Computer Networks
Lab Task #11
Saad Ahmad
20P-0051

Topology A:

Questions:

1. Based on the topology, how many subnets are needed?

   5

2. How many bits must be borrowed to support the number of subnets in the topology?

   3 bits

3. How many subnets does this create?

   8 subnets

4. How many usable hosts does this create per subnet?

   30 hosts.

5. Calculate the binary value for the first five subnets. The first two subnets have been done for you.

Subnet	Network Address	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	192.168.100.	0	0	0	0	0	0	0	0
1	192.168.100.	0	0	1	0	0	0	0	0
2	192.168.100.	0	1	0	0	0	0	0	0
3	192.168.100.	0	1	1	0	0	0	0	0
4	192.168.100.	1	0	0	0	0	0	0	0

6. Calculate the binary and decimal value of the new subnet mask.

First Octet	Second Octet	Third Octet	Mask Bit 7	Mask Bit 6	Mask Bit 5	Mask Bit 4	Mask Bit 3	Mask Bit 2	Mask Bit 1	Mask Bit 0
11111111	11111111	11111111	1	1	1	0	0	0	0	0

First Octet	Second Octet	Third Octet	Mask Bit 7	Mask Bit 6	Mask Bit 5	Mask Bit 4	Mask Bit 3	Mask Bit 2	Mask Bit 1	Mask Bit 0
First Decimal Octet	Second Decimal Octet	Third Decimal Octet	Fourth Decimal Octet							
255.	255.	255.	224							

7. Fill in the **Subnet Table**, listing the decimal value of all available subnets, the first and last usablehost address, and the broadcast address. Repeat until all addresses are listed.

Subnet Number	Subnet Address	First Usable HostAddress	Last Usable HostAddress	Broadcast Address
0	192.168.100.0	192.168.100.1	192.168.100.30	192.168.100.31
1	192.168.100.32	192.168.100.33	192.168.100.62	192.168.100.63
2	192.168.100.64	192.168.100.65	192.168.100.94	192.168.100.95
3	192.168.100.96	192.168.100.97	192.168.100.126	192.168.100.127
4	192.168.100.128	192.168.100.129	192.168.100.158	192.168.100.159
5	192.168.100.160	192.168.100.161	192.168.100.190	192.168.100.191
6	192.168.100.192	192.168.100.193	192.168.100.222	192.168.100.223
7	192.168.100.224	192.168.100.225	192.168.100.254	192.168.100.255
8				

Step 2: Assign the subnets to the network shown in the topology.

a) Assign Subnet 0 to the LAN connected to the GigabitEthernet 0/0 interface of R1:

192.168.100.0 /27

b) Assign Subnet 1 to the LAN connected to the GigabitEthernet 0/1 interface of R1:

192.168.100.32 /27

c) Assign Subnet 2 to the LAN connected to the GigabitEthernet 0/0 interface of R2:

192.168.100.64 /27

d) Assign Subnet 3 to the LAN connected to the GigabitEthernet 0/1 interface of R2:

192.168.100.96 /27

e) Assign Subnet 4 to the WAN link between R1 to R2:

192.168.100.128 /27

Step 3: Document the addressing scheme.

Fill in the **Addressing Table** using the following guidelines:

Devicee	Interface	IP Address	Subnet Mask	Default Gateway
R1	G0/0	192.168.100.1	255.255.255.224	Nile
	G0/1	192.168.100.33	255.255.255.224	Nile
	S0/0/0	192.168.100.129	255.255.255.224	Nile
R2	G0/0	192.168.100.65	255.255.255.224	Nile
	G0/1	192.168.100.97	255.255.255.224	Nile
	S0/0/0	192.168.100.130	255.255.255.224	Nile
PC0	Nile	192.168.100.2	255.255.255.224	192.168.100.1
PC1	Nile	192.168.100.34	255.255.255.224	192.168.100.33
PC2	Nile	192.168.100.66	255.255.255.224	192.168.100.65
PC3	Nile	192.168.100.98	255.255.255.224	192.168.100.97

Part 2: Implement given topology in Packet Tracer and Assign IP Addresses toNetwork Devices and Verify Connectivity.

