

Mastering IP Addressing and Firewall Rules on Google Cloud

IP Addressing on Google Cloud

Internal IP Addresses

- Used for intra-VPC communication.
- Assigned to resources like VM instances.

External IP Addresses

- Facilitate communication with the internet.
- Assigned to make resources externally accessible.

Alias IP

- Additional IP range for VM instances.
- Enables multiple IPs within a single network interface.

Auto IP

- Automatic assignment of IPs.
- System handles IP assignments.

Custom IP

- Manually configured addresses.
- Offers user control over the addressing scheme.

Ephemeral IP

- Temporary external IPs.
- Change with resource deletion or stoppage.

Static IP

- Stable, constant IPs.
- Remain unchanged even if the associated resource is stopped or deleted.

Internal IP Address Reservation

- Set aside specific IPs within a subnet.
- Maintains a consistent addressing scheme.

External IP Address Reservation

- Reserves specific IPs for external communication.

Regional IP Address

- Specific to a region.
- Used by resources within that region.

Global IP Address

- Accessible globally.
- Used by resources across multiple regions.

Creating Static IPs from the Console

Static Internal IP

Navigate to Google Cloud Console.
Go to "VPC Network" -> "Internal IP addresses."
Click "Reserve Static Address."
Enter a name and choose a subnet.
Click "Reserve."

Command: `gcloud compute addresses create [STATIC_IP_NAME]
--subnet=[SUBNET_NAME] --region=[REGION]`

Static External IP

Navigate to Google Cloud Console.
Go to "VPC Network" -> "External IP addresses."
Click "Reserve Static Address."
Enter a name and choose scope.
Click "Reserve."

Command:

```
gcloud compute addresses create [STATIC_IP_NAME] --region=[REGION]
```

VPC Firewall Rules

Characteristics

- Direction: Ingress or Egress.
- Action: Allow or Deny.
- Priority: Order of rule evaluation.
- Network: Specifies the target VPC.
- Source/Destination IP: Defines IP ranges.
- Protocol/Ports: Specifies protocol and ports.

Conclusion

Mastering IP addressing and firewall rules on Google Cloud is essential for building a secure and scalable infrastructure. This concise guide provides insights into various IP types and detailed steps for creating static IPs through the Google Cloud Console. Understanding VPC firewall rule characteristics ensures effective network security.

Navigate the Google Cloud ecosystem with confidence armed with this essential knowledge.

Check_Out_Detailed_Blog:-<https://medium.com/@srivastavayushmaan1347/a-comprehensive-guide-to-ip-addressing-and-firewall-rules-on-google-cloud-platform-202f903fc397>