



IPv4 Addressing & Subnetting

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Question-1

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Question-1

- + When using the original method of classful IP addressing, what class of network does the address 126.3.45.1 fall into?
- + [1.6]

☐

A. Class A

☐

B. Class B

☐

C. Class C

☐

D. Class D

☐

E. Class E

ANSWER

- + When using the original method of classful IP addressing, what class of network does the address 126.3.45.1 fall into?
- + [1.6]



A. Class A



B. Class B



C. Class C



D. Class D



E. Class E



Question-2

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Question-2

- + When using the original method of classful IP addressing, what class of network does the address 225.6.76.3 fall into?
- + [1.6]

☐

A. Class A

☐

B. Class B

☐

C. Class C

☐

D. Class D

☐

E. Class E

ANSWER

- + When using the original method of classful IP addressing, what class of network does the address 225.6.76.3 fall into?
- + [1.6]

☐

A. Class A

☐

B. Class B

☐

C. Class C

☒

D. Class D

☐

E. Class E



Question-3

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Question-3

- + When using the original classful method of IP addressing, which of the following answers displays the full range of Class-B addresses?
- + [1.6]

☐

A. 192.0.0.0 thru 223.255.255.255

☐

B. 127.0.0.0 through 191.255.255.255

☐

C. 128.0.0.0 thru 192.255.255.255

☐

D. 128.0.0.0 thru 191.255.255.255

☐

E. 126.0.0.0 thru 190.255.255.255

ANSWER

- + When using the original classful method of IP addressing, which of the following answers displays the full range of Class-B addresses?
- + [1.6]

☐

A. 192.0.0.0 thru 223.255.255.255

☐

B. 127.0.0.0 through 191.255.255.255

☐

C. 128.0.0.0 thru 192.255.255.255

☒

D. 128.0.0.0 thru 191.255.255.255

☐

E. 126.0.0.0 thru 190.255.255.255



Question-4

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Question-4

- + Which of the following IPv4 addresses, displayed in binary, falls into the Class-C address space?
- + [1.6]

☐

A. 10001101001011010000010011001101

☐

B. 11001101001011010011110011001101

☐

C. 11101101001110110011110011001101

☐

D. 01001101111011010011110011001111

☐

E. 11111101001011110011110011101101

ANSWER

- + Which of the following IPv4 addresses, displayed in binary, falls into the Class-C address space?
- + [1.6]

☐

A. 10001101001011010000010011001101

☒

B. 11001101001011010011110011001101

☐

C. 11101101001110110011110011001101

☐

D. 01001101111011010011110011001111

☐

E. 11111101001011110011110011101101



Question-5

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Question-5

- + PC-A contains the IPv4 address and mask of 134.55.6.18 /28. Given this information, what is the maximum quantity of remaining hosts that could reside in this same subnet?

+ [1.6]

☐

A. 12-hosts

☐

B. 13-hosts

☐

C. 14-hosts

☐

D. 16-hosts

☐

E. 19-hosts

ANSWER

- + PC-A contains the IPv4 address and mask of 134.55.6.18 /28. Given this information, what is the maximum quantity of remaining hosts that could reside in this same subnet?

+ [1.6]

☐

A. 12-hosts

☒

B. 13-hosts

☐

C. 14-hosts

☐

D. 16-hosts

☐

E. 19-hosts



Question-6

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Question-6

+ Which of the following pairs of hosts reside within the same IPv4 subnet?

+ [1.6]

☐

A. 12.2.3.25/29 and 12.2.3.32/29

☐

B. 10.15.100.70/27 and 10.15.100.98/27

☐

C. 192.168.11.45/28 and 192.168.11.80/26

☐

D. 192.168.11.17/28 and 192.168.11.30/28

☐

E. None of these answers are correct

ANSWER

+ Which of the following pairs of hosts reside within the same IPv4 subnet?

+ [1.6]