Add 4x PCs, 4x Switches and 2x Routers and connect them
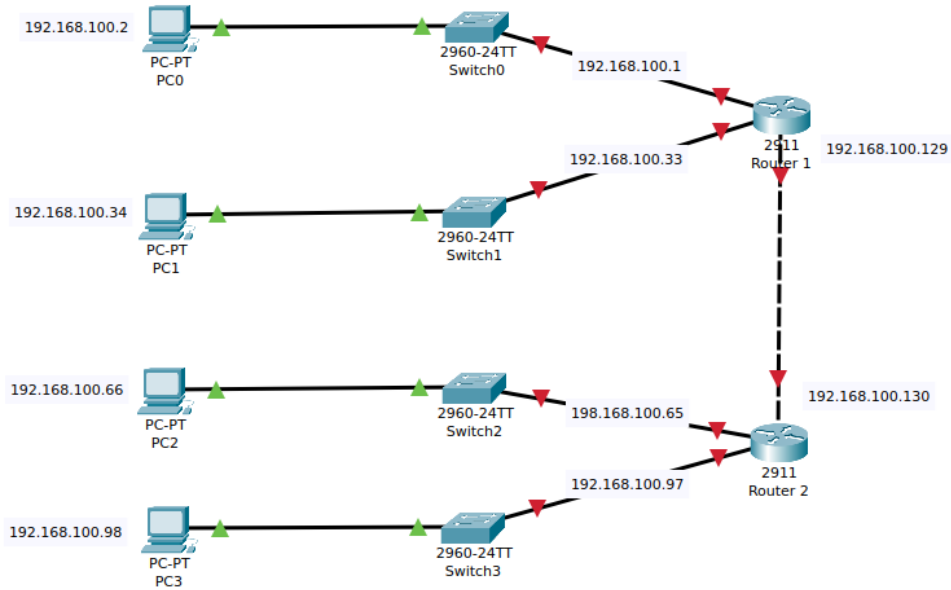
Now we will assign the IPs to the PCs
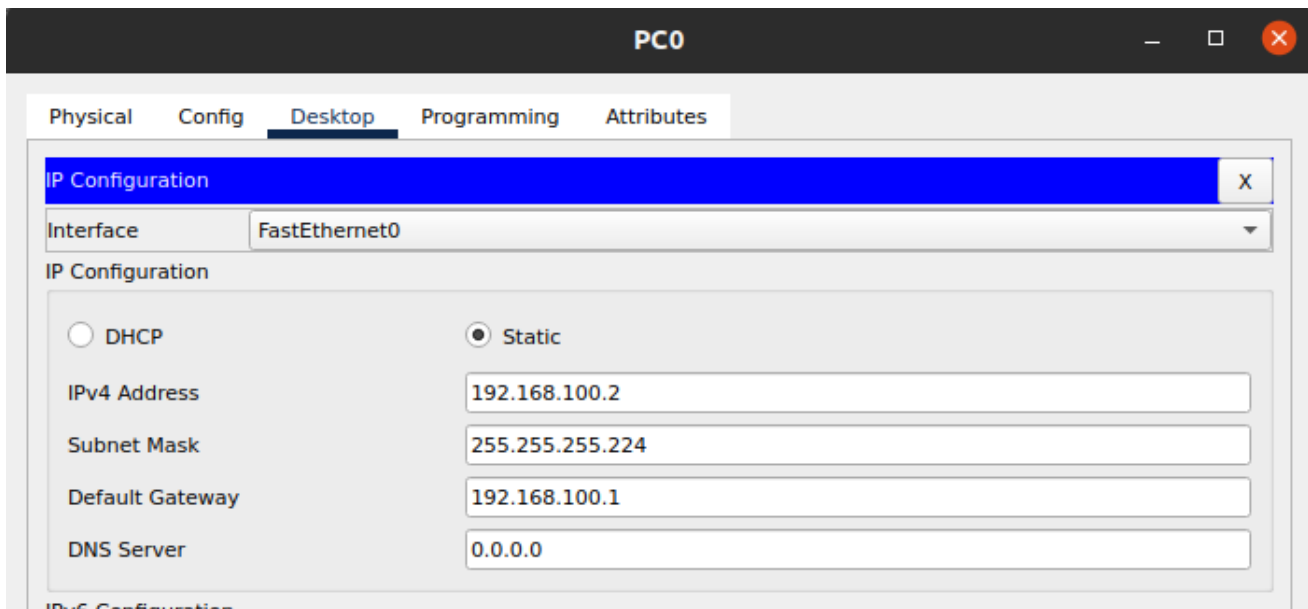
PC1

Physical Config **Desktop** Programming Attributes

IP Configuration   X

| Interface | FastEthernet0 | ▼ |

IP Configuration

○ DHCP   ● Static

IPv4 Address	192.168.100.34
Subnet Mask	255.255.255.224
Default Gateway	192.168.100.33
DNS Server	0.0.0.0

