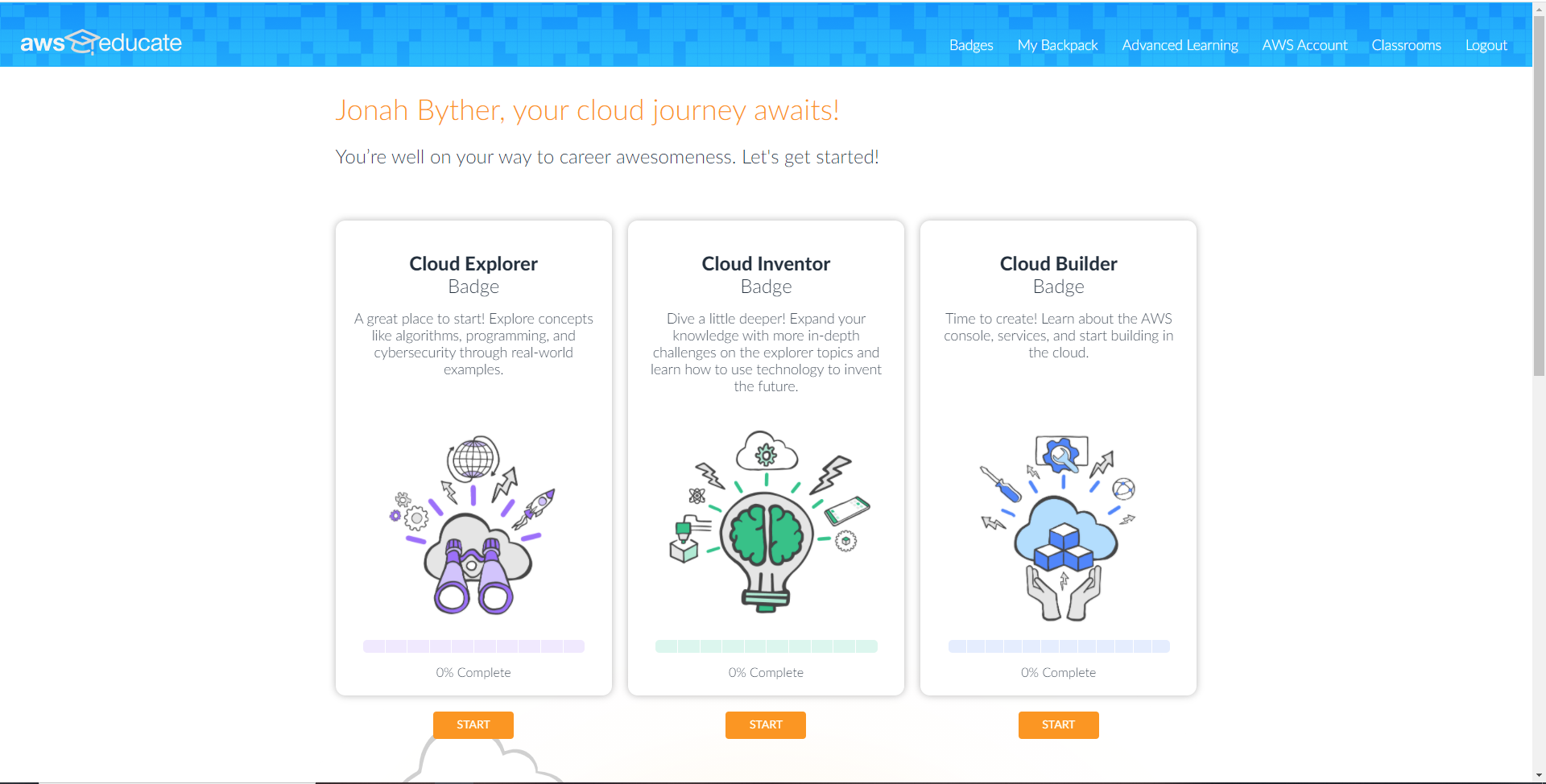
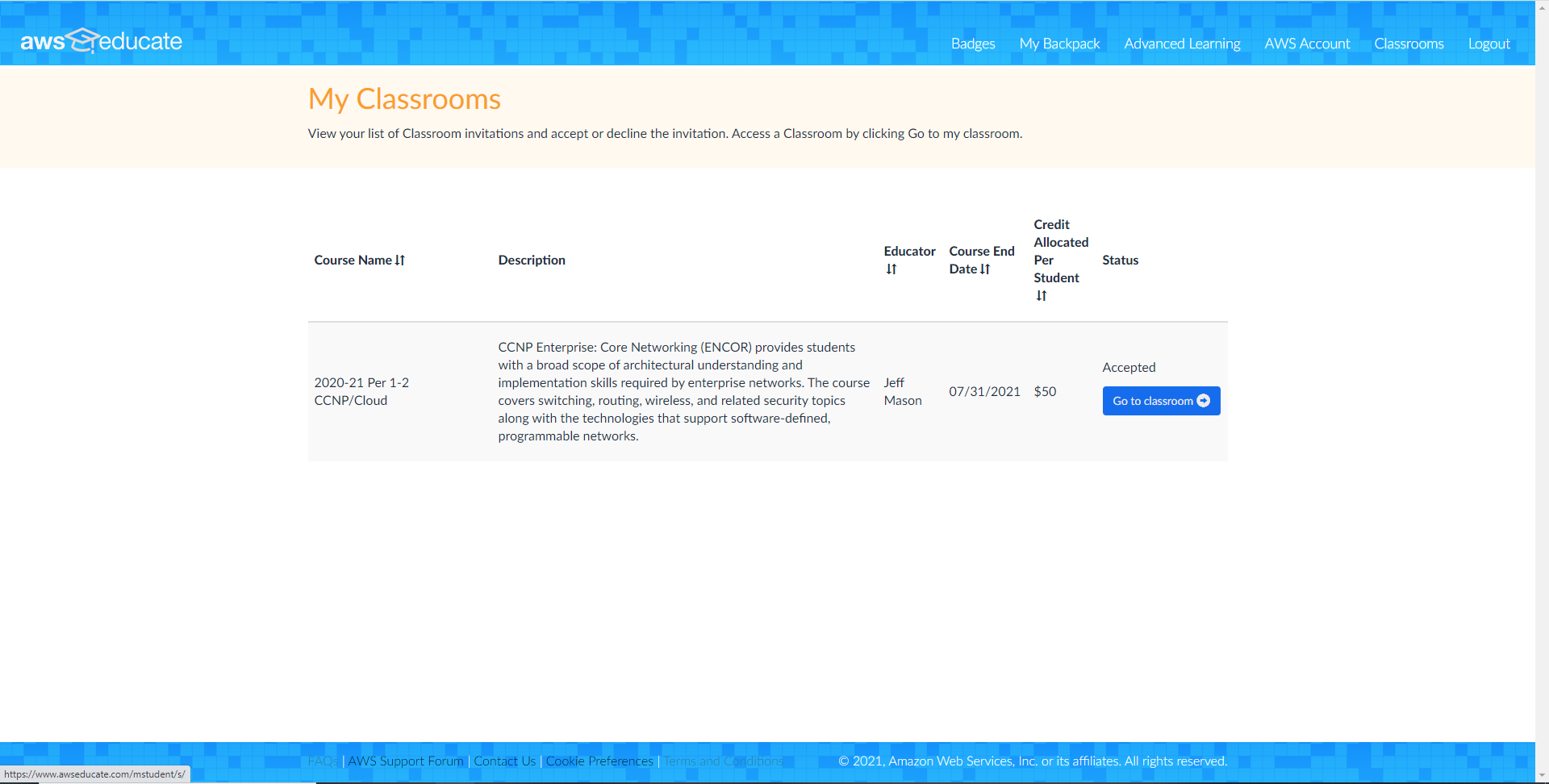
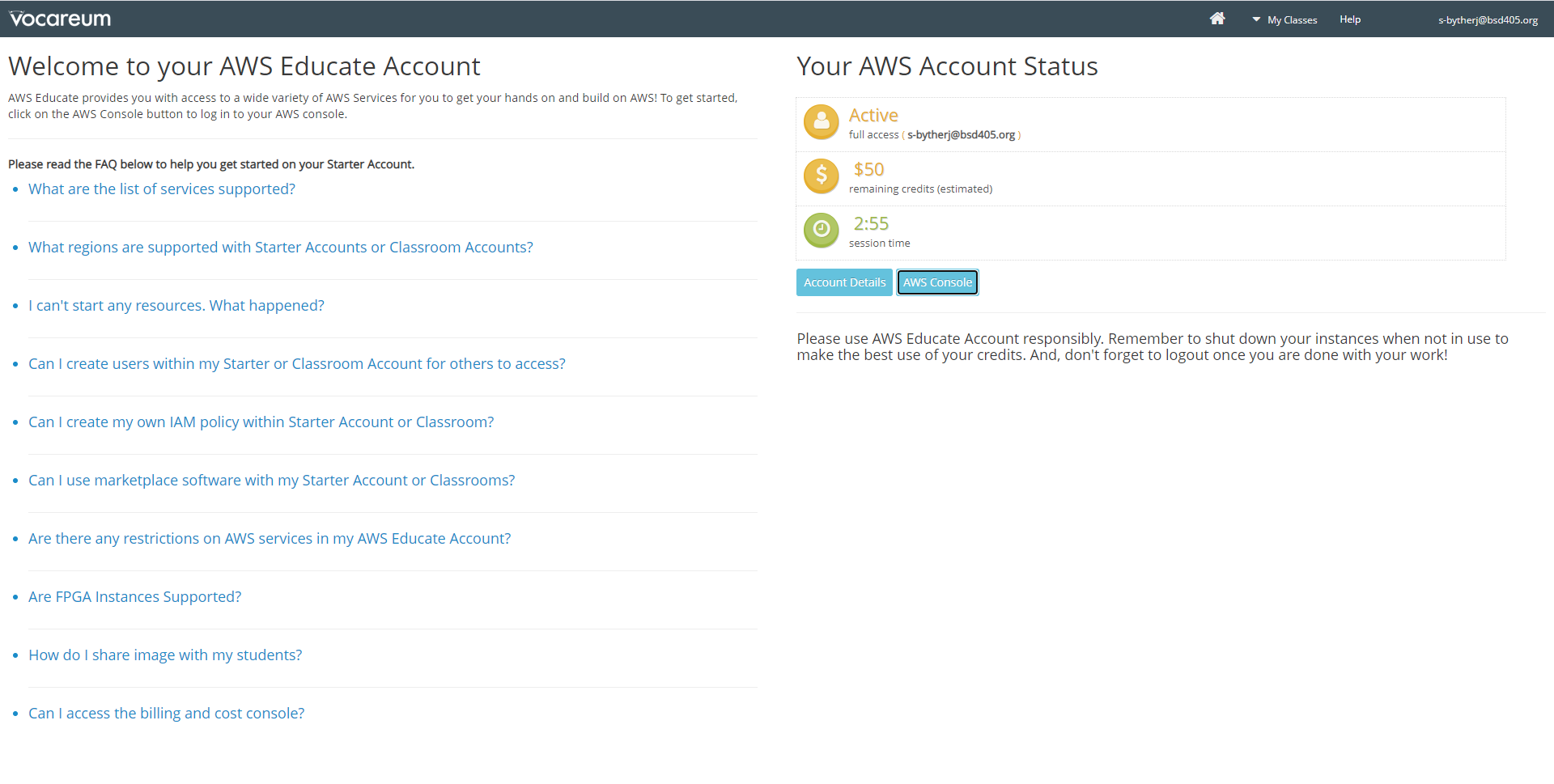
**Purpose:**