☐

A. 12.2.3.25/29 and 12.2.3.32/29

☐

B. 10.15.100.70/27 and 10.15.100.98/27

☐

C. 192.168.11.45/28 and 192.168.11.80/26

☒

D. 192.168.11.17/28 and 192.168.11.30/28

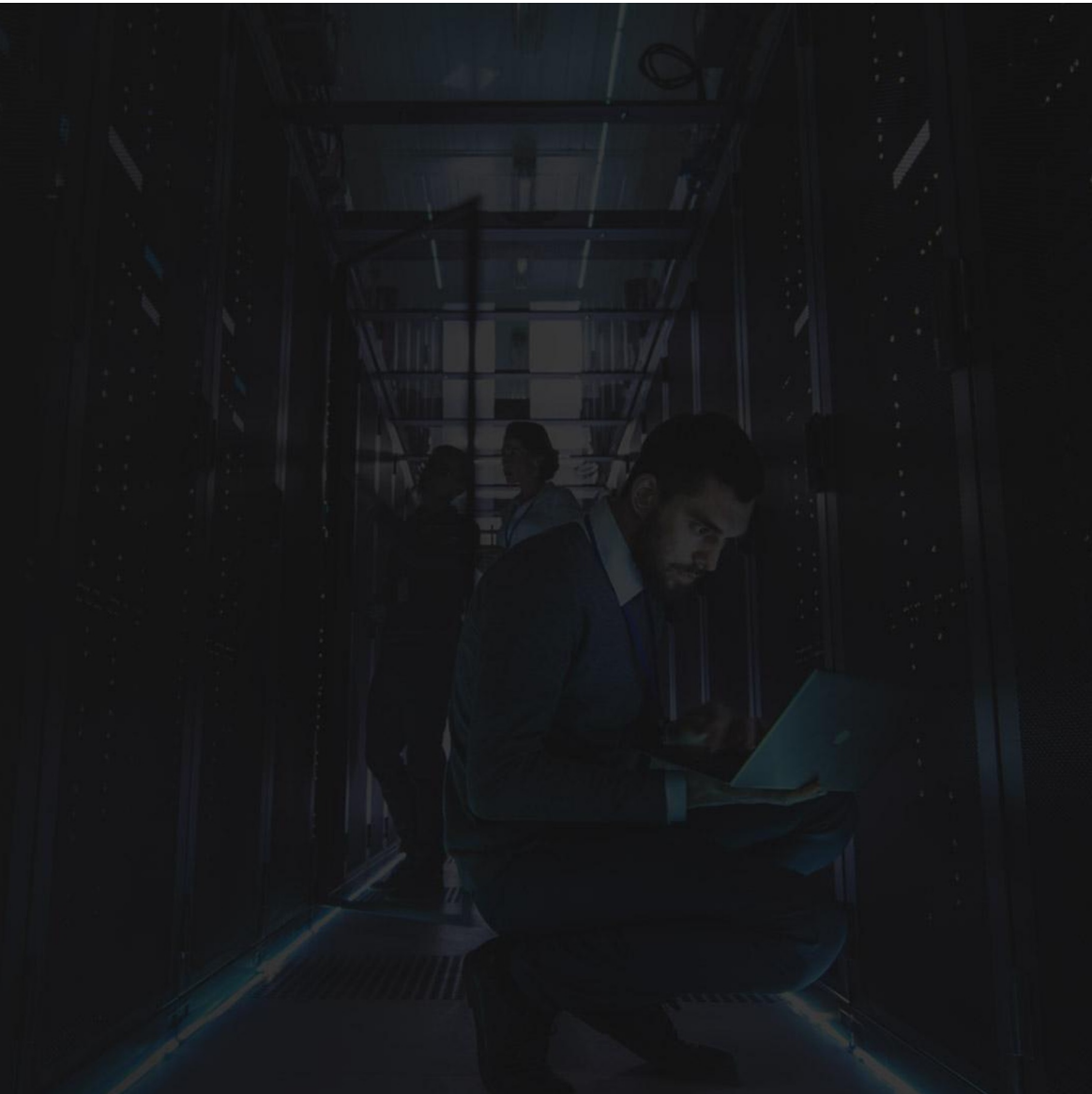
☐

E. None of these answers are correct



Question-7

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Question-7

- + With regards to the address of 134.44.1.95/27, which of the following answers is correct?
- + (Select two answers)
- + [1.6]

☐

A. This is a broadcast address

☐

B. This is a network/subnet address

☐

C. This is a host address

☐

D. There are 30-available hosts in this subnet

☐

E. There are 32-available hosts in this subnet

ANSWER

- + With regards to the address of 134.44.1.95/27, which of the following answers is correct?
- + (Select two answers)
- + [1.6]



A. This is a broadcast address



B. This is a network/subnet address



C. This is a host address



D. There are 30-available hosts in this subnet



E. There are 32-available hosts in this subnet



Question-8

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Question-8

- + A company is given the network of **156.10.0.0 255.255.0.0** from their Internet Service Provider. Internally they decide to subnet this network, with each new subnet having a mask of **255.255.248.0**. Given this information, what is the maximum quantity of subnets that will be available for them to use?

+ [1.6]

☐

A. 4-subnets

☐

B. 8-subnets

☐

C. 16-subnets

☐

D. 32-subnets

☐

E. 64-subnets

ANSWER

- + A company is given the network of **156.10.0.0 255.255.0.0** from their Internet Service Provider. Internally they decide to subnet this network, with each new subnet having a mask of **255.255.248.0**. Given this information, what is the maximum quantity of subnets that will be available for them to use?

