Google Discussions

EXAM ASSOCIATE CLOUD ENGINEER TOPIC 1 QUESTION 2 DISCUSSION

Actual exam question from Google's Associate Cloud Engineer
Question #: 2
Topic #: 1
[All Associate Cloud Engineer Questions]

You need to create a custom VPC with a single subnet. The subnet's range must be as large as possible. Which range should you use?

A. 0.0.0.0/0

B. 10.0.0.0/8

C. 172.16.0.0/12

D. 192.168.0.0/16

Show Suggested Answer

by passnow at *March 14, 2020, 11 p.m.*

Comments

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Khaled_Rashwan Highly Voted 1 month ago
B is correct
to calculate the range size for a network:

to calculate the range size of a network
10.0.0.0/x for example
range= 2^(32-x)
then the smaller x, the larger the range
0.0.0.0/0 is not a valid network ip but is the broadcast ip

upvoted 14 times

ovokpus Highly Voted 3 weeks, 6 days ago

Selected Answer: B

In Google Cloud Platform (GCP), when creating a VPC network, you should use the IP ranges that are reserved for private networks as defined by the RFC 1918. Here are the private IP address ranges defined by RFC 1918:

10.0.0.0 to 10.255.255.255 (10.0.0.0/8)
172.16.0.0 to 172.31.255.255 (172.16.0.0/12)
192.168.0.0 to 192.168.255.255 (192.168.0.0/16)
From the provided options:

A. 0.0.0.0/0: This is not a private IP address range. It represents all possible IP addresses.

B. 10.0.0.0/8: This is a private IP range that covers all IP addresses from 10.0.0.0 to 10.255.255.255. It's the largest range among the options.

C. 172.16.0.0/12: This is a private IP range, but it's smaller than 10.0.0.0/8.

D. 192.168.0.0/16: This is also a private IP range, but it's smaller than both B and C.

So, if you want the subnet's range to be as large as possible:

The correct answer is B. 10.0.0.0/8.

upvoted 7 times

rxvybgfbhlswfllbxa Most Recent 2 weeks, 4 days ago

I will become an Associate Cloud Engineer

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theanupmaurya 3 weeks, 3 days ago

The correct answer is B. 10.0.0.0/8.

Here's why:

Class A: 10.0.0.0/8 provides the largest subnet range with 16,777,214 possible IP addresses. This is because it uses only the first 8 bits for the network address, leaving the remaining 24 bits for host addresses.
Class B: 172.16.0.0/12 provides a smaller range with 1,048,574 possible IP addresses.
Class C: 192.168.0.0/16 provides an even smaller range with 65,534 possible IP addresses.
0.0.0.0/0: This is not a valid subnet range for a VPC. It represents the entire internet.
Therefore, using the 10.0.0.0/8 range for your single subnet VPC will provide you with the maximum number of available IP addresses.

upvoted 1 times

Buruguduystunstugudunstuy 3 weeks, 6 days ago

Selected Answer: B

Option B is the correct answer.

To create a custom VPC with a single subnet with the largest possible range, you should use the range 10.0.0.0/8. This range consists of 16,777,216 addresses, which is more than enough for most use cases.

upvoted 1 times

YourCloudGuru 3 weeks, 6 days ago

B is the correct answer: 10.0.0.0/8.

This is the largest subnet range that you can use in a custom VPC. It has 16,777,216 addresses, which is more than enough for most organizations.

The other options are smaller subnet ranges:

0.0.0.0/0 is the entire IPv4 address space. It is not recommended to use this range for a subnet, because it would give you too many IP addresses to manage.

172.16.0.0/12 has 1,048,576 addresses.

192.168.0.0/16 has 65,536 addresses.

upvoted 1 times

JB28 3 weeks, 6 days ago

The best option is **B. 10.0.0.0/8**.

This is because the `/8` in `10.0.0.0/8` denotes that only the first 8 bits (out of 32 bits in an IPv4 address) are reserved for identifying the network part of the address. The remaining 24 bits are available for host addresses within the network, which makes the subnet range as large as possible.

Option A (`0.0.0.0/0`) represents all possible IPv4 addresses, which is not a valid or safe range for a single subnet. Options C (`172.16.0.0/12`) and D (`192.168.0.0/16`) have more bits reserved for the network part of the address, which leaves fewer bits for host addresses within the network, thus making the subnet range smaller than `10.0.0.0/8`. Therefore, option B is the best choice for a subnet with the largest possible range.

upvoted 2 times

subha.elumalai 5 months ago

Correct Answer is A

upvoted 1 times

azgi 5 months, 2 weeks ago

A (0.0.0.0/0) is invalid. I tried creating a subnet with such a CIRD range and although the cloud console UI allowed it, I got an error at a later stage saying that I specified an invalid CIDR range for my subnet.

upvoted 1 times

7b00725 6 months, 3 weeks ago

Selected Answer: B

B is correct

upvoted 1 times

Samii150406 7 months, 2 weeks ago

even though option B (10.0.0.0/8) offers a larger total number of addresses, within a single subnet, the /12 prefix (172.16.0.0/12) provides more usable IP addresses due to a smaller network portion dedicated to the subnet itself. This allows you to assign more IP addresses to devices within that single subnet.

upvoted 1 times

MiscoMove 10 months, 1 week ago

Selected Answer: B

B is Correct!

upvoted 1 times

AndyMandy 10 months, 2 weeks ago

Selected Answer: B

Custom VPC

upvoted 1 times

thewalker 11 months ago

Selected Answer: B

B is correct

upvoted 1 times

dev_gcp 11 months, 1 week ago

Selected Answer: B

B is correct

upvoted 1 times

BAofBK 11 months, 2 weeks ago

The answer is B

upvoted 1 times

guicane 1 year ago

Selected Answer: B

A makes no sense, B is correct

upvoted 1 times

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