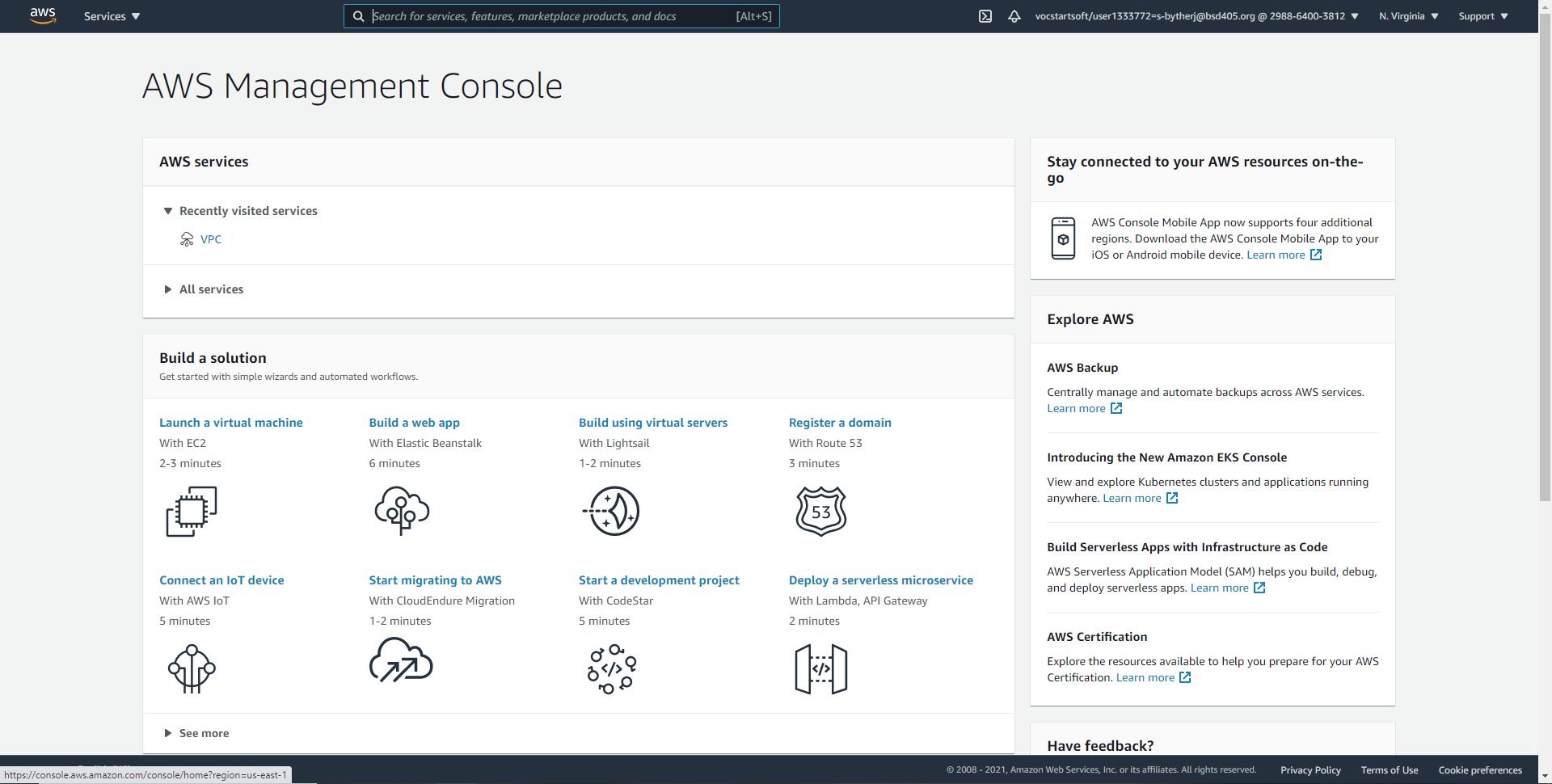
We will learn how to create a VPC, which stand for Virtual Private Cloud. We will create subnets, route tables, and internet gateways.

