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# Launching VPC Resources



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The screenshot shows the 'Create VPC' wizard in the AWS Management Console. The left pane displays 'VPC settings' with options for 'VPC only' or 'VPC and more'. It includes fields for 'Name tag auto-generation' (set to 'Info'), 'IPv4 CIDR block' (set to '10.0.0.0/16'), and 'Number of Availability Zones (AZs)' (set to '1'). The right pane, titled 'Preview', shows a network diagram for 'Grost 279-vgw'. It includes 'Subnets (2)', 'Route tables (2)', and 'Network connections (2)'. A tooltip for 'eu-west-2a' indicates it's a public subnet.

VPC > This VPC > Create VPC

Create VPC Info

A VPC is an isolated portion of the AWS Cloud populated by AWS objects, such as Amazon EC2 instances. Mouse over a resource to highlight the related resources.

**VPC settings**

Resources to create: **Info**  
Create only this VPC resource or the VPC and other networking resources.  
 VPC only  VPC and more

Name tag auto-generation: **Info**  
Enter a value for the Name tag. This value will be used to auto-generate Name tags for resources created by the VPC.  
 Auto-generate  
Grost 279

IPv4 CIDR block: **Info**  
Choose the starting IP and the size of your VPC using CIDR notation.  
10.0.0.0/16 (0.333 /24)

IPv6 CIDR block: **Info**  
 No IPv6 CIDR block  Amazon-provided IPv6 CIDR block

Tenancy: **Info**  
Default

Number of Availability Zones (AZs): **Info**  
Choosing one or two AZs makes your provider's subnets. We recommend at least two AZs for high availability.  
 1  2  3  
Customize AZs  
First availability zone: eu-west-2a

**Preview**

VPC Show details Your AWS virtual network  
Grost 279-vgw

Subnets (2) Subnets within this VPC  
eu-west-2a  
Grost 279-subnet-public1-eu-west-2a  
Grost 279-subnet-private1-eu-west-2a

Route tables (2) Route network traffic to resources  
Grost 279-rtb-public  
Grost 279-rtb-private1-eu-west-2a

Network connections (2) Connections to other networks  
Grost 279-lpe  
Grost 279-vpcx-s3

eu-west-2a

Grost 279-subnet-public1-eu-west-2a

Grost 279-rtb-private1-eu-west-2a

Grost 279-lpe

Grost 279-vpcx-s3



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# Introducing Today's Project!

## What is Amazon VPC?

Amazon VPC is a service that allows you to create an isolated virtual network within the AWS cloud. It's like having your own private data center in the cloud: You have full control over your network environment, allowing you to implement Controls

## How I used Amazon VPC in this project

Created a VPC to house all resources for the server, providing a secure and segregated network environment.

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

Resource Map to be so visual and interactive! such a convenient and speedy way to setup an entire vpc architecture

## This project took me...

1 hour

# Setting Up Direct VM Access

Directly accessing a virtual machine means establishing a connection to the machine's operating system, typically through a secure shell (SSH) connection, allowing you to interact with it as if you were physically present at the console.

## SSH is a key method for directly accessing a VM

SSH traffic means encrypted communication between two devices using the Secure Shell protocol. This protocol ensures secure remote login, file transfers, and other network services by encrypting data and authenticating users.

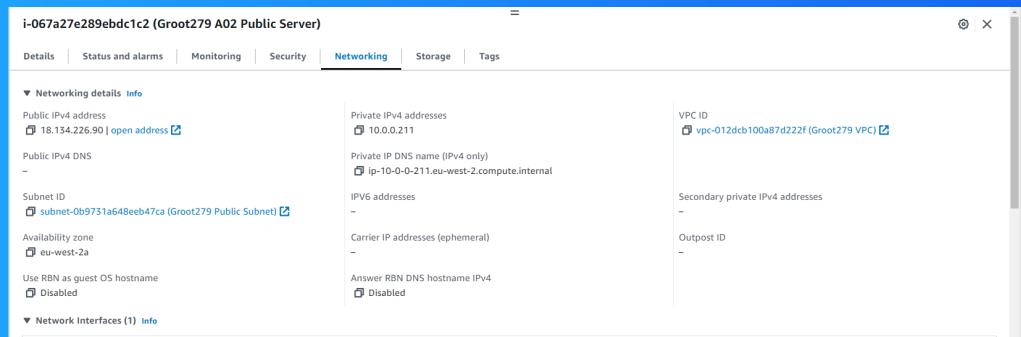
## To enable direct access, I set up key pairs

Key pairs are a set of cryptographic keys, consisting of a public key and a private key, used for secure authentication and encryption. They are commonly used for SSH and access to servers, allowing secure remote login without requiring passwords

A private key's file format means the specific structure and encoding used to store the key in a file. My private key's file format was PEM (Privacy Enhanced Mail), a widely used format for storing cryptographic keys in ASCII text with Base64.

