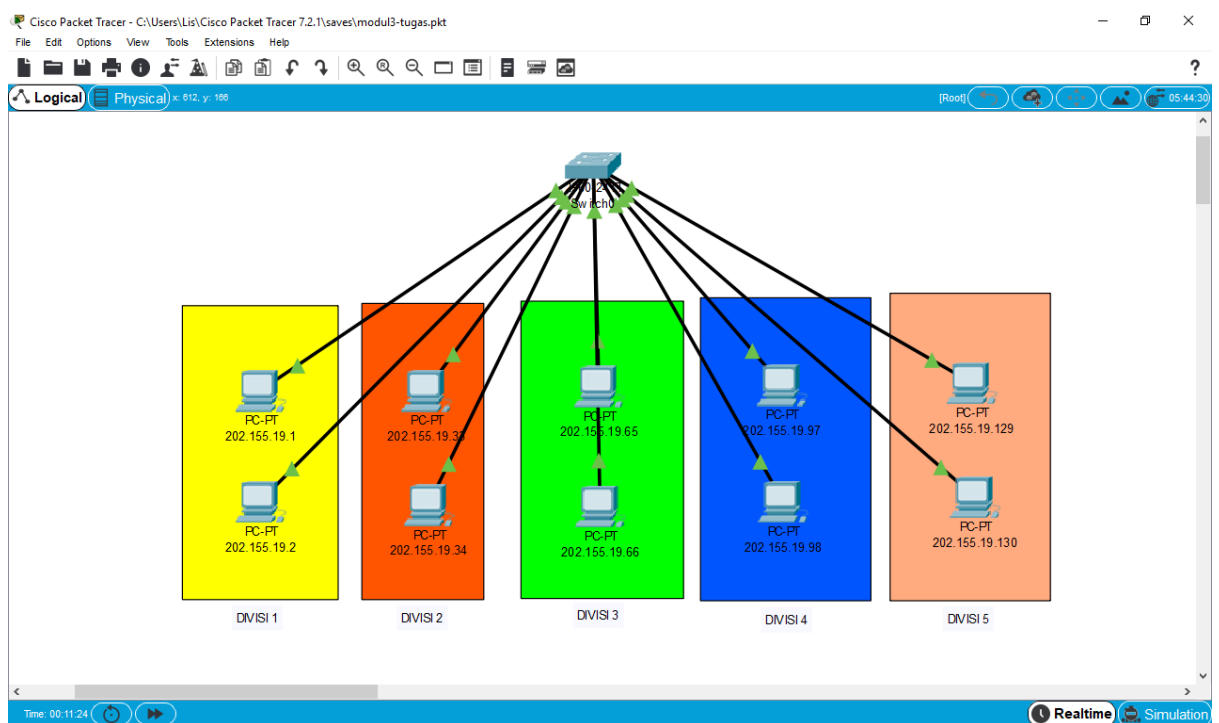


Nama : Listian Prihutomo
NIM : L200170175
Kelas : D

TUGAS PRAKTIKUM JARINGAN KOMPUTER MODUL 3

Diketahui sebuah supermarket akan memasang sebuah jaringan computer 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.

1. Langkah pertama yang dilakukan yaitu membuat topologi jaringan yang terdiri dari 1 buah switch dan 10 buah unit PC dengan pembagian 2 unit PC tiap divisinya.



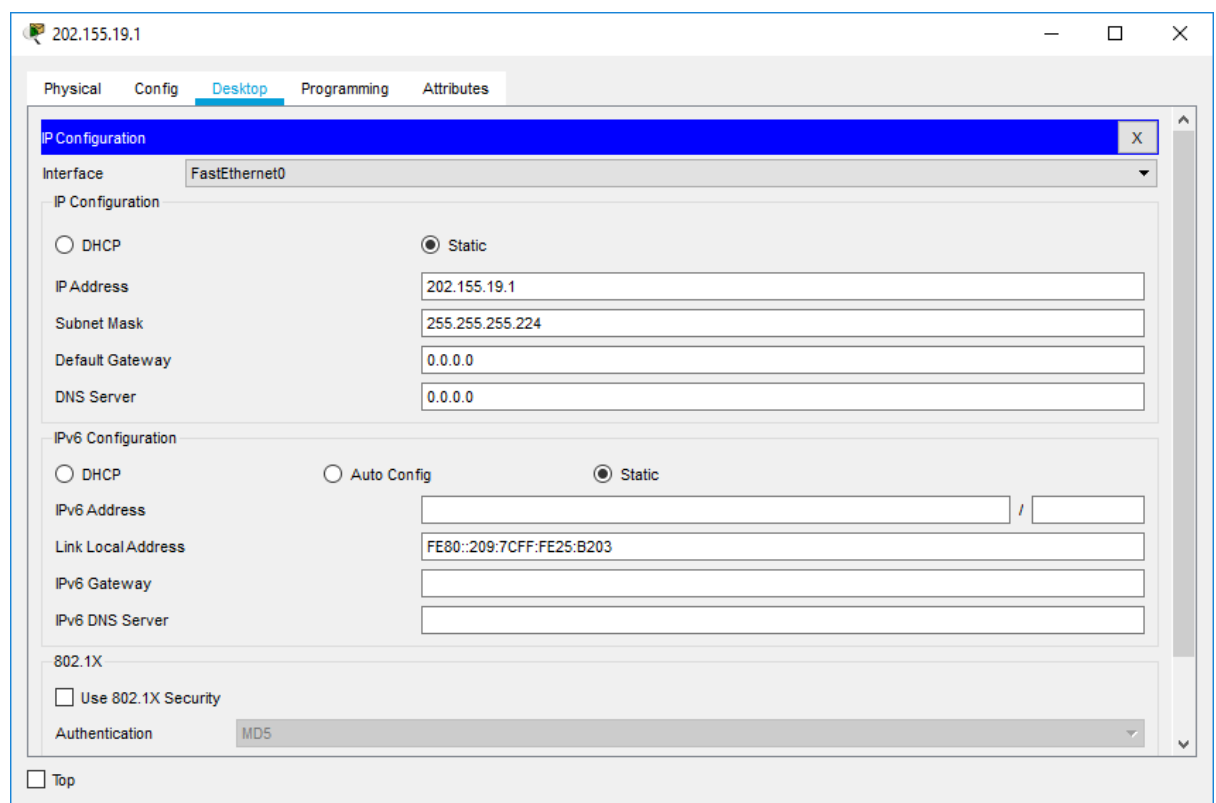
2. Menentukan subnet mask yang harus digunakan pada semua computer yaitu dengan berpatokan pada soal bahwa tiap-tiap divisi dapat menampung hingga 25 unit PC dan subnet mask default yaitu 255.255.255.0, berarti blok kosong terakhir dapat di uraikan menjadi (1111111), karena kita hanya membutuhkan 5 subnet untuk masing-masing divisi maka kita cukup mengambil 3 bit dari sebelah kiri lalu kita masukan dalam rumus :
 - $2^3 - 2 = 6$, binernya (11100000)
 - Sehingga, $(1 \times 2^7) + (1 \times 2^6) + (1 \times 2^5) + (0 \times 2^4) + (0 \times 2^3) + (0 \times 2^2) + (0 \times 2^1) + (0 \times 2^0) = 224$

