



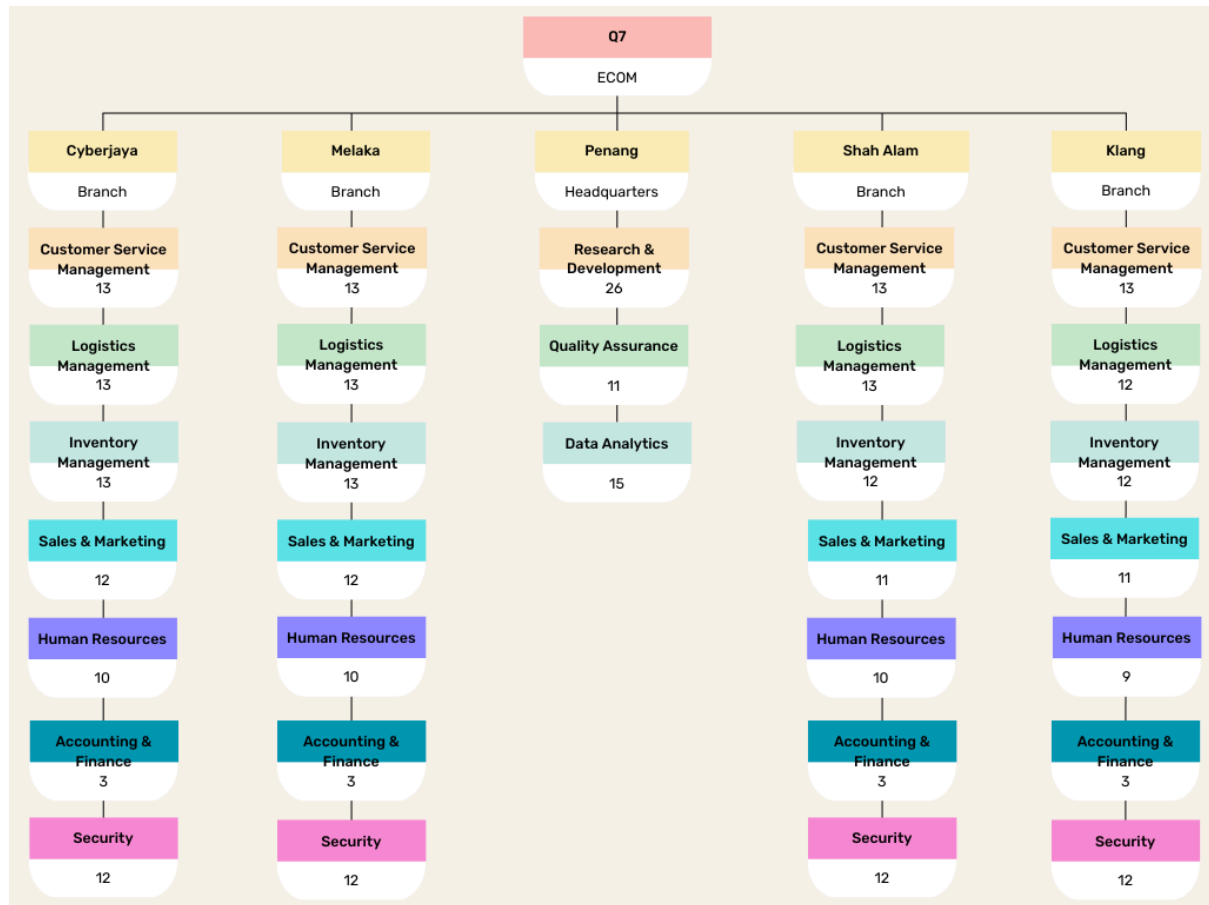
TSN2201 Computer Networks Assignment report
Group 5
Question 7

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Table of Contents

Table of Contents.....	2
Organization Chart.....	3
VLSM Design.....	6
Logical Network Diagram.....	7
Screenshots.....	8
Connectivity Check: All devices can ping.....	13
Connectivity Check: The traceroute output reflects the logical topology.....	13
Web server Configuration.....	20
DHCP server Configuration.....	21
Email Server Configuration.....	23
Sending an Email.....	25

Organization Chart



Location: Penang	Divisions / hosts:
	Research & Development: 26
	Quality Assurance: 11
	Data Analytics: 15
	Total: 52
Location: Cyberjaya	Divisions / hosts:
	Customer Service Management: 13
	Logistics Management: 13
	Inventory Management: 13
	Sales & Marketing: 12
	Human Resources: 10
	Accounting & Finance: 3

	<table><tr><td>Security: 12</td></tr><tr><td>Total:76</td></tr></table>	Security: 12	Total:76						
Security: 12									
Total:76									
Location: Melaka	Divisions / hosts: <table><tr><td>Customer Service Management: 13</td></tr><tr><td>Logistics Management: 13</td></tr><tr><td>Inventory Management: 13</td></tr><tr><td>Sales & Marketing: 12</td></tr><tr><td>Human Resources: 10</td></tr><tr><td>Accounting & Finance: 3</td></tr><tr><td>Security: 12</td></tr><tr><td>Total: 76</td></tr></table>	Customer Service Management: 13	Logistics Management: 13	Inventory Management: 13	Sales & Marketing: 12	Human Resources: 10	Accounting & Finance: 3	Security: 12	Total: 76
Customer Service Management: 13									
Logistics Management: 13									
Inventory Management: 13									
Sales & Marketing: 12									
Human Resources: 10									
Accounting & Finance: 3									
Security: 12									
Total: 76									
Location: Shah Alam	Divisions / hosts: <table><tr><td>Customer Service Management: 13</td></tr><tr><td>Logistics Management: 13</td></tr><tr><td>Inventory Management: 12</td></tr><tr><td>Sales & Marketing: 11</td></tr><tr><td>Human Resources: 10</td></tr><tr><td>Accounting & Finance: 3</td></tr><tr><td>Security: 12</td></tr><tr><td>Total: 74</td></tr></table>	Customer Service Management: 13	Logistics Management: 13	Inventory Management: 12	Sales & Marketing: 11	Human Resources: 10	Accounting & Finance: 3	Security: 12	Total: 74
Customer Service Management: 13									
Logistics Management: 13									
Inventory Management: 12									
Sales & Marketing: 11									
Human Resources: 10									
Accounting & Finance: 3									
Security: 12									
Total: 74									
Location: Klang	Divisions / hosts: <table><tr><td>Customer Service Management: 13</td></tr><tr><td>Logistics Management: 12</td></tr><tr><td>Inventory Management: 12</td></tr><tr><td>Sales & Marketing: 11</td></tr><tr><td>Human Resources: 9</td></tr><tr><td>Accounting & Finance: 3</td></tr><tr><td>Security: 12</td></tr><tr><td>Total: 72</td></tr></table>	Customer Service Management: 13	Logistics Management: 12	Inventory Management: 12	Sales & Marketing: 11	Human Resources: 9	Accounting & Finance: 3	Security: 12	Total: 72
Customer Service Management: 13									
Logistics Management: 12									
Inventory Management: 12									
Sales & Marketing: 11									
Human Resources: 9									
Accounting & Finance: 3									
Security: 12									
Total: 72									