+ [1.6]

☐

A. 4-subnets

☐

B. 8-subnets

☐

C. 16-subnets

☒

D. 32-subnets

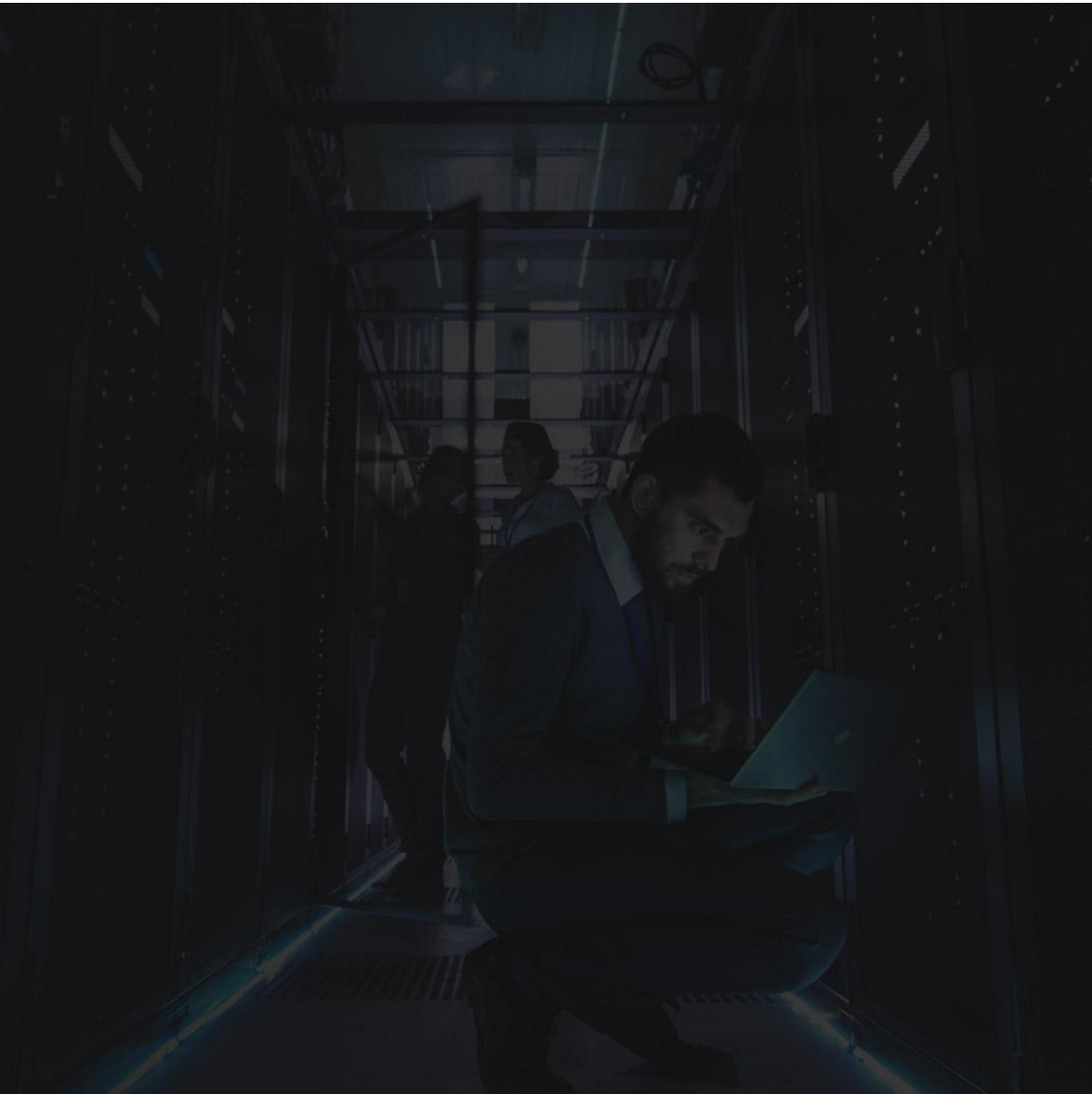
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E. 64-subnets



Question-9

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Question-9

- + An enterprise customer is given a network from their ISP which includes a mask of 255.255.255.0. The customer has a total of 22 internal networks. When subnetting, what new netmask would provide the greatest quantity of hosts per network and yet still give the customer at least 22 subnets?

