Modulo # 11 – Laboratorio # 11.7.5

a. Según la topología, ¿cuántas subredes se necesitan?
5. Cuatro para las LAN y una para el enlace entre los routers.

b. ¿Cuántos bits se deben tomar prestados para admitir la cantidad de subredes en la tabla de topología?
3

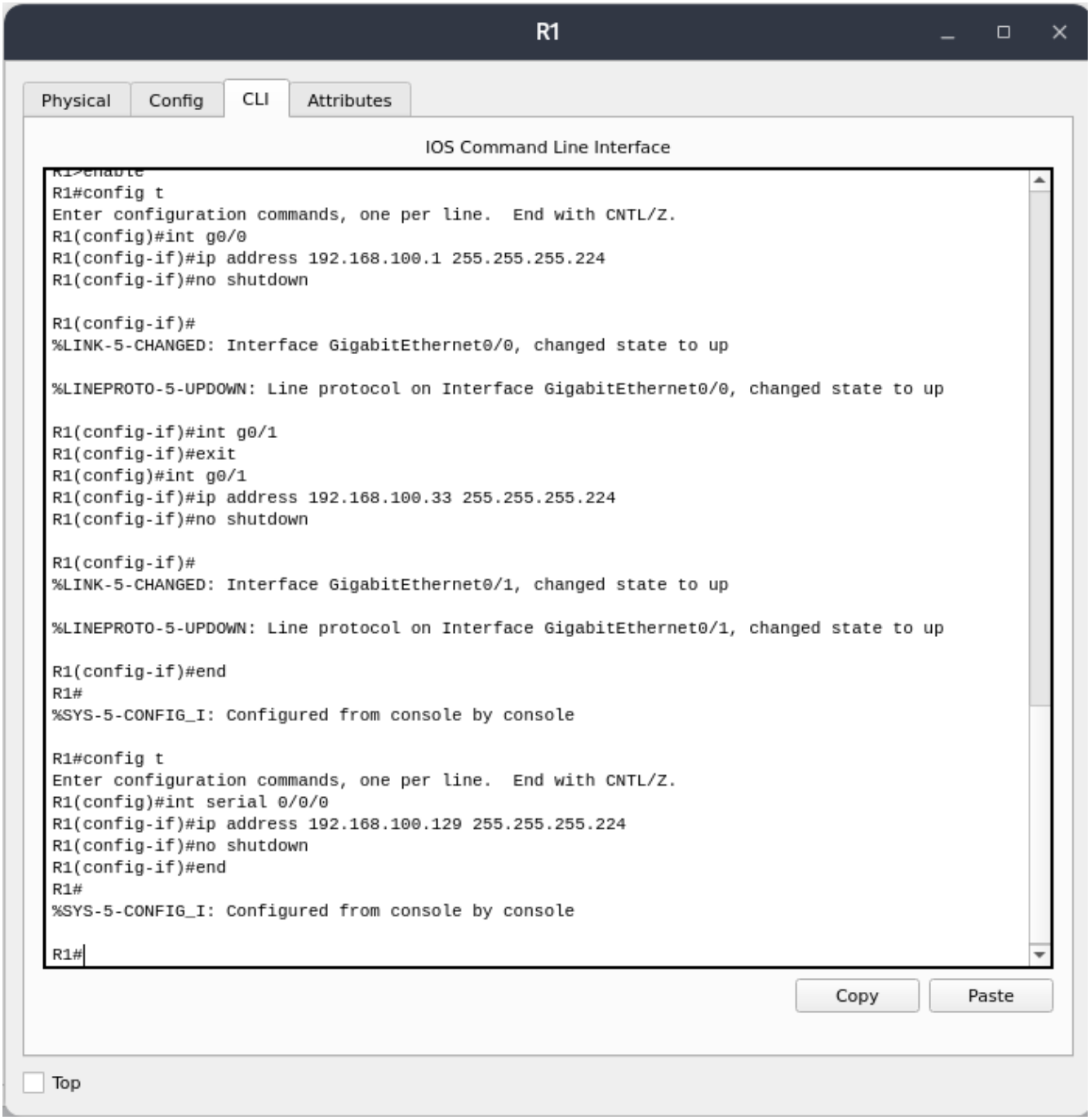
c. ¿Cuántas subredes se crean con esto?
8

