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Kelas : **C**
Modul : **3**

TUGAS
JARINGAN KOMPUTER
MODUL 3 (TUGAS MODUL)
SUBNETTING

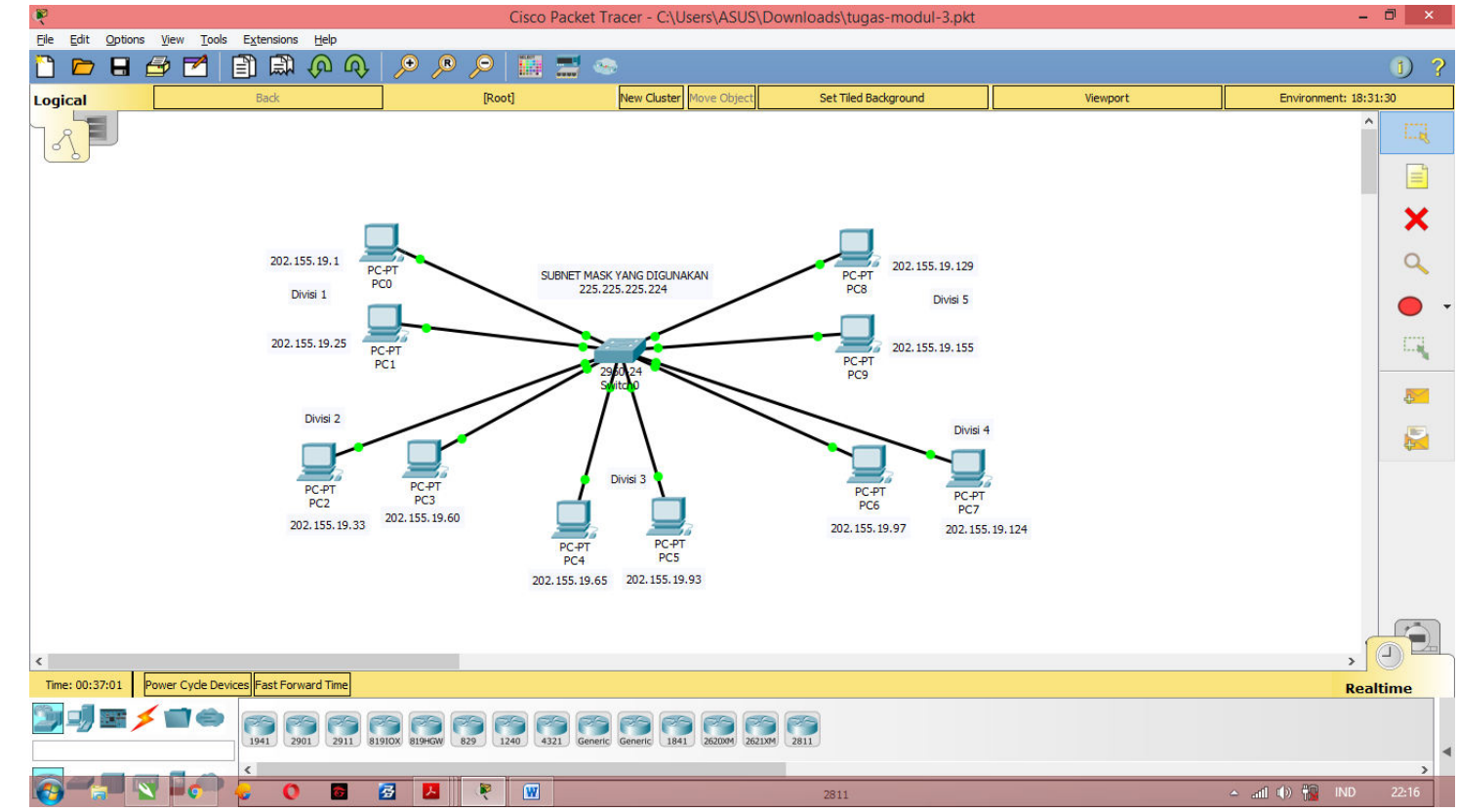
1. Diketahui sebuah supermarket akan memasang sebuah jaringan komputer yang menggunakan network ID 202.155.19.0 dengan subnet mask default 255.255.255.0. Supermarket tersebut mempunyai 5 divisi dan masing-masing divisi dapat berisi hingga 25 komputer.
2. Tugas anda adalah :
   a. Buatlah desain jaringan tersebut dengan packet tracer
   b. Gunakan switch seri generic dan gunakan juga 10(sepuluh) unit pc
   c. Tentukan subnet mask yang harus digunakan pada semua komputer tersebut **Jawab** :
      - subnet mask default yang digunakan yakni 255.255.255.0
      - konversikan angka 0 menjadi biner, sehingga 00000000
      - konversikan bit 0 pada subnet mask default menjadi bit 1 sebanyak 3 bit (karna diperlukan 5 subnet) sehingga menjadi 11100000 sehingga :
        - **jumlah subnet** = 2^x
          = 2^3
          = **8 Subnet (11100000)**

