How are we using VPC and Internet Gateway in the system architecture in a project deployment? What role does it play in the architecture?

In a public cloud environment, a virtual private cloud is a configurable on-demand pool of shared resources that offers some level of separation between the many businesses employing the resources.

a computer that stands in the way of two networks or programmes. The gateway transforms data, communications, and information from one protocol or format to another. Some of the duties of a gateway may be carried out by a router. Communications between a corporate network and the Internet can be transferred through an Internet gateway.

Step 2 of 5

**VPC in system architecture in a project deployment**

A company can link resources from several projects to a shared Virtual Private Cloud (VPC) network utilising shared VPC, enabling secure and effective communication between those resources using internal IPs from the shared VPC network.

Explanation

Projects within the same organisation are connected via shared VPC. Linked projects can be located in either the same or separate folders, but if they are, the admin needs to have Shared VPC Admin access to both files. For more details on organisations, files, and projects, consult the Google Cloud resource hierarchy.

Use the least privilege principle in network management, auditing, and access control. Without permitting Service Project Admins to make changes that would affect the network, Shared VPC Admins can assign network administration duties to Network and Security Admins in the Shared VPC network. Only instances that use the Shared VPC network can be created and managed by Service Project Admins.

Step 3 of 5

**Internet Gateway in the in the system architecture in a project deployment**

If a resource in your public subnets has a public IPv4 address or an IPv6 address, an internet gateway enables the resource to connect to the internet. The public IPv4 or IPv6 address can be used by resources on the internet to connect to resources in your subnet.

Explanation

A centralized hub known as an IoT gateway links IoT gadgets and sensors to cloud computing and data processing. Bidirectional data transmission between the cloud and IoT devices is frequently made possible by modern IoT gateways.

The communication gap between hardware, sensors, tools, systems, and the cloud is filled by an IoT gateway. IoT gateway offers local processing and storage as well as the capacity to autonomously manage field devices based on data input from sensors by connecting the cloud in a systematic fashion.

Step 4 of 5

**Role of VPC in arcitecture**

With VPC, you can create a virtual network in the AWS cloud without using hardware, VPNs, or real datacenters. You have control over how your network and the Amazon EC2 resources it contains are accessible to the Internet and can design your own network area.

In the same way that they were in your old data centre, a virtual private network protects your servers from the dangers of the public internet.

Shared VPC enables a company to link resources from many projects to a single Virtual Private Cloud (VPC) network so that they can safely and effectively communicate with one another using internal IPs from that network.

Step 5 of 5

**Role of Internet Gateway**

Utilizing a gateway in personal or professional situations has the main benefit of consolidating internet connectivity into one device. A gateway node in an organisation can operate as a firewall and proxy server, too. Gateways can be rented from an internet service provider or bought from well-known tech stores like Best Buy.

**Final Answer**

For traffic that can be routed via the internet, an internet gateway serves as a target in your VPC route tables. The internet gateway also carries out network address translation for IPv4 communication (NAT).

The VPC requires the attachment of an internet gateway. There must be a route to the internet gateway in the route tables connected to your public subnet, including any custom route tables. Traffic to and from the internet must pass via the network access control lists (ACL) and security groups connected to your VPC.