IPv6 Configuration

PC2

Physical Config **Desktop** Programming Attributes

IP Configuration   X

| Interface | FastEthernet0 | ▼ |

IP Configuration

○ DHCP   ● Static

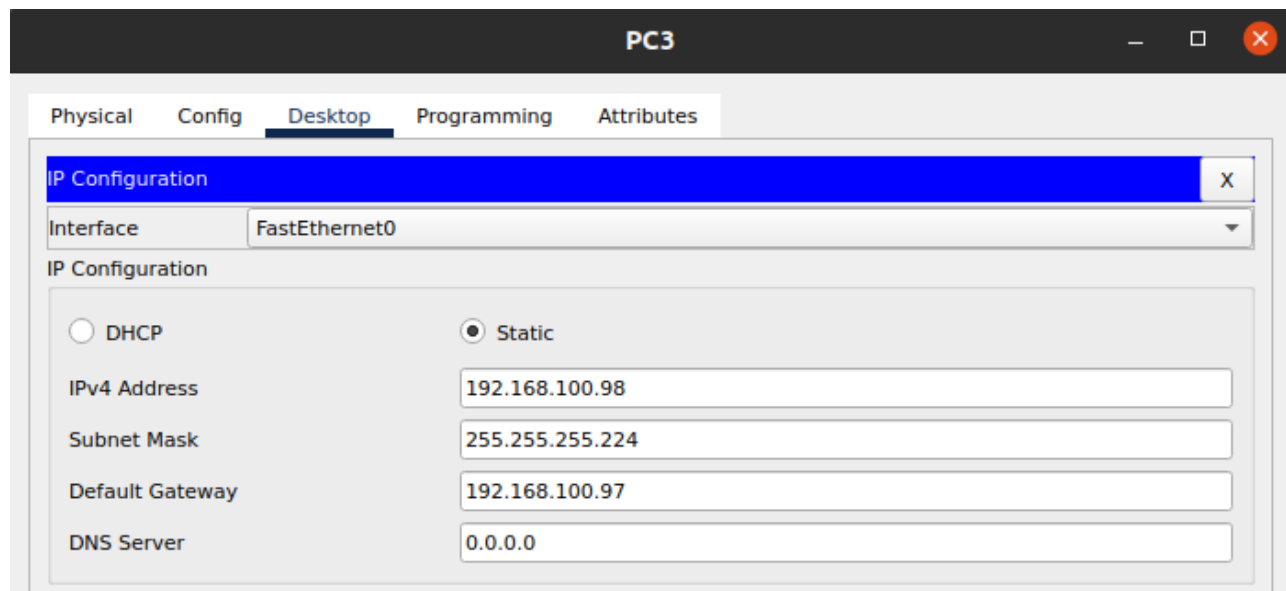| IPv4 Address | 192.168.100.66 |
Subnet Mask	255.255.255.224
Default Gateway	192.168.100.65
DNS Server	0.0.0.0

IPv6 Configuration

And now we will configure the routes

Router# 1

```
Router>
Router>
Router>
Router>
Router>enab
Router>enable
Router#confi
Router#configure ter
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interfa
Router(config)#interface Gigi
Router(config)#interface Gig
Router(config)#interface GigabitEthernet 0/0
Router(config-if)#ip address 192.168.100.1 255.255.255.224
Router(config-if)#no shu
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up

Router(config-if)#interfsa
Router(config-if)#interf
Router(config-if)#inter
Router(config-if)#interfa
Router(config-if)#exi
Router(config-if)#exit
Router(config)#inter
Router(config)#interface Gig
Router(config)#interface GigabitEthernet 0/1
Router(config-if)#ip address 192.168.100.33 255.255.255.224
Router(config-if)#no shu
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up

Router(config-if)#exi
Router(config-if)#exit
Router(config)#interf
Router(config)#interface Gig
Router(config)#interface GigabitEthernet 0/2
Router(config-if)#ip address 192.168.100.129 255.255.255.224
Router(config-if)#no shu
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/2, changed state to up

Router(config-if)#
```

```
Router>
Router>
Router>enab
Router>enable
Router#confi
Router#configure ter
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interfa
Router(config)#interface Gig
Router(config)#interface GigabitEthernet 0/0
Router(config-if)#ip address
Router(config-if)#ip address 192.168.100.65 255.255.255.224
Router(config-if)#no shu
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up

Router(config-if)#exit
Router(config)#inter
Router(config)#interface Gig
Router(config)#interface GigabitEthernet 0/1
Router(config-if)#ip address 192.168.100.97 255.255.255.224
Router(config-if)#no shu
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up

Router(config-if)#exi
Router(config-if)#exit
Router(config)#interfa
Router(config)#interface Gig
Router(config)#interface GigabitEthernet 0/2
Router(config-if)#ip address 192.168.100.130 255.255.255.224
Router(config-if)#no shu
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/2, changed state to up
exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

And now we will configure the static IPs

Router# 1

Router 1

Physical   Config   CLI   Attributes

| GLOBAL |
| Settings |
| Algorithm Settings |
| **ROUTING** |
| Static |
| RIP |
| **SWITCHING** |
| VLAN Database |
| **INTERFACE** |
| GigabitEthernet0/0 |
| GigabitEthernet0/1 |
| GigabitEthernet0/2 |

Static Routes

Network   192.168.100.96

Mask   255.255.255.224

Next Hop   192.168.100.130

Add

Network Address

192.168.100.64/27 via 192.168.100.130

192.168.100.96/27 via 192.168.100.130

Remove

Equivalent IOS Commands

```
Router(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/2, changed state to up

Router(config-if)#
Router(config-if)#exit
Router(config)#
Router(config)#ip route 192.168.100.64 255.255.255.224 192.168.100.130
Router(config)#ip route 192.168.100.96 255.255.255.224 192.168.100.130
Router(config)#
```

☐ Top

Router# 2

Router 2

Physical   Config   CLI   Attributes

GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
GigabitEthernet0/0
GigabitEthernet0/1
GigabitEthernet0/2

Static Routes

Network   192.168.100.32

Mask   255.255.255.224

Next Hop   192.168.100.129

Add

Network Address

192.168.100.0/27 via 192.168.100.129

192.168.100.32/27 via 192.168.100.129

Remove

Equivalent IOS Commands

