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Build a Virtual Private Cloud (VPC)



Leon Williams

The screenshot shows the 'Create VPC' configuration page in the AWS Management Console. The top navigation bar includes 'Search [Alt+S]', 'United States (N. Virginia)', and 'Leon Williams'. The main title is 'Create VPC' with a 'Info' link. A descriptive text states: 'A VPC is an isolated portion of the AWS Cloud populated by AWS objects, such as Amazon EC2 instances.' The configuration form is divided into sections:

- VPC settings**:
 - Resources to create**: [Info](#). Options: VPC only, VPC and more.
 - Name tag - optional**: Creates a tag with a key of 'Name' and a value that you specify. Input: My VPC.
 - IPv4 CIDR block**: [Info](#). Options: IPv4 CIDR manual input, IPAM-allocated IPv4 CIDR block. Input: 10.0.0.0/16. Note: CIDR block size must be between /16 and /28.
 - IPv6 CIDR block**: [Info](#). Options: No IPv6 CIDR block, IPAM-allocated IPv6 CIDR block, Amazon-provided IPv6 CIDR block, IPv6 CIDR owned by me.
 - Tenancy**: [Info](#). Input: Default.
- Tags**: A note: 'A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.'



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Introducing Today's Project!

What is Amazon VPC?

Amazon VPC is a virtual network in AWS where you control IP ranges, subnets, and security. It isolates your cloud resources, giving you control over traffic and boosting security while managing how your resources communicate safely and efficiently.

How I used Amazon VPC in this project

Today, I used Amazon VPC to create a secure, isolated network for our cloud resources. I managed IP addresses, set up subnets, and configured security rules to keep communication safe and protect our applications from external threats.

One thing I didn't expect in this project was...

One thing I didn't expect in this project was having to create my own CIDR block when setting up the VPC from scratch. It was a valuable learning experience that deepened my understanding of network design in the cloud.



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This project took me...

I dedicated about 20 minutes to thoroughly review the material to strengthen my understanding. This helped me approach the project with more confidence and clarity.



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Virtual Private Clouds (VPCs)

A VPC (Virtual Private Cloud) is a private, isolated network within AWS where you can control and organize your cloud resources. It gives you privacy, security, and control over how resources communicate.

AWS includes a default VPC so new users can launch services like EC2 right away without having a complex setup. It gave me a smooth start while I learned how to build and customize secure cloud networks.

To set up my VPC, I had to define an IPv4 CIDR block, which is 10.0.0.0/16. A CIDR block is a range of IP addresses. In this case, it gives me up to 65,536 private IP addresses to use within my network.



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AWS Search [Alt+S] United States (N. Virginia) Leon Williams ▾

VPC > Your VPCs > Create VPC

Create VPC [Info](#)

A VPC is an isolated portion of the AWS Cloud populated by AWS objects, such as Amazon EC2 instances.

VPC settings

Resources to create [Info](#)
Creates only the VPC resource or the VPC and other networking resources.

VPC only VPC and more

Name tag - optional
Creates a tag with a key of 'Name' and a value that you specify.

My VPC

IPv4 CIDR block [Info](#)
 IPv4 CIDR manual input IPAM-allocated IPv4 CIDR block

IPv4 CIDR
10.0.0.0/16
CIDR block size must be between /16 and /28.

IPv6 CIDR block [Info](#)
 No IPv6 CIDR block IPAM-allocated IPv6 CIDR block Amazon-provided IPv6 CIDR block IPv6 CIDR owned by me

Tenancy [Info](#)
Default

Tags
A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.



