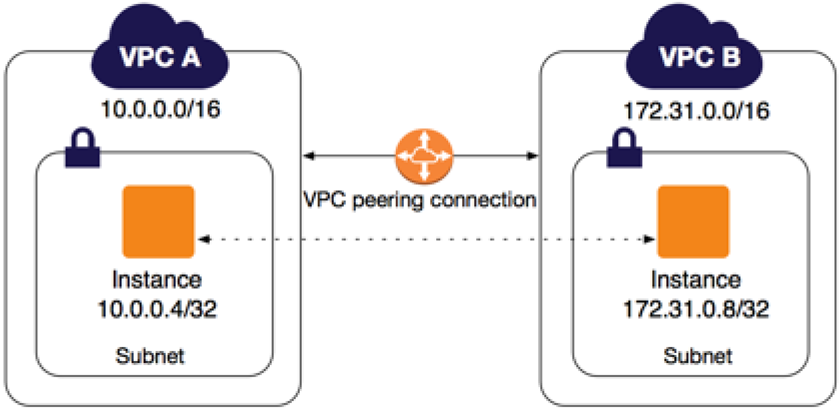
What is VPC peering?

- Amazon Virtual Private Cloud (Amazon VPC) enables you to launch AWS resources into a virtual network that you've defined.
- A VPC peering connection is a networking connection between two VPCs that enables you to route traffic between them using private IPv4 addresses or IPv6 addresses.
- Instances in either VPC can communicate with each other as if they are within the same network.
- You can create a VPC peering connection between your own VPCs, or with a VPC in another AWS account.
- The VPCs can be in different regions (also known as an inter-region VPC peering connection).



- AWS uses the existing infrastructure of a VPC to create a VPC peering connection; it is neither a gateway nor a VPN connection and does not rely on a separate piece of physical hardware.
- There is no single point of failure for communication or a bandwidth bottleneck.
- A VPC peering connection helps you to facilitate the transfer of data. For example, if you have more than one AWS account, you can peer the VPCs across those accounts to create a file sharing network.
- You can also use a VPC peering connection to allow other VPCs to access resources you have in one of your VPCs.
- You can establish peering relationships between VPCs across different AWS Regions (also called inter-Region VPC peering).

- ❖ This allows VPC resources including EC2 instances, Amazon RDS databases and Lambda functions that run in different AWS Regions to communicate with each other using private IP addresses, without requiring gateways, VPN connections, or separate network appliances.
- ❖ The traffic remains in the private IP space.
- ❖ All inter-region traffic is encrypted with no single point of failure, or bandwidth bottleneck.
- ❖ Traffic always stays on the global AWS backbone, and never traverses the public internet, which reduces threats, such as common exploits, and DDoS attacks.
- ❖ Inter-Region VPC Peering provides a simple and cost-effective way to share resources between regions or replicate data for geographic redundancy.

VPC Peering Scenarios

Peering two or more VPCs to provide full access to resources

In this scenario, you have two or more VPCs that you want to peer to enable full sharing of resources between all VPCs. The following are some examples:

- Your company has a VPC for the finance department, and another VPC for the accounting department. The finance department requires access to all resources that are in the accounting department, and the accounting department requires access to all resources in the finance department.
- Your company has multiple IT departments, each with their own VPC. Some VPCs are located within the same AWS account, and others in a different AWS account. You want to peer together all VPCs to enable the IT departments to have full access to each other’s resources.

Peering to one VPC to Access Centralized Resources

In this scenario, you have a central VPC that contains resources that you want to share with other VPCs. Your central VPC may require full or partial access to the peer VPCs, and similarly, the peer VPCs may require full or partial access to the central VPC. The following are some examples:

- Your company's IT department has a VPC for file sharing. You want to peer other VPCs to that central VPC, however, you do not want the other VPCs to send traffic to each other.
- Your company has a VPC that you want to share with your customers. Each customer can create a VPC peering connection with your VPC, however, your customers cannot route traffic to other VPCs that are peered to yours, nor are they aware of the other customers' routes.
- You have a central VPC that is used for Active Directory services. Specific instances in peer VPCs send requests to the Active Directory servers and require full access to the central VPC. The central VPC does not require full access to the peer VPCs; it only needs to route response traffic to the specific instances.