+ [1.6]

☐

A. 255.255.255.128

☐

B. 255.255.255.248

☐

C. 255.255.255.240

☐

D. 255.255.255.192

☐

E. 255.255.255.224

ANSWER

- + An enterprise customer is given a network from their ISP which includes a mask of 255.255.255.0. The customer has a total of 22 internal networks. When subnetting, what new netmask would provide the greatest quantity of hosts per network and yet still give the customer at least 22 subnets?

+ [1.6]

☐

A. 255.255.255.128

☒

B. 255.255.255.248

☐

C. 255.255.255.240

☐

D. 255.255.255.192

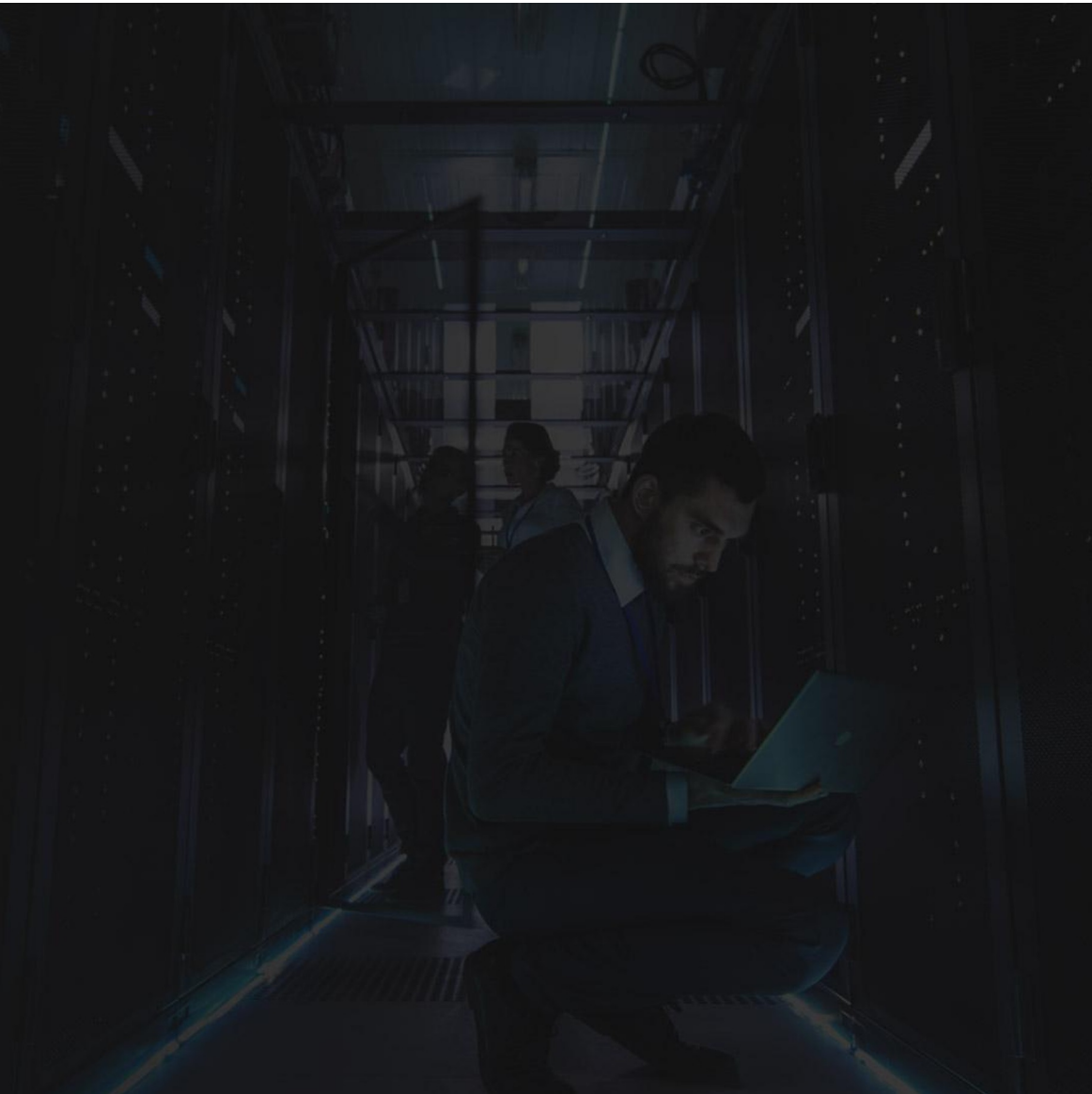
☐

E. 255.255.255.224



Question-10

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Question-10

- + Which RFC specifies the IPv4 address ranges that are considered “private addresses”?
- + [1.6]

☐

A. RFC 1918

☐

B. RFC 1819

☐

C. RFC 1901

☐

D. RFC 791

☐

E. RFC 781

ANSWER

- + Which RFC specifies the IPv4 address ranges that are considered “private addresses”?
- + [1.6]



A. RFC 1918



B. RFC 1819



C. RFC 1901



D. RFC 791



E. RFC 781



Question-11

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Question-11

+ Which of the following IPv4 addresses would be considered a public, globally-routable unicast address?