Subnets

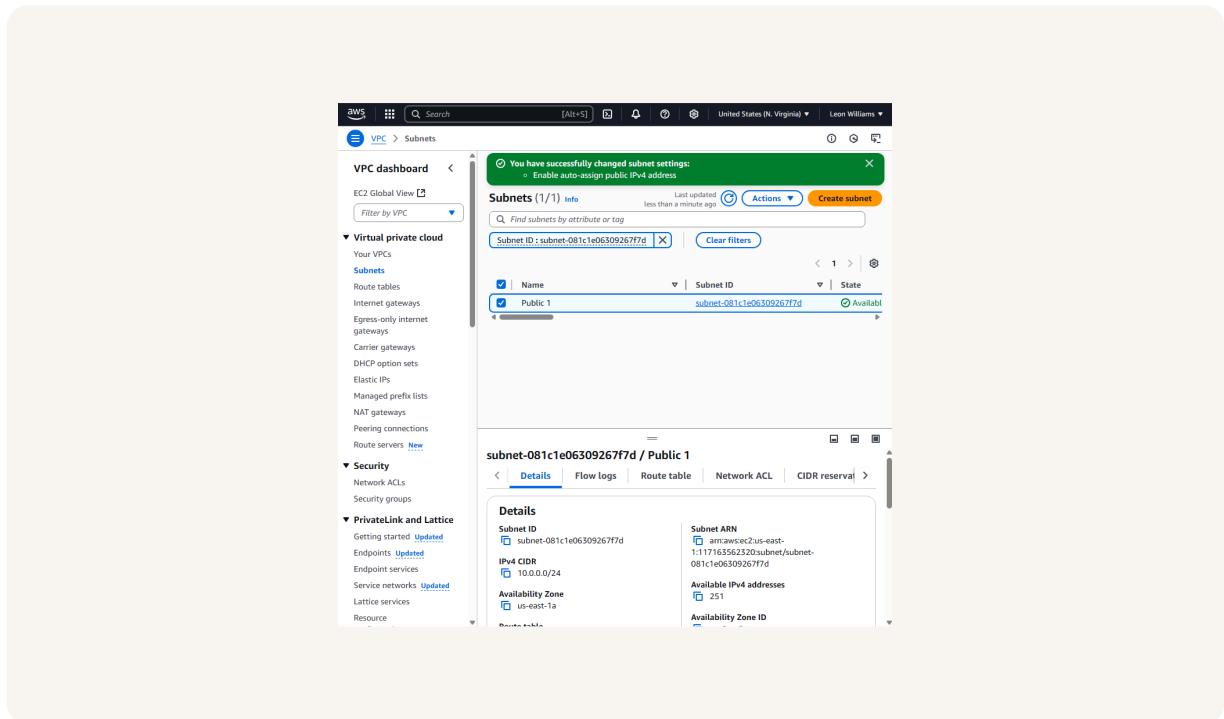
Subnets are smaller networks within a VPC that group resources by access level. There are already subnets existing in my account, one for every Availability Zone, created automatically by the default VPC.

Once I created my subnet, I enabled auto-assign public IPv4 addresses. This setting makes sure any EC2 instance launched in the subnet gets a public IP automatically so that it can access the internet or be reached from it without manual setup.

The difference between public and private subnets are internet access. For a subnet to be considered public, it has to be connected to an internet gateway. Even though mine is labeled 'Public 1', it's not public yet because it isn't connected.

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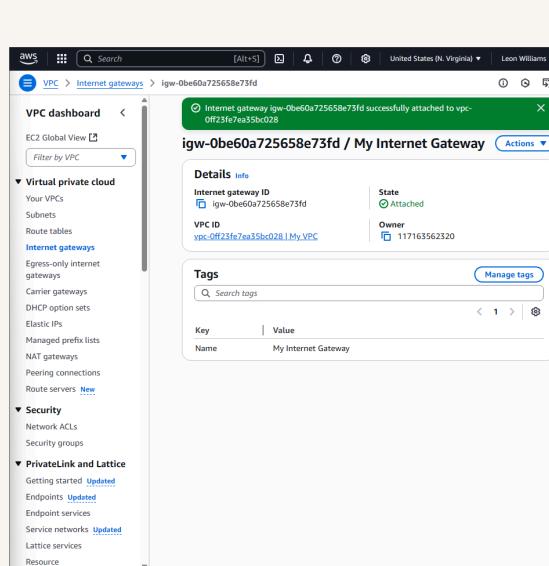
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Internet gateways

Internet gateways connect your cloud network to the internet. They let instances access the web and allow users to reach your applications. Attaching one ensures your services remain available, secure, and ready for users worldwide.

Attaching an internet gateway to a VPC means resources in your VPC can access the internet. If I missed this step, my instances with public IPs wouldn't be reachable, and my applications wouldn't be available to users outside the network.





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