IP address Block:	Divisions:	Number of employees/hosts:
170.90.136.0/22	Research & Development:	26
	Quality Assurance:	11
	Data Analytics:	15
	Customer Service Management:	52
	Logistics Management:	51
	Inventory Management:	50
	Sales & Marketing:	46
	Human Resources:	39
	Accounting & Finance:	12
	Security:	48

VLSM Design

HQ Penang

Research & Development (26 hosts): 170.90.138.0/27 (32 addresses, 30 usable)

Data Analytics (15 hosts): 170.90.138.32/27 (32 addresses, 30 usable)

Quality Assurance (11 hosts): 170.90.138.64/28 (16 addresses, 14 usable)

Servers(4 hosts): 170.90.138.80/29 (8 addresses, 6 usable)

Subnet Penang - Cyberjaya: 170.90.138.88/30 (4 addresses, 2 usable)

Subnet Penang - Melaka: 170.90.138.92/30 (4 addresses, 2 usable)

Subnet Penang - ShahAlam: 170.90.138.96/30 (4 addresses, 2 usable)

Subnet Penang - Klang: 170.90.138.100/30 (4 addresses, 2 usable)

Subnet Cyberjaya - Melaka: 170.90.138.104/30 (4 addresses, 2 usable)

Subnet Melaka - ShahAlam: 170.90.138.108/30 (4 addresses, 2 usable)

Subnet ShahAlam - Klang: 170.90.138.112/30 (4 addresses, 2 usable)

Cyberjaya

Customer Service Management (13 hosts): 170.90.136.0/28 (16 addresses, 14 usable)

Logistics Management (13 hosts): 170.90.136.16/28 (16 addresses, 14 usable)

Inventory Management (13 hosts): 170.90.136.32/28 (16 addresses, 14 usable)

Sales & Marketing (12 hosts): 170.90.136.48/28 (16 addresses, 14 usable)

Security (12 hosts): 170.90.136.64/28 (16 addresses, 14 usable)

Human Resources (10 hosts): 170.90.136.80/28 (16 addresses, 14 usable)

Accounting & Finance (3 hosts): 170.90.136.96/29 (8 addresses, 6 usable)

Melaka

Customer Service Management (13 hosts): 170.90.136.128/28 (16 addresses, 14 usable) Logistics Management (13 hosts): 170.90.136.144/28 (16 addresses, 14 usable)

Inventory Management (13 hosts): 170.90.136.160/28 (16 addresses, 14 usable)

Sales & Marketing (12 hosts): 170.90.136.176/28 (16 addresses, 14 usable)

Security (12 hosts): 170.90.136.192/28 (16 addresses, 14 usable)

Human Resources (10 hosts): 170.90.136.208/28 (16 addresses, 14 usable)

Accounting & Finance (3 hosts): 170.90.136.224/29 (8 addresses, 6 usable)

Klang

Customer Service Management (13 hosts): 170.90.137.128/28 (16 addresses, 14 usable) Logistics Management (12 hosts): 170.90.137.144/28 (16 addresses, 14 usable)

Security (12 hosts): 170.90.137.160/28 (16 addresses, 14 usable)

Inventory Management (12 hosts): 170.90.137.176/28 (16 addresses, 14 usable)

Sales & Marketing (11 hosts): 170.90.137.192/28 (16 addresses, 14 usable)

Human Resources (9 hosts): 170.90.137.208/28 (16 addresses, 14 usable)

Accounting & Finance (3 hosts): 170.90.137.224/29 (8 addresses, 6 usable)

Shah Alam

Customer Service Management (13 hosts): 170.90.137.0/28 (16 addresses, 14 usable)
Logistics Management (13 hosts): 170.90.137.16/28 (16 addresses, 14 usable)

Inventory Management (12 hosts): 170.90.137.32/28 (16 addresses, 14 usable)

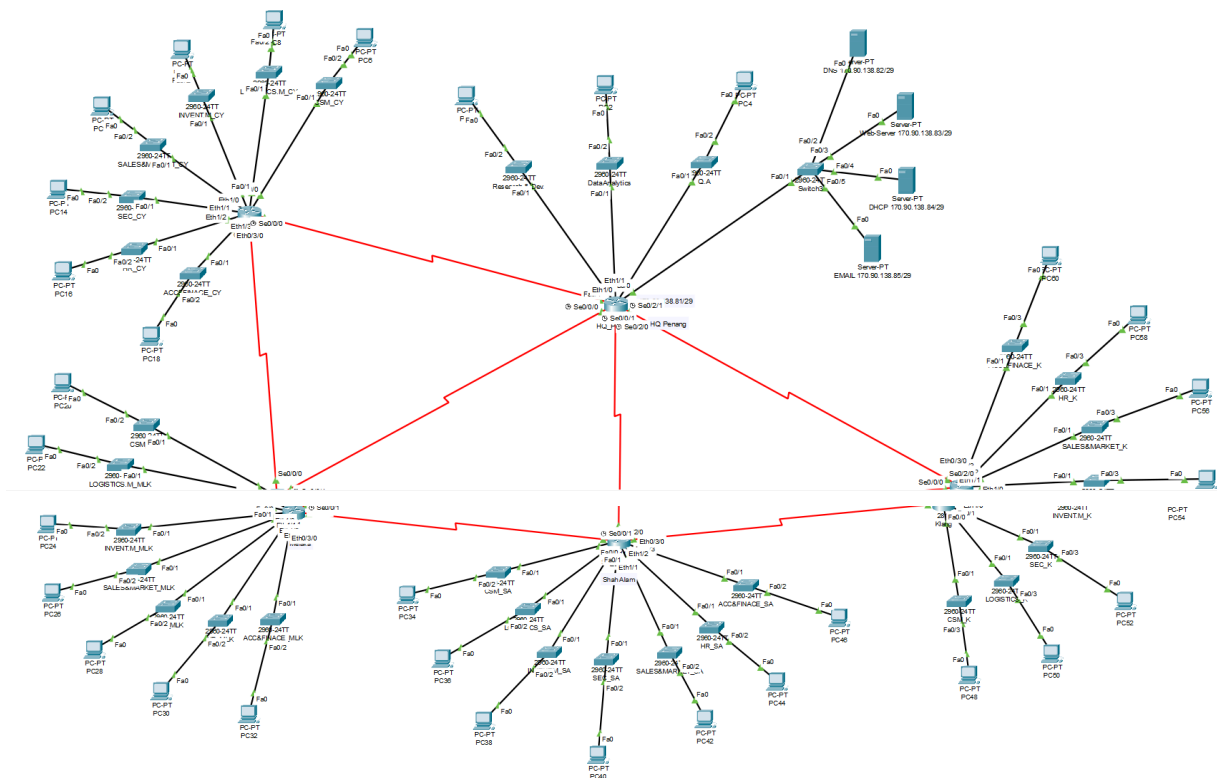
Security (12 hosts): 170.90.137.48/28 (16 addresses, 14 usable)