+ [1.6]

☐

A. 10.34.2.55

☐

B. 172.18.22.34

☐

C. 172.32.6.77

☐

D. 192.168.23.66

☐

E. 10.100.2.1

ANSWER

- + Which of the following IPv4 addresses would be considered a public, globally-routable unicast address?
- + [1.6]

☐

A. 10.34.2.55

☐

B. 172.18.22.34

☒

C. 172.32.6.77

☐

D. 192.168.23.66

☐

E. 10.100.2.1



Question-12

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Question-12

- + Which of the following answers provides an alternative way to express the subnet mask of 255.255.240.0?
- + [1.6]

☐

A. /18

☐

B. /23

☐

C. /20

☐

D. /14

☐

E. /28

ANSWER

- + Which of the following answers provides an alternative way to express the subnet mask of 255.255.240.0?
- + [1.6]

☐

A. /18

☐

B. /23

☒

C. /20

☐

D. /14

☐

E. /28



Question-13

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Question-13

- + Your company has obtained the network of **176.10.0.0/16** from an ISP. You need to subnet this network and your largest subnet will contain 100-host devices.
- + Which of the following answers provides a subnetwork that will fit your largest subnet (*while at the same time consuming the **least** possible quantity of host bits*)?
- + [1.6]

☐ A. 176.10.0.0 255.255.255.128

☐ B. 172.16.0.0 255.255.128.0

☐ C. 172.16.0.0 255.255.255.240

☐ D. 172.16.0.0 255.255.255.0

☐ E. 172.16.0.0 255.255.255.192

ANSWER

- + Your company has obtained the network of **176.10.0.0/16** from an ISP. You need to subnet this network and your largest subnet will contain 100-host devices.
- + Which of the following answers provides a subnetwork that will fit your largest subnet (*while at the same time consuming the **least** possible quantity of host bits*)?
- + [1.6]

☒ A. 176.10.0.0 255.255.255.128

☐ B. 172.16.0.0 255.255.128.0

☐ C. 172.16.0.0 255.255.255.240

☐ D. 172.16.0.0 255.255.255.0

☐ E. 172.16.0.0 255.255.255.192



Question-14

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Question-14

+ IPv4 addresses are becoming a scarce resource as they are rapidly being depleted. Which of the following features or protocols was designed to help extend the life of IPv4?

+ [1.6]

☐

A. Private IPv4 Addressing

☐

B. NAT

☐

C. GRE

☐

D. IPSec

☐

E. IPv6

ANSWER

+ IPv4 addresses are becoming a scarce resource as they are rapidly being depleted. Which of the following features or protocols was designed to help extend the life of IPv4?

+ [1.6]