# Launching a public server

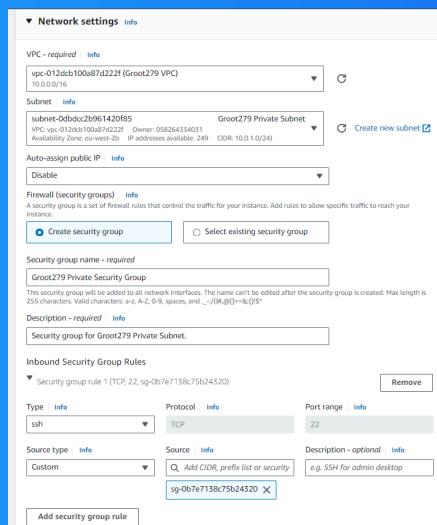
I had to change my EC2 instance's networking settings by accessing the EC2 Management Console, selecting the desired instance, and navigating to the Network & Security tab. From there, I could modify security groups, network interfaces.



# Launching a private server

My private server has its own dedicated security group because it requires a more restrictive set of inbound and outbound rules compared to the public server. This enhanced security is crucial to protect sensitive data and resources

My private server's security group's source is a specific IP address range, which means only traffic originating from those designated IP addresses is permitted to access the server.

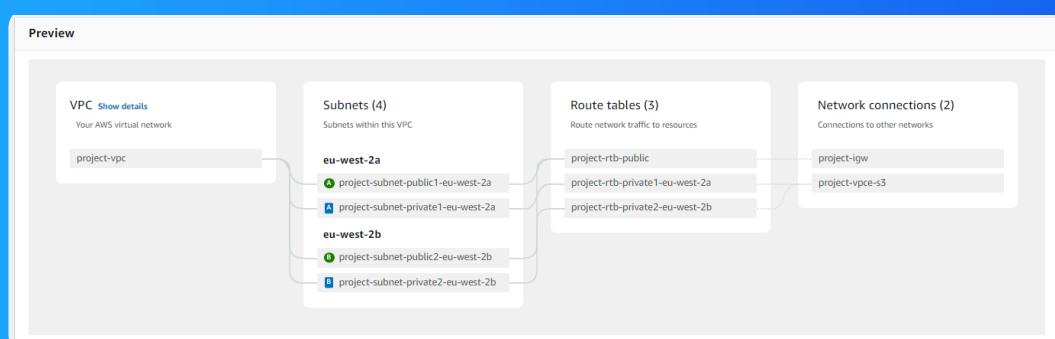


# Speeding up VPC creation

I used an alternative way to set up an Amazon VPC! This time, I used the `vpc` and `more` option which gives me a VPC resource map to use when creating the vpc and all of its components i.e security groups, route tables and internet gateways

A VPC resource map is a visual representation of all the components within your Amazon Virtual Private Cloud (VPC), including subnets, route tables, internet gateways, NAT gateways, and other resources.

My new VPC has a CIDR block of 10.0.0.0/16. It is possible for my new VPC to have the same IPv4 CIDR block as my existing VPC because VPCs are isolated environments, even if they share the same IP address range.

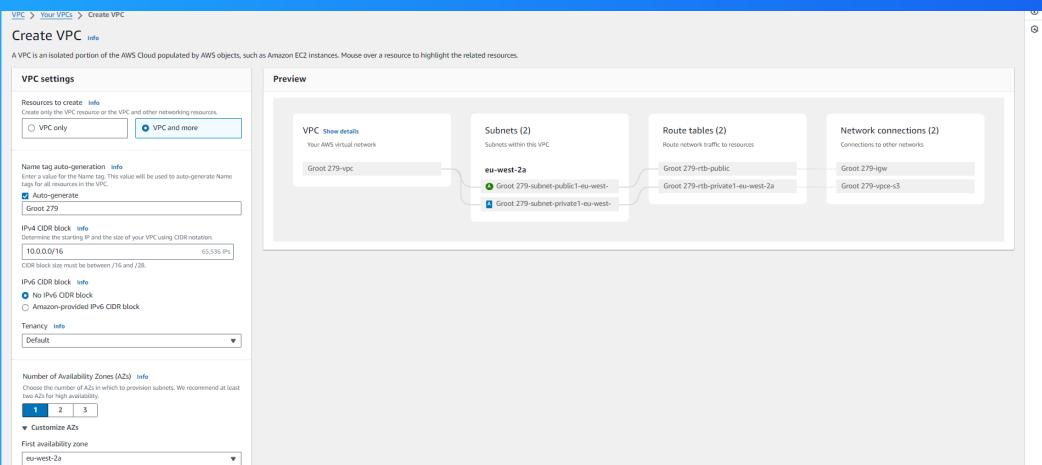


# Speeding up VPC creation

## Tips for using the VPC resource map

When determining the number of public subnets in my VPC, I only had two options: one or multiple. This was because a single public subnet could accommodate all required internet-facing resources, while multiple subnets offer better organization.

The set up page also offered to create NAT gateways, which are essentially network address translators. They allow instances in your private subnets to connect to the internet, but prevent external services from initiating connections.





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