- Range IP yang didapat : $256 - 224 = 32$ IP Address, dimana dengan ini syarat bahwa tiap-tiap divisi dapat menampung hingga 25 komputer dapat terpenuhi

3. Dengan ini didapatkan data range IP Address sebagai berikut :

Subnet Address	Alamat IP Awal	Alamat IP Akhir
202.155.19.0	202.155.19.1	202.155.19.31
202.155.19.32	202.155.19.33	202.155.19.63
202.155.19.64	202.155.19.65	202.155.19.95
202.155.19.96	202.155.19.97	202.155.19.127
202.155.19.128	202.155.19.129	202.155.19.159
202.155.19.160	202.155.19.161	202.155.19.191
202.155.19.192	202.155.19.193	202.155.19.223
202.155.19.224	202.155.19.225	202.155.19.254

4. Setelah mendapatkan data range IP Address diatas langkah selanjutnya yaitu memberikan alamat IP pada masing-masing PC berdasarkan masing masing divisi dengan menggunakan subnet mask **255.255.255.224**



202.155.19.33

Physical

Config

Desktop

Programming

Attributes

IP Configuration

X

InterfaceFastEthernet0

IP Configuration

DHCP

Static

IP Address202.155.19.33

Subnet Mask255.255.255.224

Default Gateway0.0.0.0

DNS Server0.0.0.0

IPv6 Configuration

DHCP

Auto Config

Static

IPv6 Address

Link Local AddressFE80::290:2BFF:FE17:83D6

IPv6 Gateway

IPv6 DNS Server

802.1X

Use 802.1X Security

AuthenticationMD5

Top

202.155.19.65

Physical

Config

Desktop

Programming

Attributes

IP Configuration

X

InterfaceFastEthernet0

IP Configuration

DHCP

Static

IP Address202.155.19.65

Subnet Mask255.255.255.224

Default Gateway0.0.0.0

DNS Server0.0.0.0

IPv6 Configuration

DHCP

Auto Config

Static

IPv6 Address

Link Local AddressFE80::202:4AFF:FE2A:9CD

IPv6 Gateway

IPv6 DNS Server

802.1X

Use 802.1X Security

AuthenticationMD5

Top

202.155.19.97

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IP Address: 202.155.19.97

Subnet Mask: 255.255.255.224

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address: /

Link Local Address: FE80::2E0:8FFF:FE09:DD56

IPv6 Gateway:

IPv6 DNS Server:

802.1X

☐ Use 802.1X Security

Authentication: MD5

☐ Top

202.155.19.129

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IP Address: 202.155.19.129

Subnet Mask: 255.255.255.224

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address: /

Link Local Address: FE80::2E0:A3FF:FE5A:5E06

IPv6 Gateway:

IPv6 DNS Server:

802.1X

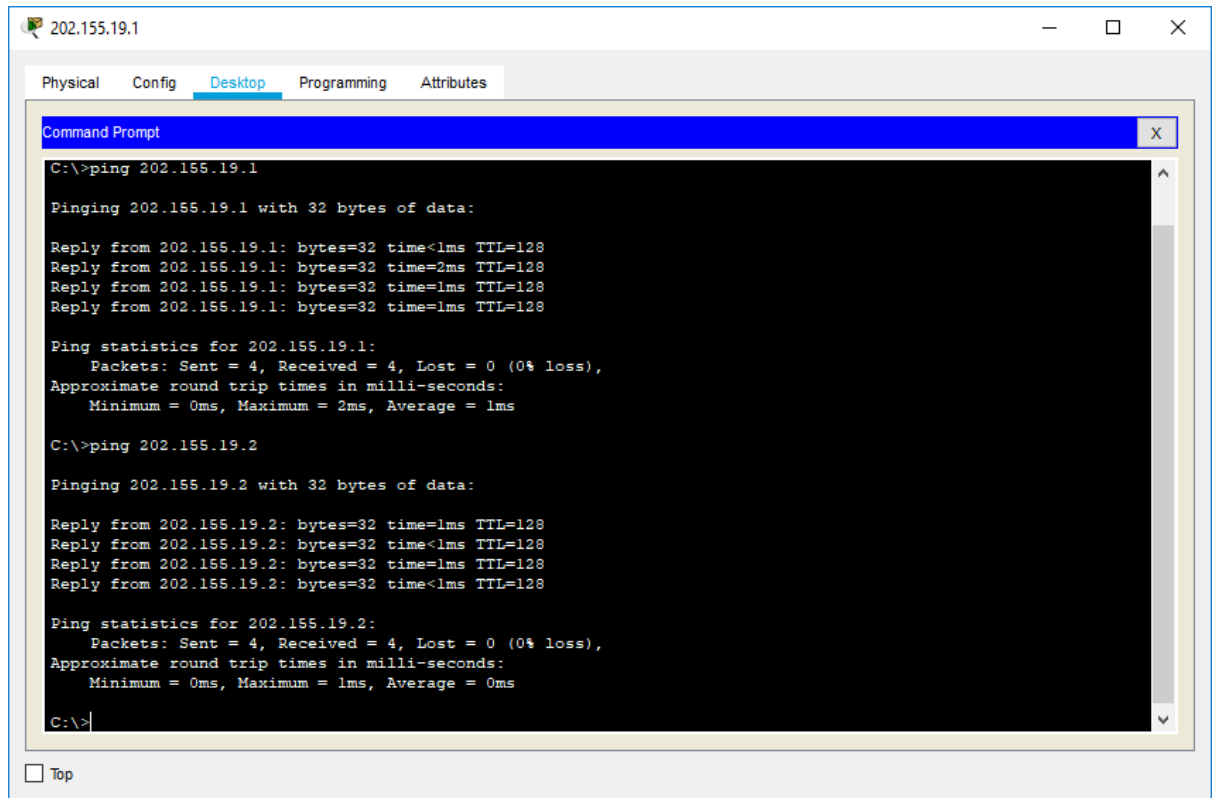
☐ Use 802.1X Security

Authentication: MD5

☐ Top

Ket : Divisi 1 = 202.155.19.1 – 31
 Divisi 2 = 202.155.19.33 – 63
 Divisi 3 = 202.155.19.65 – 95
 Divisi 4 = 202.155.19.97 – 127
 Divisi 5 = 202.155.19.129 – 159

5. Langkah terakhir yaitu melakukan tes koneksi menggunakan simulator ping yang ada pada tiap-tiap PC
- a. Tes ping menggunakan PC pada divisi 1, divisi 1 hanya dapat terhubung dengan PC dengan range ip yang sudah dijabarkan diatas, begitu juga dengan divisi selanjutnya



```
202.155.19.1

Physical  Config  Desktop  Programming  Attributes

Command Prompt

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=2ms TTL=128
Reply from 202.155.19.1: bytes=32 time=1ms TTL=128
Reply from 202.155.19.1: bytes=32 time=1ms 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 = 2ms, Average = 1ms

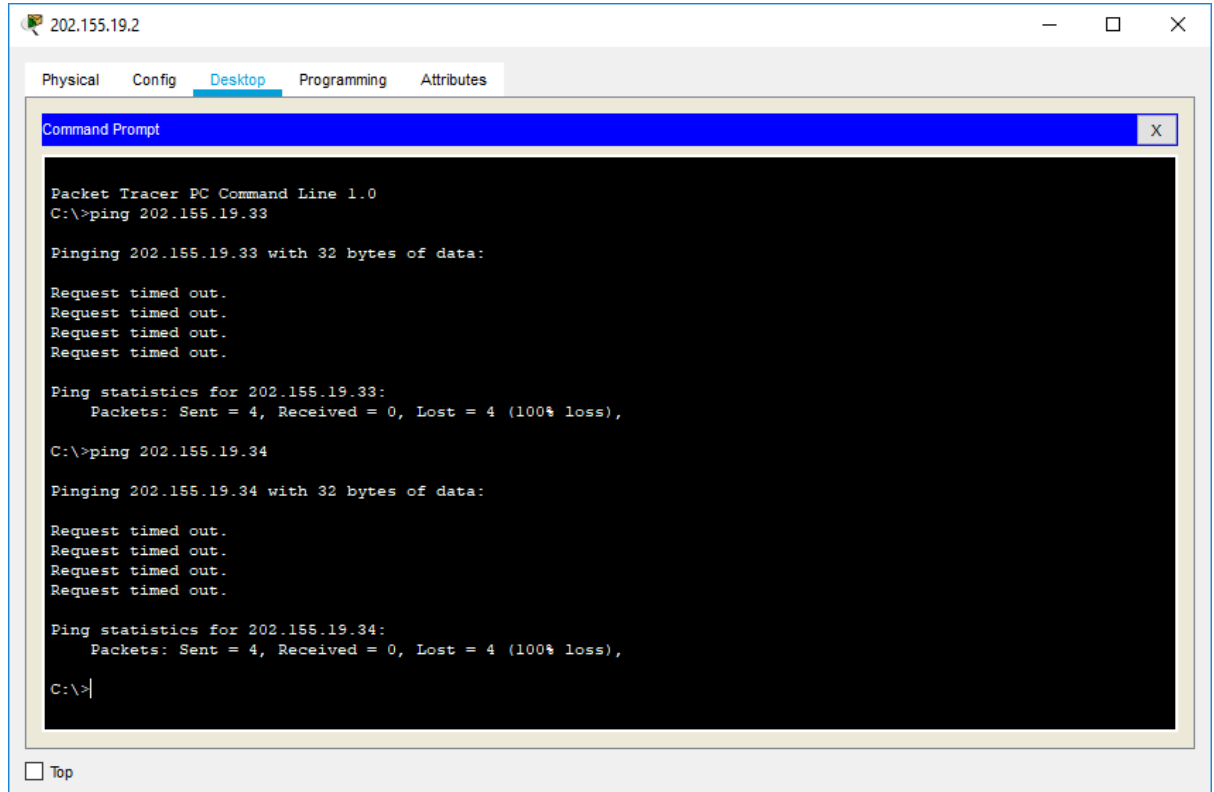
C:\>ping 202.155.19.2

Pinging 202.155.19.2 with 32 bytes of data:

Reply from 202.155.19.2: bytes=32 time=1ms TTL=128
Reply from 202.155.19.2: bytes=32 time<1ms TTL=128
Reply from 202.155.19.2: bytes=32 time=1ms TTL=128
Reply from 202.155.19.2: bytes=32 time<1ms TTL=128

Ping statistics for 202.155.19.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>|
```



```
202.155.19.2

Physical  Config  Desktop  Programming  Attributes

Command Prompt

Packet Tracer PC Command Line 1.0
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 202.155.19.34

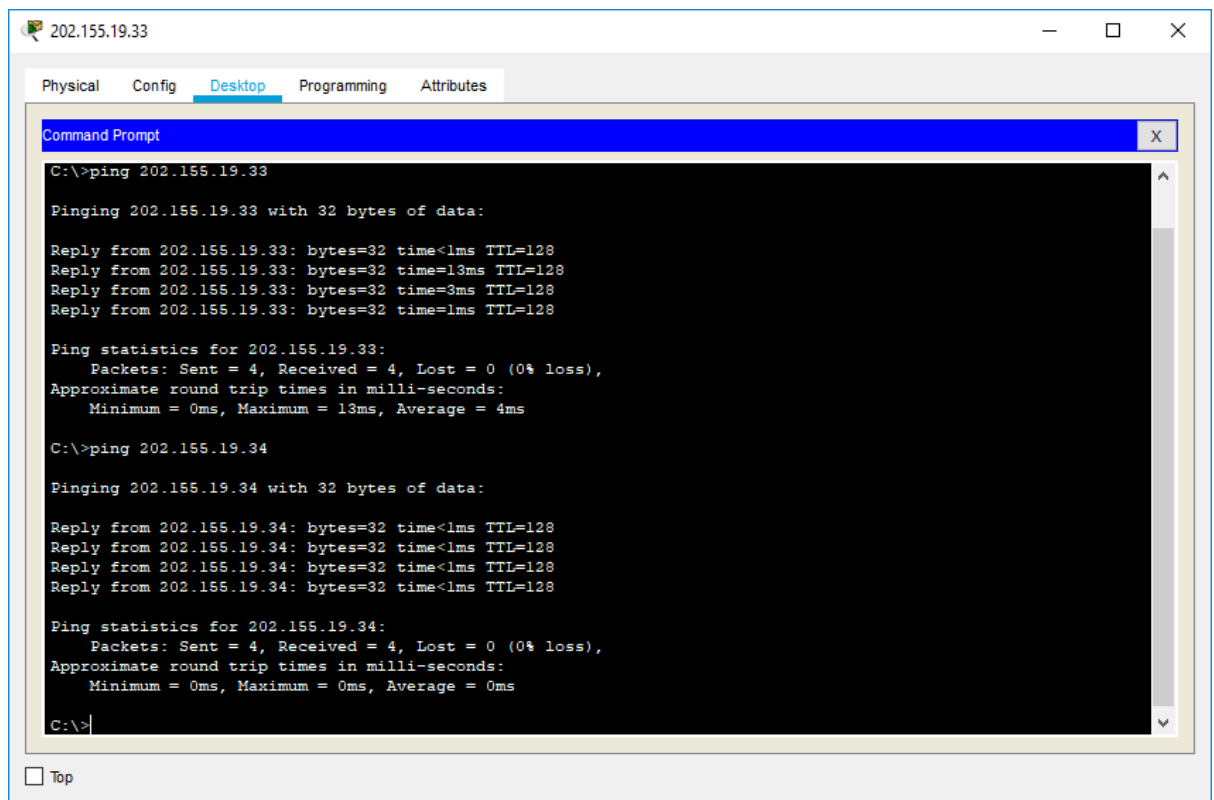
Pinging 202.155.19.34 with 32 bytes of data:

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

Ping statistics for 202.155.19.34:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>|
```