☐

A. Private IPv4 Addressing

☒

B. NAT

☐

C. GRE

☐

D. IPSec

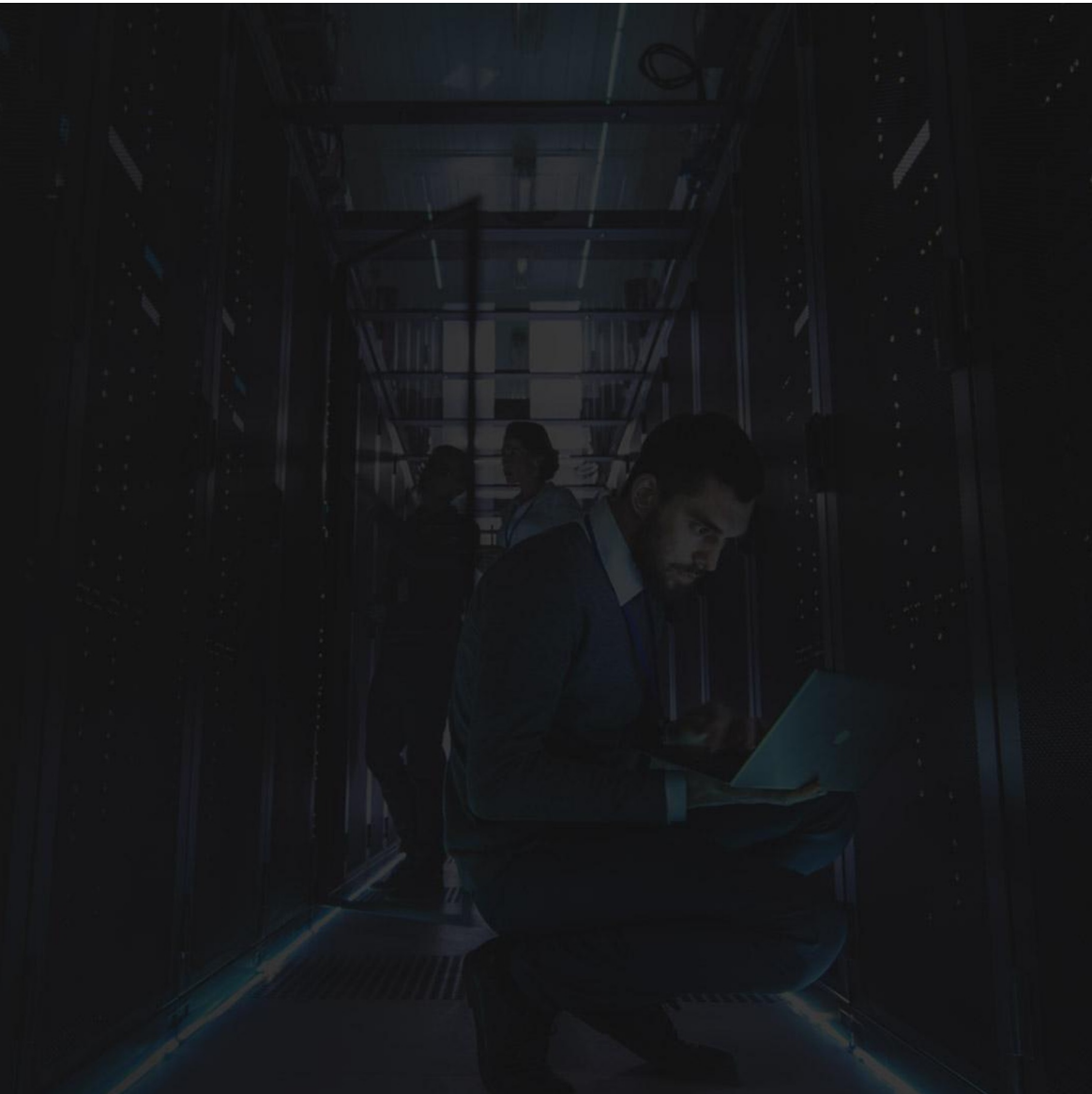
☐

E. IPv6



Question-15

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Question-15

- + Pair the correct default mask value with its appropriate class of network.
- + [1.6]

Class-A

255.255.255.0

Class-B

Not Applicable

Class-C

255.255.0.0

Class-D

255.0.0.0

ANSWER

- + Pair the correct default mask value with its appropriate class of network.
- + [1.6]

Class-A	255.0.0.0
Class-B	255.255.0.0
Class-C	255.255.255.0
Class-D	Not Applicable



Question-16

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Question-16

- + Your ISP gives you the network of **144.12.12.0/24**. You need to divide this into 22-subnetworks.
- + Using the Same-Length Subnetting method (and allowing for subnet zero [144.12.12.0/xx] to be your first subnet)...what will be the address of your sixth subnet?
- + [1.6]

☐ A. 144.12.12.48 255.255.255.248

☐ B. 144.12.12.80 255.255.255.240

☐ C. 144.12.12.96 255.255.255.240

☐ D. 144.12.12.40 255.255.255.248

☐ E. 144.12.12.160 255.255.255.224

ANSWER

- + Your ISP gives you the network of **144.12.12.0/24**. You need to divide this into 22-subnetworks.
- + Using the Same-Length Subnetting method (and allowing for subnet zero [144.12.12.0/xx] to be your first subnet)...what will be the address of your sixth subnet?
- + [1.6]