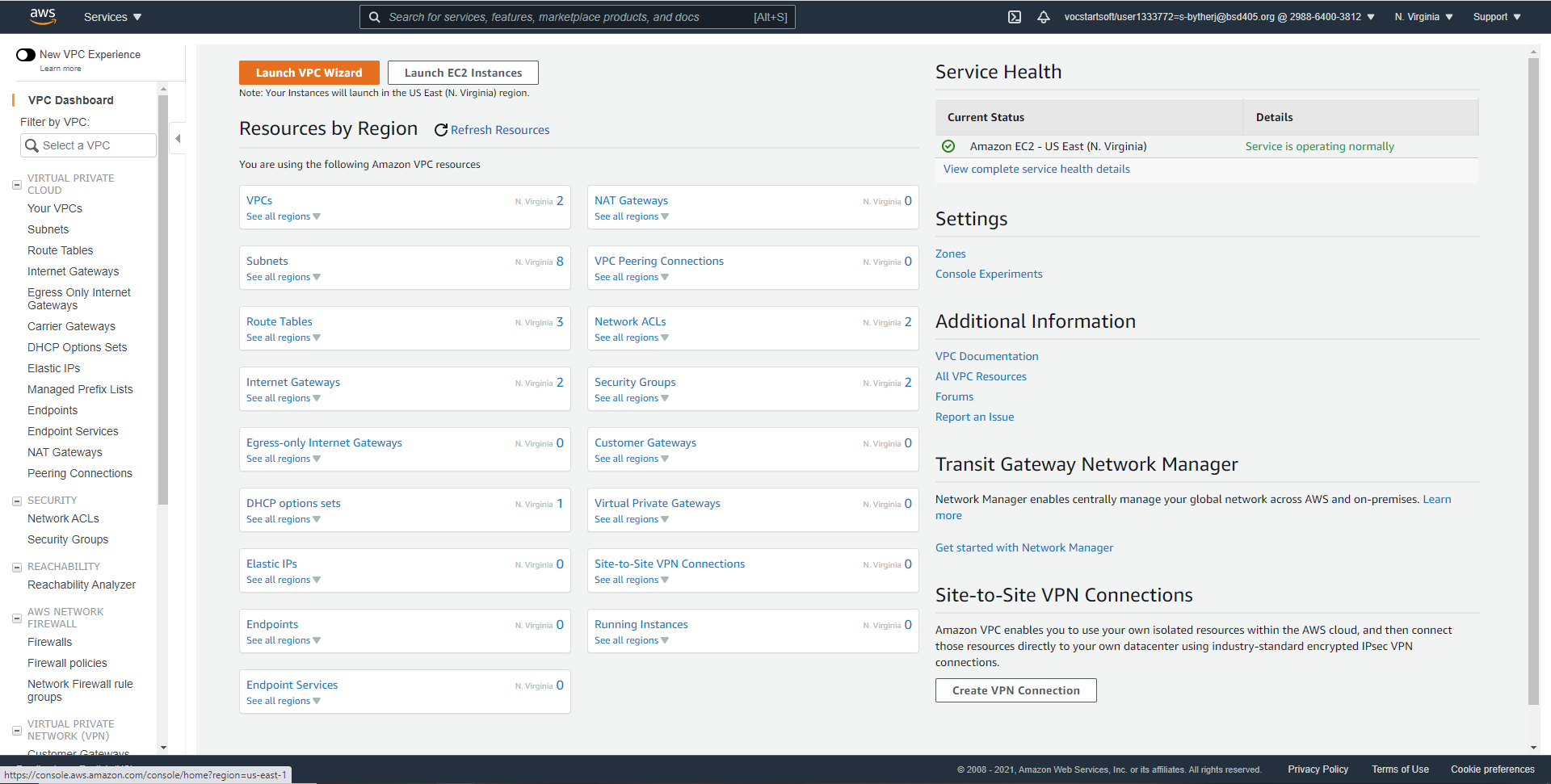
**Screenshots:**

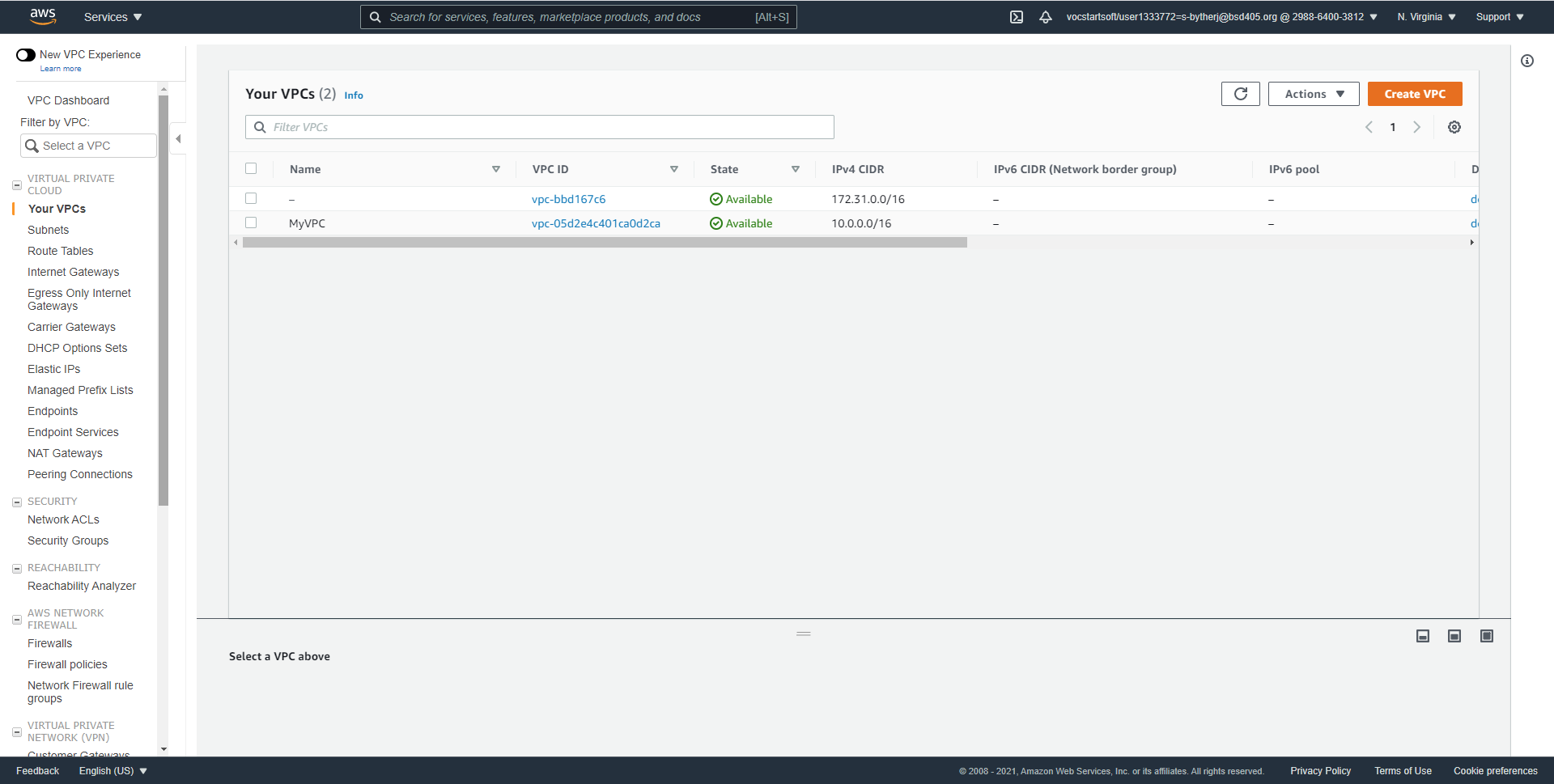


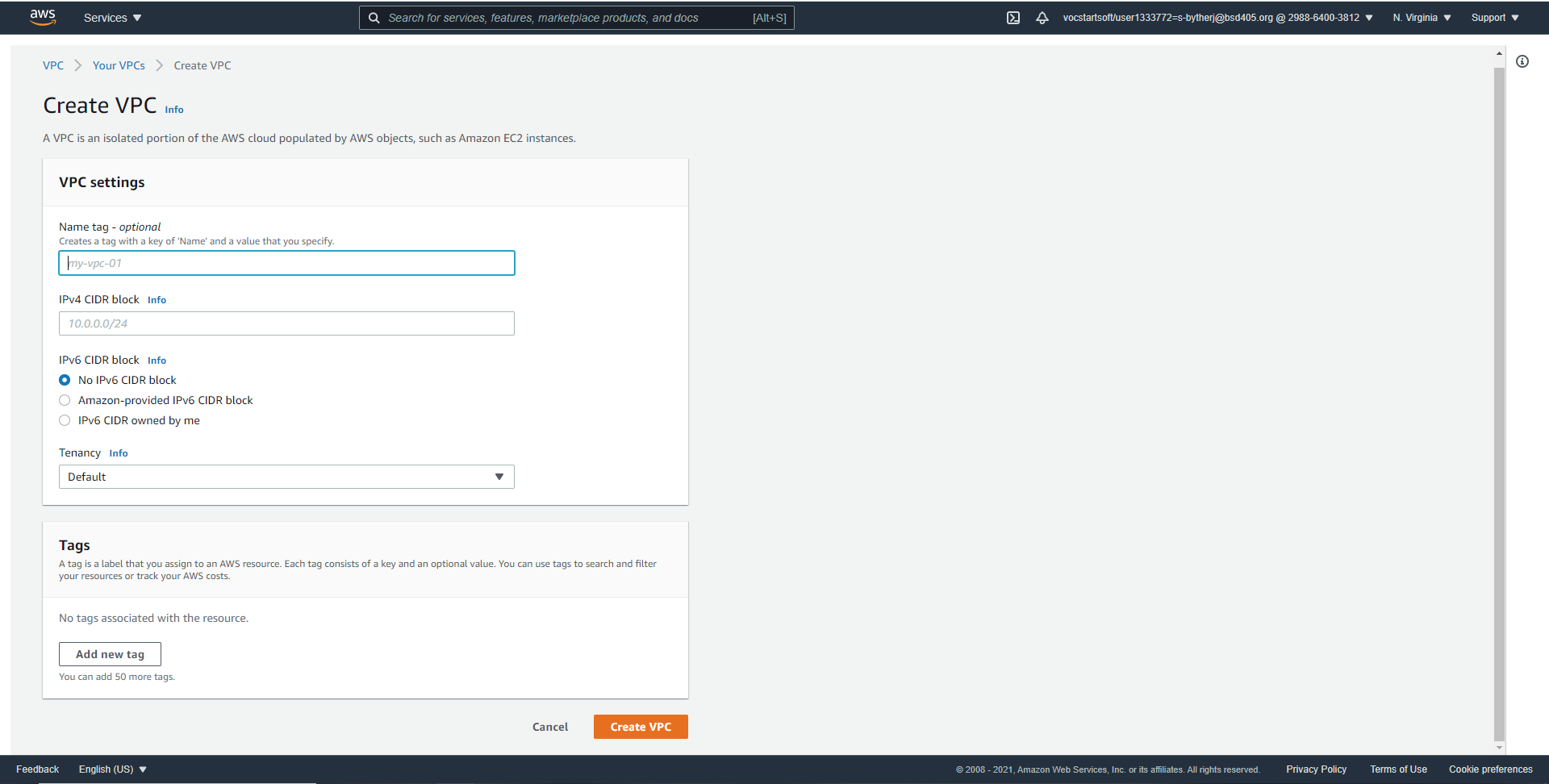


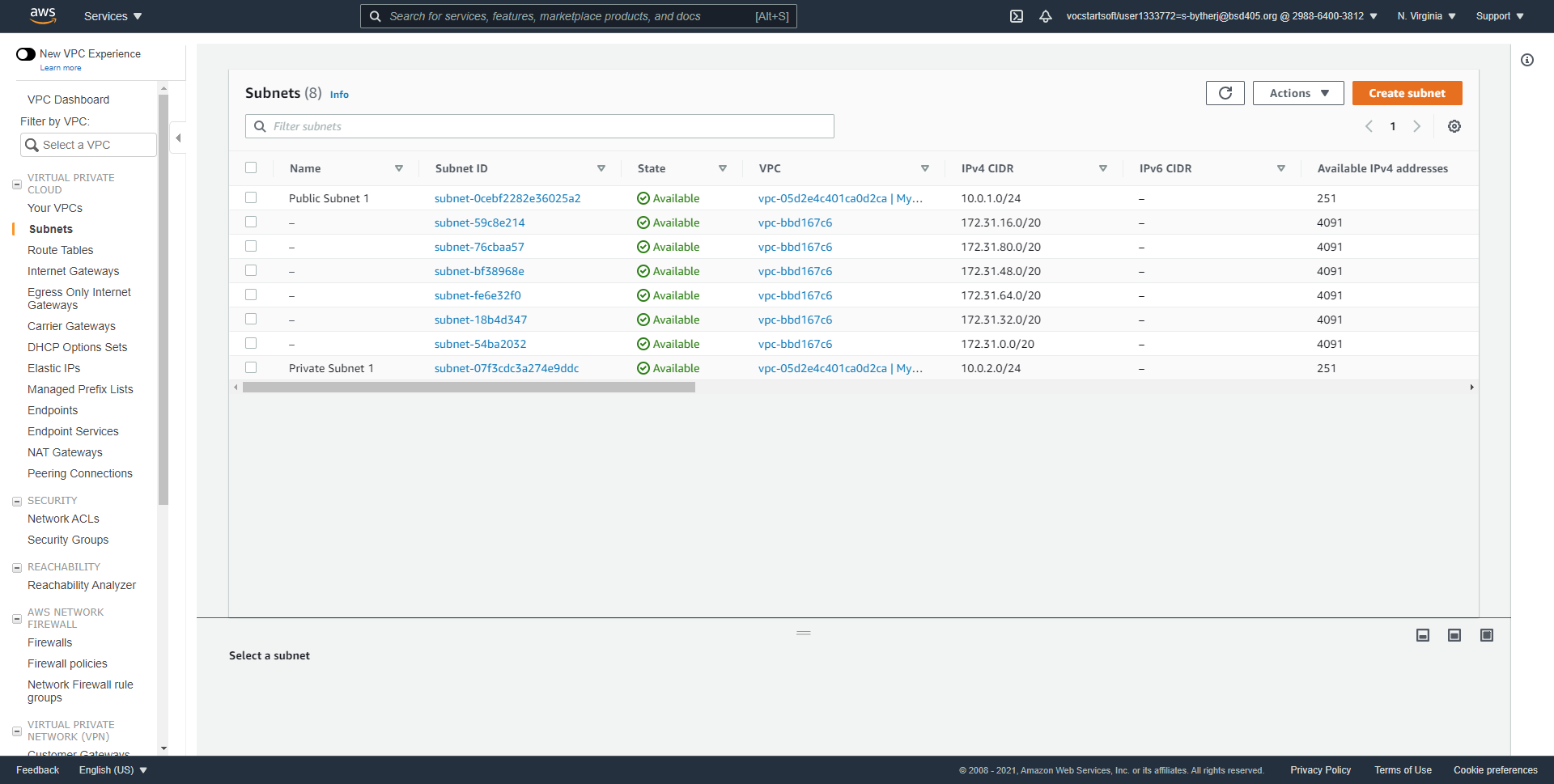


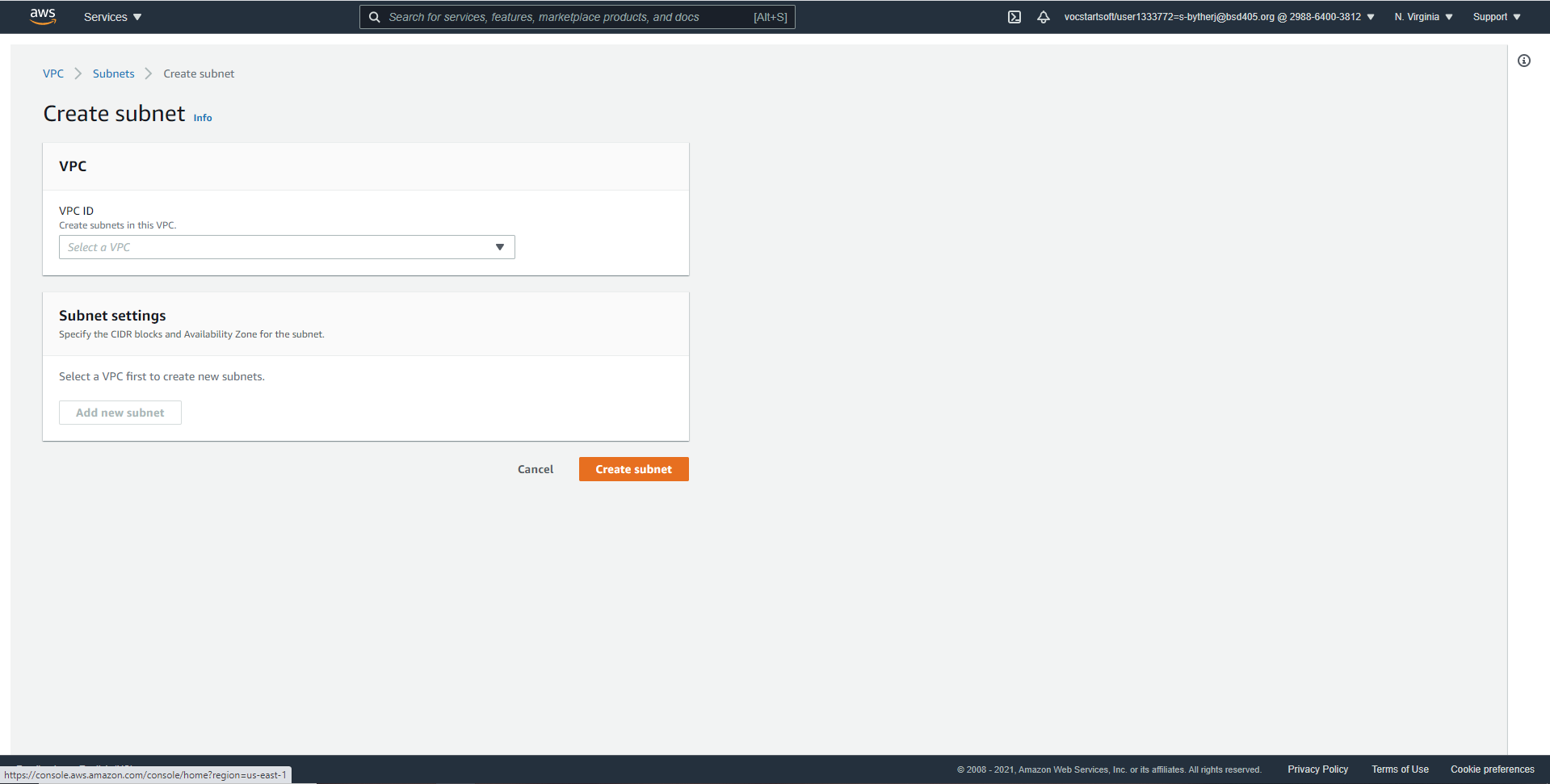


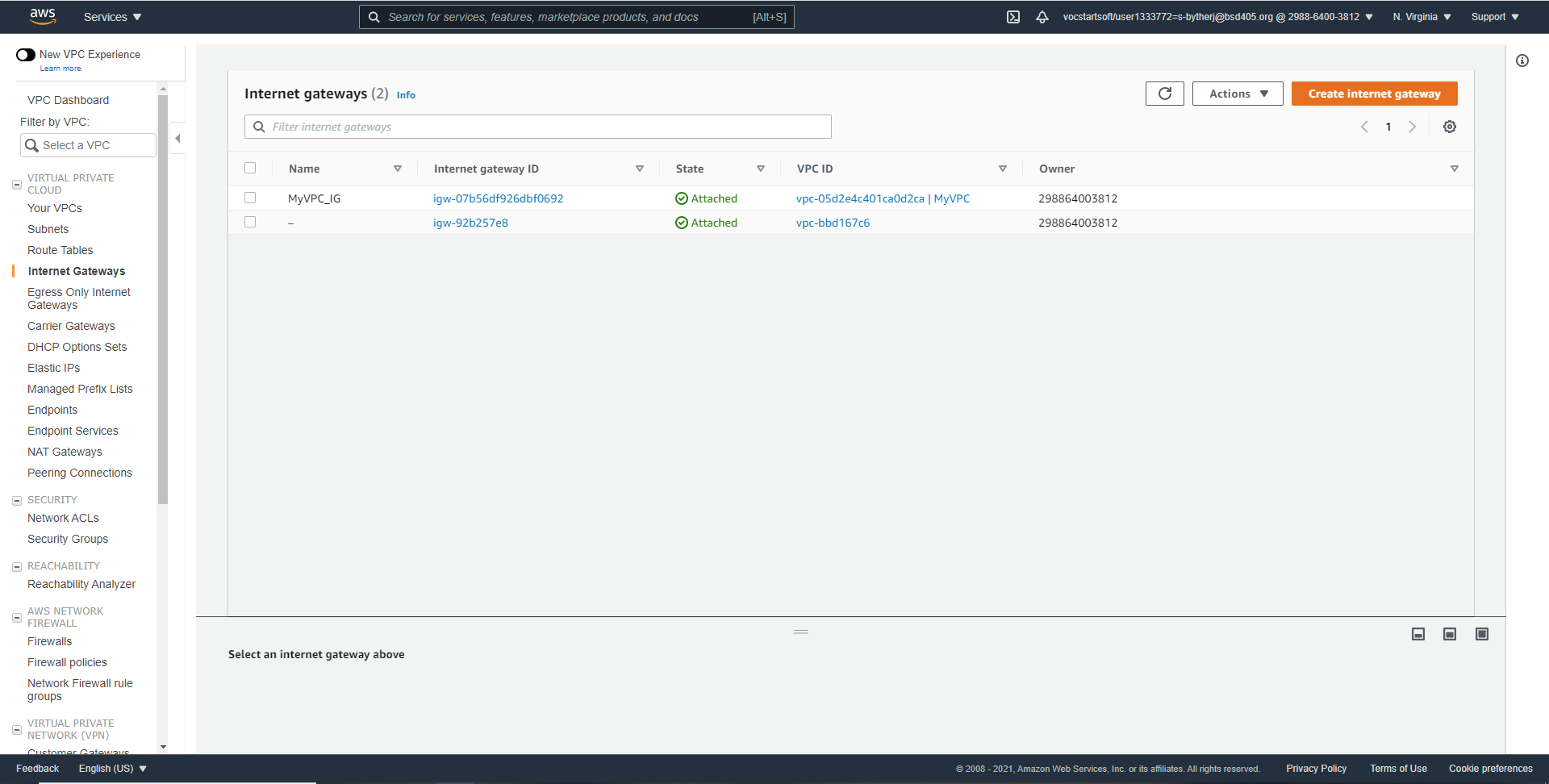


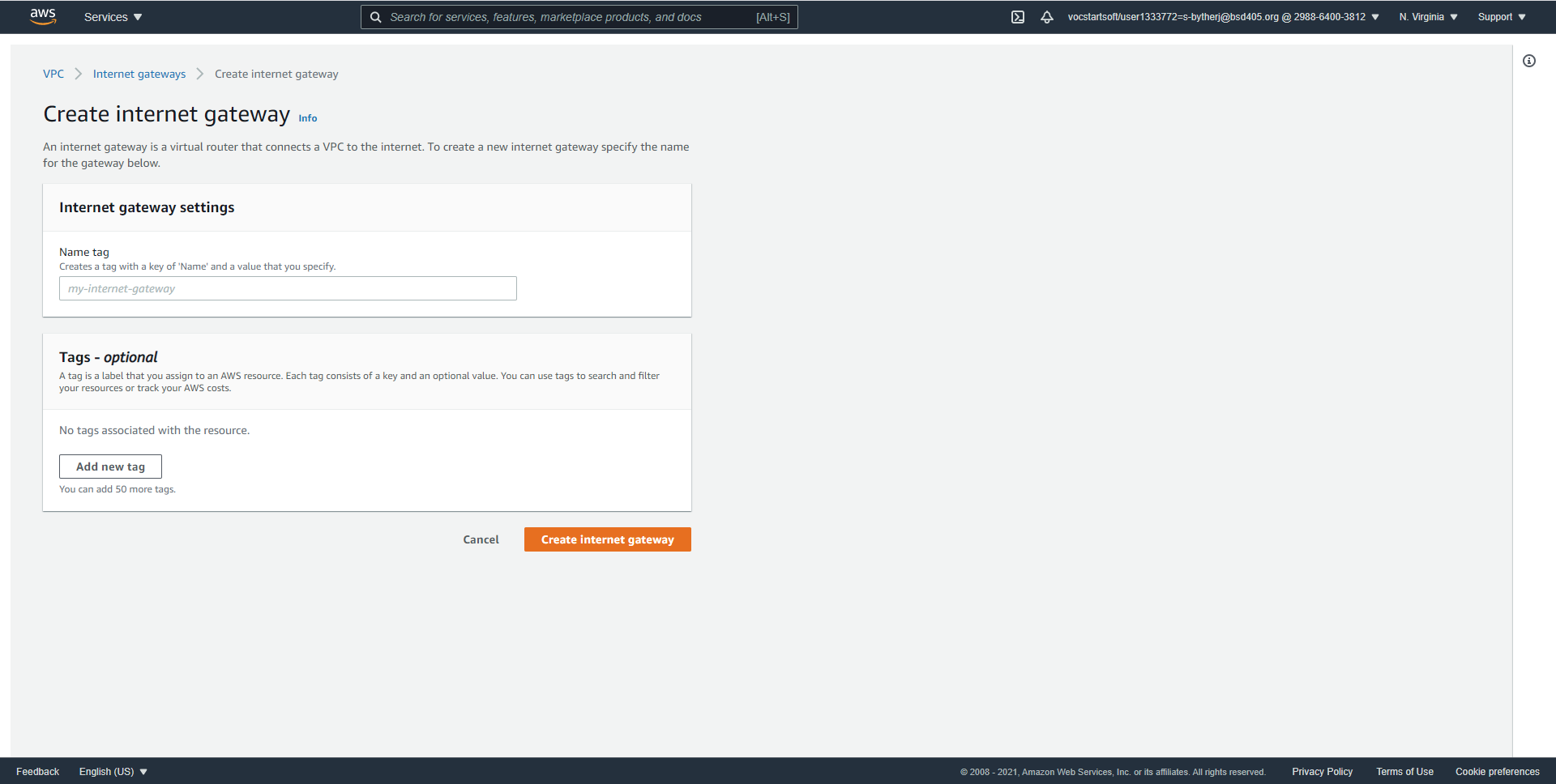


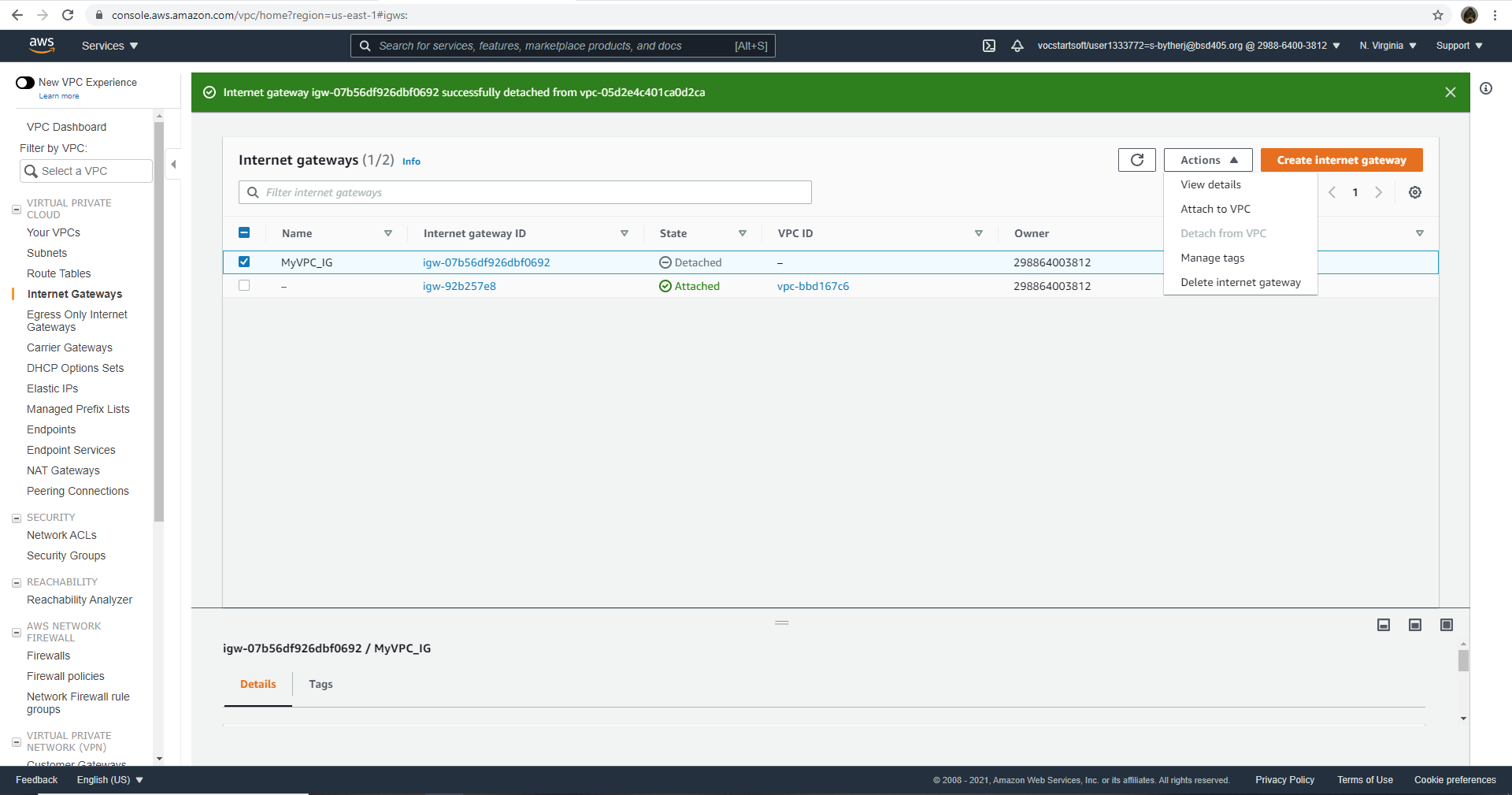


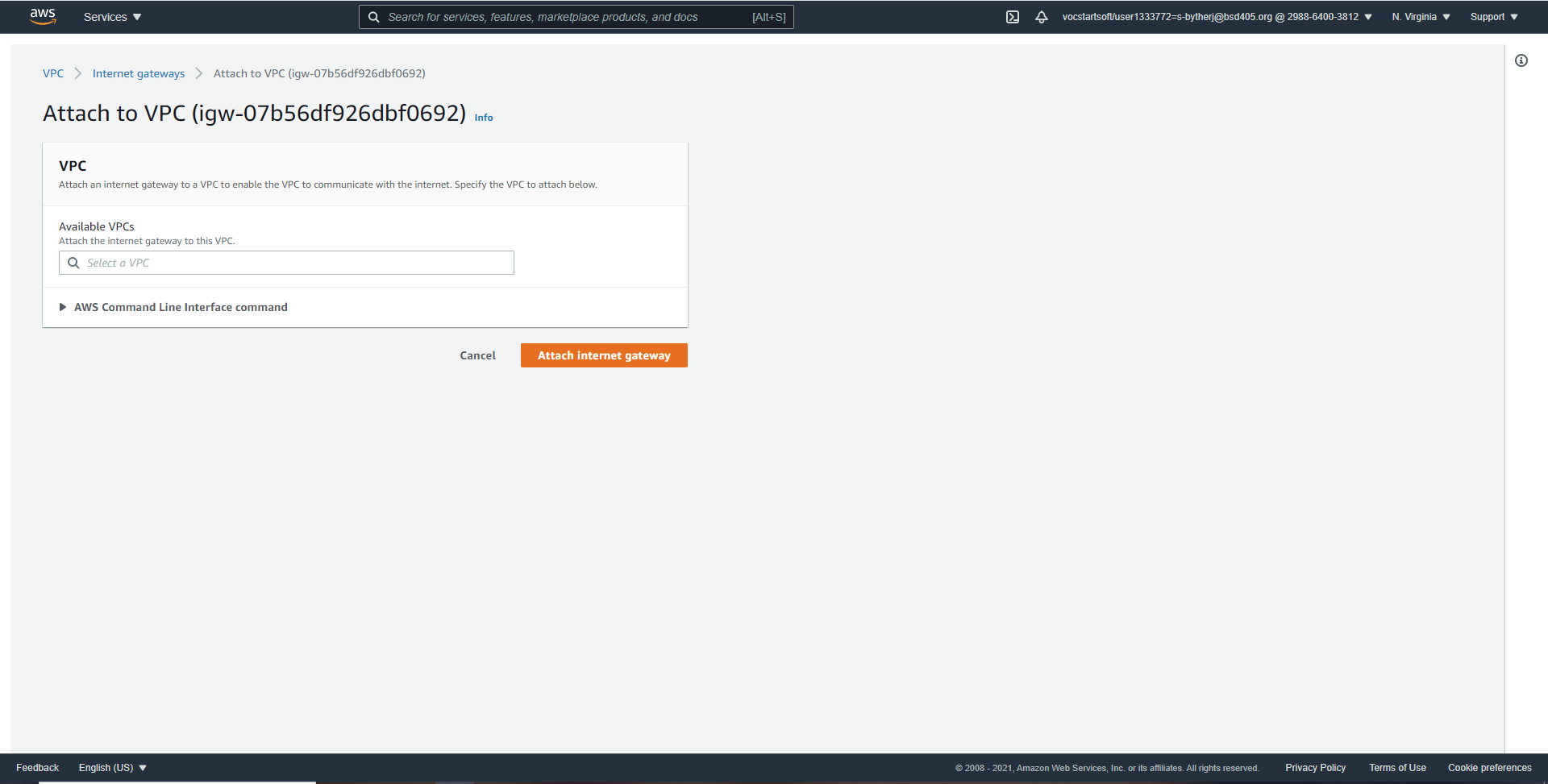


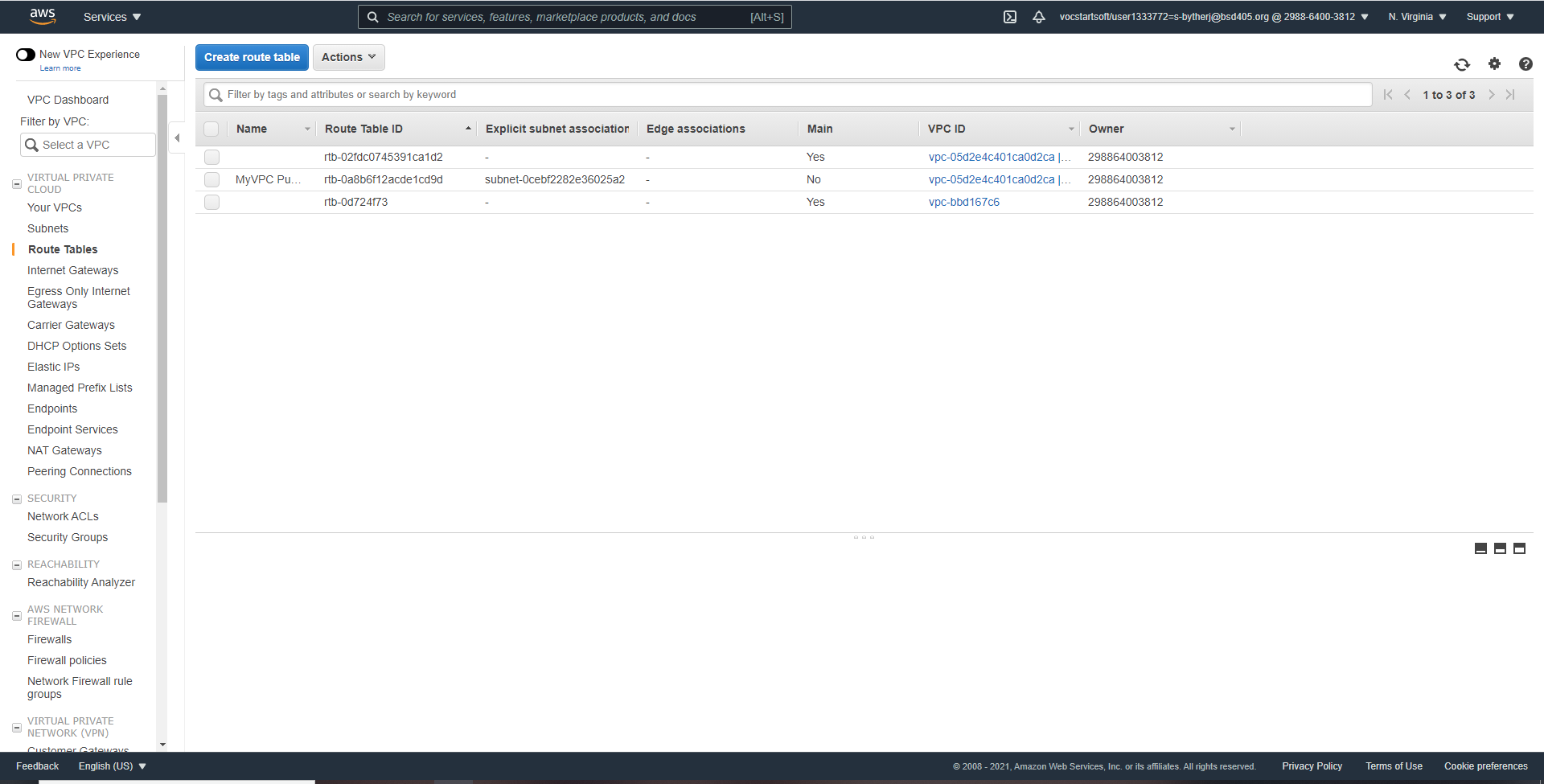


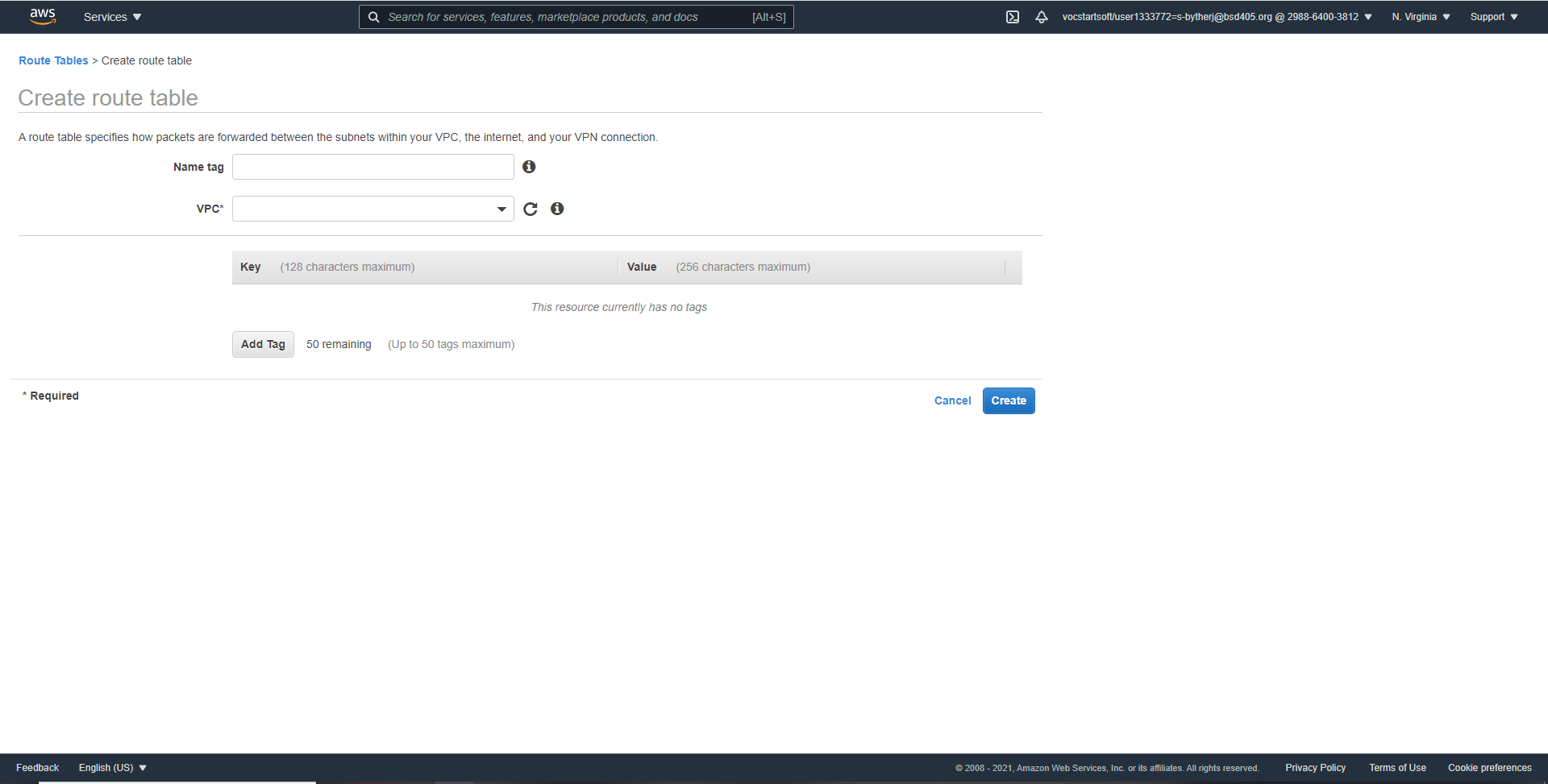


