Day 3 - Create Subnet

The Nautilus DevOps team is strategizing the migration of a portion of their infrastructure to the AWS cloud. Recognizing the scale of this undertaking, they have opted to approach the migration in incremental steps rather than as a single massive transition.

For this task, create one subnet named `nautilus-subnet` under default VPC.

What is a VPC

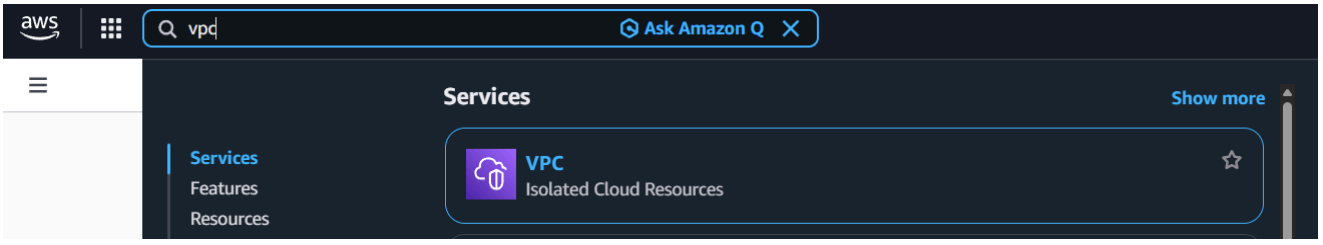
A VPC (Virtual Private Cloud) is your own isolated virtual network within AWS. A VPC allows you to define your own IP address range, create subnets, configure route tables, and set up network gateways. It provides network isolation, ensuring your resources are separated from other AWS customers and giving you control over who and what can access your infrastructure.

What is a subnet

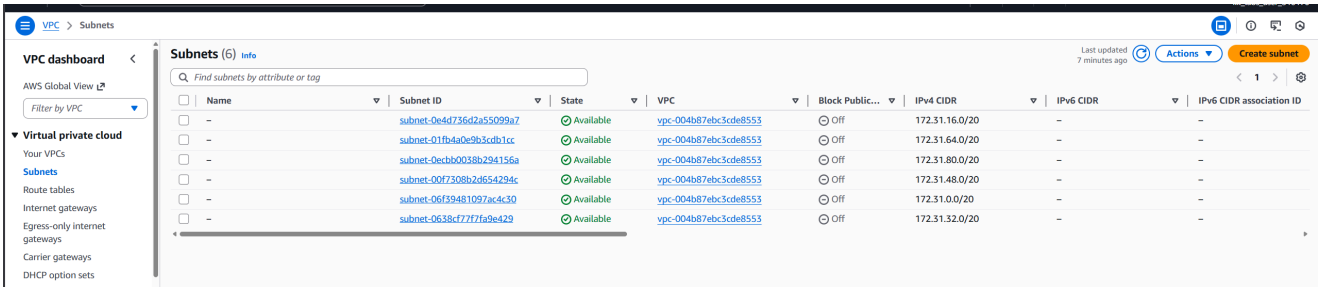
A subnet is a division of your VPC's IP address range.
Subnets allow you to organize and isolate your resources within the VPC, placing them in specific Availability Zones for high availability and applying different security and routing rules to different groups of resources.

