Round-Island Bus Company Moves to Cloud: Take-Home Engineering Assignment

To implement the infrastructure for the RIBC migration from On-Prem to Cloud below is the plan and the design for the setup.

1. Architecture design:

The setup is about implementing two tier architecture with the private VPC and the egress with the Static cloud NAT.

A diagram of a computer network

Description automatically generated

**App Vm** – Web application has been hosted in the App VM and App Subnet.

**DB VM** – DB VM has been hosted in the DB subnet with Postgres-SQL installed in the server.

**NSG** – For the Web VM the NSG has been designed to allow only the inbound for 80, 443 to pubic and the port 22 for the selected networks. Outbound has been created to forward the traffic sent to the NAT and the DB server. DB NSG has been designed only to connect with APP and the Ansible servers.

Workflow for the implementation:

For the above architecture the terraform code and the Ansible play book has been saved in the solutions folder. While performing the terraform code below has been applied.

1. Setting up the VPC
2. Creating a two Subnets one for App/Web and one for DB
3. Create 3 instance, 2 instance in App/Web and 1 instance in DB subnet.
4. Creating Firewall rule for the App server and the DB server and the Ansible server.
5. In order to connect the instance IAP has been created.
6. Creating NAT gateway

Once the resources are provisioned, need to connect the Ansible server and install the Ansible configuration once this is completed, please use the ansible playbook which will perform the Python Django setup in the App/Web server and installation of the Postgres SQL in the DB server.