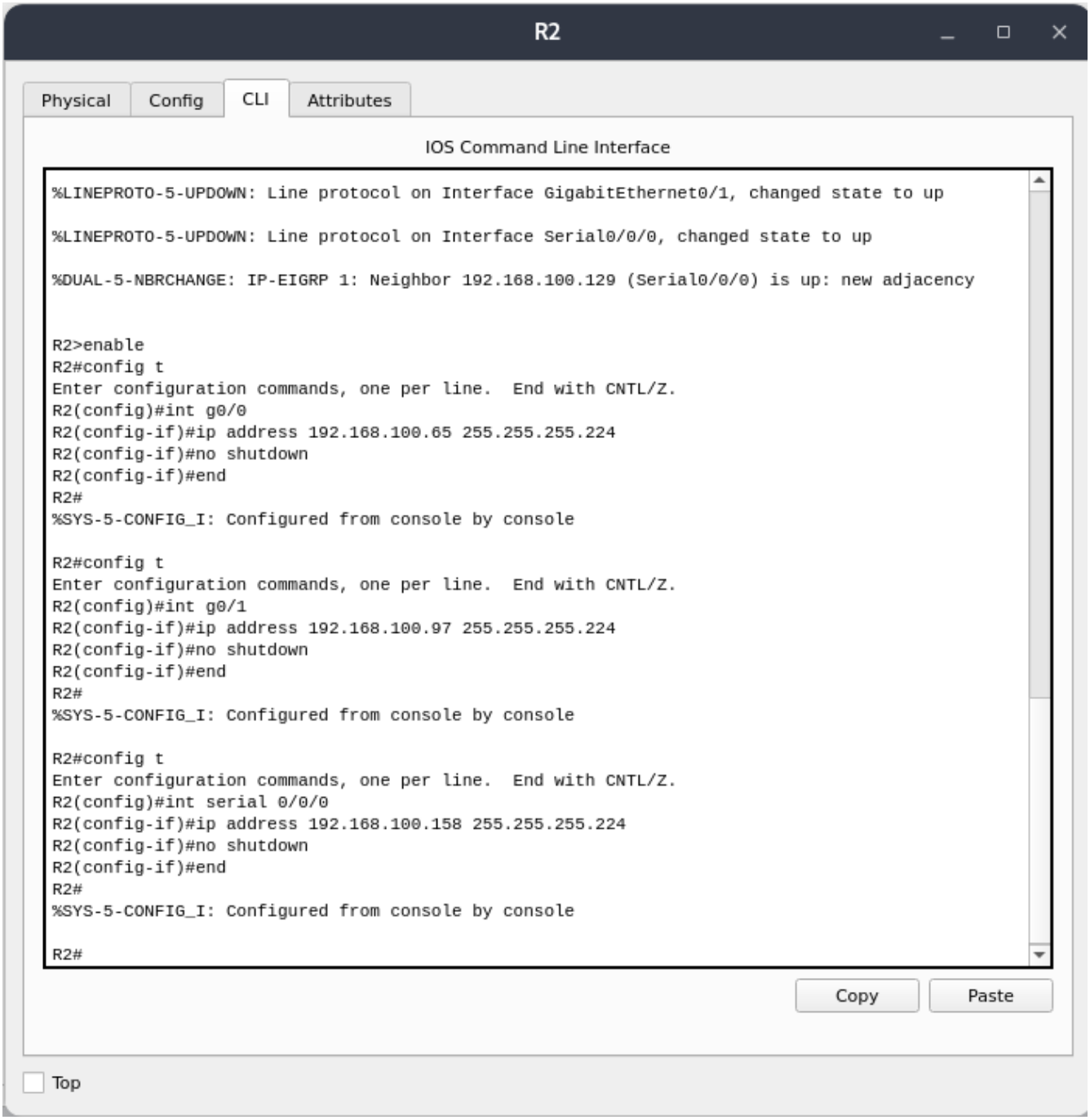
d. ¿Cuántos hosts utilizables se crean por subred?
30

