

TASKS ON TERRAFORM

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❖ **DATE:** 26/07/2025

❖ **BATCH:** 11

❖ **NO.OF TASKS:** 1

Task 1. Create resource group using terraform

Create a Directory:

To check the accounts run the command **az account list**

Run the command

```
az ad sp create-for-rbac --role="Contributor" --scopes="/subscriptions/6b09f008-6934-4533-97f5-79266f544b0b"
```

The command is used to create a new Azure Active Directory service principal and immediately assign it the Contributor role scoped to the specified subscription

```
muzzammil [ ~ ]$ az account list
[
  {
    "cloudName": "AzureCloud",
    "homeTenantId": "358ece45-8c96-48ac-a4b2-cc1af1a729a6",
    "id": "6b09f008-6934-4533-97f5-79266f544b0b",
    "isDefault": true,
    "managedByTenants": [],
    "name": "Azure subscription 1",
    "state": "Enabled",
    "tenantDefaultDomain": "shaikhussain752gmail.onmicrosoft.com",
    "tenantDisplayName": "Default Directory",
    "tenantId": "358ece45-8c96-48ac-a4b2-cc1af1a729a6",
    "user": {
      "name": "shaikhussain752@gmail.com",
      "type": "user"
    }
  }
]
muzzammil [ ~ ]$ az ad sp create-for-rbac --role="Contributor" --scopes="/subscriptions/6b09f008-6934-4533-97f5-79266f544b0b"
Creating 'Contributor' role assignment under scope '/subscriptions/6b09f008-6934-4533-97f5-79266f544b0b'
The output includes credentials that you must protect. Be sure that you do not include these credentials in your code or check the credentials into your source control. For more information, see https://aka.ms/azadsp-cli
{
  "appId": "df59ef3d-2fe8-4b05-9fa2-b8e5ae063cd7",
  "displayName": "azure-cli-2025-07-26-12-07-50",
  "password": "wxL8Q~7wNI--SBmPObmdi_Ift5h-hHl39iXy5cfz",
  "tenant": "358ece45-8c96-48ac-a4b2-cc1af1a729a6"
}
muzzammil [ ~ ]$
```

```
{
  "appId": "df59ef3d-2fe8-4b05-9fa2-b8e5ae063cd7",
  "displayName": "azure-cli-2025-07-26-12-07-50",
  "password": "wxL8Q~7wNI--SBmPObmdi_Ift5h-hHl39iXy5cfz",
  "tenant": "358ece45-8c96-48ac-a4b2-cc1af1a729a6"
}
```

Assign the **environmental variables** as follows

```
export ARM_CLIENT_ID="df59ef3d-2fe8-4b05-9fa2-b8e5ae063cd7"
export ARM_CLIENT_SECRET="nEr8Q~pVgPMH2z0u-w3CtUct21wvt1Y9Vvk7cti"
export ARM_TENANT_ID="358ece45-8c96-48ac-a4b2-cc1af1a729a6"
export ARM_SUBSCRIPTION_ID="6b09f008-6934-4533-97f5-79266f544b0b"
```

We can see the Directory is created

The screenshot shows the Microsoft Azure portal interface. The top navigation bar includes the Microsoft Azure logo, an 'Upgrade' button, a search bar, and a Copilot icon. The user's profile is shown as 'shaikhussain752@gmail...'. The main content area is titled 'Default Directory | App registrations'. On the left, there is a sidebar with navigation options: Overview, Preview features, Diagnose and solve problems, and Manage. Under 'Manage', there are links for Users, Groups, External Identities, Roles and administrators, and Administrative units. The main area shows a list of applications. A table lists the following details for the application 'azure-cli-2025-07-26-12-07-50':

Display name	Application (client) ID	Created on	Certificates & secrets
azure-cli-2025-07-26-12-07-50	df59ef3d-2fe8-4b05-9fa2-b8e5ae063cd7	26/07/2025	Current

Note the following details

The screenshot shows the 'Details' page for the application 'azure-cli-2025-07-26-12-07-50'. The page displays various details including:

- Display name: azure-cli-2025-07-26-12-07-50
- Application (client) ID: df59ef3d-2fe8-4b05-9fa2-b8e5ae063cd7
- Object ID: d9fde6c-3119-42be-b5f0-d6061f6a4221
- Directory (tenant) ID: 358ece45-8c96-48ac-a4b2-cc1af1a729a6
- Supported account types: My organization only
- Client credentials: 0 certificate, 1 secret
- Redirect URIs: Add a Redirect URI
- Application ID URI: Add an Application ID URI
- Managed application in L...: azure-cli-2025-07-26-12-07-50
- State: Activated

Go to Certificates & Secrets click on **New client secret** enter details and click on **Add**

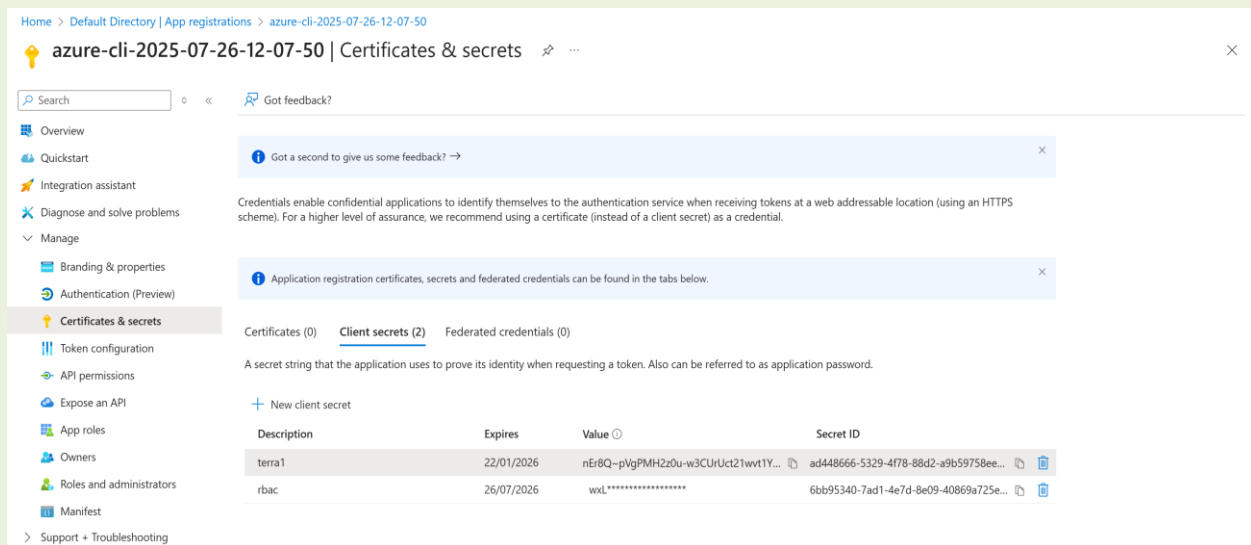
The screenshot shows the 'Add a client secret' dialog box. The dialog box prompts for a Description and an Expires date. The 'Expires' dropdown is set to 'Recommended: 180 days (6 months)'. The 'Add' button is highlighted.

Description	Expires	Value
rbac	26/07/2026	wxL*****

Note the Value and secret ID

Value=nEr8Q~pVgPMH2z0u-w3CUrUct21wvt1Y9VkZ7cti

Secret ID=ad448666-5329-4f78-88d2-a9b59758eedb



The screenshot shows the Azure portal interface for an application registration named 'azure-cli-2025-07-26-12-07-50'. The left sidebar contains navigation links: Overview, Quickstart, Integration assistant, Diagnose and solve problems, Manage, Branding & properties, Authentication (Preview), Certificates & secrets (selected), Token configuration, API permissions, Expose an API, App roles, Owners, Roles and administrators, and Manifest. The main content area is titled 'Certificates & secrets' and includes tabs for Certificates (0), Client secrets (2), and Federated credentials (0). A table lists the client secrets:

Description	Expires	Value	Secret ID
terra1	22/01/2026	nEr8Q~pVgPMH2z0u-w3CUrUct21wvt1Y...	ad448666-5329-4f78-88d2-a9b59758ee...
rbac	26/07/2026	wxL*****	6bb95340-7ad1-4e7d-8e09-40869a725e...

