# What is Amazon VPC?

With Amazon Virtual Private Cloud (Amazon VPC), you can launch AWS resources in a logically isolated virtual network that you've defined. This virtual network closely resembles a traditional network that you'd operate in your own data center, with the benefits of using the scalable infrastructure of AWS.

The following diagram shows an example VPC. The VPC has one subnet in each of the Availability Zones in the Region, EC2 instances in each subnet, and an internet gateway to allow communication between the resources in your VPC and the internet.
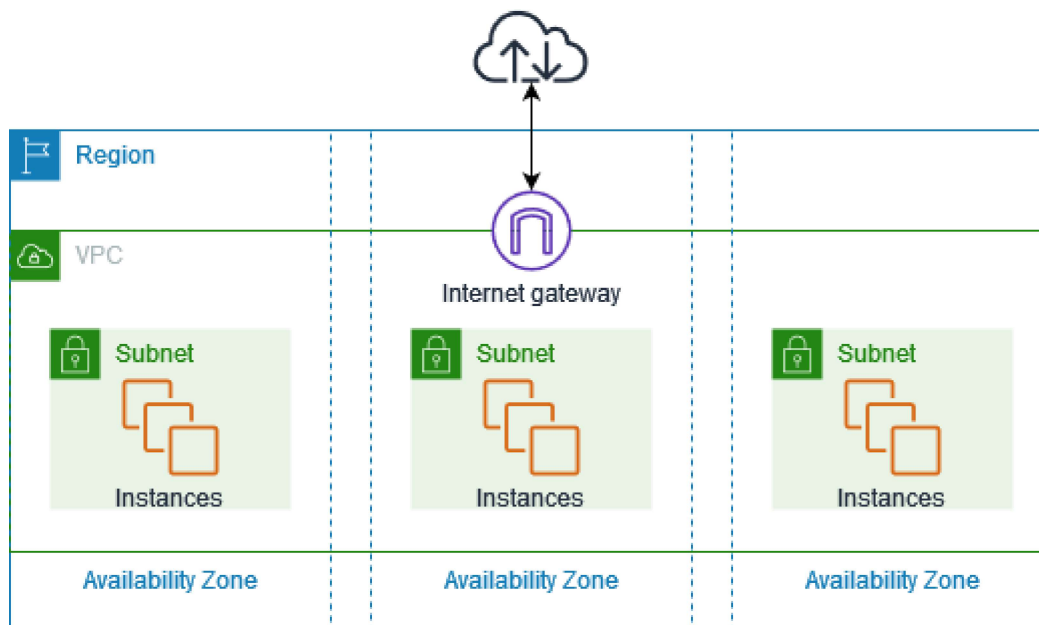
For more information, see Amazon Virtual Private Cloud (Amazon VPC).

Features

The following features help you configure a VPC to provide the connectivity that your applications need:

Virtual private clouds (VPC)

A VPC is a virtual network that closely resembles a traditional network that you'd operate in your own data center. After you create a VPC, you can add subnets.

Subnets

A subnet is a range of IP addresses in your VPC. A subnet must reside in a single Availability Zone. After you add subnets, you can deploy AWS resources in your VPC.

IP addressing

You can assign IP addresses, both IPv4 and IPv6, to your VPCs and subnets. You can also bring your public IPv4 addresses and IPv6 GUA addresses to AWS and allocate them to resources in your VPC, such as EC2 instances, NAT gateways, and Network Load Balancers.

Routing

Use route tables to determine where network traffic from your subnet or gateway is directed.

Gateways and endpoints

A gateway connects your VPC to another network. For example, use an internet gateway to connect your VPC to the internet. Use a VPC endpoint to connect to AWS services privately, without the use of an internet gateway or NAT device.

Peering connections

Use a VPC peering connection to route traffic between the resources in two VPCs.

Traffic Mirroring

Copy network traffic from network interfaces and send it to security and monitoring appliances for deep packet inspection.

Transit gateways

Use a transit gateway, which acts as a central hub, to route traffic between your VPCs, VPN connections, and AWS Direct Connect connections.

VPC Flow Logs

A flow log captures information about the IP traffic going to and from network interfaces in your VPC.

VPN connections

Connect your VPCs to your on-premises networks using AWS Virtual Private Network (AWS VPN).

How Amazon VPC works

With Amazon Virtual Private Cloud (Amazon VPC), you can launch AWS resources in a logically isolated virtual network that you've defined. This virtual network closely resembles a traditional network that you'd operate in your own data center, with the benefits of using the scalable infrastructure of AWS.

The following is a visual representation of a VPC and its resources from the **Preview** pane shown when you create a VPC using the AWS Management Console. For an existing VPC, you can access this visualization on the **Resource map** tab. This example shows the resources that are initially selected on the **Create VPC** page when you choose to create the VPC plus other networking resources. This VPC is configured with an IPv4 CIDR and an Amazon-provided IPv6 CIDR, subnets in two Availability Zones, three route tables, an internet gateway, and a gateway endpoint. Because we've selected the internet gateway, the visualization indicates that traffic from the public subnets is routed to the internet because the corresponding route table sends the traffic to the internet gateway.
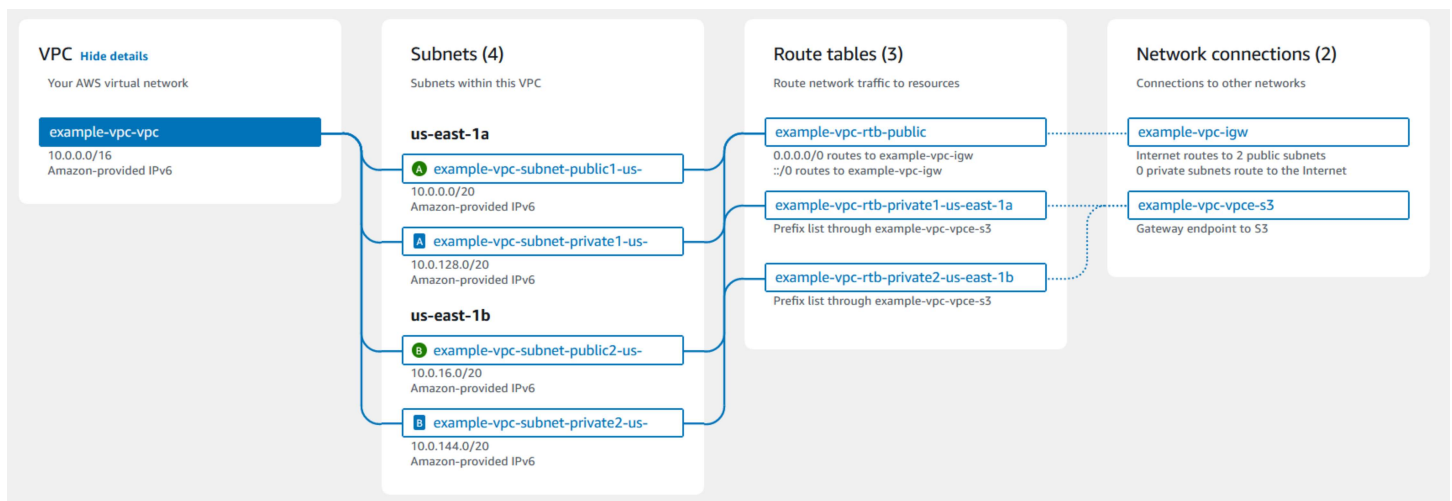
Concepts

- VPCs and subnets
- Default and nondefault VPCs
- Route tables
- Access the internet
- Access a corporate or home network
- Connect VPCs and networks