b. Tes ping dari divisi 2



202.155.19.33

Physical Config Desktop Programming Attributes

Command Prompt

```
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<1ms TTL=128
Reply from 202.155.19.33: bytes=32 time=13ms TTL=128
Reply from 202.155.19.33: bytes=32 time=3ms TTL=128
Reply from 202.155.19.33: bytes=32 time=1ms 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 = 0ms, Maximum = 13ms, Average = 4ms

C:\>ping 202.155.19.34

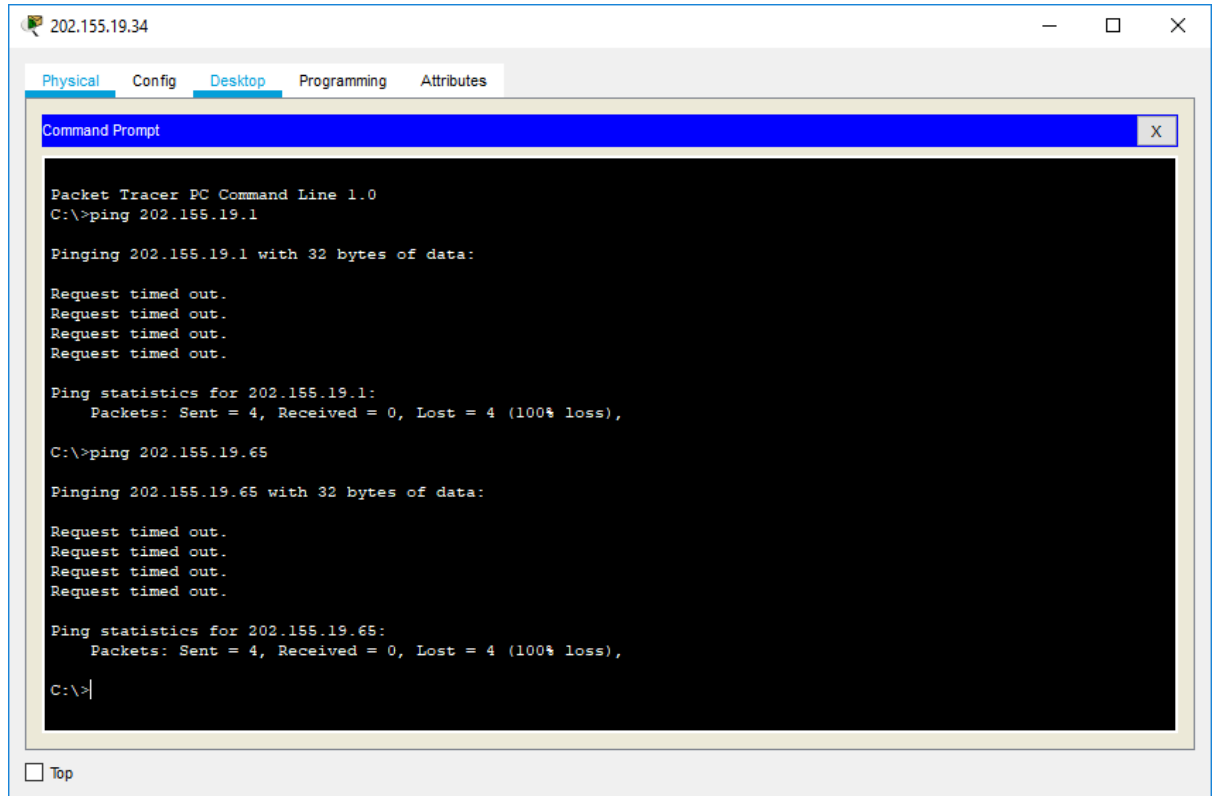
Pinging 202.155.19.34 with 32 bytes of data:

Reply from 202.155.19.34: bytes=32 time<1ms TTL=128
Reply from 202.155.19.34: bytes=32 time<1ms TTL=128
Reply from 202.155.19.34: bytes=32 time<1ms TTL=128
Reply from 202.155.19.34: bytes=32 time<1ms TTL=128

Ping statistics for 202.155.19.34:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>|
```