          Sehingga, (1 x 128) + (1 x 64) + (1 x32) + (0 x 16) + (0 x 8) + (0 x 4) + (0 x 2) + (0 x 1) = 224

        - **jumlah host** = $2^y - 2$
          = $2^5 - 2$
          = 32 – 2
          = **30 Host** (cukup dan memenuhi kebutuhan)
        - **block subnet** = 256 – 224
          = **32 IP address**
      - **Subnet mask** yang digunakan **225.225.225.224**
   d. Tentukan subnet address yang terbentuk
      Jawab :

Network	202.155.19.0	202.155.19.32	202.155.19.64	202.155.19.96	202.155.19.128	202.155.19.160	202.155.19.192	202.155.19.224
Host Pertama	202.155.19.1	202.155.19.33	202.155.19.65	202.155.19.97	202.155.19.129	202.155.19.161	202.155.19.193	202.155.19.225
Host terakhir	202.155.19.30	202.155.19.62	202.155.19.94	202.155.19.126	202.155.19.158	202.155.19.190	202.155.19.222	202.155.19.254
Broadcast	202.155.19.31	202.155.19.63	202.155.19.95	202.155.19.127	202.155.19.159	202.155.19.191	202.155.19.223	202.155.19.255

e. Implementasikan menggunakan simulator



f. Lakukan teks koneksi antara komputer-komputer yang ada.

- **Ping antara divisi 1 dengan divisi**

```
C:\>ping 202.155.19.25

Pinging 202.155.19.25 with 32 bytes of data:

Reply from 202.155.19.25: bytes=32 time=51ms TTL=128
Reply from 202.155.19.25: bytes=32 time=4ms TTL=128
Reply from 202.155.19.25: bytes=32 time<1ms TTL=128
Reply from 202.155.19.25: bytes=32 time<1ms TTL=128

Ping statistics for 202.155.19.25:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 51ms, Average = 13ms

C:\>ping 202.155.19.1

Pinging 202.155.19.1 with 32 bytes of data:

Reply from 202.155.19.1: bytes=32 time<1ms TTL=128
Reply from 202.155.19.1: bytes=32 time<1ms TTL=128
Reply from 202.155.19.1: bytes=32 time=4ms TTL=128
Reply from 202.155.19.1: bytes=32 time=8ms TTL=128

Ping statistics for 202.155.19.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 8ms, Average = 3ms
```

