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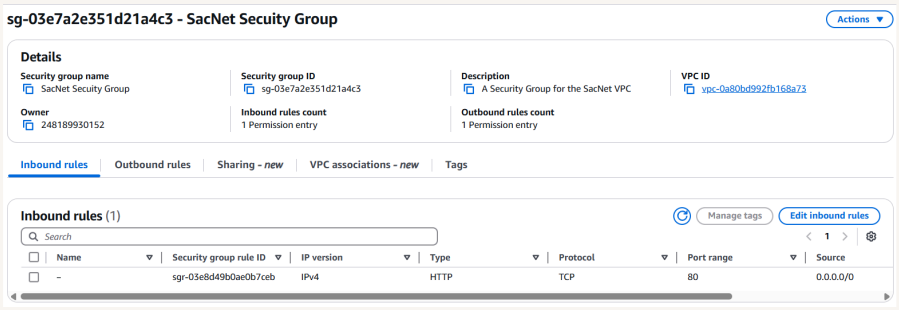
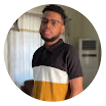
VPC Traffic Flow and Security

Jonathan Nutsugah





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Introducing Today's Project!

What is Amazon VPC?

Amazon VPC (Virtual Private Cloud) lets you create a secure, isolated network in AWS where you control IP ranges, subnets, and traffic. It's useful for customizing network setup, enhancing security, and supporting hybrid cloud deployments.

How I used Amazon VPC in this project

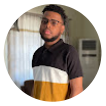
I used it through the management console to create a virtually isolated environment for my resources.

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

The ease navigating the UI.

This project took me...

60 minutes.



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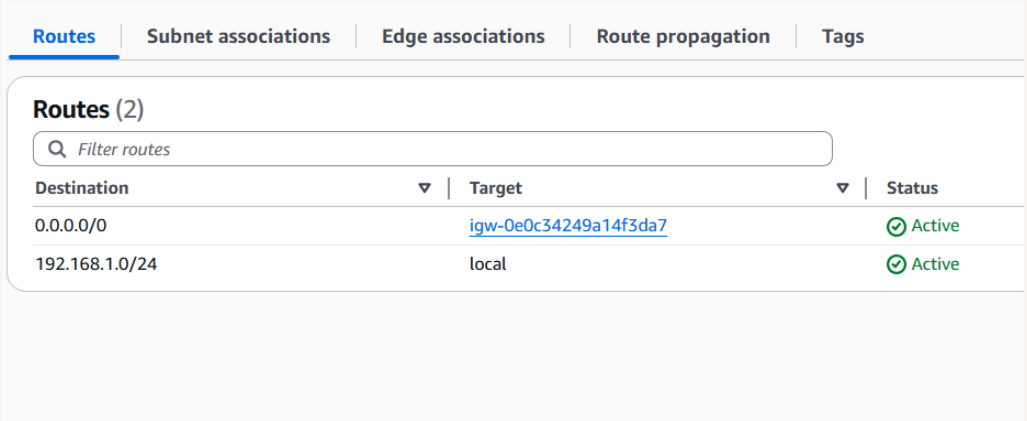
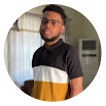
Route tables

Route tables are tables that contain destination and target information for a network. A system would refer to a routing table to select the best route for passing network traffic.

Route tables are needed to make a subnet public because it will contain the route to the internet as an entry.





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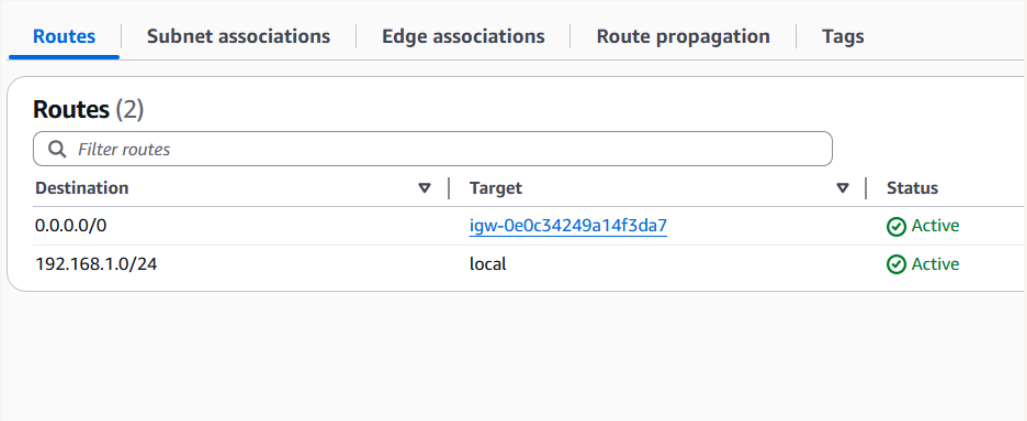
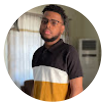
Route destination and target

