3 Virtual Private Cloud's Peering

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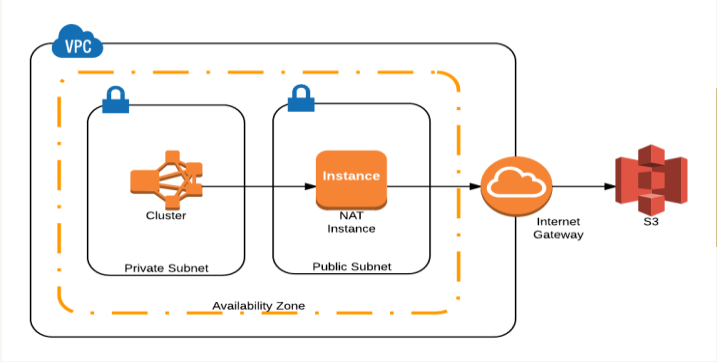
INDEX

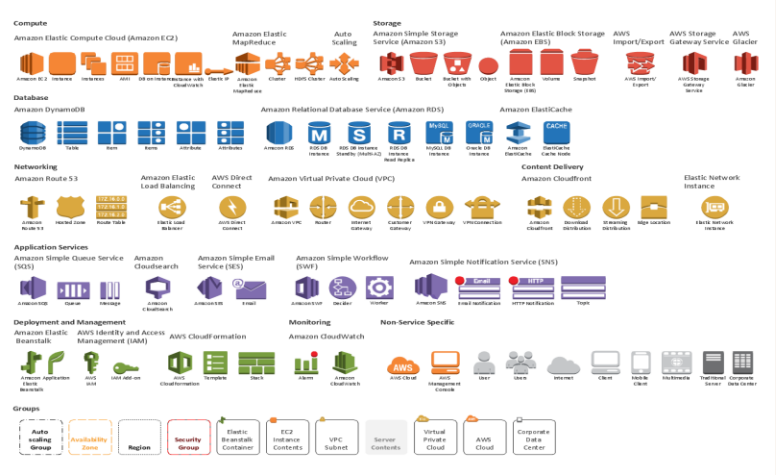
01. Introduction

- Cloud is the delivery of computing services including servers, storage, databases, networking, software, and more over the internet ("the cloud").
- **A Virtual Private Cloud (VPC):** is a secure, isolated section of a public cloud where users can launch resources in a virtual network they define. It provides control over the network environment, including IP address ranges, subnets, route tables, and network gateways
- **Amazon RDS** (Relational Database Service): is a managed database service that simplifies setting up, operating, and scaling a relational database in the cloud.