```
%SYS-5-CONFIG_I: Configured from console by console

Router#
Router#
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#
Router(config)#ip route 192.168.100.0 255.255.255.224 192.168.100.129
Router(config)#ip route 192.168.100.32 255.255.255.224 192.168.100.129
Router(config)#
```

Top

Verifying the connection between the PCs

Form PC0

```
C:\>ping 192.168.100.33

Pinging 192.168.100.33 with 32 bytes of data:

Reply from 192.168.100.33: bytes=32 time<1ms TTL=255
Reply from 192.168.100.33: bytes=32 time<1ms TTL=255
Reply from 192.168.100.33: bytes=32 time<1ms TTL=255
Reply from 192.168.100.33: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.100.33:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.100.66

Pinging 192.168.100.66 with 32 bytes of data:

Reply from 192.168.100.66: bytes=32 time=35ms TTL=126
Reply from 192.168.100.66: bytes=32 time=1ms TTL=126
Reply from 192.168.100.66: bytes=32 time=11ms TTL=126
Reply from 192.168.100.66: bytes=32 time<1ms TTL=126

Ping statistics for 192.168.100.66:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 35ms, Average = 11ms

C:\>ping 192.168.100.97

Pinging 192.168.100.97 with 32 bytes of data:

Reply from 192.168.100.97: bytes=32 time<1ms TTL=254
Reply from 192.168.100.97: bytes=32 time<1ms TTL=254
Reply from 192.168.100.97: bytes=32 time<1ms TTL=254
Reply from 192.168.100.97: bytes=32 time=14ms TTL=254

Ping statistics for 192.168.100.97:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 14ms, Average = 3ms

C:\>
```

From PC2

```
C:\>ping 192.168.100.2

Pinging 192.168.100.2 with 32 bytes of data:

Reply from 192.168.100.2: bytes=32 time=10ms TTL=126
Reply from 192.168.100.2: bytes=32 time=12ms TTL=126
Reply from 192.168.100.2: bytes=32 time=1ms TTL=126
Reply from 192.168.100.2: bytes=32 time=12ms TTL=126

Ping statistics for 192.168.100.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 12ms, Average = 8ms

C:\>ping 192.168.100.34

Pinging 192.168.100.34 with 32 bytes of data:

Reply from 192.168.100.34: bytes=32 time=10ms TTL=126
Reply from 192.168.100.34: bytes=32 time=11ms TTL=126
Reply from 192.168.100.34: bytes=32 time=11ms TTL=126
Reply from 192.168.100.34: bytes=32 time=1ms TTL=126

Ping statistics for 192.168.100.34:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 11ms, Average = 8ms

C:\>ping 192.168.100.66

Pinging 192.168.100.66 with 32 bytes of data:

Reply from 192.168.100.66: bytes=32 time=14ms TTL=128
Reply from 192.168.100.66: bytes=32 time=19ms TTL=128
Reply from 192.168.100.66: bytes=32 time=18ms TTL=128
Reply from 192.168.100.66: bytes=32 time=20ms TTL=128

Ping statistics for 192.168.100.66:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 14ms, Maximum = 20ms, Average = 17ms