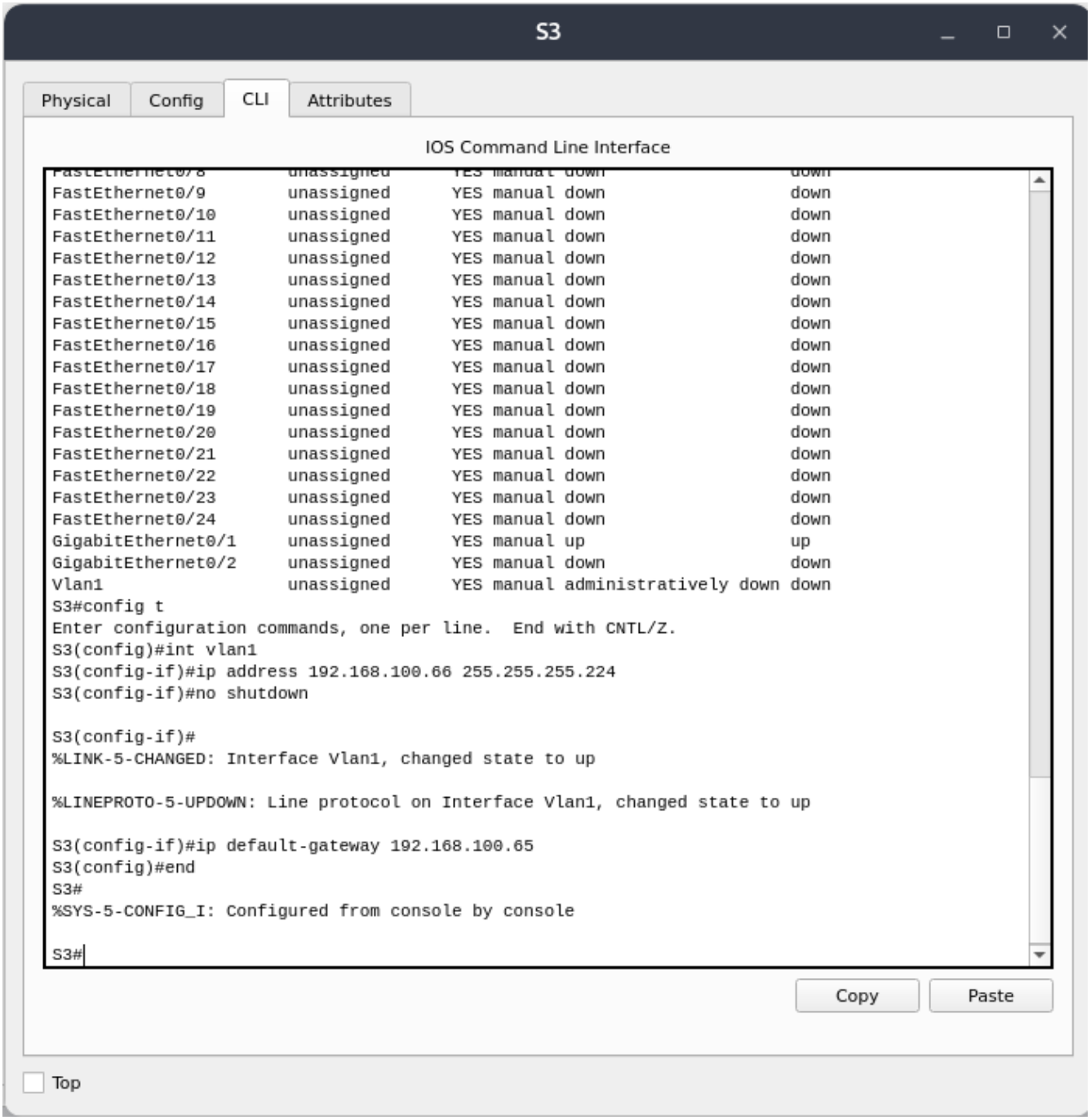
Subnet	Network Address	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	192.168.100.	0	0	0	0	0	0	0	0
1	192.168.100.	0	0	1	0	0	0	0	0
2	192.168.100.	0	1	0	0	0	0	0	0
3	192.168.100.	0	1	1	0	0	0	0	0
4	192.168.100.	1	0	0	0	0	0	0	0