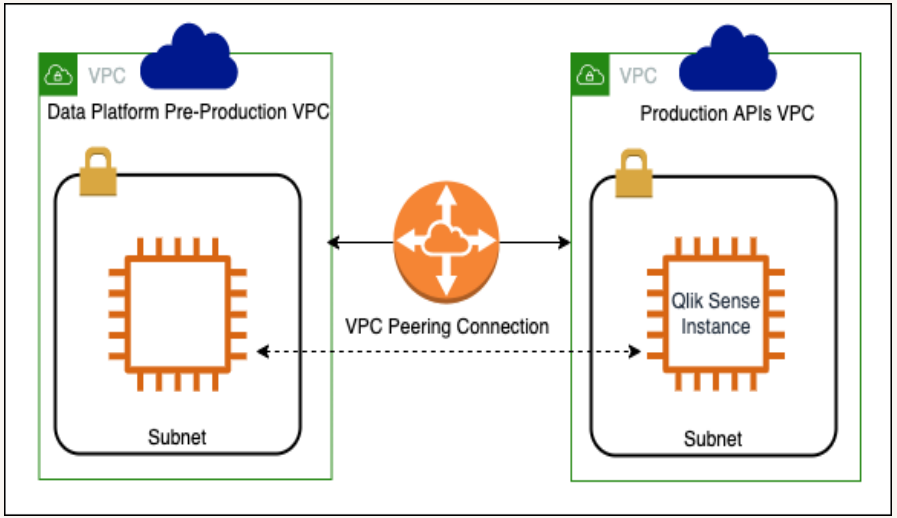
02.TECHNOLOGIES USED

1. AWS
2. VPC in different regions
3. Peering Connection
4. RDS (MySQL)
5. EC2

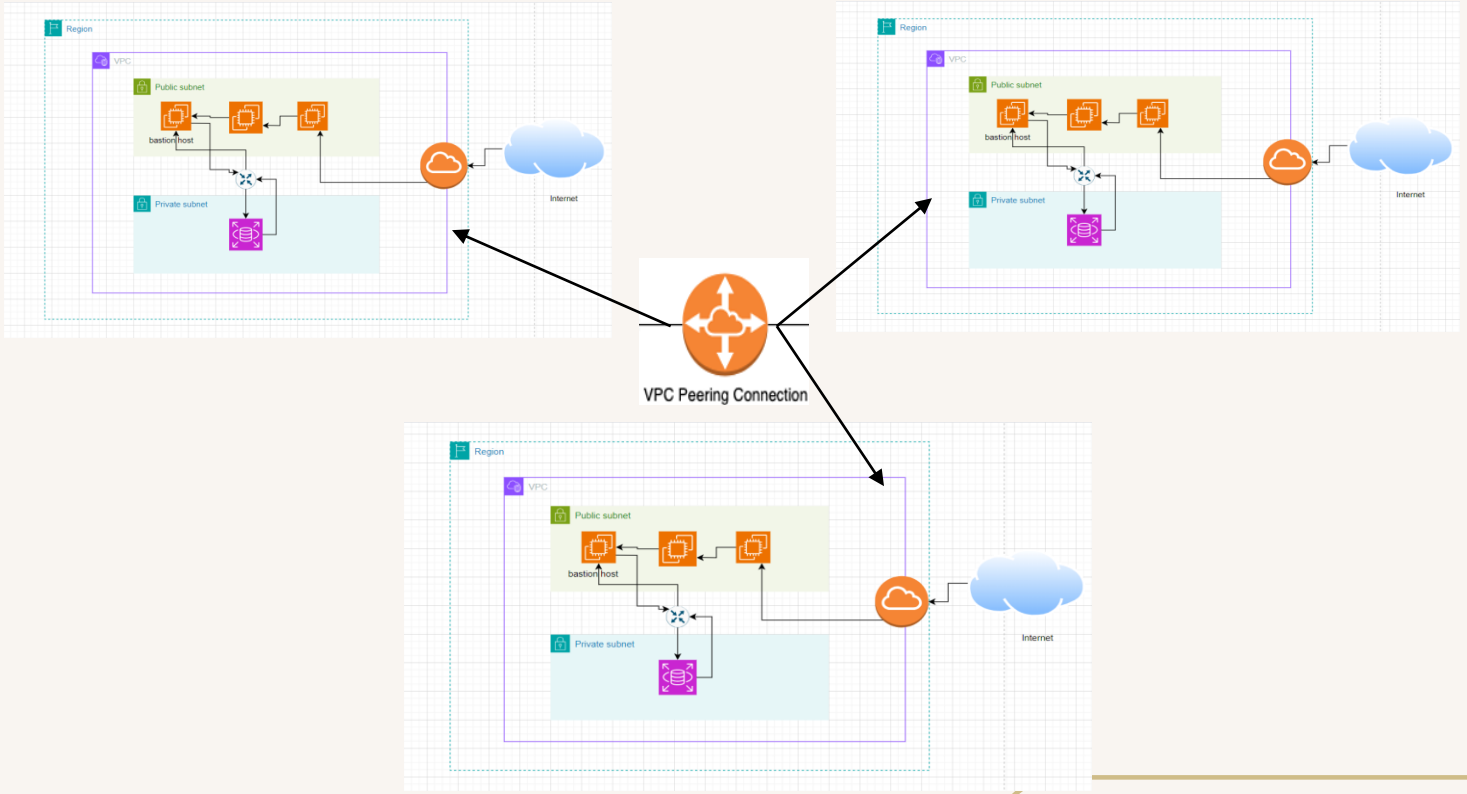


03. Why VPC peering

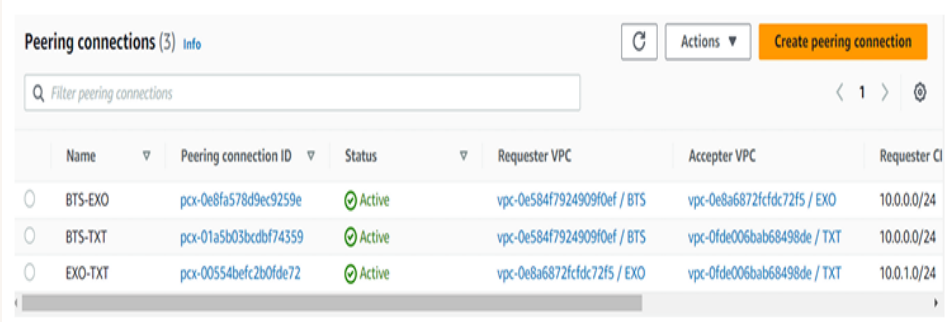
1. Private Communication
2. Cross-Region Connectivity
3. Cost-Effective
4. Security
5. Simplified Architecture
6. Scalability