C:\>
```

Topology B:

Add 6x PCs, 3x Switches, 3x Routers and connect them.
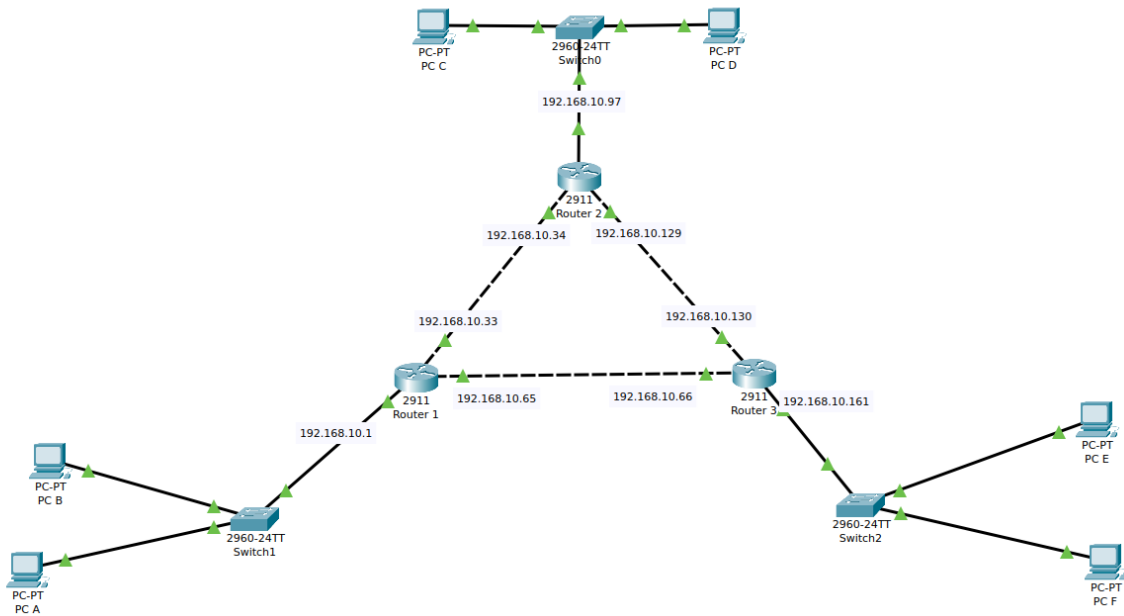
Now we will assign the IPs to the PCs

PC A

Physical   Config   **Desktop**   Programming   Attributes

IP Configuration   X

| Interface | FastEthernet0 | ▼ |

IP Configuration

○ DHCP   ● Static

IPv4 Address   192.168.10.2

Subnet Mask   255.255.255.224

Default Gateway   192.168.10.1

DNS Server   0.0.0.0

IPv6 Configuration

○ Automatic   ● Static

IPv6 Address   [   ] / [   ]

Link Local Address FE80::201:C7FF:FE3E:4A56

Default Gateway   [   ]

DNS Server   [   ]

802.1X

☐ Use 802.1X Security

Authentication   MD5   ▼

Username   [   ]

Password   [   ]

☐ Top

PC B

Physical | Config | **Desktop** | Programming | Attributes

IP Configuration   X

| Interface | FastEthernet0 ▼ |

IP Configuration

- ◯ DHCP   ◉ Static

IPv4 Address	192.168.10.3
Subnet Mask	255.255.255.224
Default Gateway	192.168.10.1
DNS Server	0.0.0.0

IPv6 Configuration

- ◯ Automatic   ◉ Static

IPv6 Address		/
Link Local Address	FE80::201:C7FF:FE13:5663
Default Gateway	
DNS Server	

802.1X

- ☐ Use 802.1X Security

Authentication	MD5 ▼
Username	
Password	

☐ Top

PC C

Physical   Config   Desktop   Programming   Attributes

IP Configuration   X

Interface	FastEthernet0 ▼

IP Configuration

○ DHCP   ● Static

IPv4 Address	192.168.10.98
Subnet Mask	255.255.255.224
Default Gateway	192.168.10.97
DNS Server	0.0.0.0

IPv6 Configuration

○ Automatic   ● Static

IPv6 Address	/
Link Local Address	FE80::202:17FF:FE98:A693
Default Gateway	
DNS Server	

802.1X

☐ Use 802.1X Security

Authentication	MD5 ▼
Username	
Password	

☐ Top

PC D

Physical   Config   **Desktop**   Programming   Attributes

IP Configuration   X

Interface	FastEthernet0 ▼

IP Configuration

○ DHCP   ● Static

IPv4 Address   192.168.10.99

Subnet Mask   255.255.255.224

Default Gateway   192.168.10.97

DNS Server   0.0.0.0

IPv6 Configuration

○ Automatic   ● Static

IPv6 Address   /

Link Local Address   FE80::2D0:BAFF:FEA3:797D

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication   MD5 ▼

Username

Password

☐ Top

PC E

Physical   Config   **Desktop**   Programming   Attributes

IP Configuration   X

| Interface | FastEthernet0 | ▼ |

IP Configuration

○ DHCP   ⦿ Static

IPv4 Address   192.168.10.162

Subnet Mask   255.255.255.224

Default Gateway   192.168.10.161

DNS Server   0.0.0.0

IPv6 Configuration

○ Automatic   ⦿ Static

IPv6 Address   [   ] / [   ]

Link Local Address FE80::207:ECFF:FE19:C7A7

Default Gateway   [   ]

DNS Server   [   ]

802.1X

☐ Use 802.1X Security

Authentication   MD5   ▼

Username   [   ]

Password   [   ]

☐ Top

And now we will configure the Routers

Router#1

Router 1

Physical   Config   **CLI**   Attributes

IOS Command Line Interface

```
Would you like to enter the initial configuration dialog? [yes/no]: no


Press RETURN to get started!



Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface Gigabit
Router(config)#interface GigabitEthernet 0/0
Router(config-if)#iip address 192.168.10.33 255.255.255.224
                    ^
% Invalid input detected at '^' marker.

Router(config-if)#ip address 192.168.10.33 255.255.255.224
Router(config-if)#no sh
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up
exi
Router(config-if)#exit
Router(config)#interfa
Router(config)#interface Gig
Router(config)#interface GigabitEthernet 0/1
Router(config-if)#ip address 192.168.10.65 255.255.255.224
Router(config-if)#no shui
Router(config-if)#no shu
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up

Router(config-if)#exi
Router(config-if)#exit
Router(config)#interfa
Router(config)#interface Gig
Router(config)#interface GigabitEthernet 0/2
Router(config-if)#ip address 192.168.10.1 255.255.255.224
Router(config-if)#no shu
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/2, changed state to up

Router(config-if)#
```

Copy   Paste

☐ Top

Router#2


```
Would you like to enter the initial configuration dialog? [yes/no]: no


Press RETURN to get started!



Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface Gig
Router(config)#interface GigabitEthernet 0/0
Router(config-if)#ip address 192.168.10.34 255.255.255.224
Router(config-if)#no shutd
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up

Router(config-if)#exi
Router(config-if)#exit
Router(config)#interf
Router(config)#interface Gig
Router(config)#interface GigabitEthernet 0/1
Router(config-if)#ip address 192.168.10.129 255.255.255.224
Router(config-if)#no shu
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up

Router(config-if)#exit
Router(config)#interf
Router(config)#interface Gig
Router(config)#interface GigabitEthernet 0/2
Router(config-if)#ip address 192.168.10.97 255.255.255.224
Router(config-if)#no shut
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/2, changed state to up

Router(config-if)#exit
Router(config)#
```

Router#3

Physical   Config   CLI   Attributes

IOS Command Line Interface

```
Router>enable
Router#configu
Router#configure term
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interfa
Router(config)#interface Gig
Router(config)#interface GigabitEthernet 0/0
Router(config-if)#ip addre
Router(config-if)#ip address 192.168.10.66 255.255.255.224
Router(config-if)#no shi
Router(config-if)#no shu
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up

Router(config-if)#exit
Router(config)#interf
Router(config)#interface Gig
Router(config)#interface GigabitEthernet 0/1
Router(config-if)#ip address 192.168.10.130 255.255.255.224
Router(config-if)#no shu
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up

Router(config-if)#exit
Router(config)#interfa
Router(config)#interface Gig
Router(config)#interface GigabitEthernet 0/2
Router(config-if)#ip address 192.168.10.161 255.255.255.224
Router(config-if)#no shut
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/2, changed state to up

Router(config-if)#exit
Router(config)#
```

Copy   Paste

☐ Top

And now we will do the static routing on each router

Router#1

Router 1

Physical   Config   CLI   Attributes

GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
GigabitEthernet0/0
GigabitEthernet0/1
GigabitEthernet0/2

Static Routes

Network   192.168.10.160

Mask   255.255.255.224

Next Hop   192.168.10.66

Add

Network Address

192.168.10.96/27 via 192.168.10.34

192.168.10.160/27 via 192.168.10.66

Remove

Equivalent IOS Commands

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#
Router(config)#ip route 192.168.10.96 255.255.255.224 192.168.10.34
Router(config)#ip route 192.168.10.160 255.255.255.224 192.168.10.66
Router(config)#
```

Top

Router#2

Router 2

Physical   Config   CLI   Attributes

GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
GigabitEthernet0/0
GigabitEthernet0/1
GigabitEthernet0/2

Static Routes

Network   192.168.10.160

Mask   255.255.255.224

Next Hop   192.168.10.130

Add

Network Address

192.168.10.0/27 via 192.168.10.33

192.168.10.160/27 via 192.168.10.130

Remove

Equivalent IOS Commands

```
Router(config-if)#exit
Router(config)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up

Router(config)#
Router(config)#
Router(config)#ip route 192.168.10.0 255.255.255.224 192.168.10.33
Router(config)#ip route 192.168.10.160 255.255.255.224 192.168.10.130
Router(config)#
```

☐ Top

Router#3

Router 3

Physical   Config   CLI   Attributes

| GLOBAL |
| Settings |
| Algorithm Settings |
| ROUTING |
| Static |
| RIP |
| SWITCHING |
| VLAN Database |
| INTERFACE |
| GigabitEthernet0/0 |
| GigabitEthernet0/1 |
| GigabitEthernet0/2 |