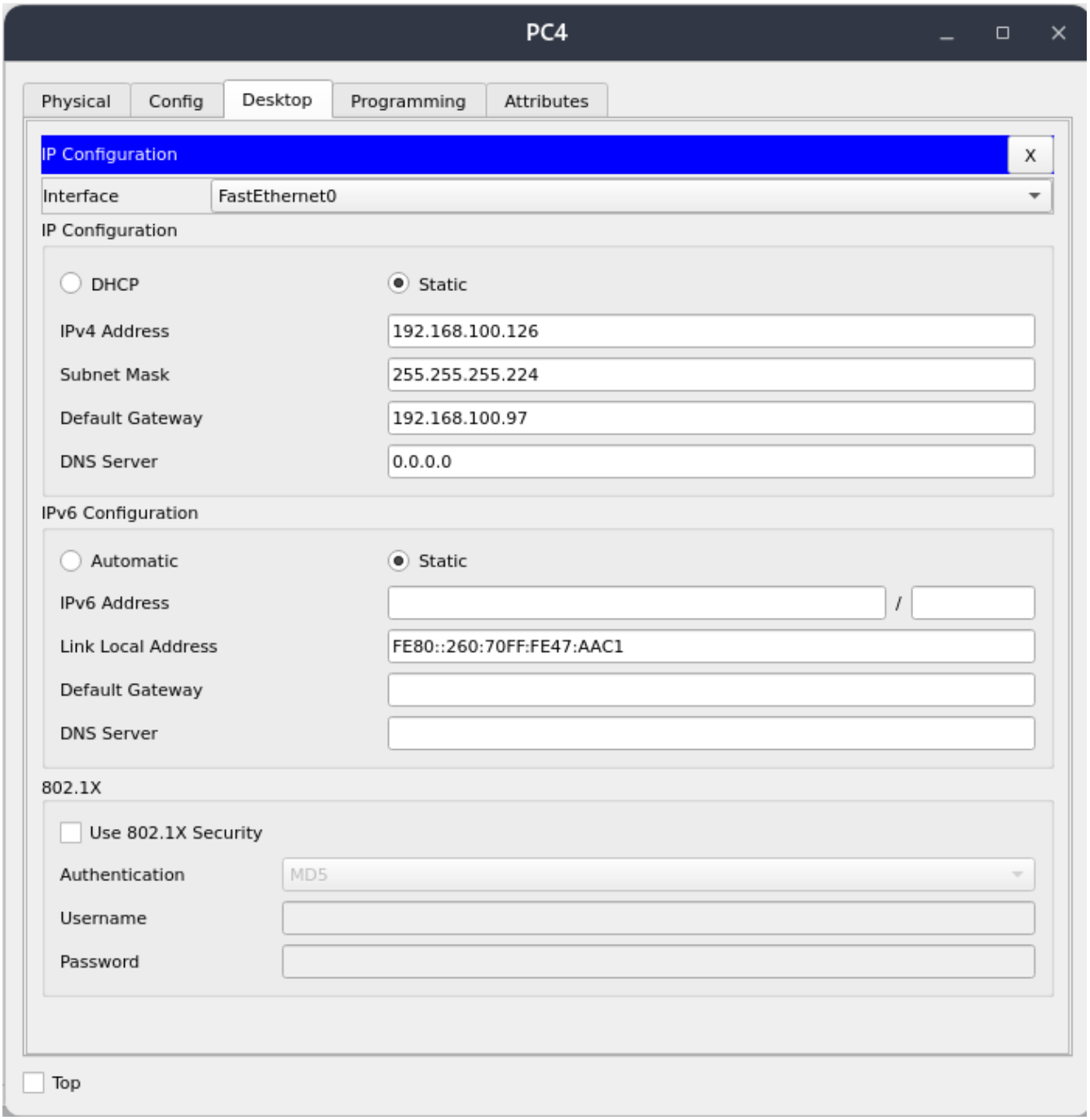
First Octet	Second Octet	Third Octet	Mask Bit 7	Mask Bit 6	Mask Bit 5	Mask Bit 4	Mask Bit 3	Mask Bit 2	Mask Bit 1	Mask Bit 0
11111111	11111111	11111111	1	1	1	0	0	0	0	0
First Decimal Octet	Second Decimal Octet	Third Decimal Octet	Fourth Decimal Octet							
255.	255.	255.	224							

