**Use cases of Geo-Replication.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Scenario | Using Azure Portal | Using Terraform | Same Region | Paired Region | Remarks |
| Vanilla setup of flex server with replication | Worked | Worked | worked | Worked | Did not used CMEK and Virtual networks. |
| Enabled CMK, Virtual network Subnets of flex server for replication without Vnet peering. | Worked | Worked | Worked | Unsuccessful | For cross region we have raised a Microsoft ticket: 2311030030003471 to replicate server in the paired region |
| Enabled CMK, Virtual network Subnets of flex server for replication with Virtual network peering. | Worked | Worked | Worked | Worked | Virtual net peering has been tested through both portal and terraform. |
| Event Hub | Worked | InProgress | Worked | InProgress |  |
| Failover and Failback  Using Vnet Peering along with CMEK’s | Worked | InProgress | Worked | InProgress | 1.Primary server created in EastUS2.  2.replica created in Central US after failover it has been promoted as new primary server.  3.New replica for the new primary is created in Central India as Failback. |

* For the geo replication we require below steps:

1. Resource Group
2. Two managed identities in two different regions.
3. Two virtual networks in two different regions.
4. Two dedicated subnets for the Microsoft.DBpostgreSQL/flexibleservers.
5. And peering connections between two virtual networks for back-and-forth traffic flow.
6. Two key vaults in two different regions and generate keys in it.
7. One Private DNS zone and virtual network linkage for it.
8. Server creation with virtual network, key vault, key, managed identity of one region.
9. Replica creation with virtual network, key vault, key, managed identity of another region.

* Here the few screen shots of the created server and replica in two different regions.
* Manged identity in East US2

A screenshot of a computer

Description automatically generated

* Managed Identity in Central US.

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* Virtual Networks in East US2 and Central US.

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* Subnets dedicated to Microsoft.DBpostgreSQL.

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* Peering connection.

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* Keyvaults in east us2 and central us

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* Server Created in East US2 and replica Created in Central US.

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Here is the GitHub link of the concerned terraform code:

<https://github.com/manojh1/Postgres/blob/main/pg%20server%20with%20geo%20replication>.