Sales & Marketing (11 hosts): 170.90.137.64/28 (16 addresses, 14 usable)

Human Resources (10 hosts): 170.90.137.80/28 (16 addresses, 14 usable)

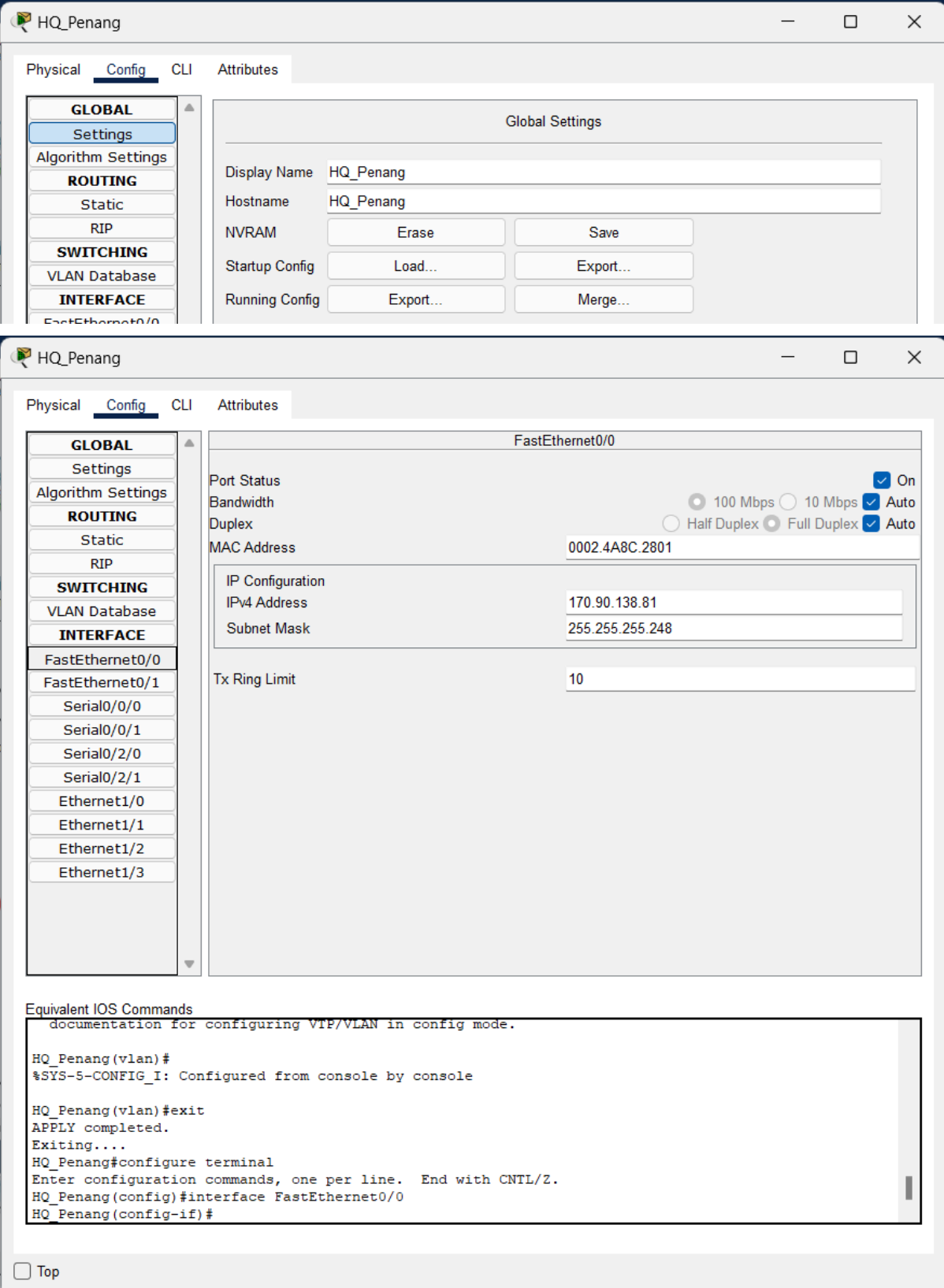
Accounting & Finance (3 hosts): 170.90.137.96/29 (8 addresses, 6 usable)

Logical Network Diagram



Screenshots

Proper Configuration of IP addresses for the hosts and router interfaces:



Global Settings

Display Name: HQ_Penang

Hostname: HQ_Penang

NVRAM:

Startup Config:

Running Config:

FastEthernet0/0

Port Status: ☒ On

Bandwidth: ☐ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex: ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address: 0002.4A8C.2801

IP Configuration:

IPv4 Address: 170.90.138.81

Subnet Mask: 255.255.255.248

Tx Ring Limit: 10

Equivalent IOS Commands

```
documentation for configuring VTP/VLAN in config mode.

HQ_Penang(vlan)#
%SYS-5-CONFIG_I: Configured from console by console

HQ_Penang(vlan)#exit
APPLY completed.
Exiting....
HQ_Penang#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
HQ_Penang(config)#interface FastEthernet0/0
HQ_Penang(config-if)#
```

☐ Top

Cyberjaya

Physical **Config** CLI Attributes

GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE

Global Settings

Display Name: Cyberjaya
Hostname: Router
NVRAM: Erase Save
Startup Config: Load... Export...
Running Config: Export... Merge...