☐ A. 144.12.12.48 255.255.255.248

☐ B. 144.12.12.80 255.255.255.240

☐ C. 144.12.12.96 255.255.255.240

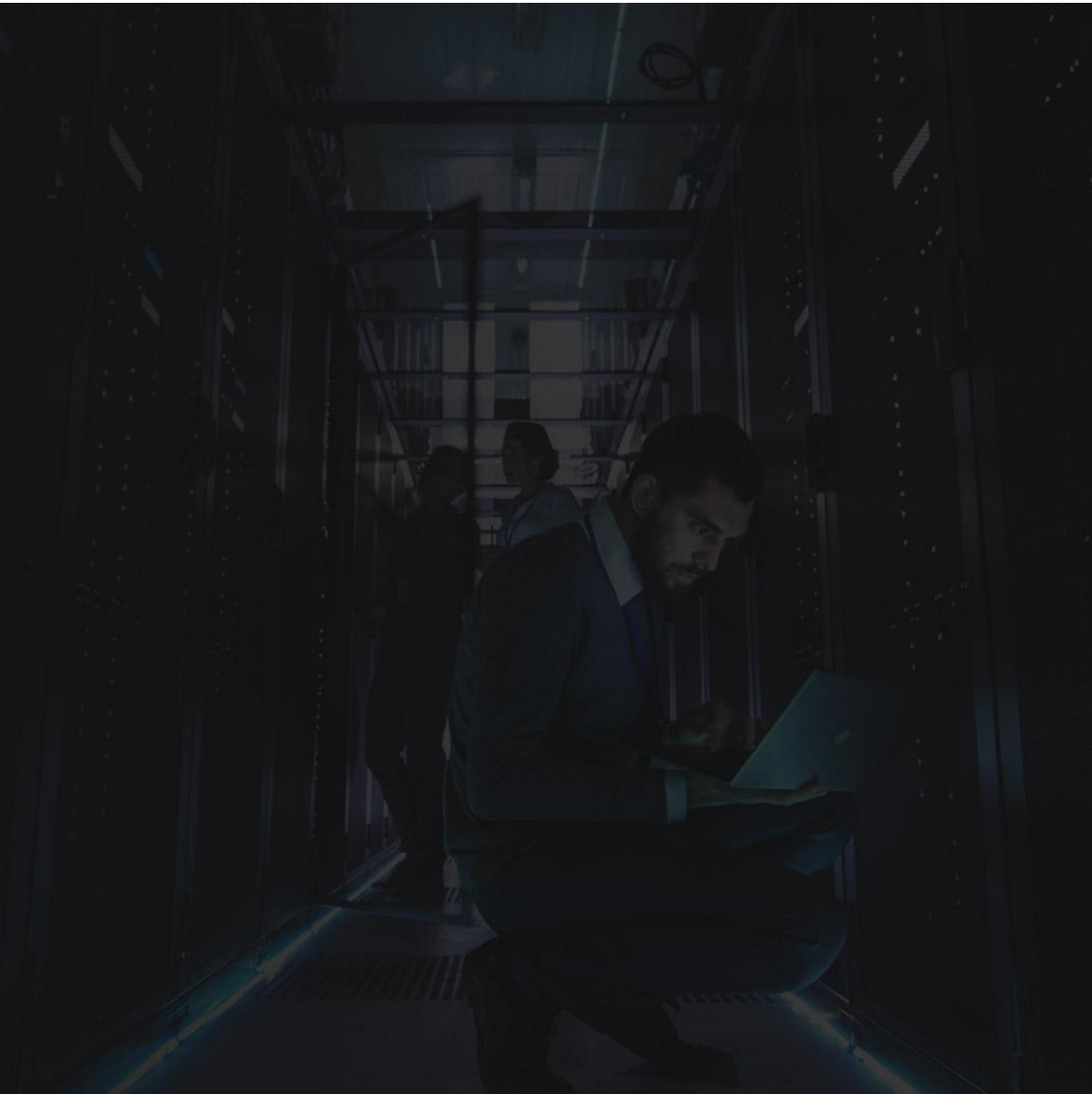
☒ D. 144.12.12.40 255.255.255.248

☐ E. 144.12.12.160 255.255.255.224



Question-17

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Question-17

+ What is the subnetwork address of the following host:

125.22.76.56 255.255.255.240

+ [1.6]

☐

A. 125.22.76.48

☐

B. 125.22.76.40

☐

C. 125.22.76.64

☐

D. 125.22.76.32

☐

E. 125.22.76.30

ANSWER

+ What is the subnetwork address
of the following host:

125.22.76.56 255.255.255.240

+ [1.6]



A. 125.22.76.48



B. 125.22.76.40



C. 125.22.76.64



D. 125.22.76.32



E. 125.22.76.30



Question-18

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Question-19

+ Pair the IPv4 addresses with their correct description. [1.6]

169.254.x.x

127.0.0.1

239.0.0.7

172.16.88.8

Multicast Address

Private Address

Loopback Address

APIPA

ANSWER

+ Pair the IPv4 addresses with their correct description. [1.6]

169.254.x.x

APIPA

127.0.0.1

Loopback Address

239.0.0.7

Multicast Address

172.16.88.8

Private Address



Question-19

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Question-19

+ Which of the following commands could you use within the Microsoft Windows OS to view the IP address, default gateway and DNS server assigned to a device?