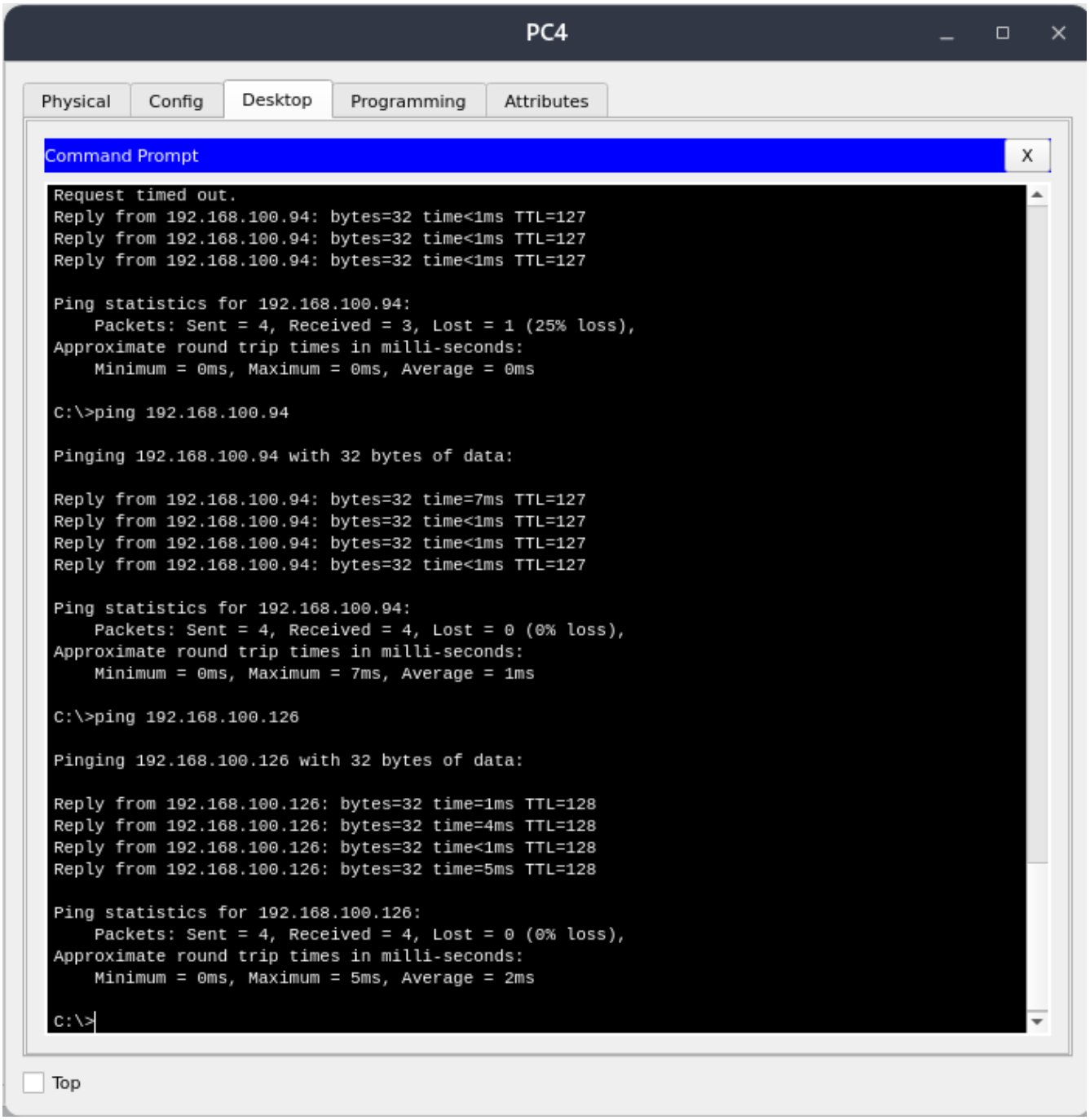
Subnet Number	Subnet Address	First Usable Host Address	Last Usable Host Address	Broadcast Address
0	192.168.100.0	192.168.100.1	192.168.100.30	192.168.100.31
1	192.168.100.32	192.168.100.33	192.168.100.62	192.168.100.63
2	192.168.100.64	192.168.100.65	192.168.100.94	192.168.100.95
3	192.168.100.96	192.168.100.97	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	Blank	Blank	blank	blank
9	blank	blank	blank	blank
10	blank	blank	blank	blank


R1
Physical
Config
CLI
Attributes
IOS Command Line Interface
R1>enable
R1#config t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#int g0/0
R1(config-if)#ip address 192.168.100.1 255.255.255.224
R1(config-if)#no shutdown
R1(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
R1(config-if)#int g0/1
R1(config-if)#exit
R1(config)#int g0/1
R1(config-if)#ip address 192.168.100.33 255.255.255.224
R1(config-if)#no shutdown
R1(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
R1(config-if)#end
R1#
%SYS-5-CONFIG_I: Configured from console by console
R1#config t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#int serial 0/0/0
R1(config-if)#ip address 192.168.100.129 255.255.255.224
R1(config-if)#no shutdown
R1(config-if)#end
R1#
%SYS-5-CONFIG_I: Configured from console by console
R1#
Copy
Paste
Top