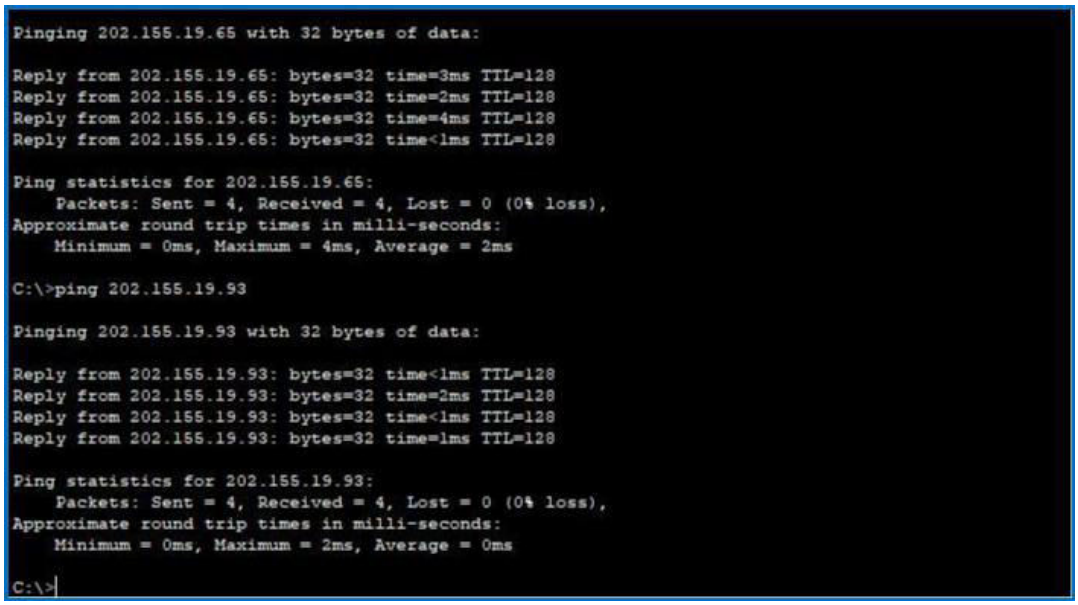
```
C:\>ping 202.155.19.33

Pinging 202.155.19.33 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 202.155.19.33:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\> ping 202.155.19.60

Pinging 202.155.19.60 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 202.155.19.60:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

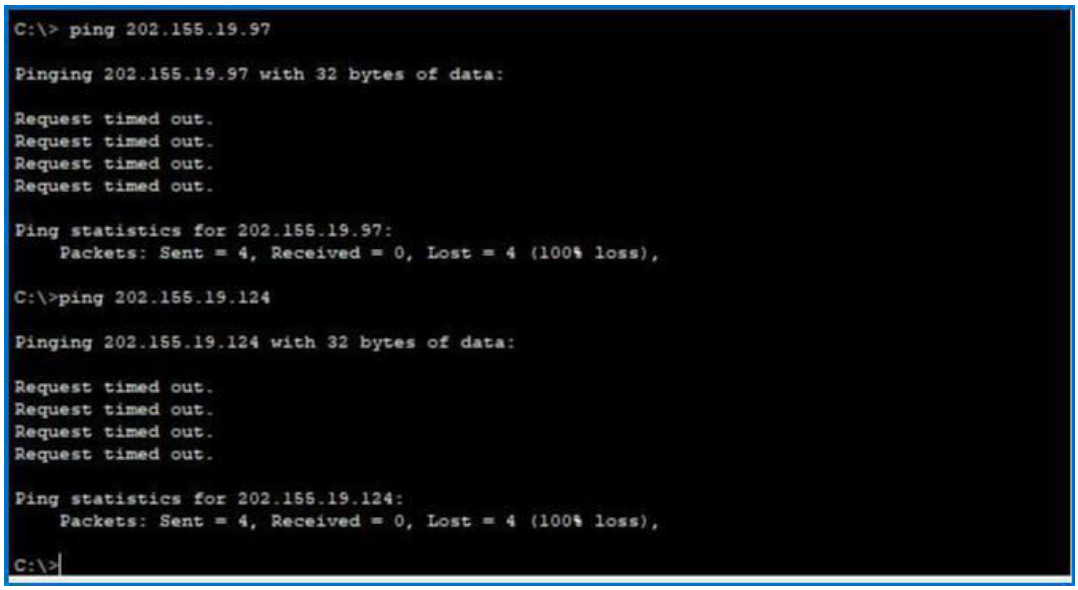
- **Ping antara divis 2 dengan divisi 3**