Create a **res.tf** file using **vi res.tf** and enter the following details to add the provider

terraform {

required_providers {

azurerm = {

source = "hashicorp/azurerm"

version = "4.37.0"

}

}

}

provider "azurerm" {

features {}

}

```
terraform {
  required_providers {
    azurerm = {
      source = "hashicorp/azurerm"
      version = "4.37.0"
    }
  }
}

provider "azurerm" {
  features {}
}
```

Run the command **terraform init** to initialize directory

```
muzzamnil [ ~/azure ]$ vi res.tf
muzzamnil [ ~/azure ]$ terraform init
Initializing the backend...
Initializing provider plugins...
- Finding hashicorp/azurerm versions matching "4.37.0"...
- Installing hashicorp/azurerm v4.37.0...
- Installed hashicorp/azurerm v4.37.0 (signed by HashiCorp)
Terraform has created a lock file .terraform.lock.hcl to record the provider
selections it made above. Include this file in your version control repository
so that Terraform can guarantee to make the same selections by default when
you run "terraform init" in the future.

Terraform has been successfully initialized!

You may now begin working with Terraform. Try running "terraform plan" to see
any changes that are required for your infrastructure. All Terraform commands
should now work.

If you ever set or change modules or backend configuration for Terraform,
rerun this command to reinitialize your working directory. If you forget, other
commands will detect it and remind you to do so if necessary.
muzzamnil [ ~/azure ]$
```

In **res.tf** file add the resource block to create resource group

```
terraform {
  required_providers {
    azurerm = {
      source = "hashicorp/azurerm"
      version = "4.37.0"
    }
  }
}

provider "azurerm" {
  features {}
}

resource azurerm_resource_group rg {
  location = "westus"
  name="testtf123"
}
```

Run the command **terraform apply**

```
muzzamnil [ ~/azure ]$ terraform apply

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:
+ create

Terraform will perform the following actions:

# azurerm_resource_group.rg will be created
+ resource "azurerm_resource_group" "rg" {
+ id           = (known after apply)
+ location     = "westus"
+ name        = "testtf123"
}

Plan: 1 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?
Terraform will perform the actions described above.
Only 'yes' will be accepted to approve.

Enter a value: yes

azurerm_resource_group.rg: Creating...
azurerm_resource_group.rg: Still creating... [0m10s elapsed]
azurerm_resource_group.rg: Creation complete after 16s [id=/subscriptions/6b09f008-6934-4533-97f5-79266f544b0b/resourceGroups/testtf123]

Apply complete! Resources: 1 added, 0 changed, 0 destroyed.
muzzamnil [ ~/azure ]$
```

The resource group **testtf123** is created

Home > Resource groups ...

Default Directory

+ Create Manage view Refresh Export to CSV Open query Assign tags Group by none

You are viewing a new version of Browse experience. Click here to access the old experience.

Filter for any field... Subscription equals all Location equals all Add filter

<input type="checkbox"/>	RG-C	Azure subscription 1	West Europe
<input type="checkbox"/>	sk-dns	Azure subscription 1	North Europe
<input type="checkbox"/>	sk-vnet	Azure subscription 1	East US
<input type="checkbox"/>	sk_networks	Azure subscription 1	West US 2
<input type="checkbox"/>	slave_vnet	Azure subscription 1	East US
<input type="checkbox"/>	test	Azure subscription 1	West US
<input type="checkbox"/>	testtf123	Azure subscription 1	West US
<input type="checkbox"/>	vm	Azure subscription 1	East US
<input type="checkbox"/>	vm-sk	Azure subscription 1	West US 2
<input type="checkbox"/>	vm1	Azure subscription 1	East US
<input type="checkbox"/>	vm2	Azure subscription 1	East US
<input type="checkbox"/>	vm3	Azure subscription 1	East US
<input type="checkbox"/>	vn1	Azure subscription 1	West US 3