Solution

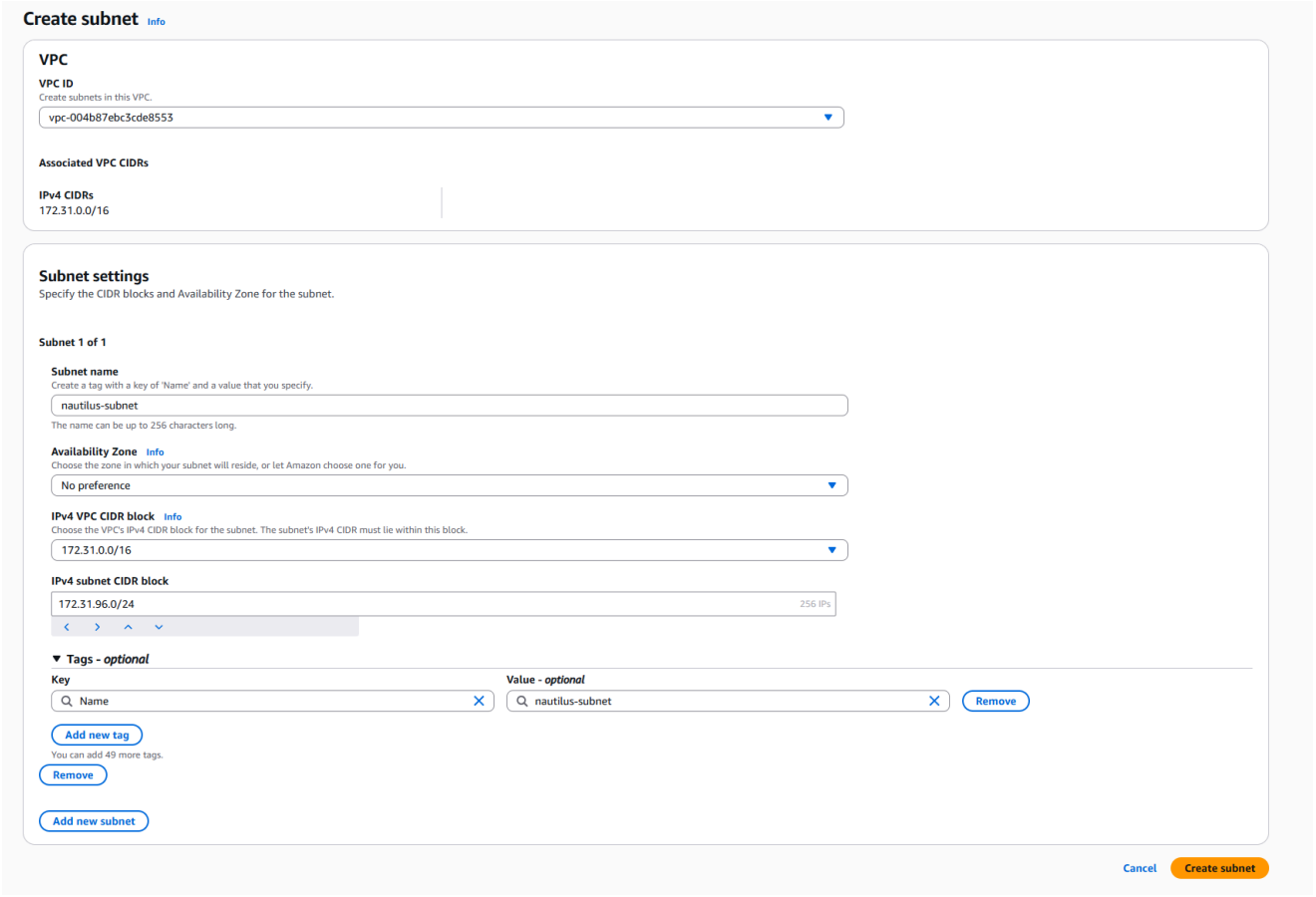
Search for VPC



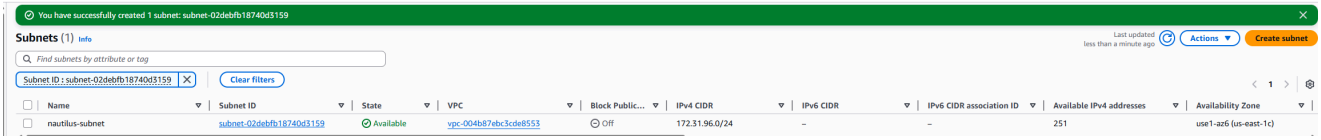
Next we go to `subnets` > `Create subnet` (It will already be filled out with default subnets)



Now we fill in all the relevant information that we need. We select the default VPC that AWS already provides us, Name the subnet `nautilus-subnet` and the `IPv4 CIDR Block` will automatically be filled `172.31.0.0/16` (The CIDR block tells us which IP ranges are available for the subnet). We then fill out the subnet CIDR block as `172.31.96.0/24`. Once all fields have been filled out we can go ahead and create our subnet



The subnet has successfully been created



Security Best Practices Implemented

✅ Private by Default - Subnet created without public IP auto-assignment for security
✅ Proper CIDR Sizing - Allocated /24 providing adequate IPs without waste

Additional Recommendations

- Use Network ACLs as an additional security layer beyond security groups
- Implement VPC Flow Logs to monitor and audit network traffic
- Always create subnets in at least 2-3 Availability Zones