Routes are defined by their destination and target, which means a specific destination and target must be specified for a router to be able to direct traffic through the most appropriate path.

The route in my route table that directed internet-bound traffic to my internet gateway had a destination of 0.0.0.0/0 and a target of Internet Gateway.





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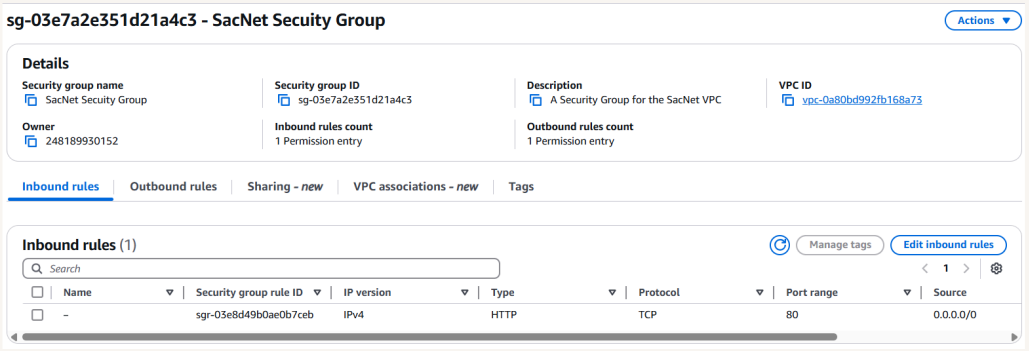
Security groups

Security groups are firewalls that either deny or allow traffic based on inbound and outbound rules at the instance level.

Inbound vs Outbound rules

Inbound rules are rules that regulate incoming traffic. I configured an inbound rule that allows only HTTP traffic coming in from anywhere.

Outbound rules are rules that regulate outgoing traffic from an instance. By default, my security group's outbound rule is set to allow all traffic to go out of the instance.


sg-03e7a2e351d21a4c3 - SacNet Secuity Group
Actions
Details
Security group name
SacNet Secuity Group
Security group ID
sg-03e7a2e351d21a4c3
Description
A Security Group for the SacNet VPC
VPC ID
vpc-0a80bd992fb168a73
Owner
248189930152
Inbound rules count
1 Permission entry
Outbound rules count
1 Permission entry
Inbound rules
Outbound rules
Sharing - new
VPC associations - new
Tags
Inbound rules (1)
Manage tags
Edit inbound rules
Search
1
Name
Security group rule ID
IP version
Type
Protocol
Port range
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TCP
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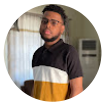
0.0.0.0/0



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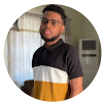
Network ACLs

Network ACLs are similar to security groups, but they filter traffic at the subnet level.

Security groups vs. network ACLs

The difference between a security group and a network ACL is that security groups are stateful and NACLs are stateless. Also, security groups operate at the instance level while NACLs operate at the subnet level.



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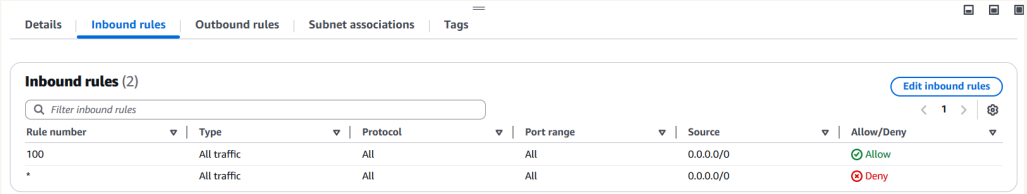
Default vs Custom Network ACLs

Similar to security groups, network ACLs use inbound and outbound rules

By default, a network ACL's inbound and outbound rules will allow all traffic.

In contrast, a custom ACL's inbound and outbound rules are automatically set to deny all traffic.



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