Cyberjaya

Physical **Config** CLI Attributes

GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
FastEthernet0/0
FastEthernet0/1
Serial0/0/0
Serial0/0/1
Serial0/2/0
Serial0/2/1
Ethernet0/3/0
Ethernet1/0
Ethernet1/1
Ethernet1/2
Ethernet1/3

FastEthernet0/0

Port Status: ☒ On
Bandwidth: ☒ 100 Mbps ☐ 10 Mbps ☒ Auto
Duplex: ☐ Half Duplex ☒ Full Duplex ☒ Auto
MAC Address: 000B.BEBB.6E01

IP Configuration
IPv4 Address: 170.90.136.1
Subnet Mask: 255.255.255.240

Tx Ring Limit: 10

Equivalent IOS Commands

```

Router(config-if)#exit
Router(config)#interface Serial0/0/0
Router(config-if)#
Router(config)#exit
Router(config)#interface Serial0/0/1
Router(config-if)#
Router(config)#exit
Router(config)#interface Serial0/2/0
Router(config-if)#
Router(config)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#

```

☐ Top

Melaka

Physical **Config** CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

Global Settings

Display Name Melaka

Hostname Router

NVRAM

Startup Config

Running Config

Melaka

Physical **Config** CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

FastEthernet0/0

FastEthernet0/1

Serial0/0/0

Serial0/0/1

Serial0/2/0

Serial0/2/1

Ethernet0/3/0

Ethernet1/0

Ethernet1/1

Ethernet1/2

Ethernet1/3

FastEthernet0/0

Port Status ☒ On

Bandwidth ☐ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 000C.CF91.CD94

IP Configuration

IPv4 Address 170.90.136.129

Subnet Mask 255.255.255.240

Tx Ring Limit 10

Equivalent IOS Commands

```

Loading Done

00:00:10: %OSPF-5-ADJCHG: Process 1, Nbr 170.90.138.101 on Serial0/2/0 from LOADING to FULL,
Loading Done

Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#

```

☐ Top

Shah_Alam

Physical **Config** CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

Global Settings

Display Name: Shah_Alam

Hostname: Router

NVRAM:

Startup Config:

Running Config:

Shah_Alam

Physical **Config** CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

FastEthernet0/0

FastEthernet0/1

Serial0/0/0

Serial0/0/1

Serial0/2/0

Serial0/2/1

Ethernet0/3/0

Ethernet1/0

Ethernet1/1

Ethernet1/2

Ethernet1/3

FastEthernet0/0

Port Status: ☒ On

Bandwidth: ☐ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex: ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address: 0060.2F51.8E9C

IP Configuration

IPv4 Address: 170.90.137.1

Subnet Mask: 255.255.255.240

Tx Ring Limit: 10

Equivalent IOS Commands

```

Router(config-if)#exit
Router(config)#interface Ethernet1/2
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Ethernet1/3
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Ethernet1/3
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#

```

☐ Top

Klang

Physical **Config** CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

FastEthernet0/0

Global Settings

Display Name: Klang

Hostname: Router

NVRAM:

Startup Config:

Running Config:

Klang

Physical **Config** CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

FastEthernet0/0

FastEthernet0/1

Serial0/0/0

Serial0/0/1

Serial0/2/0

Serial0/2/1

Ethernet0/3/0

Ethernet1/0

Ethernet1/1

Ethernet1/2

Ethernet1/3

FastEthernet0/0

Port Status: ☒ On

Bandwidth: ☐ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex: ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address: 0030.F237.4783

IP Configuration: 170.90.137.129

Subnet Mask: 255.255.255.240

Tx Ring Limit: 10

Equivalent IOS Commands

```

Loading Done

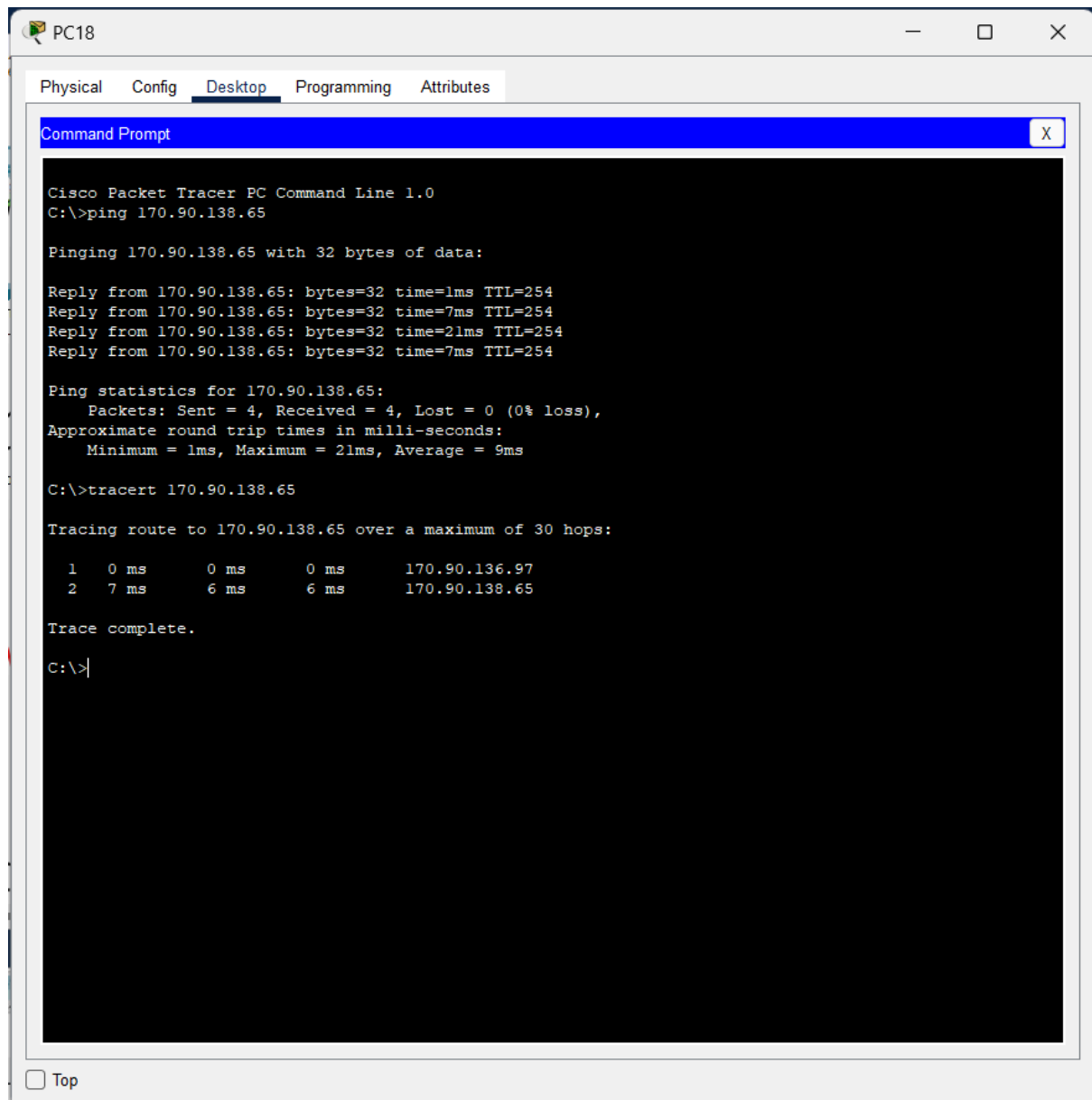
00:00:10: %OSPF-5-ADJCHG: Process 1, Nbr 170.90.138.113 on Serial0/0/0 from LOADING to FULL,
Loading Done

Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#
  
```

☐ Top

Connectivity Check: All devices can ping.

