

# Azure Terraform Modules

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Create the **azure-modules** directory.

The folder structure for the above-created directory is as follows:

```
azure-modules
├── acr
│   ├── main.tf
│   ├── outputs.tf
│   └── variables.tf
├── aks
│   ├── main.tf
│   └── variables.tf
├── container-apps
│   ├── main.tf
│   ├── outputs.tf
│   └── variables.tf
├── mysql-flexible
│   ├── main.tf
│   ├── outputs.tf
│   └── variables.tf
├── resource-group
│   ├── main.tf
│   └── variables.tf
└── virtual-network
    ├── main.tf
    ├── outputs.tf
    └── variables.tf
```

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## Resource Group Module

Let's start with the Resource Group Module.

1. Create a *resource-group* folder inside the above-created directory.
2. Inside *resource-group* folder, create *main.tf* file.
3. Define the following resources:
  - `azurerm_resource_group`
4. Click [code](#) for reference.
5. The definition of *main.tf* file has been completed.
6. Now we will create *variables.tf* file for declaring variables.
7. Inside it, declare the following variables:

- resource-group-properties
8. Click [code](#) for reference.
  9. We have completed defining the **Resource Group Module**.
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## VNet Module

Now, let's create a Virtual Network module.

1. Create a *vnet* folder inside the above-created directory.
  2. Inside *vnet* folder, create *main.tf* file.
  3. Define the following resources:
    - azurerm\_virtual\_network
  4. Click [code](#) for reference.
  5. The definition of *main.tf* file is completed.
  6. Now we will create *variables.tf* file for declaring variables.
  7. Inside it, declare the following variables:
    - resource-group-properties
    - virtual-network-properties
  8. Click [code](#) for reference.
  9. We have completed declaring *variables.tf* file for the *VNet module*.
  10. Now we will declare outputs for the *VNet module*.
  11. Create *outputs.tf* file and add the following outputs:
    - azurerm\_virtual\_network.vnet.id
    - azurerm\_virtual\_network.vnet.name
  12. Click [code](#) for reference.
  13. Now we have completed defining the **VNet Module**.
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## ACR Module

We will use Azure Container Registry for storing container image.

1. Create *acr* folder inside the above-created *azure-modules* directory.
2. Inside *acr* folder, create *main.tf* file and define the following resources:
  - azurerm\_container\_registry
3. Click [code](#) for reference.
4. The definition of *main.tf* file is complete.
5. Now we will create *variables.tf* file.
6. Inside it, declare the following variables:
  - resource-group-properties
  - acr-properties
7. Click [code](#) for reference.
8. Variables have been declared.
9. Now create the *outputs.tf* file and define the following outputs:
  - acr-id
  - acr-name
  - acr-login-server

10. Click [code](#) for reference.
11. We have completed defining the **ACR Module**.

## MySQL Flexible Module

For the database, we will use Azure MySQL Flexible.

1. Create *mysql-flexible* folder inside the *azure-modules* directory.
  2. Inside *mysql-flexible* folder, create *main.tf* file and define the following resources:
    - `azurerm_subnet`
    - `azurerm_private_dns_zone`
    - `azurerm_private_dns_zone_virtual_network_link`
    - `azurerm_mysql_flexible_server`
    - `azurerm_mysql_flexible_database`
  3. Click [code](#) for reference.
  4. The definition of *main.tf* file is complete.
  5. Now we will create *variables.tf* file and declare the following variables:
    - `resource-group-properties`
    - `mysql-flexible-properties`
    - `vnet-id`
    - `vnet-name`
  6. Click [code](#) for reference.
  7. Variables have been declared.
  8. Now create the *outputs.tf* file and define the following outputs:
    - `DB_HOST`
  9. Click [code](#) for reference.
  10. We have completed defining the **MySQL Flexible Module**.
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## Storage Module

Let's start with the Storage Module

1. Create *storage* folder in the above-created *azure-modules* directory.
  2. Inside it, create *main.tf* file and define the following resources:
    - `azurerm_storage_account`
    - `azurerm_storage_container`
    - `azurerm_storage_blob`
  3. Click [code](#) for reference.
  4. The definition of *main.tf* file for *Storage Module* is complete.
  5. Now create *variables.tf* file and declare the following variables:
    - `resource-group-properties`
    - `storage-properties`
    - `vnet-public-subnet-id`
  6. Click [code](#) for reference.
  7. Variables have been declared.
  8. The definition of **Storage Module** is complete.
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## Container Apps Module

Let's start with the Container Apps Module.

1. Create *container-apps* folder in the above-created *azure-modules* directory.
  2. Inside it, create *main.tf* file and define the following resources:
    - `azurerm_container_registry_scope_map`
    - `azurerm_container_registry_token`
    - `azurerm_container_registry_token_password`
    - `azurerm_log_analytics_workspace`
    - `azurerm_container_app_environment`
    - `azurerm_container_app`
  3. Click [code](#) for reference.
  4. The definition of *main.tf* file for *Container Apps* is complete.
  5. Now create *variables.tf* file and declare the following variables:
    - `resource-group-properties`
    - `container-apps-properties`
    - `vnet-public-subnet-id`
    - `acr-id`
    - `acr-name`
  6. Click [code](#) for reference.
  7. Variables have been declared.
  8. Now create the *outputs.tf* file and define the following outputs:
    - `container-apps-url`
  9. Click [code](#) for reference.
  10. The definition of **Container Apps Module** is complete.
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## AKS Module

Let's start with the AKS Module.

1. Create the *aks* folder in the *azure-modules* directory.
  2. Inside it, create a *main.tf* file and define the following resources:
    - `azurerm_subnet`
    - `azurerm_kubernetes_cluster`
  3. Click [code](#) for reference.
  4. The *main.tf* file for AKS has been defined.
  5. Now we will create *variables.tf* file and declare the following variables:
    - `resource-group-properties`
    - `aks-properties`
    - `vnet-name`
  6. Click [code](#) for reference.
  7. We have completed defining the **AKS Module**.
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