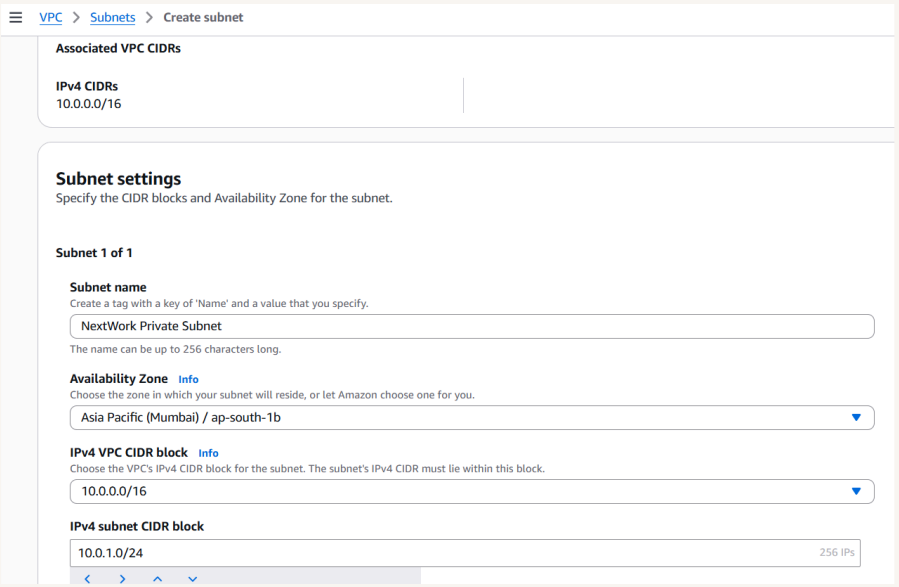
nextwork.org

Creating a Private Subnet

MHM Aslam



MHM Aslam
NextWork Student

Introducing Today's Project!

What is Amazon VPC?

Amazon VPC (Virtual Private Cloud) is a virtual network dedicated to your AWS account where you can launch AWS resources in an isolated environment. It’s useful because it gives you full control over your network settings, security, and traffic flow.

How I used Amazon VPC in this project

In today’s project, I used Amazon VPC to isolate the private subnet from the internet and make the public subnet accessible by attaching an internet gateway, allowing external access only to the resources meant to be publicly available.

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

One thing I didn't expect in this project was how important route tables and network ACLs are in controlling access—small misconfigurations can completely block traffic or expose resources unintentionally.

This project took me...

Another AWS Service done! This project took me around 1 hour since I had already learned about public subnet settings earlier and only needed to focus on configuring and securing the private subnet.

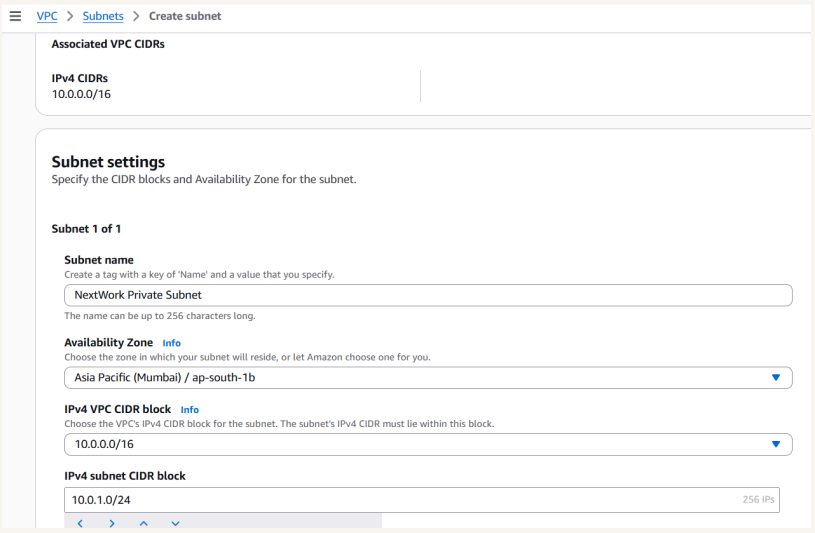
MHM Aslam
NextWork Student

Private vs Public Subnets

The difference between public and private subnets is that public subnets are accessible from the internet, while private subnets are not accessible from the internet.