Connectivity Check: The traceroute output reflects the logical topology.



The screenshot shows a Cisco Packet Tracer PC Command Line window for PC18. The window has tabs for Physical, Config, Desktop, Programming, and Attributes, with Desktop selected. The Command Prompt shows the following output:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 170.90.138.65

Pinging 170.90.138.65 with 32 bytes of data:

Reply from 170.90.138.65: bytes=32 time=1ms TTL=254
Reply from 170.90.138.65: bytes=32 time=7ms TTL=254
Reply from 170.90.138.65: bytes=32 time=21ms TTL=254
Reply from 170.90.138.65: bytes=32 time=7ms TTL=254

Ping statistics for 170.90.138.65:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 21ms, Average = 9ms

C:\>tracert 170.90.138.65

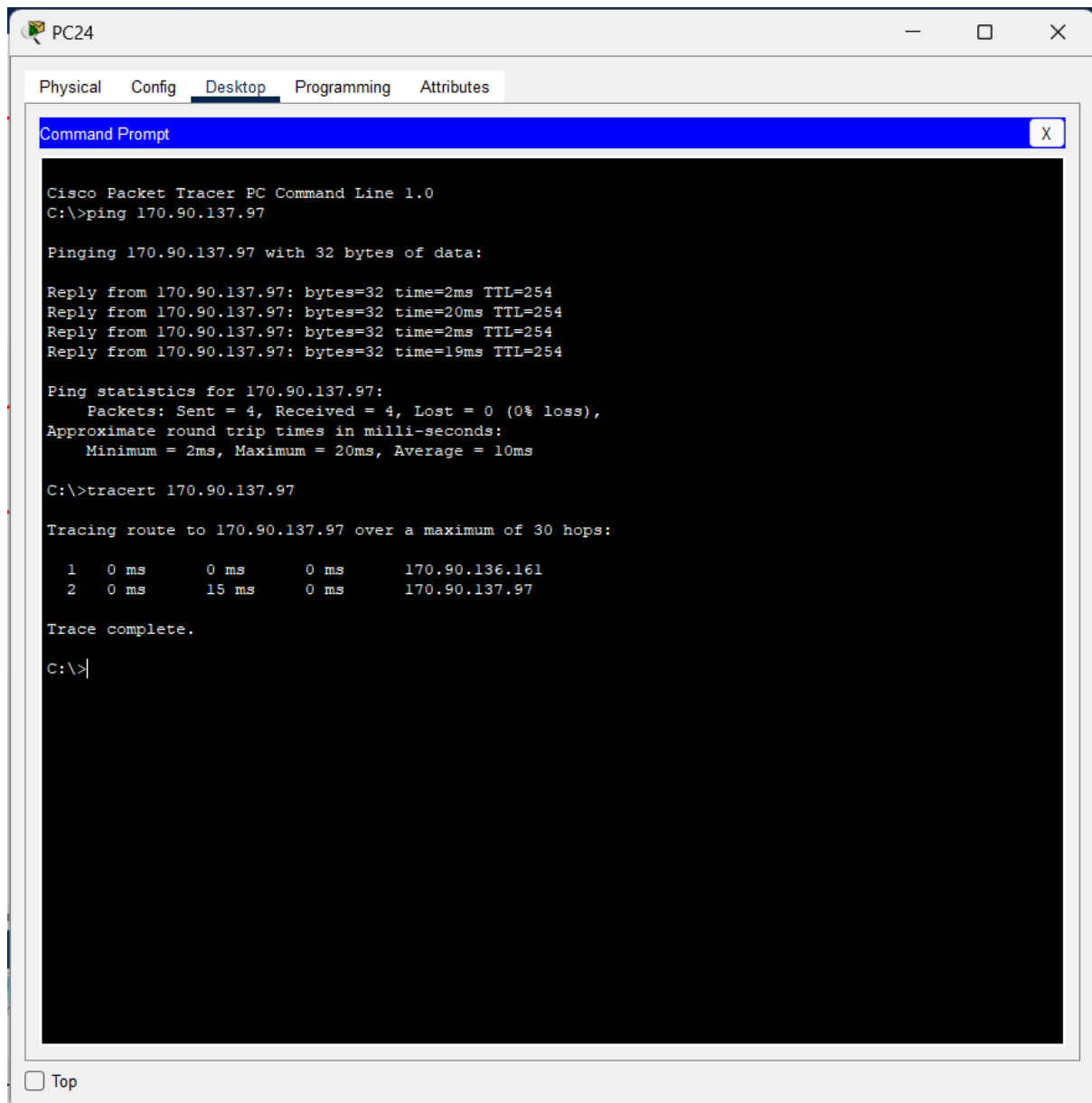
Tracing route to 170.90.138.65 over a maximum of 30 hops:

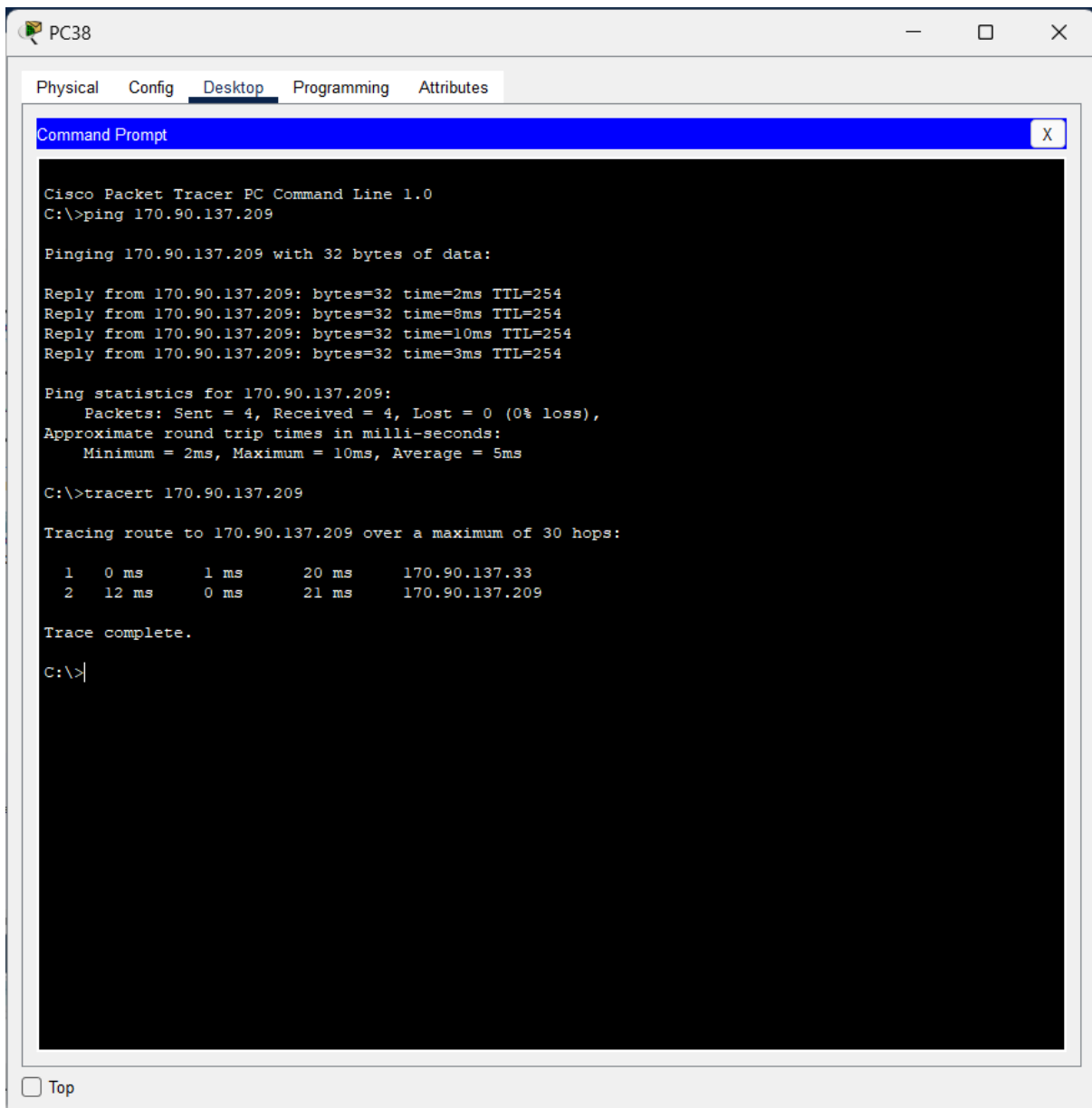
  1  0 ms    0 ms    0 ms    170.90.136.97
  2  7 ms    6 ms    6 ms    170.90.138.65

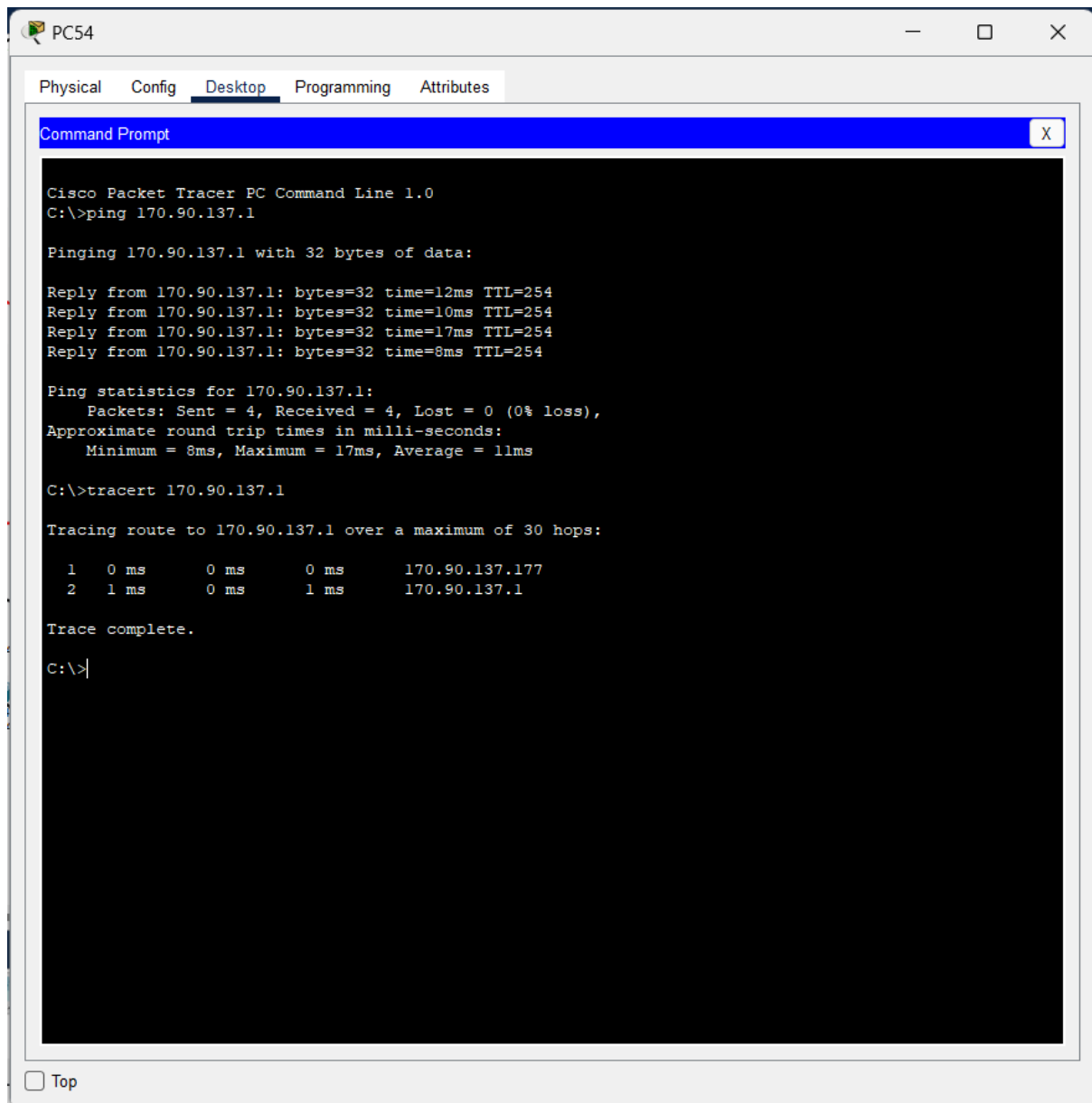
Trace complete.