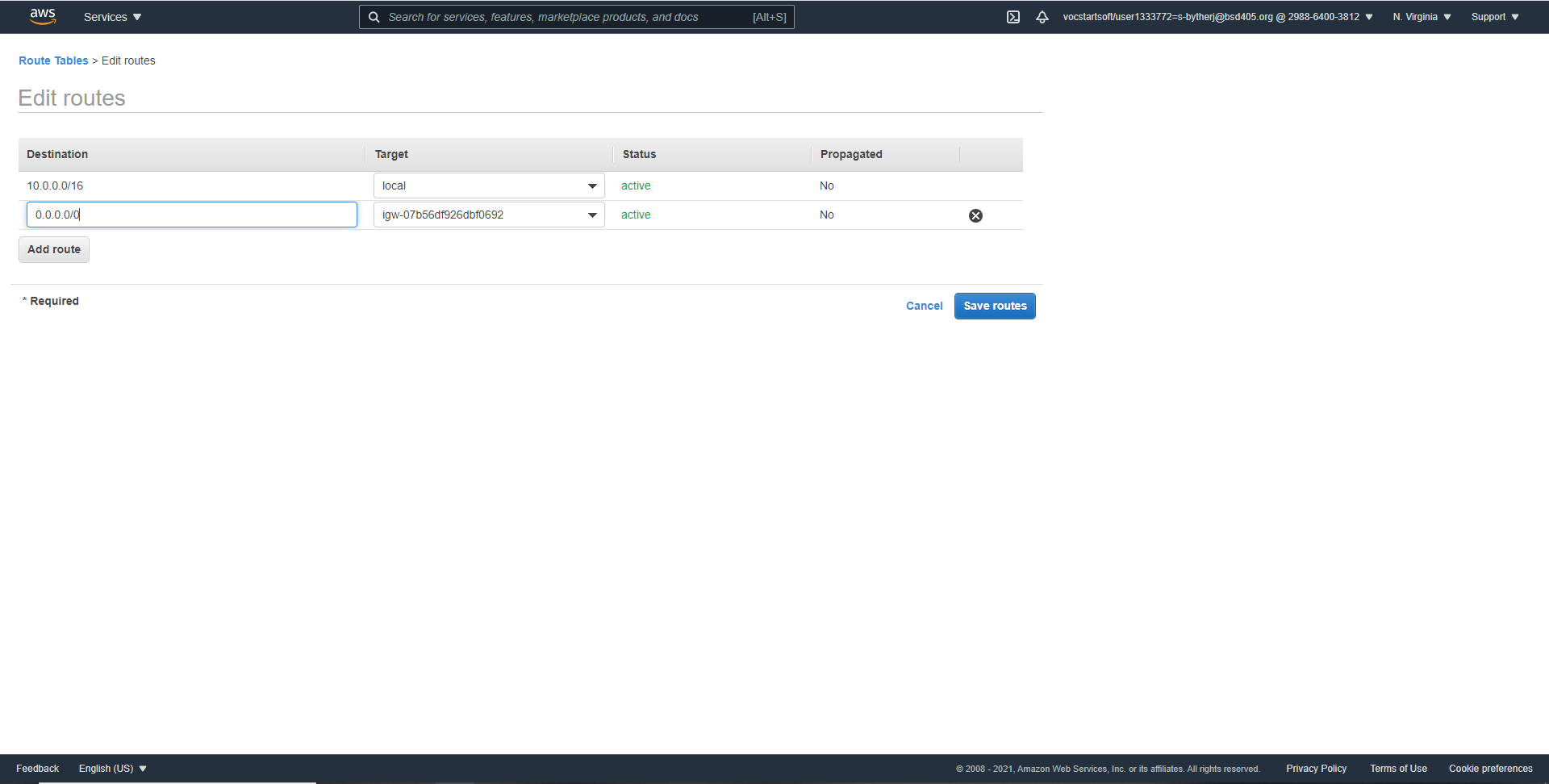












**Problems:**

A problem I had was actually getting to the VPC dashboard. I had to go to classrooms and then go to the AWS console from there, and then I could go to the VPC dashboard.

## Test your knowledge Private Network

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

What is a VPC? It is a thing that enables you to launch AWS resources into a virtual network that you've defined

What are your public and private subnet IDs?

The public subnet ID is 10.0.1.0/24 and the private subnet is 10.0.2.0/24

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

The purpose of the public one is so people can access the website and the private one is for the website to reach the servers

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

10.0.0.0/16 and 0.0.0.0/0

What is the purpose of the internet gateway?

It is so the routes in the routing table have a target and to perform NAT for the IPv4 addresses

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

No because it is private



What is

a

NAT? What is

a

NAT

g

ateway? A NAT gateway helps a private subnet connect to the internet

What is the allowed block size for a VPC? The allowed block size is a /16 netmask

What is the minimum size for a VPC subnet? /28 netmask

8

**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.

Because you build the VPC in the AWS account.

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.

Because if it wasn’t all the IP addresses, the internal gateway wouldn’t know some of the IP addresses.

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.

They direct traffic because the traffic would be lost without them.

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.

Because the VPC needs to be connected to the internet so the internet gateway helps it connect.

### 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.

Because you need to create a not-default VPC so control it.

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.

**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 private subnets to the 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?

I created a public subnet that the website was connected to so people could access the website.

### Performance-based assessment

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

**VIRTUAL**

**PRIVATE**

**NETWORK**



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.