☐ Top



202.155.19.34

Physical Config Desktop Programming Attributes

Command Prompt

```
Packet Tracer PC Command Line 1.0
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 202.155.19.65

Pinging 202.155.19.65 with 32 bytes of data:

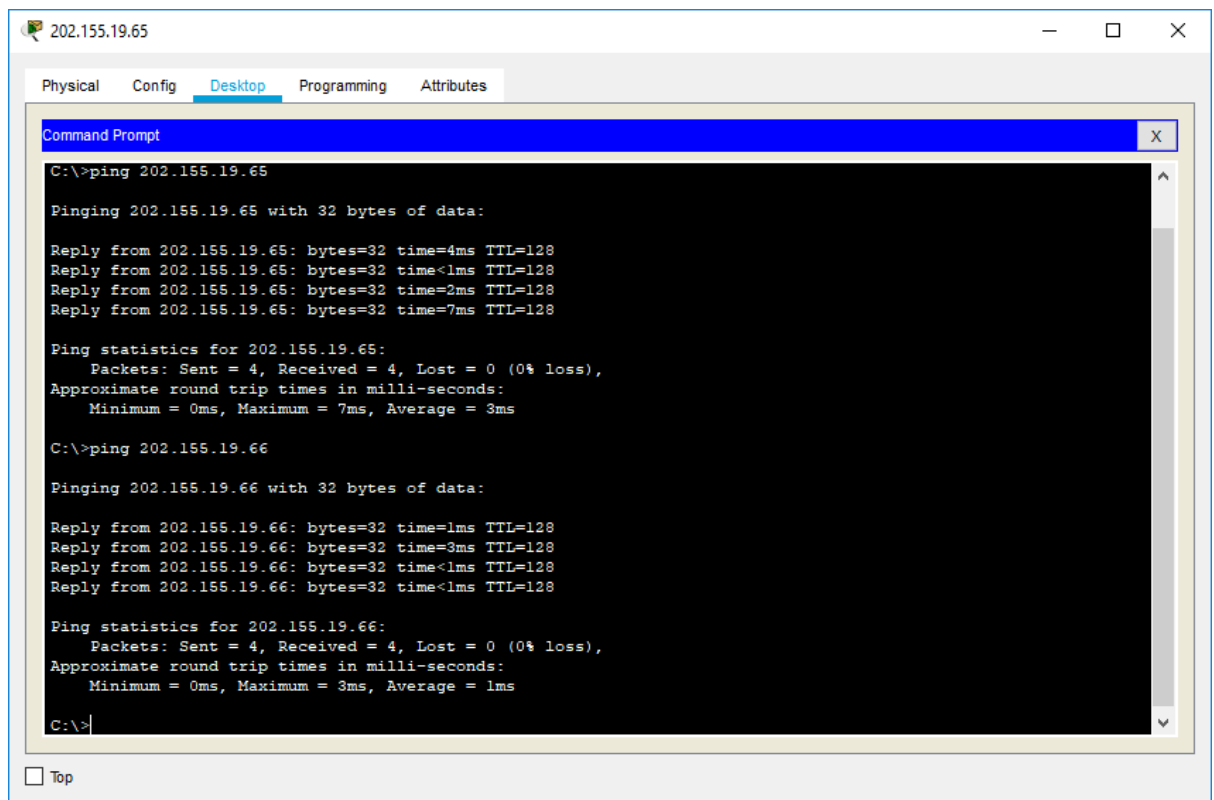
Request timed out.
Request timed out.
Request timed out.
Request timed out.

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

C:\>|
```