R2
Physical
Config
CLI
Attributes
IOS Command Line Interface
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/0, changed state to up
%DUAL-5-NBRCHANGE: IP-EIGRP 1: Neighbor 192.168.100.129 (Serial0/0/0) is up: new adjacency
R2>enable
R2#config t
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#int g0/0
R2(config-if)#ip address 192.168.100.65 255.255.255.224
R2(config-if)#no shutdown
R2(config-if)#end
R2#
%SYS-5-CONFIG_I: Configured from console by console
R2#config t
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#int g0/1
R2(config-if)#ip address 192.168.100.97 255.255.255.224
R2(config-if)#no shutdown
R2(config-if)#end
R2#
%SYS-5-CONFIG_I: Configured from console by console
R2#config t
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#int serial 0/0/0
R2(config-if)#ip address 192.168.100.158 255.255.255.224
R2(config-if)#no shutdown
R2(config-if)#end
R2#
%SYS-5-CONFIG_I: Configured from console by console
R2#
Copy
Paste
Top


S3
Physical
Config
CLI
Attributes
IOS Command Line Interface
FastEthernet0/8 unassigned YES manual down down
FastEthernet0/9 unassigned YES manual down down
FastEthernet0/10 unassigned YES manual down down
FastEthernet0/11 unassigned YES manual down down
FastEthernet0/12 unassigned YES manual down down
FastEthernet0/13 unassigned YES manual down down
FastEthernet0/14 unassigned YES manual down down
FastEthernet0/15 unassigned YES manual down down
FastEthernet0/16 unassigned YES manual down down
FastEthernet0/17 unassigned YES manual down down
FastEthernet0/18 unassigned YES manual down down
FastEthernet0/19 unassigned YES manual down down
FastEthernet0/20 unassigned YES manual down down
FastEthernet0/21 unassigned YES manual down down
FastEthernet0/22 unassigned YES manual down down
FastEthernet0/23 unassigned YES manual down down
FastEthernet0/24 unassigned YES manual down down
GigabitEthernet0/1 unassigned YES manual up up
GigabitEthernet0/2 unassigned YES manual down down
Vlan1 unassigned YES manual administratively down down
S3#config t
Enter configuration commands, one per line. End with CNTL/Z.
S3(config)#int vlan1
S3(config-if)#ip address 192.168.100.66 255.255.255.224
S3(config-if)#no shutdown
S3(config-if)#
%LINK-5-CHANGED: Interface Vlan1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up
S3(config-if)#ip default-gateway 192.168.100.65
S3(config)#end
S3#
%SYS-5-CONFIG_I: Configured from console by console
S3#
Copy
Paste
Top


PC4
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.100.126
Subnet Mask
255.255.255.224
Default Gateway
192.168.100.97
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
/
Link Local Address
FE80::260:70FF:FE47:AAC1
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top


PC4
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
Request timed out.
Reply from 192.168.100.94: bytes=32 time<1ms TTL=127
Reply from 192.168.100.94: bytes=32 time<1ms TTL=127
Reply from 192.168.100.94: bytes=32 time<1ms TTL=127
Ping statistics for 192.168.100.94:
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>ping 192.168.100.94
Pinging 192.168.100.94 with 32 bytes of data:
Reply from 192.168.100.94: bytes=32 time=7ms TTL=127
Reply from 192.168.100.94: bytes=32 time<1ms TTL=127
Reply from 192.168.100.94: bytes=32 time<1ms TTL=127
Reply from 192.168.100.94: bytes=32 time<1ms TTL=127
Ping statistics for 192.168.100.94:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 7ms, Average = 1ms
C:\>ping 192.168.100.126
Pinging 192.168.100.126 with 32 bytes of data:
Reply from 192.168.100.126: bytes=32 time=1ms TTL=128
Reply from 192.168.100.126: bytes=32 time=4ms TTL=128
Reply from 192.168.100.126: bytes=32 time<1ms TTL=128
Reply from 192.168.100.126: bytes=32 time=5ms TTL=128
Ping statistics for 192.168.100.126:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 5ms, Average = 2ms
C:\>
Top