Static Routes

Network   192.168.10.96

Mask   255.255.255.224

Next Hop   192.168.10.129

Add

Network Address

192.168.10.0/27 via 192.168.10.65

192.168.10.96/27 via 192.168.10.129

Remove

Equivalent IOS Commands

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/2, changed state to up

Router(config-if)#exit
Router(config)#
Router(config)#
Router(config)#
Router(config)#ip route 192.168.10.0 255.255.255.224 192.168.10.65
Router(config)#ip route 192.168.10.96 255.255.255.224 192.168.10.129
Router(config)#
```
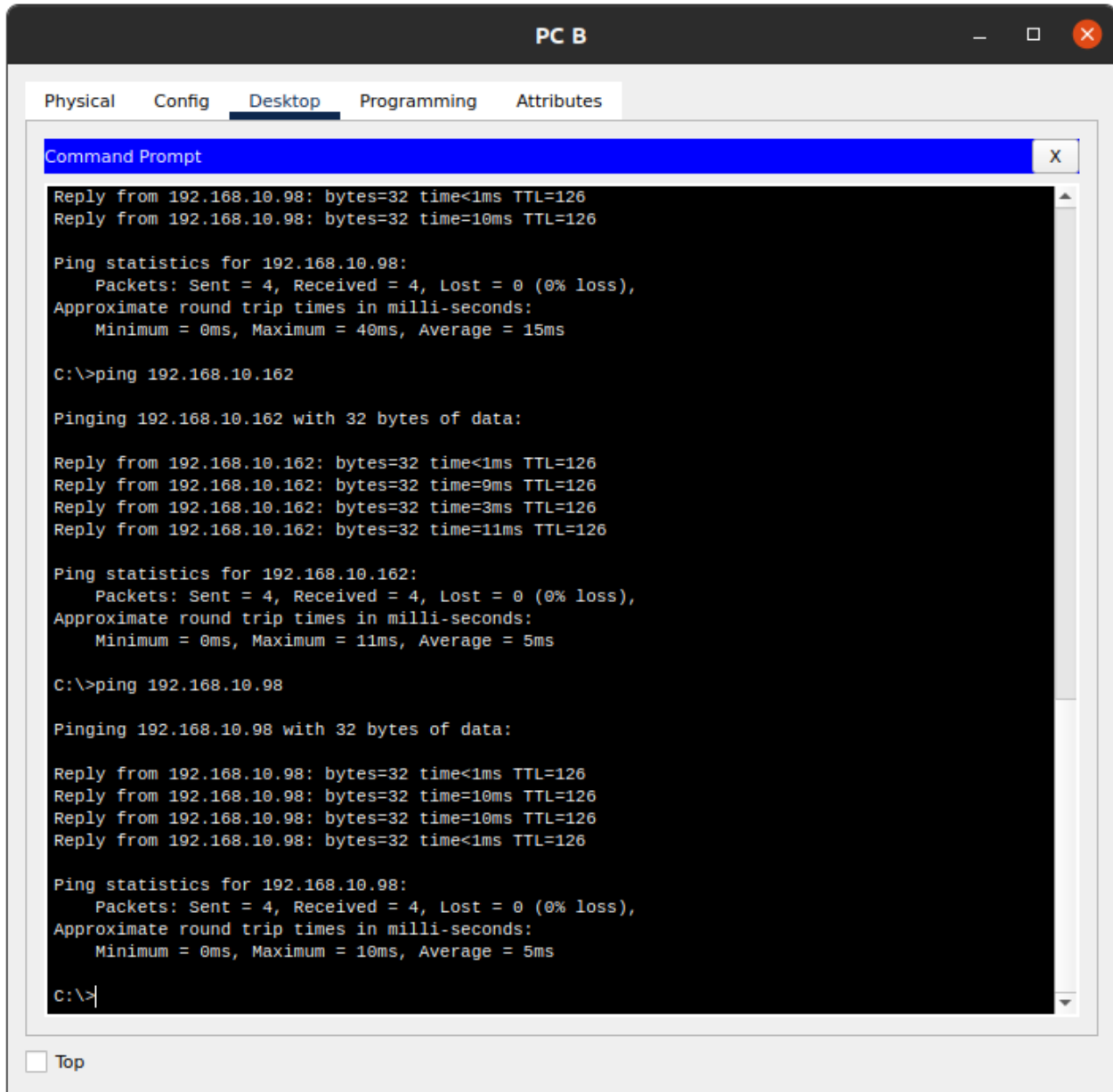
☐ Top

Checking the connection between the PCs on different networks

Form PC#B

```
                                    PC B                              _   □   ✕

  Physical    Config    Desktop    Programming    Attributes

  Command Prompt                                                          X

  Reply from 192.168.10.98: bytes=32 time<1ms TTL=126
  Reply from 192.168.10.98: bytes=32 time=10ms TTL=126

  Ping statistics for 192.168.10.98:
      Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
  Approximate round trip times in milli-seconds:
      Minimum = 0ms, Maximum = 40ms, Average = 15ms

  C:\>ping 192.168.10.162

  Pinging 192.168.10.162 with 32 bytes of data:

  Reply from 192.168.10.162: bytes=32 time<1ms TTL=126
  Reply from 192.168.10.162: bytes=32 time=9ms TTL=126
  Reply from 192.168.10.162: bytes=32 time=3ms TTL=126
  Reply from 192.168.10.162: bytes=32 time=11ms TTL=126

  Ping statistics for 192.168.10.162:
      Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
  Approximate round trip times in milli-seconds:
      Minimum = 0ms, Maximum = 11ms, Average = 5ms

  C:\>ping 192.168.10.98

  Pinging 192.168.10.98 with 32 bytes of data:

  Reply from 192.168.10.98: bytes=32 time<1ms TTL=126
  Reply from 192.168.10.98: bytes=32 time=10ms TTL=126
  Reply from 192.168.10.98: bytes=32 time=10ms TTL=126
  Reply from 192.168.10.98: bytes=32 time<1ms TTL=126

  Ping statistics for 192.168.10.98:
      Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
  Approximate round trip times in milli-seconds:
      Minimum = 0ms, Maximum = 10ms, Average = 5ms

  C:\>

  ☐ Top
```

From PC#D

```
PC D                                    _  □  ✕

Physical    Config    Desktop    Programming    Attributes

Command Prompt                                          X

C:\>
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>
C:\>ping 192.168.10.2

Pinging 192.168.10.2 with 32 bytes of data:

Reply from 192.168.10.2: bytes=32 time<1ms TTL=126
Reply from 192.168.10.2: bytes=32 time=1ms TTL=126
Reply from 192.168.10.2: bytes=32 time=10ms TTL=126
Reply from 192.168.10.2: bytes=32 time=1ms TTL=126

Ping statistics for 192.168.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 10ms, Average = 3ms

C:\>ping 192.168.10.162

Pinging 192.168.10.162 with 32 bytes of data:

Reply from 192.168.10.162: bytes=32 time<1ms TTL=126
Reply from 192.168.10.162: bytes=32 time=2ms TTL=126
Reply from 192.168.10.162: bytes=32 time=11ms TTL=126
Reply from 192.168.10.162: bytes=32 time=11ms TTL=126