☐ Top

c. Tes ping dari divisi 3



```
C:\>ping 202.155.19.65

Pinging 202.155.19.65 with 32 bytes of data:

Reply from 202.155.19.65: bytes=32 time=4ms TTL=128
Reply from 202.155.19.65: bytes=32 time<1ms TTL=128
Reply from 202.155.19.65: bytes=32 time=2ms TTL=128
Reply from 202.155.19.65: bytes=32 time=7ms TTL=128

Ping statistics for 202.155.19.65:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 7ms, Average = 3ms

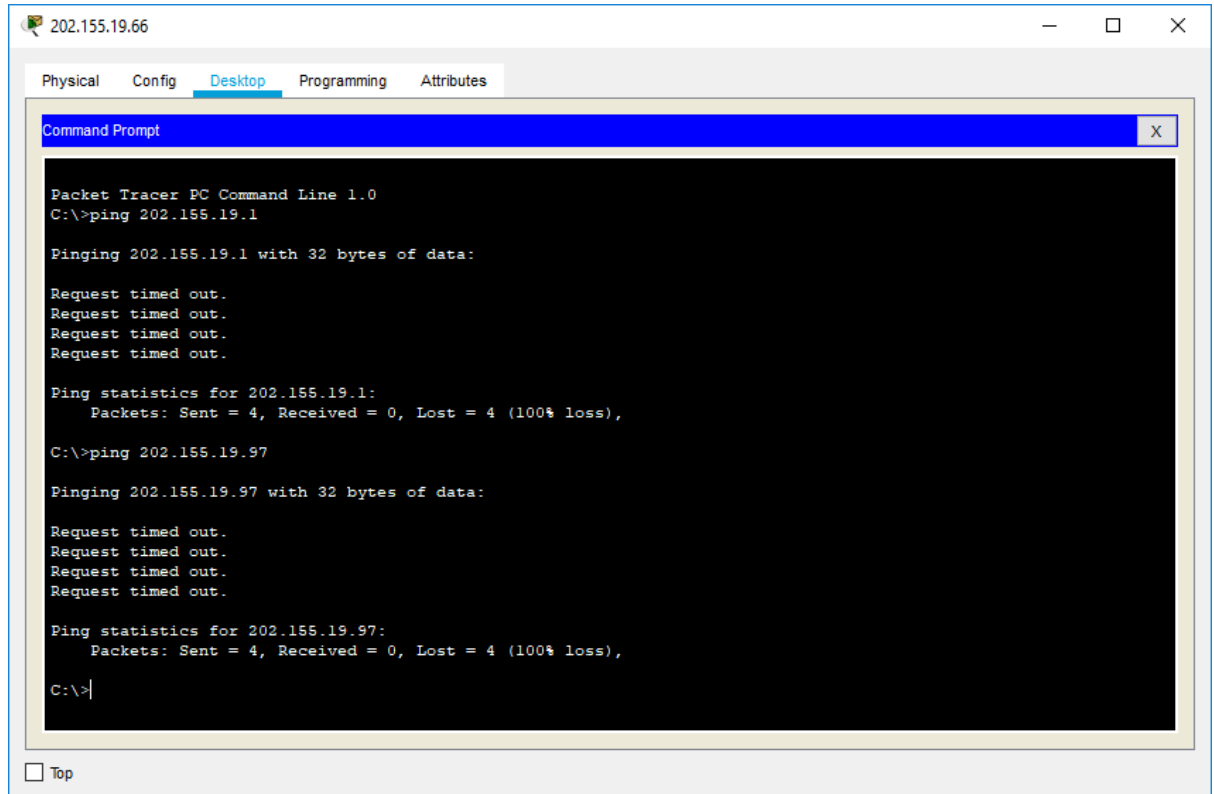
C:\>ping 202.155.19.66

Pinging 202.155.19.66 with 32 bytes of data:

Reply from 202.155.19.66: bytes=32 time=1ms TTL=128
Reply from 202.155.19.66: bytes=32 time=3ms TTL=128
Reply from 202.155.19.66: bytes=32 time<1ms TTL=128
Reply from 202.155.19.66: bytes=32 time<1ms TTL=128

Ping statistics for 202.155.19.66:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 3ms, Average = 1ms

C:\>
```



```
Packet Tracer PC Command Line 1.0
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 202.155.19.97

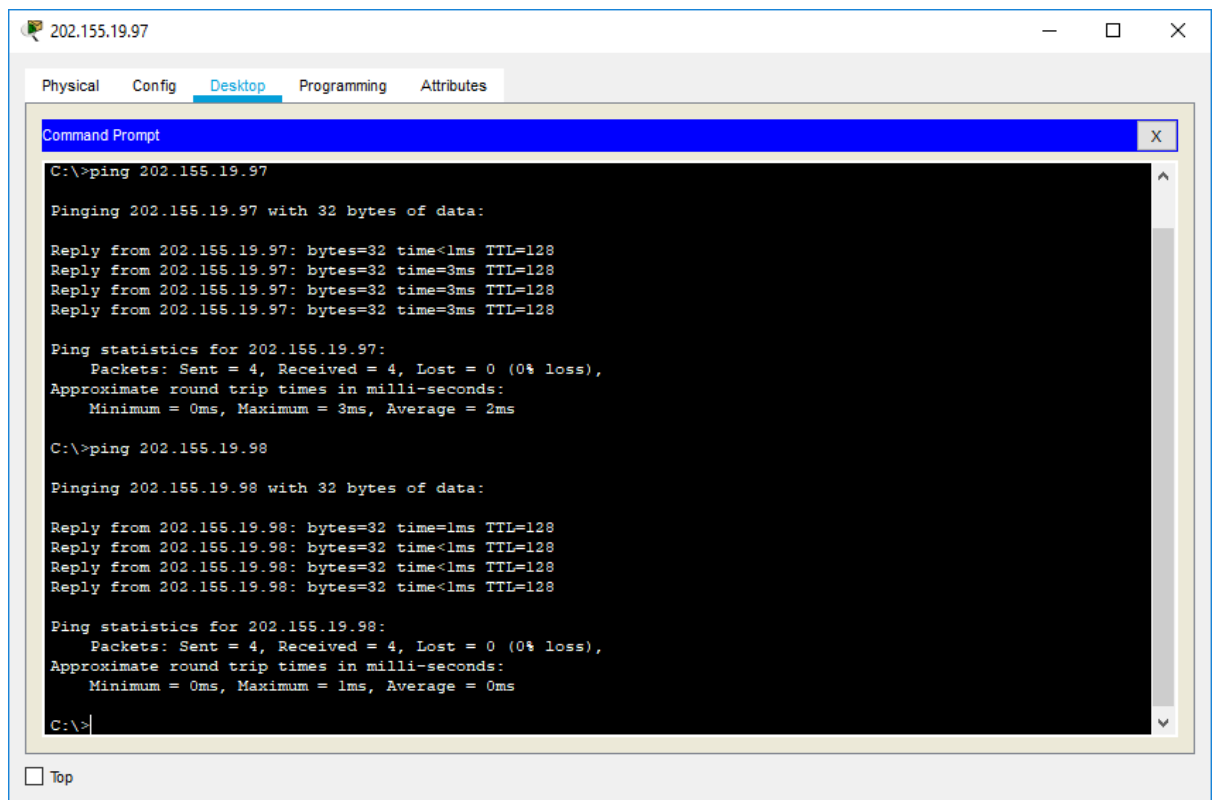
Pinging 202.155.19.97 with 32 bytes of data:

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

Ping statistics for 202.155.19.97:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

d. Tes ping dari divisi 4



202.155.19.97

Physical Config Desktop Programming Attributes

Command Prompt

