TUGAS 2

ROUTING STATIS MENGGUNAKAN PACKET TRACER

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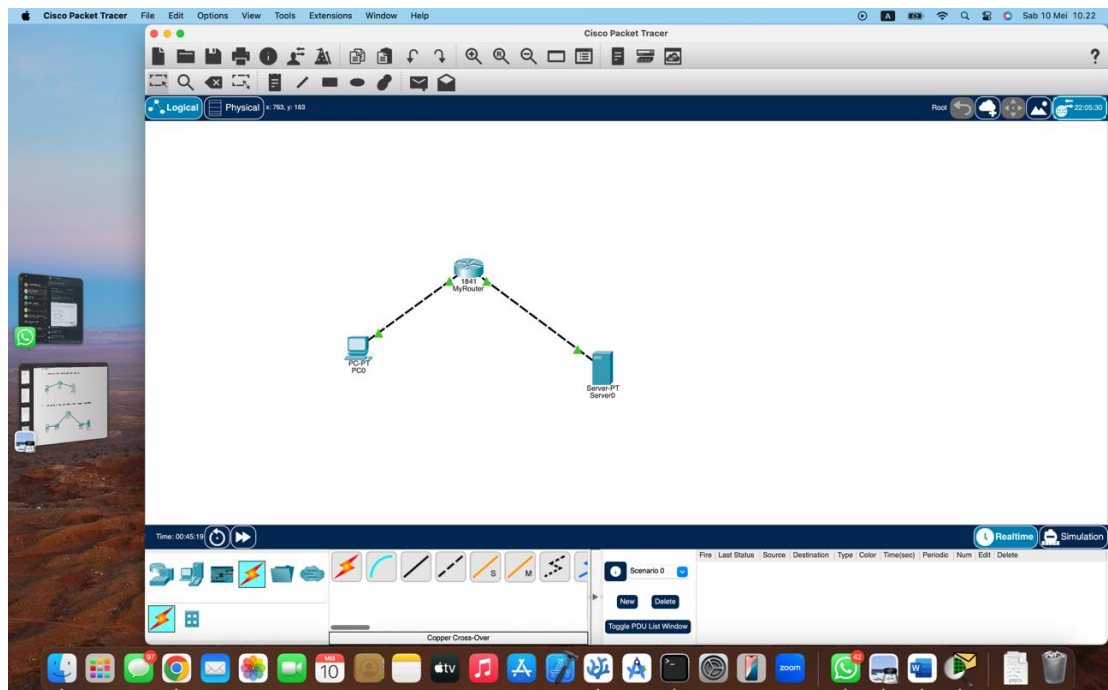❖ Diagram 1: Satu router menghubungkan dua network
  ➢ Struktur

- PC => Router
- Router => Server

➢ Alat Tempur
- Cisco Packet Tracer
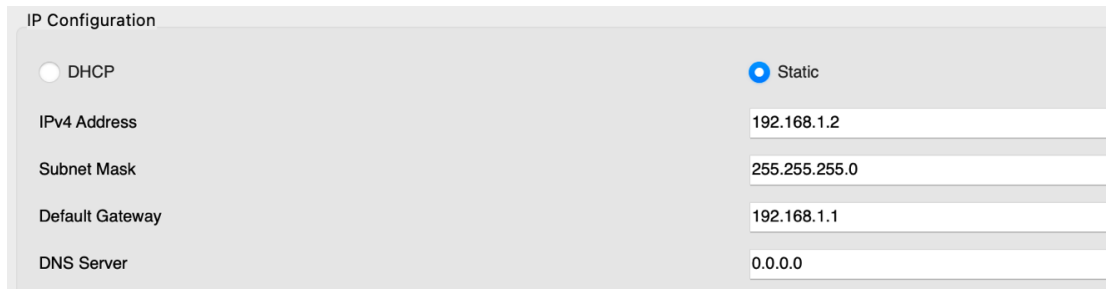- Router (1841)
- PC & Server
- Kabel Copper Cross-Over

➢ Langkah Pertama

- Buka Cisco packet tracer
- Drag and Drop:
  - 1 Router (1841)
  - 1 PC dan 1 Server
- Pilih kabel Copper cross over lalu hubungkan PC (FastEthernet0) ke Router (FastEthernet0/0), kemudian hubungkan juga Server (FastEthernet0) ke Router (FastEthernet0/1), kalau ujung kabel berwarna hijau berarti koneksi berhasil.
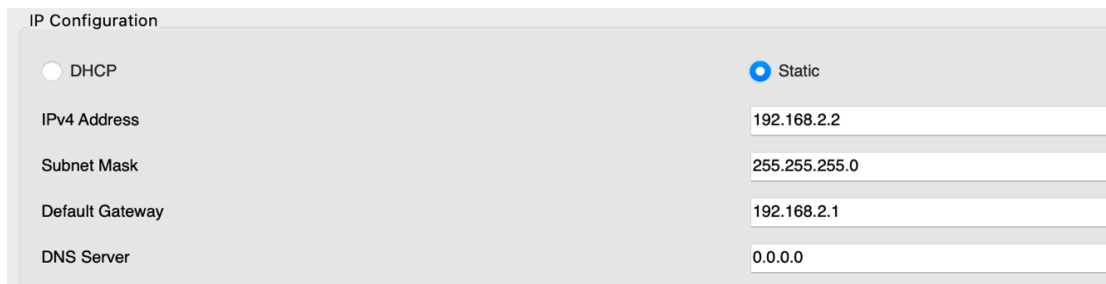
➢ Konfigurasi

- Setting IP PC:

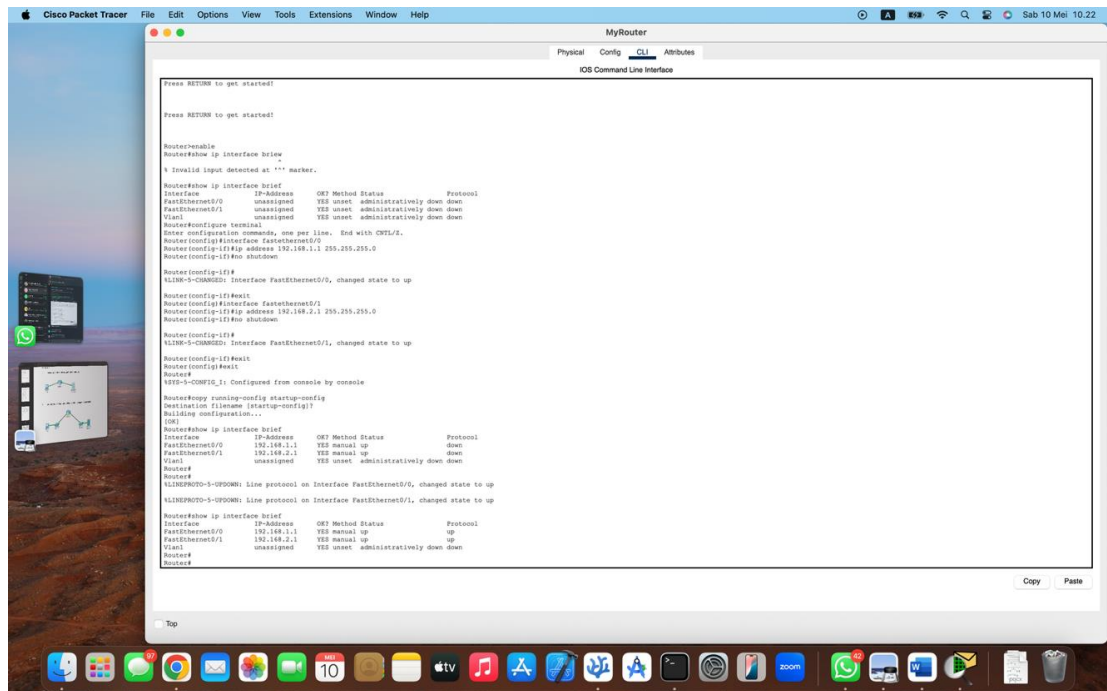| IP Configuration	
○ DHCP	● Static
IPv4 Address	192.168.1.2
Subnet Mask	255.255.255.0
Default Gateway	192.168.1.1
DNS Server	0.0.0.0

  - Klik PC lalu pergi ke Desktop/IP Configuration
  - Atur config, misalnya:
    - ♦ IP: 192.168.1.2
    - ♦ Subnet Mask (Otomatis): 255.255.255.0
    - ♦ Default Gateway: 192.168.1.1

- Setting IP Server

IP Configuration	
○ DHCP	● Static
IPv4 Address	192.168.2.2
Subnet Mask	255.255.255.0
Default Gateway	192.168.2.1
DNS Server	0.0.0.0

  - Klik Server lalu pergi ke Desktop/IP Configuration
  - Atur config, misalnya:
    - ♦ IP: 192.168.2.2
    - ♦ Subnet Mask (Otomatis): 255.255.255.0
    - ♦ Default Gateway: 192.168.2.1
- Konfigurasi Router

- Klik Router masuk ke CLI lalu masukan command berikut, atau salin command dari ROUTER.md

- Selanjutnya cek koneksi router dengan cara masukan command "*show ip interface brief*" ke CLI Router. Perhatikan kolom Protocol jika status menunjukkan "up" berarti koneksi router berhasil, tapi jika kolom Protocol menunjukkan status "down" berarti ada masalah dengan koneksi router, solusinya ulangi konfigurasi dari awal dan cek langkah sudah benar atau belum.

```
Router#show ip interface brief
Interface              IP-Address      OK? Method Status                Protocol
FastEthernet0/0        192.168.1.1     YES manual up                    down
FastEthernet0/1        192.168.2.1     YES manual up                    down
Vlan1                  unassigned      YES unset  administratively down down
Router#
Router#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

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

Router#show ip interface brief
Interface              IP-Address      OK? Method Status                Protocol
FastEthernet0/0        192.168.1.1     YES manual up                    up
FastEthernet0/1        192.168.2.1     YES manual up                    up
Vlan1                  unassigned      YES unset  administratively down down
Router#
Router#
```

- Selanjutnya simpan konfigurasi dengan cara mengetikan perintah "copy running-config startup-config" ke CLI Router, lalu tekan enter untuk konfirmasi contohnya seperti ini:

```
Router#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
```

➢ Pengujian

- Klik PC lalu masuk ke Desktop/Command Prompt
- Selanjutnya masukan perintah misalnya "*ping 192.168.2.1*", maka hasilnya seperti ini:

```
C:\>
C:\>
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<1ms 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 = 0ms, Average = 0ms

C:\>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=255
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255

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

C:\>
```

- Kalau statusnya "request timed out" berarti ada masalah dengan koneksinya, coba atur ulang konfigurasi routernya.