+ [1.10]

☐

A. ipconfig

☐

B. ipconfig /all

☐

C. ipdisplay

☐

D. ipdisplay /all

☐

E. None of these answers are correct

ANSWER

+ Which of the following commands could you use within the Microsoft Windows OS to view the IP address, default gateway and DNS server assigned to a device?

+ [1.10]

☐

A. `ipconfig`

☒

B. `ipconfig /all`

☐

C. `ipdisplay`

☐

D. `ipdisplay /all`

☐

E. None of these answers are correct



Question-20

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Question-20

- + What command was used on a laptop running Microsoft Windows OS in order to obtain the output shown here? [1.10]

```
C:\Users\Keith Bogart>
=====
Interface List
11...08 00 27 1a d3 37 .....Intel(R) PRO/1000 MT Desktop Adapter
2...08 00 27 cc 2b cf .....Intel(R) PRO/1000 MT Desktop Adapter #2
1.....Software Loopback Interface 1
=====

IPv4 Route Table
=====
Active Routes:
Network Destination        Netmask          Gateway           Interface        Metric
0.0.0.0                    0.0.0.0          10.0.2.2          10.0.2.15         25
0.0.0.0                    0.0.0.0          192.168.1.200     192.168.1.119     25
10.0.2.0                  255.255.255.0    On-link           10.0.2.15         281
10.0.2.15                 255.255.255.255  On-link           10.0.2.15         281
```

☐ A. ipconfig /all

☐ B. route -s

☐ C. netstat -rn

☐ D. netstat

☐ E. None of these answers are correct

ANSWER

- + What command was used on a laptop running Microsoft Windows OS in order to obtain the output shown here? [1.10]

```
C:\Users\Keith Bogart>netstat -rn
=====
Interface List
11...08 00 27 1a d3 37 .....Intel(R) PRO/1000 MT Desktop Adapter
2...08 00 27 cc 2b cf .....Intel(R) PRO/1000 MT Desktop Adapter #2
1.....Software Loopback Interface 1
=====

IPv4 Route Table
=====
Active Routes:
Network Destination        Netmask          Gateway           Interface        Metric
0.0.0.0                  0.0.0.0          10.0.2.2          10.0.2.15         25
0.0.0.0                  0.0.0.0          192.168.1.200     192.168.1.119     25
10.0.2.0                255.255.255.0    On-link           10.0.2.15         281
10.0.2.15               255.255.255.255  On-link           10.0.2.15         281
```

☐ A. ipconfig /all

☐ B. route -s



C. netstat -rn



D. netstat



E. None of these answers are correct



Question-21

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Question-21

- + What command was used on a MacBook running macOS in order to obtain the output shown here? [1.10]

```
Keith-Bogart:~ keithbogart$ [REDACTED]  
en0: flags=8863<UP,BROADCAST,SMART,RUNNING,SIMPLEX,MULTICAST> mtu 1500  
options=6463<RXCSUM,TXCSUM,TS04,TS06,CHANNEL_IO,PARTIAL_CSUM,ZEROINVERT_  
CSUM>  
ether f0:18:98:64:77:b8  
inet6 fe80::1826:efe9:cf93:3f65%en0 prefixlen 64 secured scopeid 0x6  
inet 192.168.0.4 netmask 0xffffffff broadcast 192.168.0.255  
nd6 options=201<PERFORMNUD,DAD>  
media: autoselect  
status: active
```

☐ A. `ipconfig /all`

☐ B. `ifconfig`

☐ C. `netstat -rn`

☐ D. `ifconfig /all`

☐ E. None of these answers are correct

ANSWER

- + What command was used on a MacBook running macOS in order to obtain the output shown here? [1.10]

```
Keith-Bogart:~ keithbogart$ ifconfig
en0: flags=8863<UP,BROADCAST,SMART,RUNNING,SIMPLEX,MULTICAST> mtu 1500
    options=6463<RXCSUM,TXCSUM,TS04,TS06,CHANNEL_IO,PARTIAL_CSUM,ZEROINVERT_
CSUM>
    ether f0:18:98:64:77:b8
    inet6 fe80::1826:efe9:cf93:3f65%en0 prefixlen 64 secured scopeid 0x6
    inet 192.168.0.4 netmask 0xffffffff broadcast 192.168.0.255
    nd6 options=201<PERFORMNUD,DAD>
    media: autoselect
    status: active
```

☐ A. ipconfig /all

☒ B. ifconfig

☐ C. netstat -rn

☐ D. ifconfig /all

☐ E. None of these answers are correct



Thanks for Watching!