```
C:\>ping 202.155.19.97

Pinging 202.155.19.97 with 32 bytes of data:

Reply from 202.155.19.97: bytes=32 time<1ms TTL=128
Reply from 202.155.19.97: bytes=32 time=3ms TTL=128
Reply from 202.155.19.97: bytes=32 time=3ms TTL=128
Reply from 202.155.19.97: bytes=32 time=3ms 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 = 0ms, Maximum = 3ms, Average = 2ms

C:\>ping 202.155.19.98

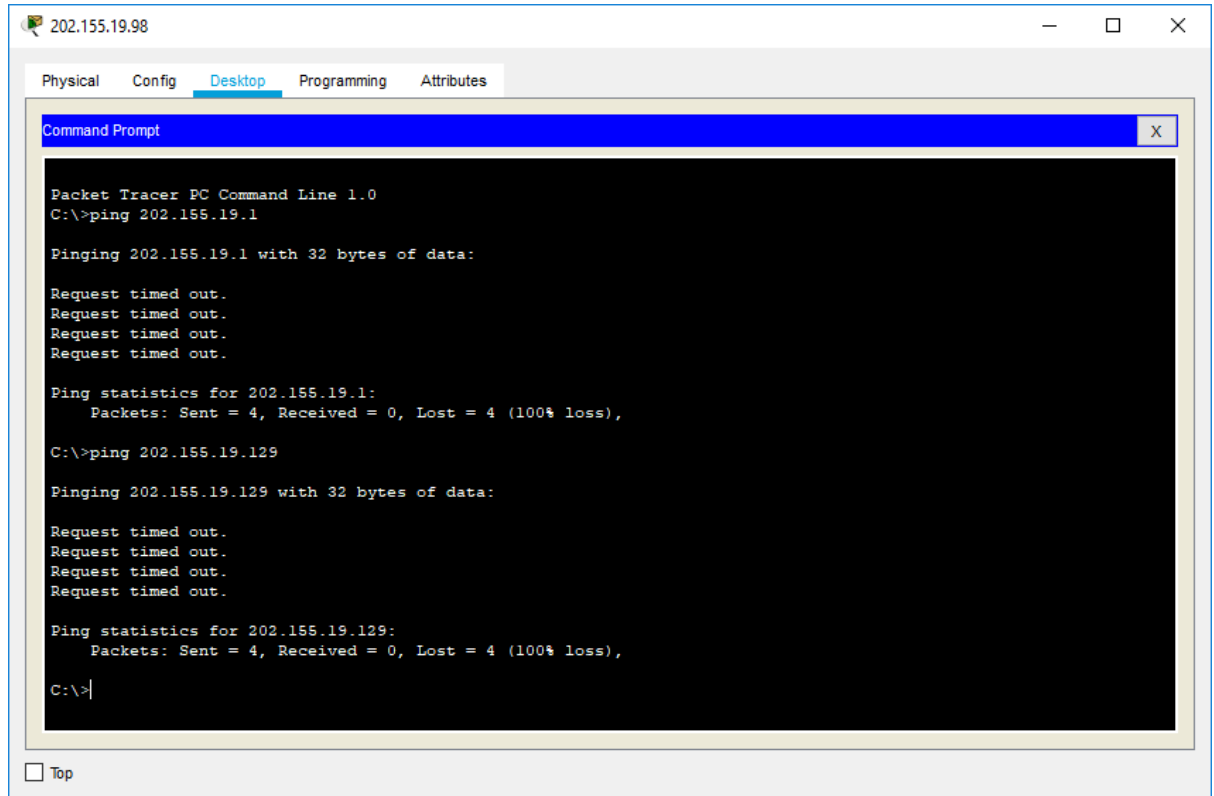
Pinging 202.155.19.98 with 32 bytes of data:

Reply from 202.155.19.98: bytes=32 time=1ms TTL=128
Reply from 202.155.19.98: bytes=32 time<1ms TTL=128
Reply from 202.155.19.98: bytes=32 time<1ms TTL=128
Reply from 202.155.19.98: bytes=32 time<1ms TTL=128

Ping statistics for 202.155.19.98:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>|
```

☐ Top



202.155.19.98

Physical Config Desktop Programming Attributes

Command Prompt

```
Packet Tracer PC Command Line 1.0
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 202.155.19.129

Pinging 202.155.19.129 with 32 bytes of data:

