Requirement For GitHub Enterprise Server on Azure

- Licenses: Trial, demo, or 10 light users
- x86-64 vCPUs: 4
- Memory: 32GB
- Root storage: 200 GB
- Attached (data) storage: 150 GB

Prerequisites

- Install Ansible
- Install TerraForm
- Install Azure-CLI
- Azure Account Permission Contributor.

How to run

Steps to Run Terraform

1. Ensure your machine has Azure CLI installed, and that your Azure account has Contributor permissions on the Azure Subscription you're working on.

   ```
   az login
   az account set --subscription <subscription-id>
   ```

2. Modify the `subscription_id` value in the `./terraform/versions.tf` file located in the root directory.

3. (Optional) You can also customize your values in the `./terraform/terraform.tfvars` file located in the root directory.

4. Execute the following Terraform commands to create Azure resources for the project:

   ```
   cd terraform/
   terraform init
   terraform validate
   terraform plan
   terraform apply
   ```

Steps to Run ansible

```
cd ansible/
ansible-playbook -i inventory/hosts playbooks/main.yaml
```

Resource groups & Azure VMs

- Resource groups:
  - WP05_GITHUB_ENTERPRISE_EAST_US
  - WP05_GITHUB_ENTERPRISE_WEST_US_2
- Virtual machines:
  - vm-wp05-ge-east-us-1
  - vm-wp05-ge-east-us-2

- vm-wp05-ge-west-us-2-1 (cross region)

Setting up replica

1. ssh to replica vm

   ```
   ssh -p 122 -i <private key path> <admin username>@<replica IP>
   ```

2. To generate a key pair for replication, use the `ghe-repl-setup` command with the primary appliance's IP address and copy the public key as the command output.

   ```
   sudo ghe-repl-setup <primary IP>
   ```

   Output:

3. Open browser access to `https://<primary IP>:8443/setup/start`
4. Enter admin password
5. Input the SSH public key (2)
6. Go back SSH terminal, then enter the below command to verify the connection:

   ```
   ghe-repl-setup <primary ip>
   ```

   PS: for the second replica, add more flag `--add`

7. Start replica

   ```
   ghe-repl-start
   ```

8. Check status

   ```
   ghe-repl-status
   ```

Install Prometheus & Grafana

1. Ensure your machine has Azure CLI installed, and that your Azure account has Contributor permissions on the Azure Subscription you're working on.

   ```
   az login
   az account set --subscription <subscription-id>
   ```

2. Provision VM (Ubuntu LTS 18):

   ```
   az vm create -n vm-wp05-ge-west-us-2-prometheus-graffana -g
   WP05_GITHUB_ENTERPRISE_WEST_US_2 --size Standard_F8s_v2 -l westus2 --image
   Canonical:UbuntuServer:18.04-LTS:latest --storage-sku Standard_LRS --admin-
   password <admin password> --admin-username <admin username> --generate-ssh-keys
   --output table
   ```

3. Install Prometheus: https://www.cherryservers.com/blog/install-prometheus-ubuntu
4. Install Grafana: https://www.cherryservers.com/blog/install-grafana-ubuntu

5. Configuring `Load Balancer` for our 3 VMs
6. Configuring Failover script in Prometheus & Grafana VM in order to automatically promote the replica instance to the primary instance in case the primary instance down.
7. Integrate `Load balancer` service automatically find the proper instance and route traffic by `health-check` mechanism.