❖ Diagram 2: Satu Router menghubungkan dua Network dengan tambahan Switch dan Penggantian Jenis kabel
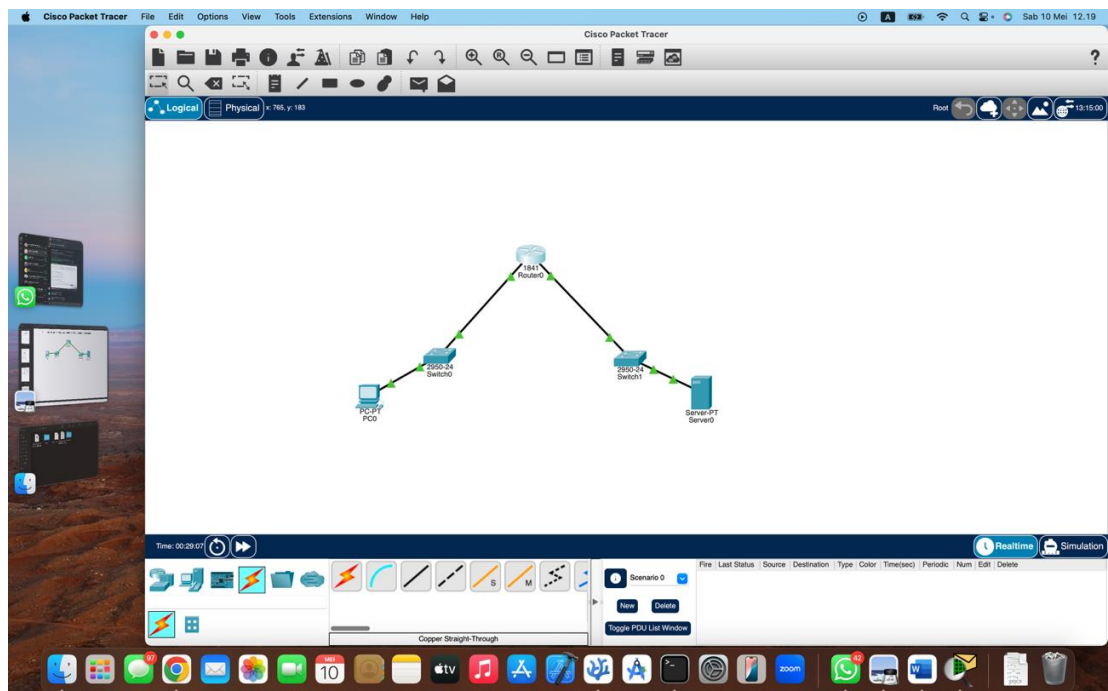 ➢ Struktur
    ▪ PC => Router
    ▪ Router => Server
  ➢ Alat yang Digunakan:
    ▪ Cisco Packet Tracer
    ▪ Router (1841)
    ▪ Switch (2950-24)
    ▪ PC & Server
    ▪ Kabel Copper Straight-through
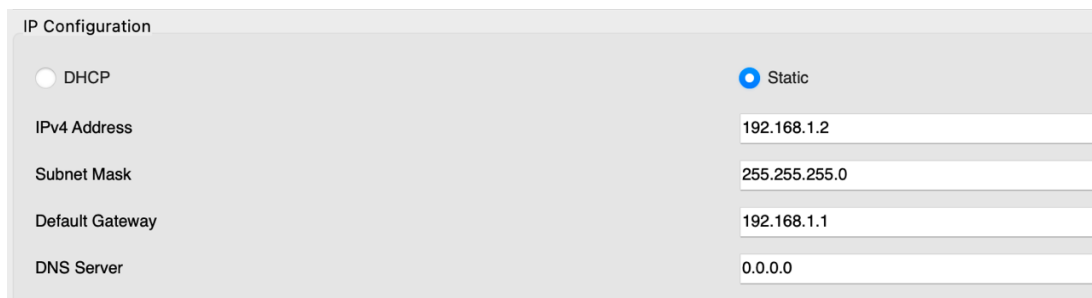 ➢ Langkah Pertama

    ▪ Buka Cisco packet tracer
    ▪ Drag and Drop:
      ● 1 Router (1841)
      ● 2 Switch (2950-24)
      ● 1 PC dan 1 Server

- Hubungkan kabel Straight-through dari PC (FastEthernet0) ke Switch (FastEthernet0/1) lalu dari Switch (FastEthernet0/2) ke Router (FastEthernet0/0). Kemudian hubungkan juga Server (FastEthernet0) ke Switch (FastEthernet0/2) lalu dari Switch (FastEthernet0/1) ke Router (FastEthernet0/1).
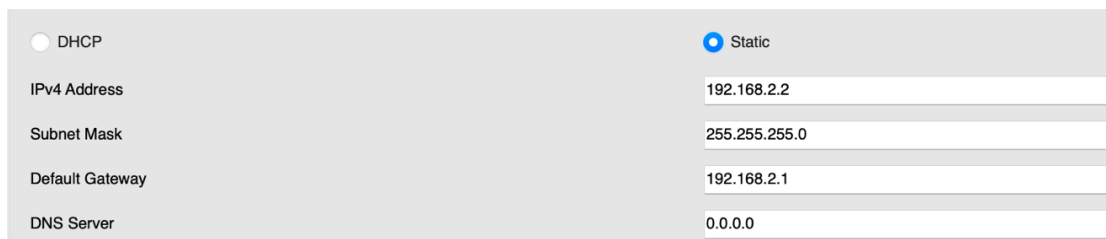
➢ Konfigurasi
  - Setting IP PC:

IP Configuration	
◯ DHCP	🔵 Static
IPv4 Address	192.168.1.2
Subnet Mask	255.255.255.0
Default Gateway	192.168.1.1
DNS Server	0.0.0.0

  - Klik PC lalu pergi ke Desktop/IP Configuration
  - Atur config, misalnya:
    - IP: 192.168.1.2
    - Subnet Mask (Otomatis): 255.255.255.0
    - Default Gateway: 192.168.1.1

  - Setting IP Server

◯ DHCP	🔵 Static
IPv4 Address	192.168.2.2
Subnet Mask	255.255.255.0
Default Gateway	192.168.2.1
DNS Server	0.0.0.0

  - Klik Server lalu pergi ke Desktop/IP Configuration
  - Atur config, misalnya:
    - IP: 192.168.2.2
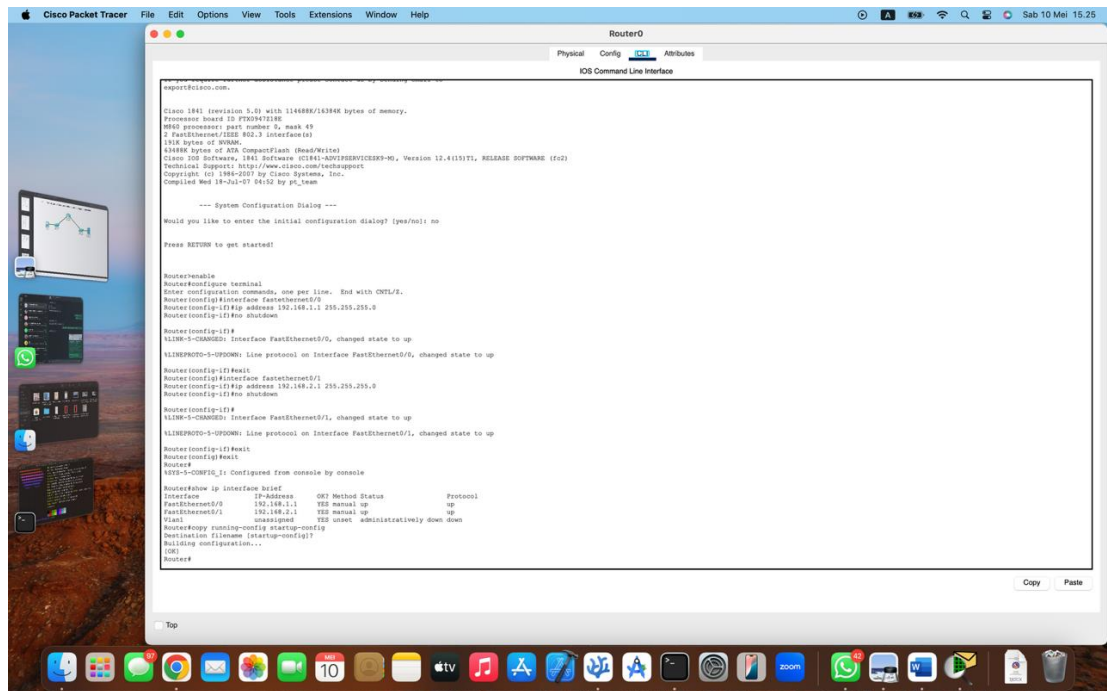   - Subnet Mask (Otomatis): 255.255.255.0
    - Default Gateway: 192.168.2.1
  - Konfigurasi Router