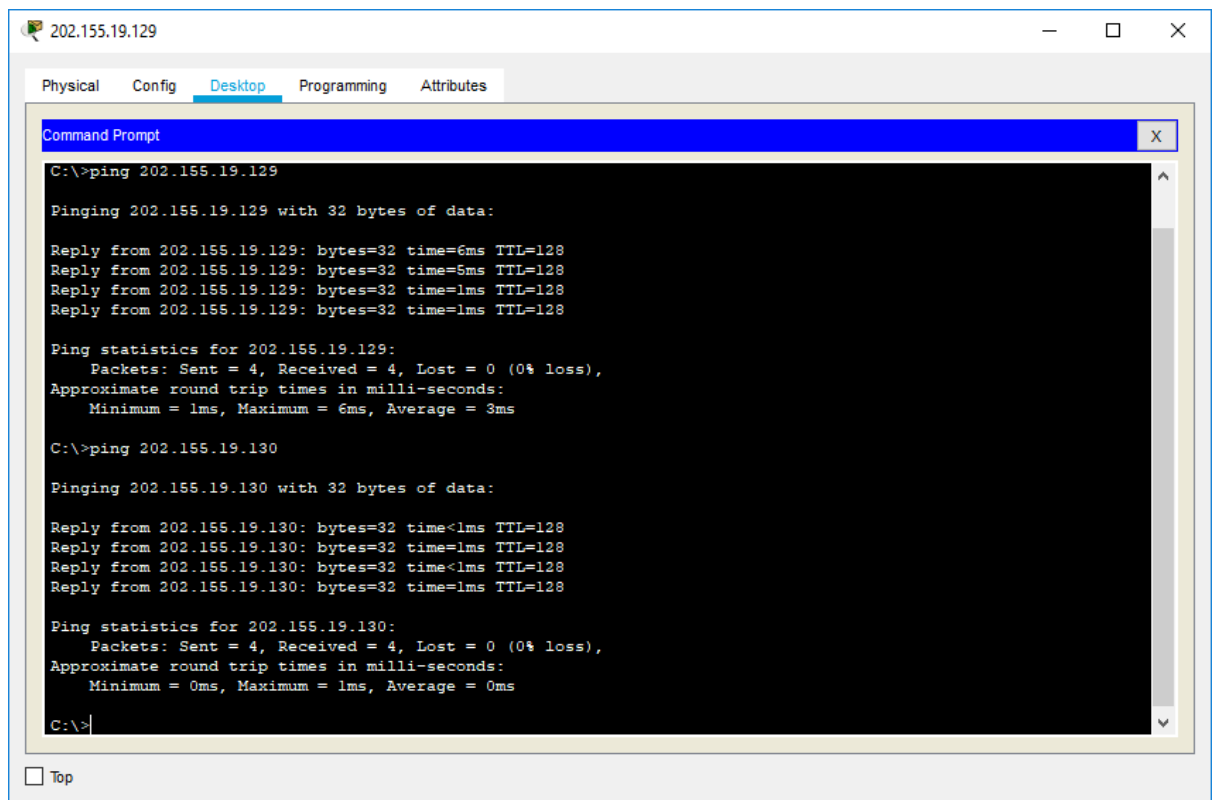
Request timed out.
Request timed out.
Request timed out.
Request timed out.

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

C:\>|
```

☐ Top

e. Tes ping dari divisi 5



202.155.19.129

Physical Config Desktop Programming Attributes

Command Prompt

```
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=6ms TTL=128
Reply from 202.155.19.129: bytes=32 time=5ms 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 = 1ms, Maximum = 6ms, Average = 3ms

C:\>ping 202.155.19.130

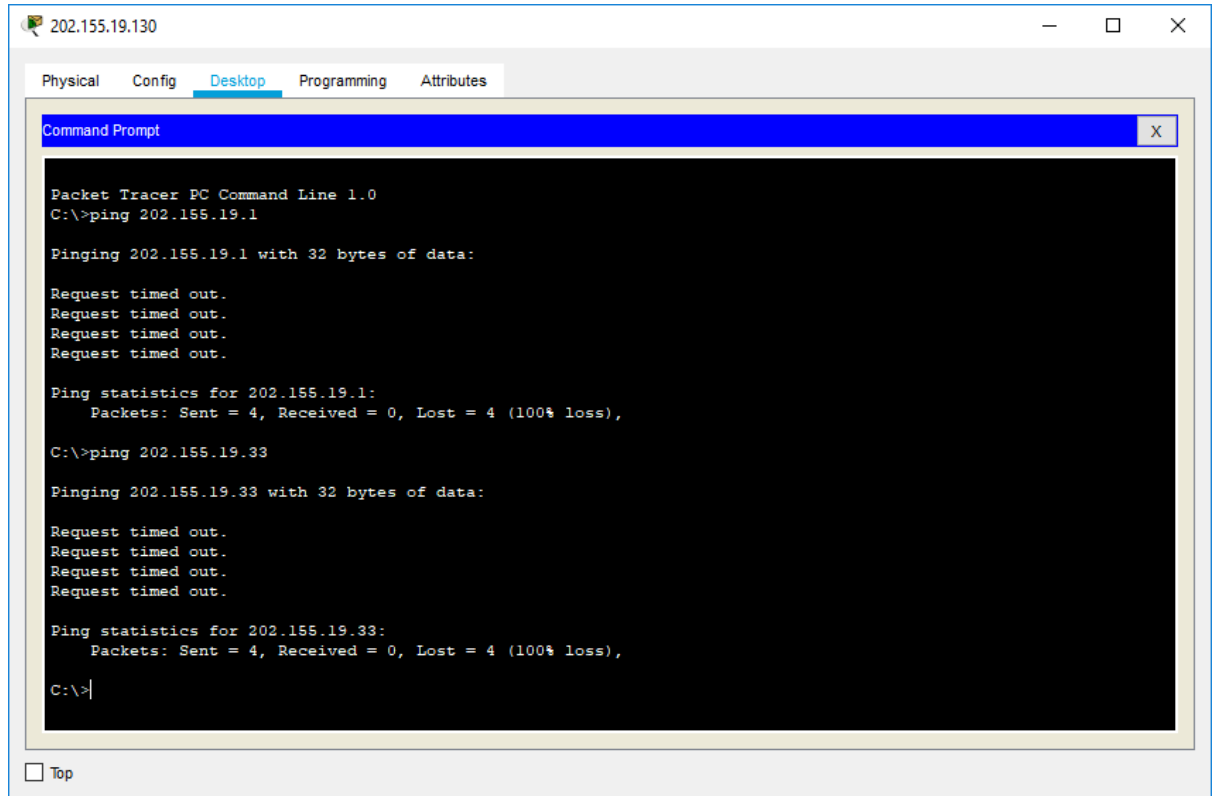
Pinging 202.155.19.130 with 32 bytes of data:

Reply from 202.155.19.130: bytes=32 time<1ms TTL=128
Reply from 202.155.19.130: bytes=32 time=1ms TTL=128
Reply from 202.155.19.130: bytes=32 time<1ms TTL=128
Reply from 202.155.19.130: bytes=32 time=1ms TTL=128

Ping statistics for 202.155.19.130:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>|
```

☐ Top



202.155.19.130

Physical Config Desktop Programming Attributes

Command Prompt

```
Packet Tracer PC Command Line 1.0
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:\>|
```

☐ Top