Showing 1 - 27 of 27. Display count: 50

Give feedback

We can create resource group without providing the environmental variables by giving the details in resource block as follows

```
terraform {  
  
  required_providers {  
  
    azurerm = {  
  
      source = "hashicorp/azurerm"  
  
      version = "4.37.0"  
  
    }  
  
  }  
  
}  
  
provider "azurerm" {  
  
  features {}  
  
  subscription_id = "6b09f008-6934-4533-97f5-79266f544b0b"  
  
  client_id      = "df59ef3d-2fe8-4b05-9fa2-b8e5ae063cd7"  
  
  client_secret   = "nEr8Q~pVgPMH2z0u-w3CUrUct21wvt1Y9VkZ7cti"  
  
  tenant_id      = "358ece45-8c96-48ac-a4b2-cc1af1a729a6"  
  
}  
  
resource azurerm_resource_group rg {  
  
  location = "westus"  
  
  name="test23"  
  
}
```

```
terraform {  
  required_providers {  
    azurerm = {  
      source = "hashicorp/azurerm"  
      version = "4.37.0"  
    }  
  }  
}  
  
provider "azurerm" {  
  features {}  
  subscription_id = "6b09f008-6934-4533-97f5-79266f544b0b"  
  client_id      = "df59ef3d-2fe8-4b05-9fa2-b8e5ae063cd7"  
  client_secret   = "nEr8Q~pVgPMH2z0u-w3CUrUct21wvt1Y9VkZ7cti"  
  tenant_id      = "358ece45-8c96-48ac-a4b2-cc1af1a729a6"  
}  
  
resource azurerm_resource_group rg {  
  location = "westus"  
  name="test23"  
}
```

Run the command **terraform apply** it will create a resource group named **test23**

```
muzzammil [ ~/azure ]$ terraform apply

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:
+ create

Terraform will perform the following actions:

# azurerm_resource_group.rg will be created
+ resource "azurerm_resource_group" "rg" {
+   id          = (known after apply)
+   location    = "westus"
+   name        = "test23"
}

Plan: 1 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?
Terraform will perform the actions described above.
Only 'yes' will be accepted to approve.

Enter a value: yes

azurerm_resource_group.rg: Creating...
azurerm_resource_group.rg: Still creating... [00m10s elapsed]
azurerm_resource_group.rg: Creation complete after 17s [id=/subscriptions/6b09f008-6934-4533-97f5-79266f544b0b/resourceGroups/test23]

Apply complete! Resources: 1 added, 0 changed, 0 destroyed.
muzzammil [ ~/azure ]$
```

Resource group **test23** is created

Home >

Resource groups

Default Directory

+ Create Manage view Refresh Export to CSV Open query Assign tags Group by none

You are viewing a new version of Browse experience. Click here to access the old experience.

Filter for any field... Subscription equals all Location equals all Add filter

Resource group name	Subscription	Location
<input type="checkbox"/> ResourceMoverRG-westus3-uksouth-uks	Azure subscription 1	UK South
<input type="checkbox"/> RG-A	Azure subscription 1	West Europe
<input type="checkbox"/> RG-B	Azure subscription 1	West Europe
<input type="checkbox"/> RG-C	Azure subscription 1	West Europe
<input type="checkbox"/> sk-dns	Azure subscription 1	North Europe
<input type="checkbox"/> sk-vnet	Azure subscription 1	East US
<input type="checkbox"/> sk_networks	Azure subscription 1	West US 2
<input type="checkbox"/> slave_vnet	Azure subscription 1	East US
<input type="checkbox"/> test	Azure subscription 1	West US
<input type="checkbox"/> test23	Azure subscription 1	West US
<input type="checkbox"/> testtf23	Azure subscription 1	West US
<input type="checkbox"/> vm	Azure subscription 1	East US

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Give feedback