Having private subnets are useful because they enhance security by isolating sensitive resources from direct internet access, reducing the attack surface and allowing controlled communication through secure channels.

My private and public subnets cannot have the same IP address range (CIDR block), as each subnet in a VPC must have a unique range to avoid routing conflicts.

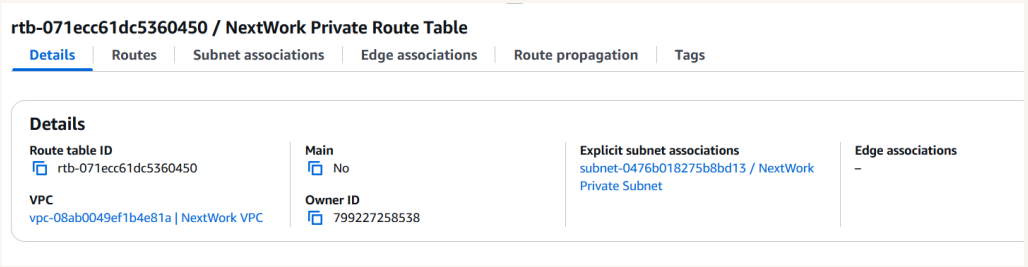


A dedicated route table

By default, my private subnet is associated with the main route table, which does not have a route to an internet gateway.

I had to set up a new route table because I needed to control traffic flow differently, such as allowing internet access for a public subnet or isolating a private subnet from external networks.

My private subnet's dedicated route table only has one inbound and one outbound rule that allows internal VPC traffic, enabling communication between subnets within the VPC but not with the internet.

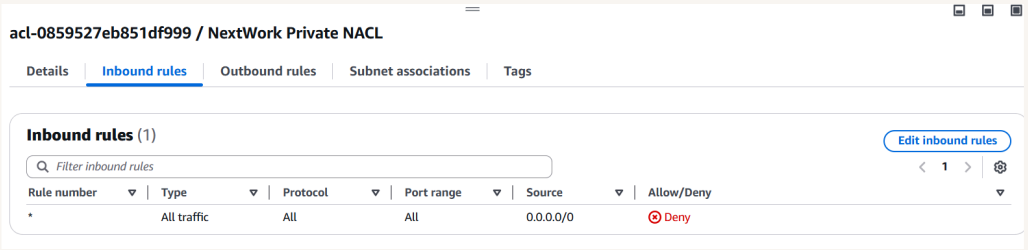

rtb-071ecc61dc5360450 / NextWork Private Route Table
Details
Routes
Subnet associations
Edge associations
Route propagation
Tags
Details
Route table ID
rtb-071ecc61dc5360450
Main
No
Explicit subnet associations
subnet-0476b018275b8bd13 / NextWork Private Subnet
Edge associations
–
VPC
vpc-08ab0049ef1b4e81a | NextWork VPC
Owner ID
799227258538

A new network ACL

By default, my private subnet is associated with the default Network ACL (NACL) of the VPC, which allows all inbound and outbound traffic.

I set up a dedicated network ACL for my private subnet to control inbound and outbound traffic more strictly, improving security by limiting access to trusted sources and blocking unwanted traffic to protect sensitive resources.

My new network ACL has two simple rules – it denies all inbound and outbound traffic to completely block any network communication, ensuring maximum isolation and security for the private subnet.


acl-0859527eb851df999 / NextWork Private NACL
Details
Inbound rules
Outbound rules
Subnet associations
Tags
Inbound rules (1)
Edit inbound rules
Filter inbound rules
1
Rule number
Type
Protocol
Port range
Source
Allow/Deny
*
All traffic
All
All
0.0.0.0/0
Deny

The place to learn & showcase your skills

Check out nextwork.org for more projects