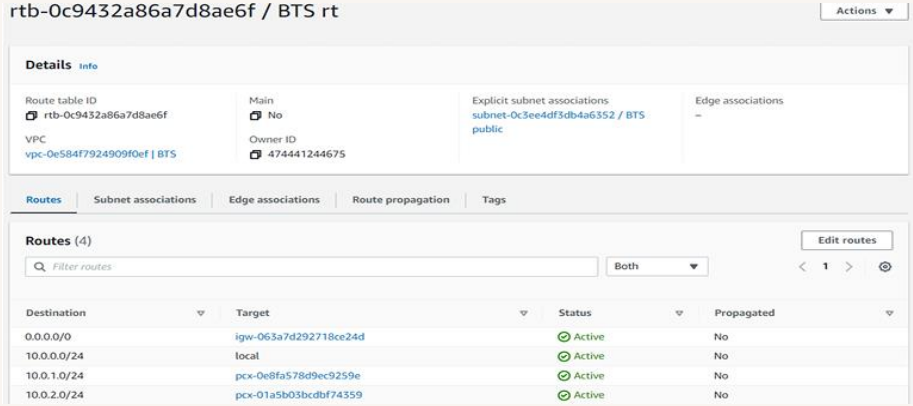


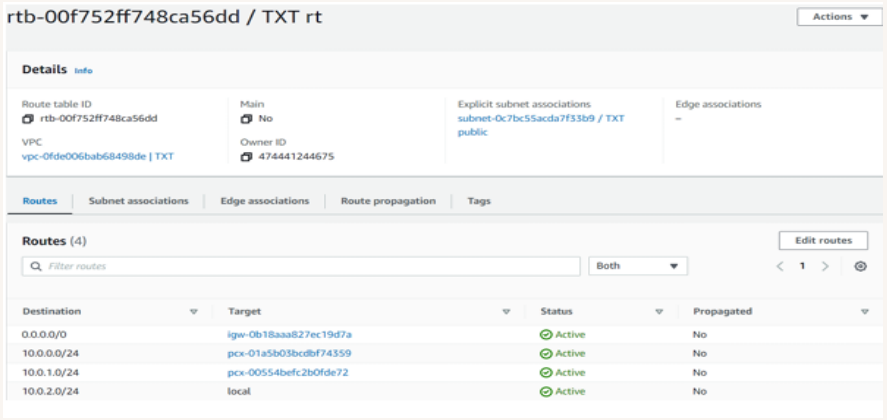
04. DEVELOPMENT

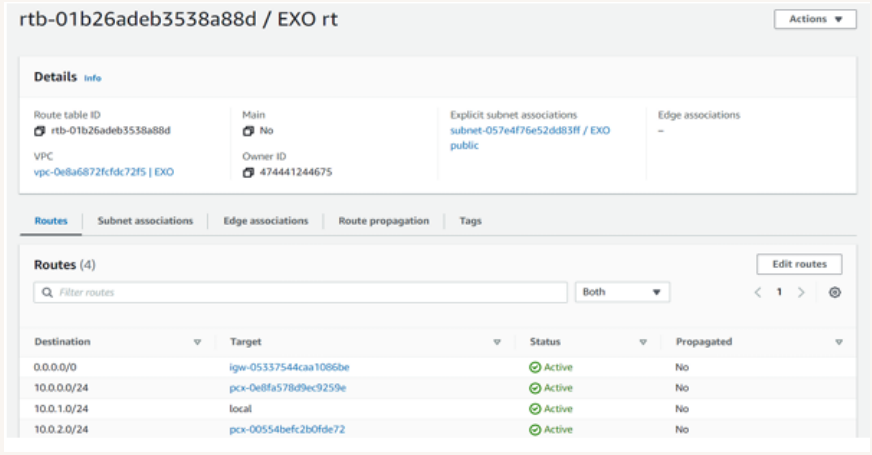


05.RESULTS


Peering connections (3) Info
Actions
Create peering connection
Filter peering connections
1
Name
Peering connection ID
Status
Requester VPC
Accepter VPC
Requester CI
BTS-EXO
pcx-0e8fa578d9ec9259e
Active
vpc-0e584f7924909f0ef / BTS
vpc-0e8a6872fcfdc72f5 / EXO
10.0.0.0/24
BTS-TXT
pcx-01a5b03bcdbf74359
Active
vpc-0e584f7924909f0ef / BTS
vpc-0fde006bab68498de / TXT
10.0.0.0/24
EXO-TXT
pcx-00554befc2b0fde72
Active
vpc-0e8a6872fcfdc72f5 / EXO
vpc-0fde006bab68498de / TXT
10.0.1.0/24


rtb-0c9432a86a7d8ae6f / BTS rt
Actions
Details Info
Route table ID
rtb-0c9432a86a7d8ae6f
Main
No
Explicit subnet associations
subnet-0c3ee4df3db4a6352 / BTS public
Edge associations
–
VPC
vpc-0e584f7924909f0ef | BTS
Owner ID
474441244675
Routes
Subnet associations
Edge associations
Route propagation
Tags
Routes (4)
Edit routes
Filter routes
Both
1
Destination
Target
Status
Propagated
0.0.0.0/0
igw-063a7d292718ce24d
Active
No
10.0.0.0/24
local
Active
No
10.0.1.0/24
pcx-0e8fa578d9ec9259e
Active
No
10.0.2.0/24
pcx-01a5b03bcdbf74359
Active
No






```
[ec2-user@ip-10-0-2-80 ~]$ sudo su
[root@ip-10-0-2-80 ec2-user]# ping 10.0.0.82
PING 10.0.0.82 (10.0.0.82) 56(84) bytes of data.
64 bytes from 10.0.0.82: icmp_seq=1 ttl=127 time=1.42 ms
64 bytes from 10.0.0.82: icmp_seq=2 ttl=127 time=0.856 ms
64 bytes from 10.0.0.82: icmp_seq=3 ttl=127 time=0.952 ms
64 bytes from 10.0.0.82: icmp_seq=4 ttl=127 time=0.923 ms
64 bytes from 10.0.0.82: icmp_seq=5 ttl=127 time=0.898 ms