Ping statistics for 192.168.10.162:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 11ms, Average = 6ms

C:\>

☐ Top
```

From PC#F

PC F   — □ ✕

Physical   Config   Desktop   Programming   Attributes

Command Prompt   X

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.10.3

Pinging 192.168.10.3 with 32 bytes of data:

Reply from 192.168.10.3: bytes=32 time=10ms TTL=126
Reply from 192.168.10.3: bytes=32 time=11ms TTL=126
Reply from 192.168.10.3: bytes=32 time=10ms TTL=126
Reply from 192.168.10.3: bytes=32 time=3ms TTL=126

Ping statistics for 192.168.10.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 3ms, Maximum = 11ms, Average = 8ms

C:\>ping 192.168.10.163

Pinging 192.168.10.163 with 32 bytes of data:

Reply from 192.168.10.163: bytes=32 time<1ms TTL=128
Reply from 192.168.10.163: bytes=32 time=19ms TTL=128
Reply from 192.168.10.163: bytes=32 time<1ms TTL=128
Reply from 192.168.10.163: bytes=32 time=8ms TTL=128

Ping statistics for 192.168.10.163:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 19ms, Average = 6ms

C:\>
```
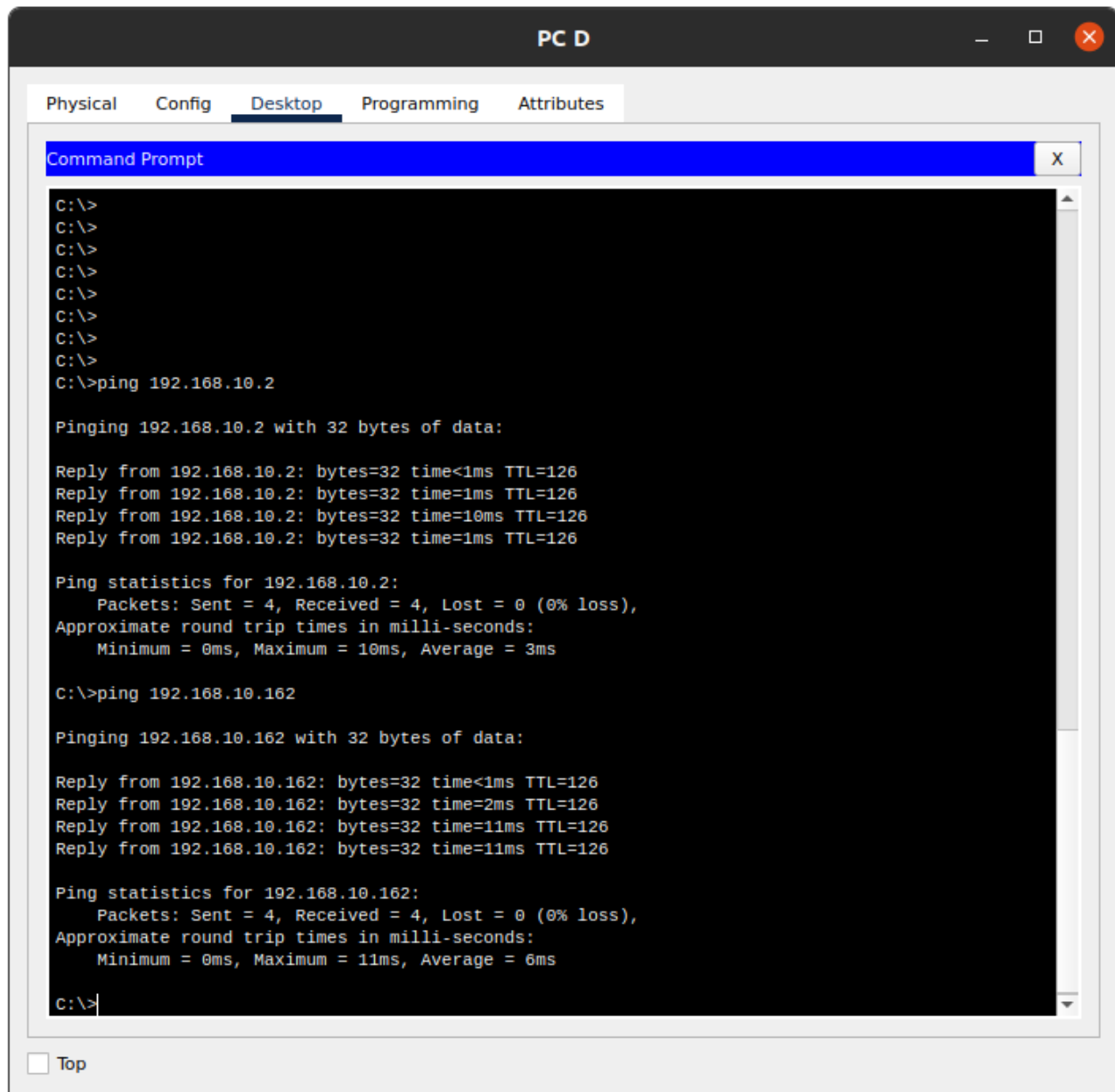
☐ Top