

# Amazon Virtual Private Cloud (Amazon VPC)

## EXERCISE - 3.1

### Create a Custom Amazon VPC

1. Sign in to the AWS Management Console as an administrator or power user.
2. Select the Amazon VPC icon to launch the Amazon VPC Dashboard.
3. Create an Amazon VPC with a CIDR block equal to `192.168.0.0/16`, a name tag of `My First VPC`, and default tenancy.

You have created your first custom VPC.

## EXERCISE - 3.2

### Create Two Subnets for Your Custom Amazon VPC

1. Create a subnet with a CIDR block equal to `192.168.1.0/24` and a name tag of `My First Public Subnet`. Create the subnet in the Amazon VPC from Exercise 4.1, and specify an Availability Zone for the subnet (for example, `US-East-1a`).
2. Create a subnet with a CIDR block equal to `192.168.2.0/24` and a name tag of `My First Private Subnet`. Create the subnet in the Amazon VPC from Exercise 4.1, and specify a different Availability Zone for the subnet than previously specified (for example, `US-East-1b`).

You have now created two new subnets, each in its own Availability Zone. It's important to remember that one subnet equals one Availability Zone. You cannot stretch a subnet across multiple Availability Zones.

## EXERCISE - 3.3

### Connect Your Custom Amazon VPC to the Internet and Establish Routing

For assistance with this exercise, refer to the Amazon EC2 key pair documentation at:

<http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-key-pairs.html>

For additional assistance with this exercise, refer to the NAT instances documentation at:

[http://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/VPC\\_NAT\\_Instance.html#NATInstance](http://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/VPC_NAT_Instance.html#NATInstance)

1. Create an Amazon EC2 key pair in the same region as your custom Amazon VPC.
2. Create an IGW with a name tag of `My First IGW` and attach it to your custom Amazon VPC.
3. Add a route to the main route table for your custom Amazon VPC that directs Internet traffic (`0.0.0.0/0`) to the IGW.

4. Create a NAT gateway, place it in the public subnet of your custom Amazon VPC, and assign it an EIP.
5. Create a new route table with a name tag of **My First Private Route Table** and place it within your custom Amazon VPC. Add a route to it that directs Internet traffic (0.0.0.0/0) to the NAT gateway and associate it with the private subnet.

You have now created a connection to the Internet for resources within your Amazon VPC. You established routing rules that direct Internet traffic to the IGW regardless of the originating subnet.

### EXERCISE - 3.4

#### Launch an Amazon EC2 Instance and Test the Connection to the Internet

1. Launch a t2.micro Amazon Linux AMI as an Amazon EC2 instance into the public subnet of your custom Amazon VPC, give it a name tag of **My First Public Instance**, and select the newly-created key pair for secure access to the instance.
2. Securely access the Amazon EC2 instance in the public subnet via SSH with the newly-created key pair.
3. Execute an `update` to the operating system instance libraries by executing the following command:

```
# sudo yum update -y
```

4. You should see output showing the instance downloading software from the Internet and installing it.

You have now provisioned an Amazon EC2 instance in a public subnet. You can apply patches to the Amazon EC2 instance in the public subnet, and you have demonstrated n connectivity to the Internet.