^C
--- 10.0.0.82 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4005ms
rtt min/avg/max/mdev = 0.856/1.009/1.418/0.206 ms
[root@ip-10-0-2-80 ec2-user]# ping 10.0.1.103
PING 10.0.1.103 (10.0.1.103) 56(84) bytes of data.
64 bytes from 10.0.1.103: icmp_seq=1 ttl=127 time=1.11 ms
64 bytes from 10.0.1.103: icmp_seq=2 ttl=127 time=0.680 ms
64 bytes from 10.0.1.103: icmp_seq=3 ttl=127 time=0.675 ms
64 bytes from 10.0.1.103: icmp_seq=4 ttl=127 time=0.725 ms
64 bytes from 10.0.1.103: icmp_seq=5 ttl=127 time=0.950 ms
64 bytes from 10.0.1.103: icmp_seq=6 ttl=127 time=0.693 ms
^C
--- 10.0.1.103 ping statistics ---
6 packets transmitted, 6 received, 0% packet loss, time 5087ms
rtt min/avg/max/mdev = 0.675/0.804/1.106/0.164 ms
[root@ip-10-0-2-80 ec2-user]#
```

06. CONCLUSION

- In this project, I successfully designed and implemented a Virtual Private Cloud (VPC) architecture with distinct public and private subnets to optimize security and functionality. By deploying EC2 instances in the public subnet, equipped with a bastion host, I ensured secure access to the internet and management of resources.
- VPC peering is a valuable networking feature in AWS that facilitates secure and efficient communication between VPCs. By allowing private IP address communication, it reduces latency and minimizes data transfer costs, all while enhancing security by keeping traffic within AWS's internal network. VPC peering simplifies network architecture and supports both intra-region and cross-region connectivity, making it a versatile solution for scalable and cost-effective cloud infrastructure.


Thank You