## Test your knowledge Private Network

What does the acronym VPC stand for? Virtual Private Cloud

What is a VPC? A virtual version of a physical network

What are your public and private subnet IDs? A public subnet is routed to an internet gateway (10.0.1.0/16), a private subnet doesn’t have a router to the internal gateway (10.0.2.0/.24)

What is the purpose of your public subnet and the private subnet?

Public subnets send outbound traffic directly to the internet, private subnets can’t but can access the internet by using a network address translation gateway that resides in the public subnet.

What are the two routes in the public subnet? (*Hint: Look at your route tables.*)

10.0.0.0/24 and 10.0.0.0/16

What is the purpose of the internet gateway?

A gateway that you attach to your VPC to enable communication between resources in your VPC and the internet

Can resources launched in your private subnet communicate to the internet gateway directly?

No, private subnets don’t route to an internet gateway directly

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What is

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NAT: Network Address Translation, A NAT gateway can enable instances in a private subnet to connect to the internet or other AWS services, but prevent the internet from initiating a connection with those instances.

What is the allowed block size for a VPC? Between a /16 and /28

What is the minimum size for a VPC subnet? /28 (or 14 ip addresses) for iPv4

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**Private**

**Network**

# Resources

**Reference tools**

CIDR notation

Subnet calculator

VPC and subnet documentation

## CIDR reference

The following is a list of CIDR Blocks, with available IP range, subnet mask, and IP addresses you can use as reference:

|  |  |  |  |
| --- | --- | --- | --- |
| **CIDR Block** | **IP Range** | **Subnet Mask** | **IP Qty** |
| 10.0.0.0/32 | 10.0.0.0 – 10.0.0.0 | 255.255.255.255 | 1 |
| 10.0.0.0/31 | 10.0.0.0 – 10.0.0.1 | 255.255.255.254 | 2 |
| 10.0.0.0/30 | 10.0.0.0 – 10.0.0.3 | 255.255.255.252 | 4 |
| 10.0.0.0/29 | 10.0.0.0 – 10.0.0.7 | 255.255.255.248 | 8 |
| 10.0.0.0/28 | 10.0.0.0 – 10.0.0.15 | 255.255.255.240 | 16 |
| 10.0.0.0/27 | 10.0.0.0 – 10.0.0.31 | 255.255.255.224 | 32 |
| 10.0.0.0./26 | 10.0.0.0 – 10.0.0.63 | 255.255.255.192 | 64 |
| 10.0.0.0/25 | 10.0.0.0 – 10.0.0.127 | 255.255.255.128 | 128 |
| 10.0.0.0/24 | 10.0.0.0 – 10.0.0.255 | 255.255.255.0 | 256 |
| 10.0.0.0/16 | 10.0.0.0 – 10.0.255.255 | 255.255.0.0 | 65536 |

## Assessments

### Key concepts and terminology assessment

1. A virtual private cloud (VPC) is a virtual network dedicated to your AWS account.

True

False

Say: A virtual private cloud (VPC) is a virtual network dedicated to your AWS account. Is this true or false? Explain your reasoning. The Amazon Virtual Private Cloud (Amazon VPC) enables AWS resources into a virtual network that is defined.

1. A subnet is a range of IP addresses in your VPC.

True

False

Say: A subnet is a range of IP addresses in your VPC. Is this true or false? Explain your reasoning. A subnet is a range of IP addresses that are used in the VPC

1. A route table is a set of rules, called tables, that are used to determine where network traffic is directed.

True

False

Say: A route table is a set of rules, called tables, that are used to determine where network traffic is directed. Is this true or false? Explain your reasoning. A routing table has routes, (the set rules) that are used to determine the direction of the network traffic.

1. An internet gateway is a gateway that you attach to your Amazon VPC to enable communication between resources in your VPC and the internet.

True False

Say: An internet gateway is a gateway that you attach to your VPC to enable communication between resources in your VPC and the internet. Is this true or false? Explain your reasoning. The internet gateway is a gateway that can be attached to a VPC to enable the communication between resources to that connected VPC and the internet

### Task assessment

1. You should create a default VPC when you want control over your infrastructure.

True

False

Say: In this activity, you created a non-default Amazon VPC. Did you create a default Amazon VPC for control over your infrastructure? Is this true or false? Explain your reasoning. A default VPC was already created before the non-default VPC was created for the activity. The infrastructure of the console was enabled to be controlled.

1. Why did you need to build a public subnet and a private subnet in this activity? Say: You created a public and private subnet. Explain why. The public subnet is for the internet connection and the private is for the NAT gateway connection.

**VIRTUAL**

**PRIVATE**

**NETWORK**



1. What was the main reason for creating an internet gateway?

Say: You needed to create an internet gateway for BitBeat. Why. To connect the Amazon VPC side to the public internet.

1. How did you enable BitBeat’s web servers to be able to respond to customers’ requests? Say: You needed to enable BitBeat’s web servers to respond to requests. How did you do that? Connecting the public subnets to the public internet allowing access to the web server, creating an instance for the VPC to the internet.

### Performance-based assessment

Build a new Amazon VPC in the AWS Management Console without referring to the steps in this activity.

**VIRTUAL**

**PRIVATE**

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As you create your Amazon VPCs, document your work with a diagram that includes labels and captions. Include screenshots of important pieces that can be included in a lab writeup.