**Sc2. Terraform Templates**

1. **List the tools you will to create and store the Terraform templates.**

We can use **Visual Studio code** to create terraform templates and store it in **AzureDevOps (Git, TFS repo)**

We would require to store terraform state file in Azure Blob container for security.

1. **Explain the process and steps to create automated deployment pipeline.**

In order to create the deployment pipeline we would require to add the files in the AzureDevOps or any Other Repo.

**i)** we need to Create a Storage Account for State File to store in Azure Blob storage. We need Azure Blob account details to be specified in Backend module of terraform code. Public access of Blob storage Should be disabled.

**ii)**  we need to create the pipeline with mentioned steps either in yml or Task Format

Terraform Install #consider always running with the latest version.

Terraform init

displayName: Terraform Init

env:

BLOB\_ACCOUNT\_NAME: $(kv-tf-state-blob-account)

BLOB\_CONTAINER\_NAME: $(kv-tf-state-blob-container)

BLOB\_FILE: $(kv-tf-state-blob-file)

BLOB\_SAS\_TOKEN: $(kv-tf-state-sas-token)

Terraform Plan

Terraform apply

displayName: Terraform Apply

env:

ARM\_SUBSCRIPTION\_ID: $(kv-arm-subscription-id)

ARM\_CLIENT\_ID: $(kv-arm-client-id)

ARM\_CLIENT\_SECRET: $(kv-arm-client-secret)

ARM\_TENANT\_ID: $(kv-arm-tenant-id)

We can also separate the terraform plan and apply in different stages in pipeline as per project requirement.

**iii)** In case Any secrets we can store that in Key Vault and can access the values by using pipeline secret variables

1. **Create a sample Terraform template you will use to deploy Below services:**

**Vnet 2 Subnet NSG to open port 80 and 443 1 Window VM in each subnet 1 Storage account:**

Please find terraform template files attached and updated in github link



1. **Explain how will you access the password stored in Key Vault and use it as Admin Password in the VM Terraform template.**

We can use mentioned modules and changes the username password field in os\_profile for vm creation

data "azurerm\_key\_vault\_secret" "mySecret" {

name = "TestUser"

vault\_uri = "https://yourKeyVault.vault.azure.net/"

}

os\_profile {

computer\_name = "myvm"

admin\_username = "TestUser"

admin\_password = "${data.azurerm\_key\_vault\_secret.mySecret.value}"

}