```
C:\>ping 202.155.19.33

Pinging 202.155.19.33 with 32 bytes of data:

Reply from 202.155.19.33: bytes=32 time=2ms TTL=128
Reply from 202.155.19.33: bytes=32 time=4ms TTL=128
Reply from 202.155.19.33: bytes=32 time=7ms TTL=128
Reply from 202.155.19.33: bytes=32 time=8ms TTL=128

Ping statistics for 202.155.19.33:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 8ms, Average = 5ms

C:\>ping 202.155.19.60

Pinging 202.155.19.60 with 32 bytes of data:

Reply from 202.155.19.60: bytes=32 time=1ms TTL=128
Reply from 202.155.19.60: bytes=32 time<1ms TTL=128
Reply from 202.155.19.60: bytes=32 time<1ms TTL=128
Reply from 202.155.19.60: bytes=32 time<1ms TTL=128

Ping statistics for 202.155.19.60:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

```
C:\> ping 202.155.19.65

Pinging 202.155.19.65 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 202.155.19.65:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\> ping 202.155.19.93

Pinging 202.155.19.93 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 202.155.19.93:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

- **Ping antara divisi 3 dengan divisi 4**





- **Ping antara divisi 4 dengan divisi 5**

```
Pinging 202.155.19.97 with 32 bytes of data:

Reply from 202.155.19.97: bytes=32 time=3ms TTL=128
Reply from 202.155.19.97: bytes=32 time=2ms TTL=128
Reply from 202.155.19.97: bytes=32 time=3ms TTL=128
Reply from 202.155.19.97: bytes=32 time=4ms TTL=128

Ping statistics for 202.155.19.97:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 4ms, Average = 3ms

C:\>ping 202.155.19.124

Pinging 202.155.19.124 with 32 bytes of data:

Reply from 202.155.19.124: bytes=32 time=2ms TTL=128
Reply from 202.155.19.124: bytes=32 time<1ms TTL=128
Reply from 202.155.19.124: bytes=32 time=1ms TTL=128
Reply from 202.155.19.124: bytes=32 time<1ms TTL=128

Ping statistics for 202.155.19.124:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 2ms, Average = 0ms

C:\>
```

```
C:\>ping 202.155.19.129

Pinging 202.155.19.129 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 202.155.19.129:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 202.155.19.155

Pinging 202.155.19.155 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 202.155.19.155:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

- **Ping antara divisi 5 dengan divisi 1**

```
C:\>ping 202.155.19.129

Pinging 202.155.19.129 with 32 bytes of data:

Reply from 202.155.19.129: bytes=32 time=2ms TTL=128
Reply from 202.155.19.129: bytes=32 time=9ms TTL=128
Reply from 202.155.19.129: bytes=32 time<1ms TTL=128
Reply from 202.155.19.129: bytes=32 time<1ms TTL=128

Ping statistics for 202.155.19.129:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 9ms, Average = 2ms

C:\>ping 202.155.19.155

Pinging 202.155.19.155 with 32 bytes of data:

Reply from 202.155.19.155: bytes=32 time<1ms TTL=128
Reply from 202.155.19.155: bytes=32 time<1ms TTL=128
Reply from 202.155.19.155: bytes=32 time=3ms TTL=128
Reply from 202.155.19.155: bytes=32 time<1ms TTL=128

Ping statistics for 202.155.19.155:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 3ms, Average = 0ms
```

```
C:\>ping 202.155.19.1

Pinging 202.155.19.1 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 202.155.19.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\> ping 202.155.19.33

Pinging 202.155.19.33 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 202.155.19.33:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

- *Jika setelah di ping, uji koneksi berstatus **Reply** berati koneksi berhasil dan benar berada dalam 1 subnet bukan berasal dari subnet lain.*
- *Jika setelah di ping, uji koneksi bestatus **Requested Timed Out** berarti koneksi gagal karen tidak berada dalam 1 subnet yang sama.*