- Klik Router masuk ke CLI lalu masukan command berikut, atau salin command dari ROUTER.md


```
enable
configure terminal
interface FastEthernet0/0
ip address 192.168.1.1 255.255.255.0
no shutdown
exit
interface FastEthernet0/1
ip address 192.168.2.1 255.255.255.0
no shutdown
exit
```

- Selanjutnya cek koneksi router dengan cara masukan command "*show ip interface brief*" ke CLI Router. Sama seperti cara sebelumnya kalau kolom Protocol menunjukkan status "up" berarti koneksi router berhasil, tapi jika kolom Protocol menunjukkan status "down" berarti ada masalah dengan koneksi router, solusinya ulangi konfigurasi dari awal

```
Router#show ip interface brief
Interface              IP-Address      OK? Method Status                Protocol
FastEthernet0/0        192.168.1.1     YES manual up                    up
FastEthernet0/1        192.168.2.1     YES manual up                    up
Vlan1                  unassigned      YES unset  administratively down down
```

- Selanjutnya simpan konfigurasi dengan cara mengetikan perintah "copy running-config startup-config" ke CLI Router, lalu tekan enter untuk konfirmasi contohnya seperti ini:

```
Router#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
```

- <u>Untuk Switch tidak perlu dikonfigurasi.</u>

➢ Pengujian
  ▪ Klik PC lalu masuk ke Desktop/Command Prompt
  ▪ Selanjutnya masukan perintah misalnya "*ping 192.168.2.2*", maka hasilnya seperti ini:

```
Cisco Packet Tracer PC Command Line 1.0
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<1ms 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 = 1ms, Average = 0ms

C:\>ping 192.168.2.1

Pinging 192.168.2.1 with 32 bytes of data:

Reply from 192.168.2.1: bytes=32 time=27ms TTL=255
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255
Reply from 192.168.2.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.2.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 27ms, Average = 6ms

C:\>
```

  ▪ Kalau statusnya "request timed out" berarti ada masalah dengan koneksinya, coba atur ulang konfigurasi routernya.

❖ Diagram 3: Dua Router menggunakan Tiga Network

➤ Struktur
  ▪ PC0 => Router0
  ▪ Router0 ⇔ Router1
  ▪ Router1 => PC1
➤ Alat yang Dipakai:
  ▪ Cisco Packet Tracer
  ▪ Router (1841)
  ▪ PC & Server
  ▪ Kabel Copper Cross-Over
➤ Langkah Pertama
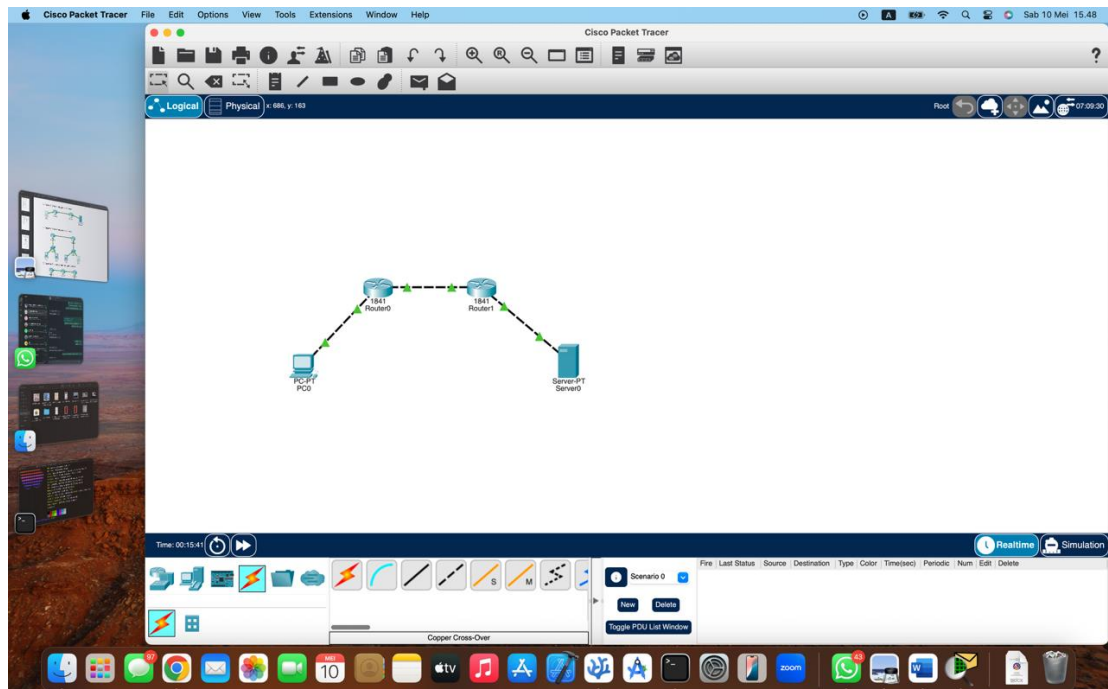
  ▪ Buka Cisco packet tracernya
  ▪ Drag and Drop:
    • 2 Router
    • 1 PC dan 1 Server
  ▪ Pilih Kabel Cross-Over lalu hubungkan PC (FastEthernet0) ke Router0 (FastEthernet0/0), Kemudian dari Router0 (FastEthernet0/1) ke Router1 (FastEthernet0/1), Terakhir dari Router1 (FastEthernet0/0) ke Server (FastEthernet0).
➤ Konfigurasi

- Setting IP PC & Server
  - Klik PC lalu pergi ke Desktop/IP Configuration kemudian isi input ini:

    - ♦ IP: 192.168.1.2
    - ♦ Subnet Mask: 255.255.255.0
    - ♦ Default Gateway: 192.168.1.1
  - Klik Server lalu pergi juga ke Desktop/IP Configuration dan isi juga inputnya dengan:

    - ♦ IP: 192.168.2.2
    - ♦ Subnet Mask: 255.255.255.0
    - ♦ Default Gateway: 192.168.2.1
  - Setting Router
    - ♦ Klik Router0 masuk ke CLI lalu masukan command ini (IP Router 10.10.10.1 dan Subnet 255.255.255.252 cukup untuk 2 Host):

```
enable
configure terminal

interface fastethernet0/0
ip address 192.168.1.1 255.255.255.0
no shutdown
exit

interface fastethernet0/1
ip address 10.10.10.1 255.255.255.252
no shutdown
exit

ip route 192.168.2.0 255.255.255.0 10.10.10.2
exit
```

♦ Klik Router1 masuk ke CLI juga lalu masukan command ini (IP Router 10.10.10.2 dan Subnet juga 255.255.255.252 cukup untuk 2 Host 4 IP).

```
enable
configure terminal

interface fastethernet0/0
ip address 192.168.2.1 255.255.255.0
no shutdown
exit

interface fastethernet0/1
ip address 10.10.10.2 255.255.255.252
no shutdown
exit

ip route 192.168.1.0 255.255.255.0 10.10.10.1
exit
```

Command "*ip route*" untuk memberitahu router kalau mau kirim paket Network ini harus lewat IP ini, Untuk command bisa di copy dari README.md

➢ Ayo Uji Coba

▪ Klik PC0 lalu masuk ke Desktop/Command Prompt

▪ Selanjutnya masukan perintah misalnya "*ping 192.168.2.2*", maka hasilnya seperti ini:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.2.2

Pinging 192.168.2.2 with 32 bytes of data:

Request timed out.
Request timed out.
Reply from 192.168.2.2: bytes=32 time<1ms TTL=126
Reply from 192.168.2.2: bytes=32 time<1ms TTL=126

Ping statistics for 192.168.2.2:
    Packets: Sent = 4, Received = 2, Lost = 2 (50% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>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=254
Reply from 192.168.2.1: bytes=32 time<1ms TTL=254
Reply from 192.168.2.1: bytes=32 time<1ms TTL=254
Reply from 192.168.2.1: bytes=32 time<1ms TTL=254

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

C:\>
```

- Kalau statusnya "request timed out" berarti ada masalah dengan koneksinya, coba atur ulang konfigurasi routernya.

❖ Diagram 4: Dua Router menggunakan Tiga Network
  ➢ Struktur
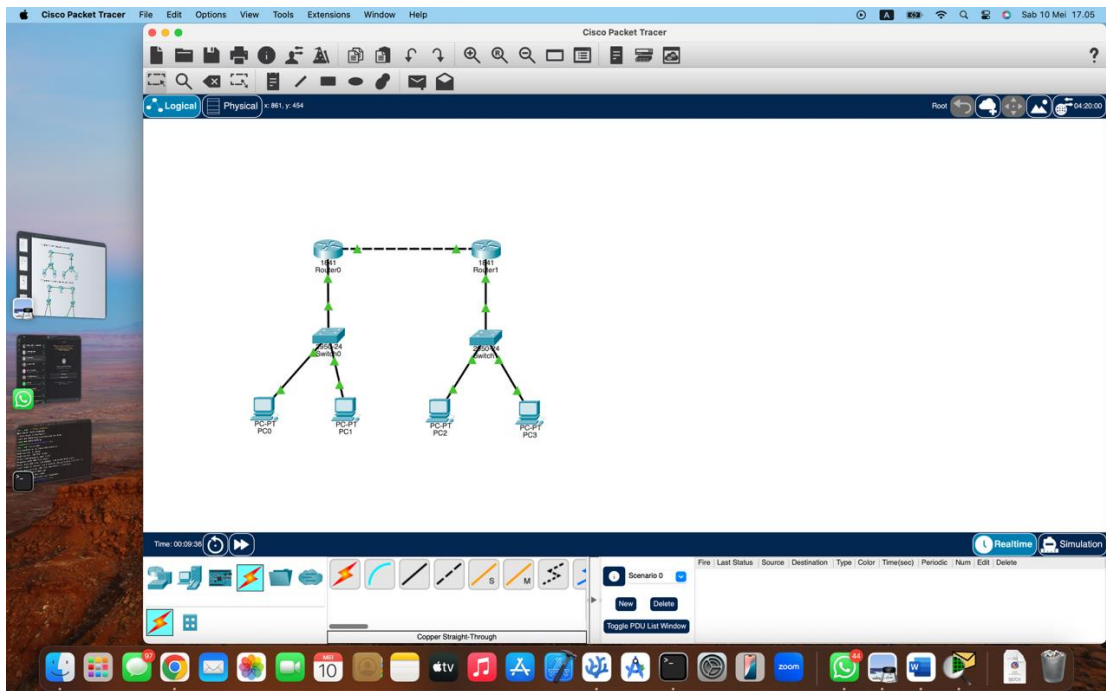   ▪ PC0, PC1 => Router0
    ▪ Router0 ⇔ Router1
    ▪ Router1 => PC2, PC3
  ➢ Alat yang Dipakai:
    ▪ Cisco Packet Tracer
    ▪ Router (1841)
    ▪ PC & Switch (2950-24)
    ▪ Kabel Cross Over
    ▪ Kabel Straight Through
  ➢ Langkah Pertama

- Buka Cisco packet tracernya
- Drag and Drop:
  - 2 Router
  - 4 PC
  - 2 Switch
- Pilih Kabel Cross-Over lalu hubungkan Router0 (FastEthernet0/1) ke Router1 (FastEthernet0/1), Kemudian pilih kabel Straight Through dan hubungan PC0 (Fastethernet0) ke Switch (FastEthernet0/1) dan PC1 ke Switch (FastEthernet0/2) lalu dari Switch (FastEthernet0/3) ke Router0 (FastEthernet0/0). Berikutnya hubungan juga PC2 (FastEthernet0) ke Switch (FastEthernet0/1) dan PC3 (FastEthernet0) ke Switch (FastEthernet0/2), terakhir dari Switch (FastEthernet0/3) ke Router1 (FastEthernet0/0).
- Konfigurasi
  - Setting IP PC
    - Klik PC lalu pergi ke Desktop/IP Configuration kemudian isi input ini:
      - PC0:

- IP: 192.168.1.2
- Subnet Mask: 255.255.255.0
- Default Gateway: 192.168.1.1

♦ PC1:
- IP: 192.168.1.3
- Subnet Mask: 255.255.255.0
- Default Gateway: 192.168.1.1

♦ PC2:
- IP: 192.168.2.2
- Subnet Mask: 255.255.255.0
- Default Gateway: 192.168.2.1

♦ PC3:
- IP: 192.168.2.3
- Subnet Mask: 255.255.255.0
- Default Gateway: 192.168.2.1

- Setting Router
  ♦ Klik Router0 masuk ke CLI lalu masukan command ini (IP Router 10.10.10.1 dan Subnet 255.255.255.252 cukup untuk 2 Host):