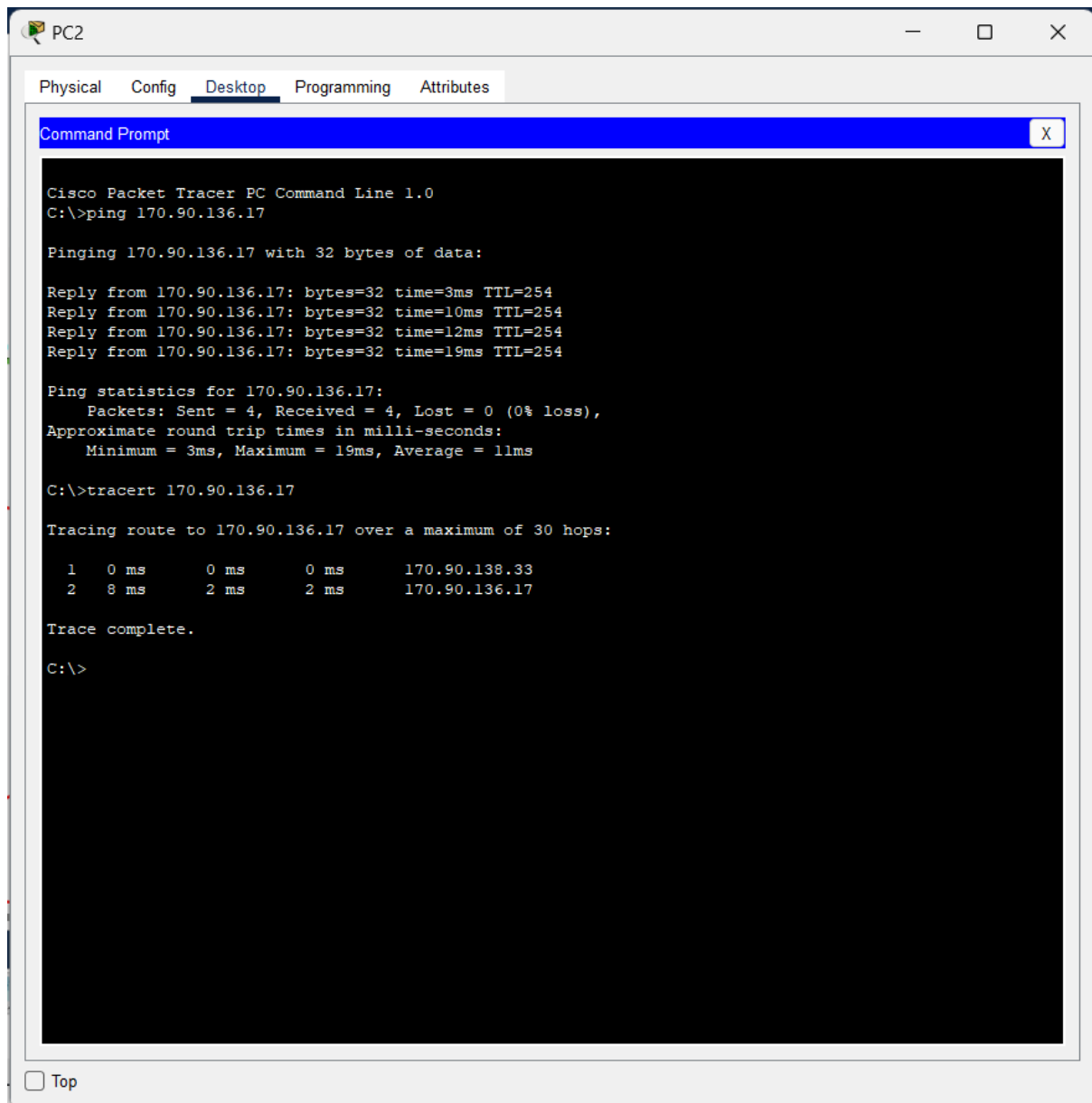
C:\>
```

At the bottom of the window, there is a checkbox labeled "Top" which is currently unchecked.


















PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	Shah_...	Melaka	ICMP		0.000	N	0	(edit)	
	Successful	Melaka	Cyberjaya	ICMP		0.000	N	1	(edit)	
	Successful	Cyberj...	HQ_Penang	ICMP		0.000	N	2	(edit)	
	Successful	HQ_Pe...	Klang	ICMP		0.000	N	3	(edit)	

DNS Configuration

 DNS 170.90.138.82/29

Physical

Config

Services

Desktop

Programming

Attributes

GLOBAL

Settings

Algorithm Settings

INTERFACE

FastEthernet0

Global Settings

Display Name

DNS 170.90.138.82/29

Gateway/DNS IPv4

☐ DHCP
 ☒ Static

Default Gateway

170.90.138.81

DNS Server

170.90.138.82

Gateway/DNS IPv6

☐ Automatic
 ☒ Static

Default Gateway

DNS Server

☐ Top

DNS 170.90.138.82/29

Physical

Config

Services

Desktop

Programming

Attributes

SERVICES

HTTP

DHCP

DHCPv6

TFTP

DNS

SYSLOG

AAA

NTP

EMAIL

FTP

IoT

VM Management

Radius EAP

DNS

DNS Service ☒ On ☐ Off

Resource Records

Name Type

A Record

Address

Add

Save

Remove

No.	Name	Type	Detail
0	www.ecom.com.my	A Record	170.90.138.83

Web server Configuration

Web-Server 170.90.138.83/29

Physical **Config** Services Desktop Programming Attributes

GLOBAL

Settings

Algorithm Settings

INTERFACE

FastEthernet0

Global Settings

Display Name Web-Server 170.90.138.83/29

Gateway/DNS IPv4

☐ DHCP

☒ Static

Default Gateway 170.90.138.81

DNS Server 170.90.138.82

Gateway/DNS IPv6

☐ Automatic

☒ Static

Default Gateway

DNS Server

☐ Top

Web-Server 170.90.138.83/29

Physical Config **Services** Desktop Programming Attributes

SERVICES

HTTP

DHCP

DHCPv6

TFTP

DNS

SYSLOG

AAA

NTP

EMAIL

FTP

IoT

VM Management

Radius EAP

HTTP

HTTP

☒ On ☐ Off

HTTPS

☒ On ☐ Off

File Manager

	File Name	Edit	Delete
1	copyrights.html	(edit)	(delete)
2	cscoptlogo177x111.jpg		(delete)
3	helloworld.html	(edit)	(delete)
4	image.html	(edit)	(delete)
5	index.html	(edit)	(delete)

DHCP server Configuration

DHCP 170.90.138.84/29

Physical **Config** Services Desktop Programming Attributes

GLOBAL

Settings

Algorithm Settings

INTERFACE

FastEthernet0

Global Settings

Display Name DHCP 170.90.138.84/29

Gateway/DNS IPv4

☐ DHCP

☒ Static

Default Gateway 170.90.138.81

DNS Server 170.90.138.82

Gateway/DNS IPv6

☐ Automatic

☒ Static

Default Gateway

DNS Server

☐ Top

DHCP 170.90.138.84/29

Physical
Config
Services
Desktop
Programming
Attributes

SERVICES

HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP

DHCP

Interface

FastEthernet0

Pool Name

