

Quiz: Classless Inter Domain Routing

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1. Your Application Server IP Address is 172.20.30.75 and it is part of 172.20.30.0/24 subnet. Your database needs to be accessible only from this application server. What IP Address would you specify in the database firewall?
 - A. 172.20.30.75/24
 - B. 172.20.30.0/24
 - C. 172.20.30.75/32
 - D. 172.20.30.0/32
2. You have defined an IPv4 subnet with /24 CIDR block. How many hosts can you connect to each subnet?
 - A. 256 hosts
 - B. 2^{32} hosts
 - C. 24 hosts
 - D. 251 hosts
3. How many machines can you add to a 10.0.0.0/24 subnet? Pick the nearest number
 - A. 2^{16} machines
 - B. 2^{32} machines
 - C. 2^8 machines
 - D. 2^{24} machines
4. How many machines can you add to a 10.0.0.0/16 network? Pick nearest number
 - A. 2^{16} machines
 - B. 2^{32} machines
 - C. 2^8 machines
 - D. 2^{24} machines
5. Your network is defined using the 192.168.0.0/16 CIDR block. You plan to reserve 5 bits for subnet addressing. What would be a suitable CIDR block to use for subnets?
 - A. 192.168.0.0/16
 - B. 192.168.0.0/32
 - C. 192.168.0.0/24
 - D. 192.168.0.0/21

Answers:

1. C - A specific IP address can be identified with /32 notation
2. D - Since subnet is defined using /24 address, last 8 bits (32-24) are used for host addressing. With 8 bits, you can have up to 2^8 possible hosts. Out of this, AWS reserves first four IP addresses and last one IP address in every subnet for IP networking. These five addresses cannot be used for hosts. So, $256-5 = 251$
3. C - 8 bits are available for host addressing in a /24 subnet ($32 - 24 = 8$)
4. A - 16 bits are available for host addressing ($32-16 = 16$)

5. Since 5 bits are reserved for subnet addressing. So, $16 + 5 = 21$ bits are reserved for network and subnet identifiers. Remaining 11 bits ($32 - 21$) are used for host addresses