Amazon VPC
## Define and launch AWS resources in a logically isolated virtual network

Amazon Virtual Private Cloud (VPC) is a service that lets you create an isolated section of the AWS cloud and launch AWS resources into a virtual network you've defined. VPC provides a complete control over your virtual networking environment, including IP address ranges, subnets, route tables, and network gateways.

Concepts

- **VPCs:** Virtual networks in your AWS account.
- **Subnets:** A range of IP addresses in your VPC where you can place groups of isolated resources.
- **Elastic IPs:** These are static, public IPv4 addresses that you associate with an Amazon EC2 instance for consistent public access.
- **Internet Gateway:** A communication channel between your VPC and the internet for public subnets.
- **Network Access Control Lists (ACLs):** An optional layer of security that acts as a firewall for controlling traffic in and out of subnets.

How It Works

The following is a visual representation of a VPC and its resources. The sample VPC is configured with an IPv4 CIDR and an Amazon-provided IPv6 CIDR, subnets in two Availability Zones (us-east-1a and us-east-1b), three route tables, an internet gateway, and a gateway endpoint.
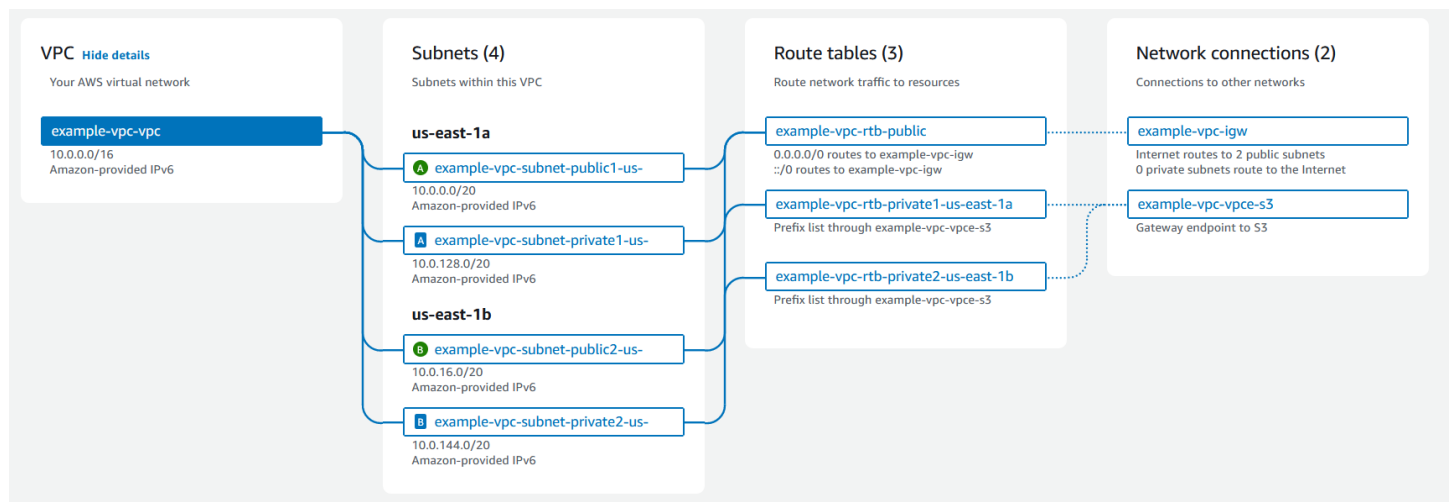
Use Cases

Launch a simple website or blog
Improve your web application security posture by enforcing rules on inbound and outbound connections.

Host multi-tier web applications
Define network connectivity and restrictions between your web servers, application servers, and databases.

Create hybrid connections
Build and manage a compatible VPC network across your AWS services and on premises.