serverPool

Default Gateway

170.90.138.1

DNS Server

170.90.138.82

Start IP Address :

170

90

138

2

Subnet Mask:

255

255

255

224

Maximum Number of Users :

26

TFTP Server:

0.0.0.0

WLC Address:

0.0.0.0

Add

Save

Remove

Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max User	TFTP Server	WLC Address
QaPool	170.90.138.65	170.90.138.82	170.90.138.66	255.255.255.240	11	0.0.0.0	0.0.0.0
DataPool	170.90.138.33	170.90.138.82	170.90.138.34	255.255.255.224	15	0.0.0.0	0.0.0.0
FINACE_CY	170.90.136.97	170.90.138.82	170.90.136.98	255.255.255.248	3	0.0.0.0	0.0.0.0
HR_CY	170.90.136.81	170.90.138.82	170.90.136.82	255.255.255.240	10	0.0.0.0	0.0.0.0
SEC_CY	170.90.136.65	170.90.138.82	170.90.136.66	255.255.255.240	12	0.0.0.0	0.0.0.0
SALES&MARKET_CY	170.90.136.49	170.90.138.82	170.90.136.50	255.255.255.240	12	0.0.0.0	0.0.0.0
INVENT.M_CY	170.90.136.33	170.90.138.82	170.90.136.34	255.255.255.240	13	0.0.0.0	0.0.0.0
LOGISTICS.M_CY	170.90.136.17	170.90.138.82	170.90.136.18	255.255.255.240	13	0.0.0.0	0.0.0.0
CSM_CY	170.90.136.1	170.90.138.82	170.90.136.2	255.255.255.240	13	0.0.0.0	0.0.0.0
serverPool	170.90.138.1	170.90.138.82	170.90.138.2	255.255.255.224	26	0.0.0.0	0.0.0.0

☐ Top

Email Server Configuration

The screenshot shows a web-based configuration interface for an email server. The window title is "EMAIL 170.90.138.85/29". The interface has a top navigation bar with tabs: "Physical", "Config" (selected), "Services", "Desktop", "Programming", and "Attributes". On the left is a sidebar with a tree view containing "GLOBAL" (expanded) and "INTERFACE" (with "FastEthernet0" sub-item). Under "GLOBAL", there are links for "Settings" and "Algorithm Settings". The main content area is titled "Global Settings" and contains two sections. The first section, "Gateway/DNS IPv4", has radio buttons for "DHCP" and "Static" (selected). Below these are input fields for "Default Gateway" (170.90.138.81) and "DNS Server" (170.90.138.82). The second section, "Gateway/DNS IPv6", has radio buttons for "Automatic" and "Static" (selected). Below these are empty input fields for "Default Gateway" and "DNS Server". At the bottom left of the window is a "Top" button.

EMAIL 170.90.138.85/29

Physical **Config** Services Desktop Programming Attributes

GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0

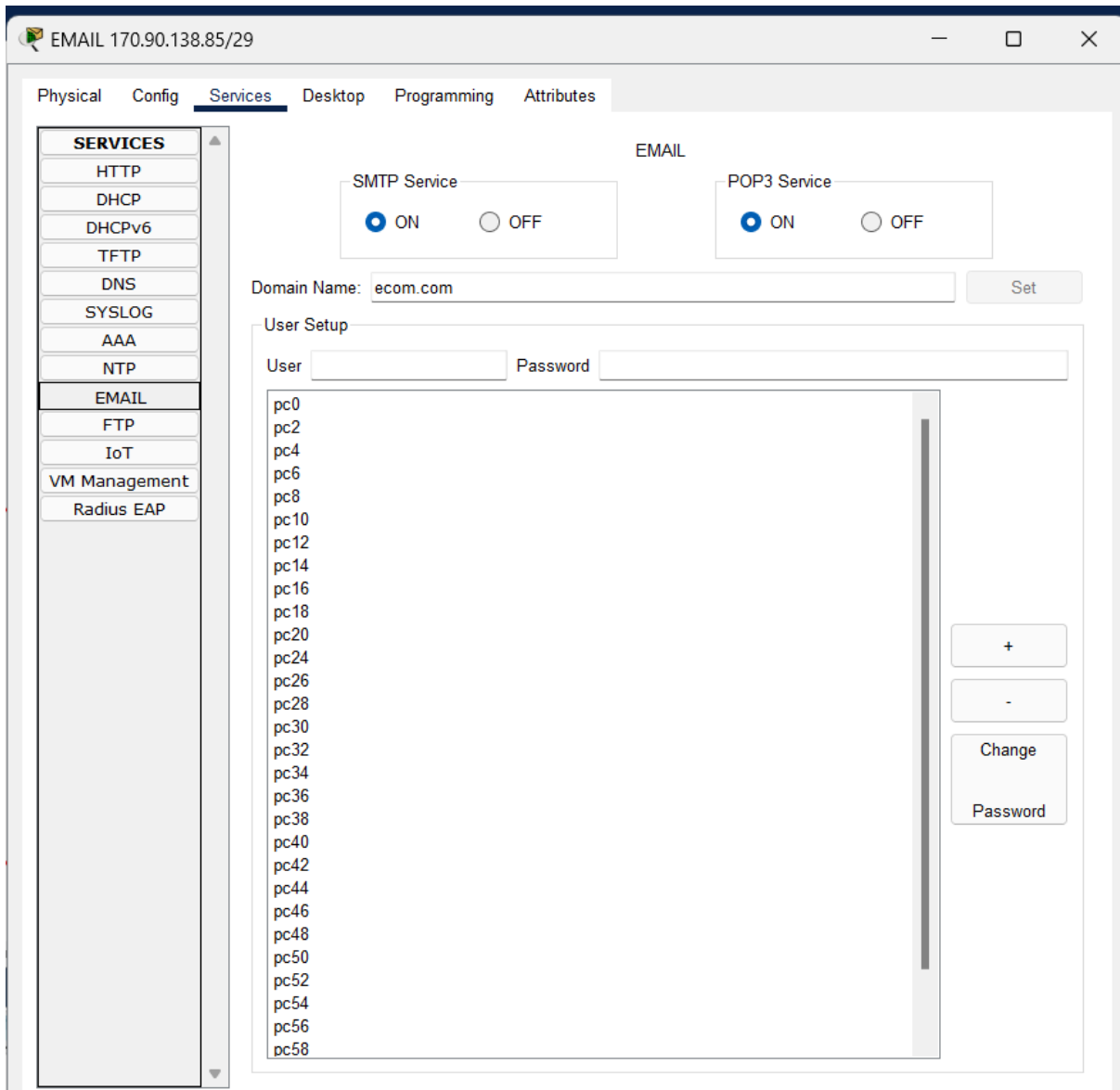
Global Settings

Display Name EMAIL 170.90.138.85/29

Gateway/DNS IPv4
☐ DHCP
☒ Static
Default Gateway 170.90.138.81
DNS Server 170.90.138.82

Gateway/DNS IPv6
☐ Automatic
☒ Static
Default Gateway
DNS Server

☐ Top



Sending an Email