```
enable
configure terminal

interface fastethernet0/0
ip address 192.168.1.1 255.255.255.0
no shutdown
exit

interface fastethernet0/1
ip address 10.10.10.1 255.255.255.252
no shutdown
exit

ip route 192.168.2.0 255.255.255.0 10.10.10.2
exit
```

♦ Klik Router1 masuk ke CLI juga lalu masukan command ini (IP Router 10.10.10.2 dan Subnet juga 255.255.255.252 cukup untuk 2 Host 4 IP):

```
enable
configure terminal

interface fastethernet0/0
ip address 192.168.2.1 255.255.255.0
no shutdown
exit

interface fastethernet0/1
ip address 10.10.10.2 255.255.255.252
no shutdown
exit

ip route 192.168.1.0 255.255.255.0 10.10.10.1
exit
```

Command bisa di copy dari README.md.

➢ Uji Coba
- Klik PC0 lalu masuk ke Desktop/Command Prompt
- Selanjutnya masukan perintah misalnya "*ping 192.168.2.2*", maka hasilnya seperti ini:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.2.1

Pinging 192.168.2.1 with 32 bytes of data:

Request timed out.
Reply from 192.168.2.1: bytes=32 time<1ms TTL=254
Reply from 192.168.2.1: bytes=32 time<1ms TTL=254
Reply from 192.168.2.1: bytes=32 time<1ms TTL=254

Ping statistics for 192.168.2.1:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.2.2

Pinging 192.168.2.2 with 32 bytes of data:

Request timed out.
Reply from 192.168.2.2: bytes=32 time<1ms TTL=126
Reply from 192.168.2.2: bytes=32 time<1ms TTL=126
Reply from 192.168.2.2: bytes=32 time<1ms TTL=126

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 = 0ms, Average = 0ms

C:\>
```

- Coba juga dari PC3 dengan perintah "*ping 192.168.1.3*"
- Kalau statusnya "request timed out" berarti ada masalah dengan koneksinya, coba atur ulang konfigurasi routernya.

❖ Diagram 5: Tiga Router Menghubungkan Empat Network
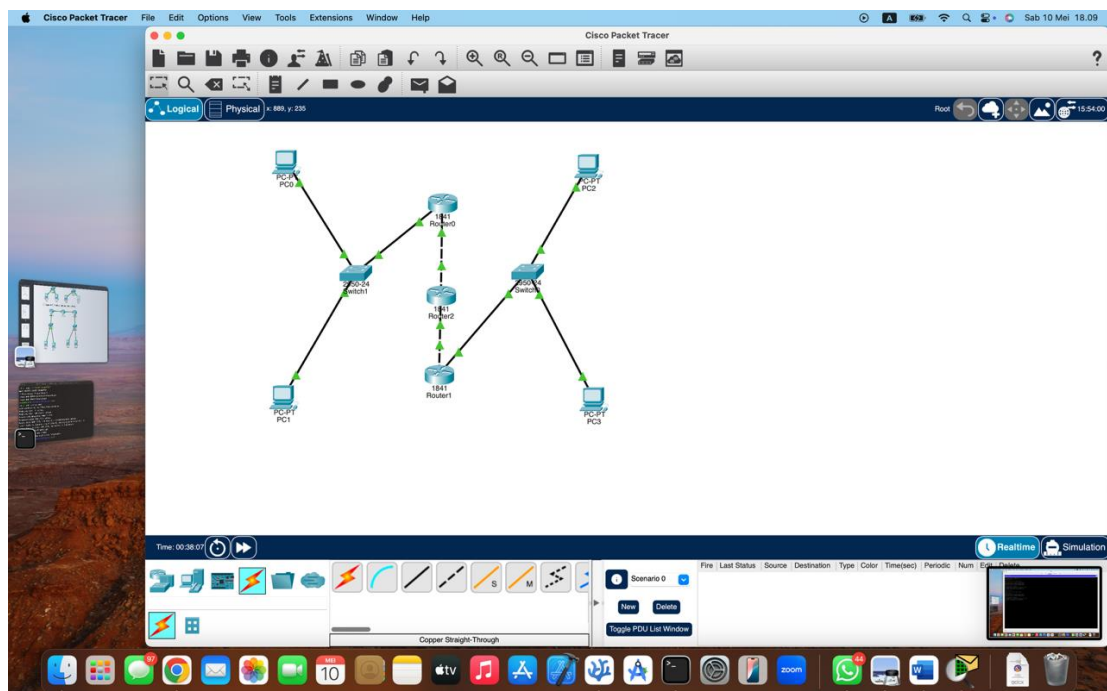 ➢ Struktur
    ▪ PC0, PC1 => Router0
    ▪ Router0 ⇔ Router1
    ▪ Router1 ⇔ Router2
    ▪ Router2 => PC2, PC3
  ➢ Alat yang Dipakai:
    ▪ Cisco Packet Tracer
    ▪ Router (1841)
    ▪ PC & Switch (2950-24)
    ▪ Kabel Cross-Over
    ▪ Kabel Straight Through
  ➢ Langkah Pertama

    ▪ Buka Cisco packet tracernya
    ▪ Drag and Drop:
      • 3 Router
      • 4 PC
      • 2 Switch

- Pilih Kabel Cross-Over lalu hubungkan Router0 (FastEthernet0/1) ke Router2(FastEthernet0/0), dari Router2(FastEthernet0/1) ke Router1 (FastEthernet0/1), Kemudian pilih kabel Straight Through dan hubungan PC0 (Fastethernet0) ke Switch (FastEthernet0/1) dan PC1 ke Switch (FastEthernet0/2) lalu dari Switch (FastEthernet0/3) ke Router0 (FastEthernet0/0). Berikutnya hubungan juga PC2 (FastEthernet0) ke Switch (FastEthernet0/1) dan PC3 (FastEthernet0) ke Switch (FastEthernet0/2), terakhir dari Switch (FastEthernet0/3) ke Router1 (FastEthernet0/0).

- Konfigurasi
  - Setting IP PC (Seperti biasa)
    - PC0:
      - IP: 192.168.1.2
      - Subnet Mask: 255.255.255.0
      - Default Gateway: 192.168.1.1
    - PC1:
      - IP: 192.168.1.3
      - Subnet Mask: 255.255.255.0
      - Default Gateway: 192.168.1.1
    - PC2:
      - IP: 192.168.2.2
      - Subnet Mask: 255.255.255.0
      - Default Gateway: 192.168.2.1
    - PC3:
      - IP: 192.168.2.3
      - Subnet Mask: 255.255.255.0
      - Default Gateway: 192.168.2.1
    - Setting Router

♦ Klik Router0 masuk ke CLI lalu masukan command ini (IP Router 10.10.10.1 dan Subnet 255.255.255.252 cukup untuk 2 Host):

```
enable
configure terminal

interface f0/0
ip address 192.168.1.1 255.255.255.0
no shutdown
exit

interface f0/1
ip address 10.10.10.1 255.255.255.252
no shutdown
exit

ip route 10.10.20.0 255.255.255.252 10.10.10.2
ip route 192.168.2.0 255.255.255.0 10.10.10.2
```

♦ Klik Router1 masuk ke CLI juga lalu masukan command ini (IP Router 10.10.20.2):

```
enable
configure terminal

interface f0/0
ip address 192.168.2.1 255.255.255.0
no shutdown
exit

interface f0/1
ip address 10.10.20.2 255.255.255.252
no shutdown
exit

ip route 192.168.1.0 255.255.255.0 10.10.20.1
ip route 10.10.10.0 255.255.255.252 10.10.20.1
```

♦ Klik Router2 masuk ke CLI hubungkan Router0 dan Router1 dengan command:

```
enable
configure terminal

interface f0/0
ip address 10.10.10.2 255.255.255.252
no shutdown
exit

interface f0/1
ip address 10.10.20.1 255.255.255.252
no shutdown
exit

ip route 192.168.1.0 255.255.255.0 10.10.10.1
ip route 192.168.2.0 255.255.255.0 10.10.20.2
```

Command "*ip route*" untuk memberitahu router kalau mau kirim paket dari Network ini harus lewat IP ini, commandnya bisa di salin di README.md.

➢ Percobaan
- Klik PC1 lalu masuk ke Desktop/Command Prompt
- Selanjutnya masukan perintah misalnya "*ping 192.168.2.2*", maka hasilnya seperti ini:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.2.3

Pinging 192.168.2.3 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Reply from 192.168.2.3: bytes=32 time<1ms TTL=125

Ping statistics for 192.168.2.3:
    Packets: Sent = 4, Received = 1, Lost = 3 (75% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

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=125
Reply from 192.168.2.2: bytes=32 time=26ms TTL=125
Reply from 192.168.2.2: bytes=32 time<1ms TTL=125

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 = 26ms, Average = 9ms

C:\>
```

- Coba test juga di PC2 dan PC3

- Kalau statusnya "request timed out" berarti ada masalah dengan koneksinya, coba atur ulang konfigurasi routernya.
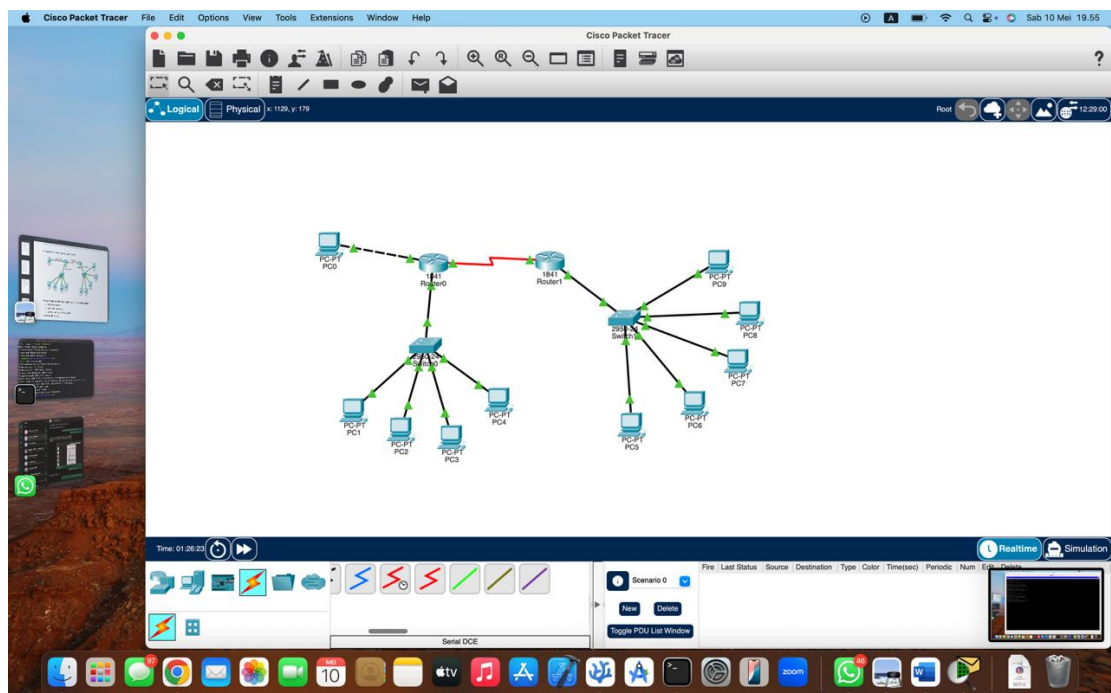
❖ Diagram 6: Dua Router menghubungkan Empat Network
  ➢ Struktur
    - PC0 => Router0
    - PC1, PC2, PC3, PC4 => Router0
    - Router0 ⇔ Router1
    - Router1 => PC5, PC6, PC7, PC8, PC9
  ➢ Alat yang Dipakai:
    - Cisco Packet Tracer
    - Router (1841)
    - PC & Switch (2950-24)
    - Kabel Cross-Over
    - Kabel Straight Through
    - Kabel Serial DCE
  ➢ Langkah Pertama

  - Buka Cisco packet tracernya
  - Drag and Drop:

- 2 Router
- 10 PC
- 2 Switch

- Tambahkan dulu WIC-2T supaya bisa menggunkan Serial DCE dan supaya 2 router bisa saling terhubung, berikut cara caranya:

- Klik Router0 Masuk ke Physical lalu tekan tombol power router ke "off" hingga berwarna merah
- Kemudian cari Modul WIC-2T dan drag and drop ke Slot yang kosong di router
- Setelah itu tekan lagi tombol power ke "on" hingga berwarna hijau
- Lakukan hal serupa ke Router1

- Pilih Kabel Serial DCE lalu hubungkan Router0 (Serial 0/1/0) ke Router1 (Serial 0/1/0), setelah itu pilih kabel Cross-Over lalu hubungkan PC0 (FastEthernet0) ke Router1 (FastEthernet0), kemudian pilih kabel Straight Through dan hubungkan PC1, PC2, PC3, PC4 (FastEthernet0) ke Switch0 (FastEthernet0/1-4) lalu Switch (FastEthernet0/5) ke Router0 (FastEthernet0/1), berikutnya hubungkan PC5, PC6, PC7, PC8, PC9 (FastEthernet0) ke Switch1 (FastEthernet0/1-4), terakhir dari Switch1 (FastEthernet0/5) ke Router1 (FastEthernet0/0).

- Konfigurasi
  - Setting IP PC (Masuk Desktop/IP Configuration)
    - PC0:
      - IP: 193.0.0.130

- ♦ Subnet Mask: 255.255.255.192
- ♦ Default Gateway: 193.0.0.129
- PC1:
  - ♦ IP: 193.0.0.195
  - ♦ Subnet Mask: 255.255.255.192
  - ♦ Default Gateway: 193.0.0.194
- PC2:
  - ♦ IP: 193.0.0.196
  - ♦ Subnet Mask: 255.255.255.192
  - ♦ Default Gateway: 193.0.0.194
- PC3:
  - ♦ IP: 193.0.0.197
  - ♦ Subnet Mask: 255.255.255.192
  - ♦ Default Gateway: 193.0.0.194
- PC4:
  - ♦ IP: 193.0.0.198
  - ♦ Subnet Mask: 255.255.255.192
  - ♦ Default Gateway: 193.0.0.194
- PC5:
  - ♦ IP: 193.0.0.66
  - ♦ Subnet Mask: 255.255.255.192
  - ♦ Default Gateway: 193.0.0.65
- PC6:
  - ♦ IP: 193.0.0.67
  - ♦ Subnet Mask: 255.255.255.192
  - ♦ Default Gateway: 193.0.0.65
- PC7:
  - ♦ IP: 193.0.0.68
  - ♦ Subnet Mask: 255.255.255.192

♦ Default Gateway: 193.0.0.65
- PC8:
  ♦ IP: 193.0.0.69
  ♦ Subnet Mask: 255.255.255.192
  ♦ Default Gateway: 193.0.0.65
- PC9:
  ♦ IP: 193.0.0.70
  ♦ Subnet Mask: 255.255.255.192
  ♦ Default Gateway: 193.0.0.65
- Setting Router
  - IP & Subnet Mask Router
    ♦ Router0
      ➢ FastEthernet0/0 (IP 193.0.0.129 Subnet 255.255.255.192)
      ➢ FastEthernet0/1 (IP 193.0.0.194 Subnet 255.255.255.192)
      ➢ Serial 0/1/0 (IP 193.0.0.25 Subnet 255.255.255.252)
    ♦ Router1
      ➢ FastEthernet0/0 (IP 193.0.0.65 Subnet 255.255.255.192)
      ➢ Serial 0/1/0 (IP 193.0.0.26 Subnet 255.255.255.252)
  - Klik Router0 masuk ke CLI lalu masukan command ini:

```
enable
configure terminal

interface fastethernet0/0
ip address 193.0.0.129 255.255.255.192
no shutdown
exit

interface fastethernet0/1
ip address 193.0.0.194 255.255.255.192
no shutdown
exit

interface serial0/1/0
ip address 193.0.0.25 255.255.255.252
clock rate 64000
no shutdown
exit

ip route 193.0.0.64 255.255.255.192 193.0.0.26
```

- Klik Router1 masuk ke CLI juga lalu masukan command ini:

```
enable
configure terminal

interface serial0/1/0
ip address 193.0.0.26 255.255.255.252
no shutdown
exit

interface fastethernet0/0
ip address 193.0.0.65 255.255.255.192
no shutdown
exit

ip route 193.0.0.128 255.255.255.192 193.0.0.25
ip route 193.0.0.192 255.255.255.192 193.0.0.25
```

Command bisa di copy dari link README.md.

➢ Ayo Uji Coba
  ▪ Klik PC0 lalu masuk ke Desktop/Command Prompt
  ▪ Selanjutnya masukan perintah misalnya "*ping 193.0.0.66*", maka hasilnya seperti ini:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 193.0.0.66

Pinging 193.0.0.66 with 32 bytes of data:

Request timed out.
Reply from 193.0.0.66: bytes=32 time=47ms TTL=126
Reply from 193.0.0.66: bytes=32 time=30ms TTL=126
Reply from 193.0.0.66: bytes=32 time=33ms TTL=126

Ping statistics for 193.0.0.66:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 30ms, Maximum = 47ms, Average = 36ms

C:\>ping 193.0.0.67

Pinging 193.0.0.67 with 32 bytes of data:

Request timed out.
Reply from 193.0.0.67: bytes=32 time=3ms TTL=126
Reply from 193.0.0.67: bytes=32 time=3ms TTL=126
Reply from 193.0.0.67: bytes=32 time=2ms TTL=126

Ping statistics for 193.0.0.67:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 3ms, Average = 2ms

C:\>
```

▪ Uji juga dari PC5 dengan command "*ping 193.0.0.195*"
  seperti ini:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 193.0.0.195

Pinging 193.0.0.195 with 32 bytes of data:

Request timed out.
Reply from 193.0.0.195: bytes=32 time=67ms TTL=126
Reply from 193.0.0.195: bytes=32 time=42ms TTL=126
Reply from 193.0.0.195: bytes=32 time=46ms TTL=126

Ping statistics for 193.0.0.195:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 42ms, Maximum = 67ms, Average = 51ms

C:\>
```

▪ Kalau statusnya "request timed out" berarti ada masalah
  dengan koneksinya, coba atur ulang konfigurasi routernya.