TASKS ON TERRAFORM

- **NAME: S.MUZZAMMIL HUSSAIN**
- **DATE: 26/07/2025**
- **BATCH: 11**
- **NO.OF TASKS: 1**

Task 1 . Create resource group and virtual machine using Azure CLI, create a subscription also.

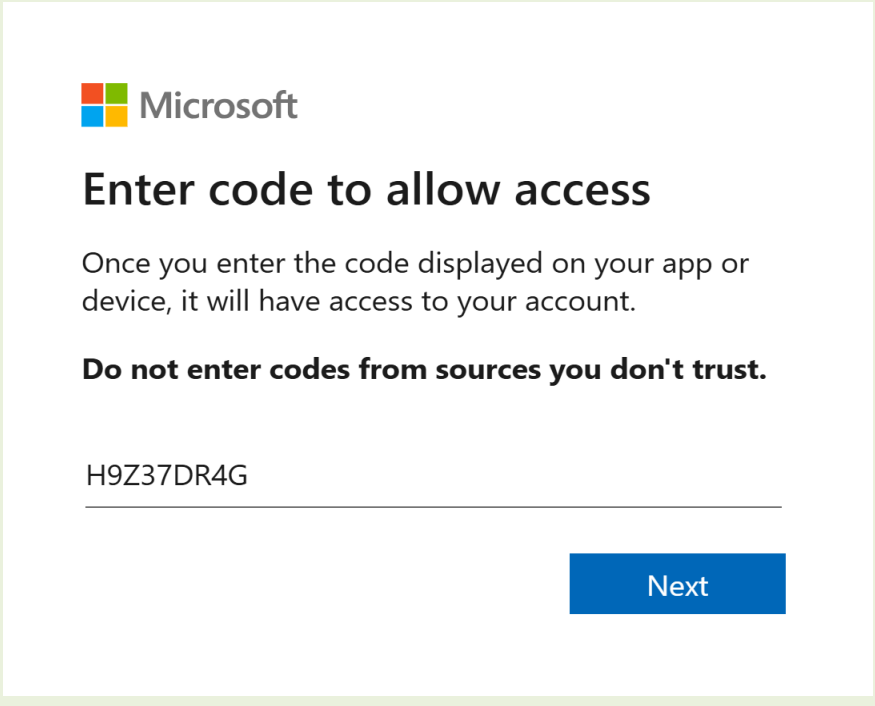
Go to azure portal using portal.azure.com and click on CLI of the virtual machine we have terraform and azure CLI installed in it

```
muzzammil [ ~ ]$ terraform -v
Terraform v1.12.2
on linux_amd64
muzzammil [ ~ ]$ az -v
azure-cli                         2.75.0

core                              2.75.0
telemetry                          1.1.0

Extensions:
ml                                2.37.2
ssh                                2.0.6

Dependencies:
msal                            1.33.0b1
azure-mgmt-resource               23.3.0

Python location '/usr/bin/python3.12'
Config directory '/home/muzzammil/.azure'
Extensions directory '/home/muzzammil/.azure/cliextensions'
Extensions system directory '/usr/lib/python3.12/site-packages/azure-cli-extensions'

Python (Linux) 3.12.9 (main, Jun 12 2025, 19:38:44) [GCC 13.2.0]

Legal docs and information: aka.ms/AzureCliLegal


Your CLI is up-to-date.
muzzammil [ ~ ]$
```

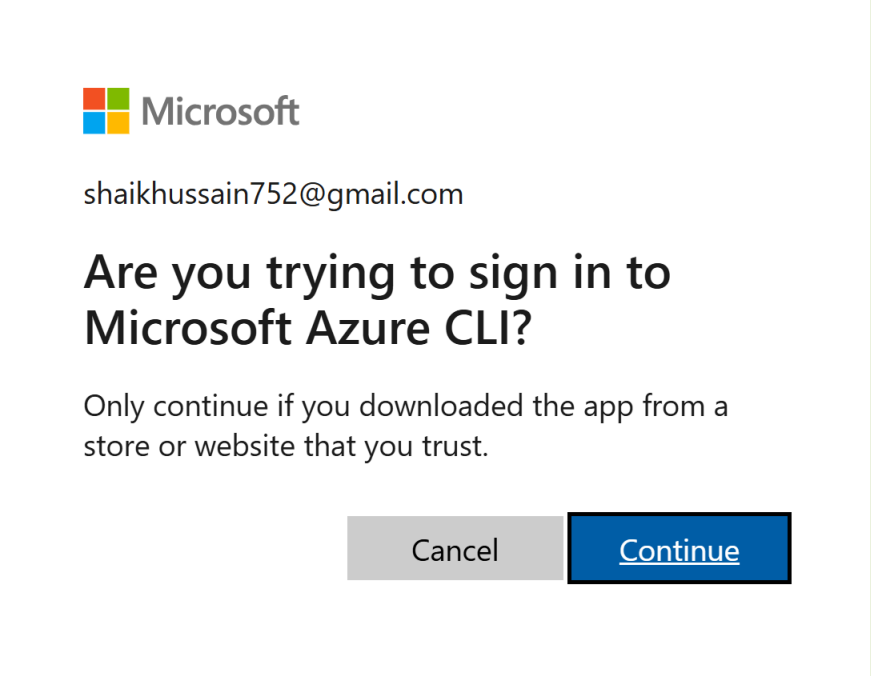
Run the command **az login** which gives a **URL (https://microsoft.com/devicelogin)** click on **URL**, copy the **code** that is needed to **authenticate**

```
muzzammil [ ~ ]$ az login
Cloud Shell is automatically authenticated under the initial account signed-in with. Run 'az login' only if you need to use a different account
To sign in, use a web browser to open the page https://microsoft.com/devicelogin and enter the code H9Z37DR4G to authenticate.
```

Paste the code here and click on **Next**



Click on **Continue**



It will give the subscriptions present in the azure, click on Enter as it is Default.

```
muzzammil [ ~ ]$ az login
Cloud Shell is automatically authenticated under the initial account signed-in with. Run 'az login' only if you need to use a different account
To sign in, use a web browser to open the page https://microsoft.com/devicelogin and enter the code H9Z37DR4G to authenticate.

Retrieving tenants and subscriptions for the selection...

[Tenant and subscription selection]

No     Subscription name     Subscription ID                       Tenant
-----  --------------------  ------------------------------------  ----------------
[1] *  Azure subscription 1  6b09f008-6934-4533-97f5-79266f544b0b  Default Directory

The default is marked with an *; the default tenant is 'Default Directory' and subscription is 'Azure subscription 1' (6b09f008-6934-4533-97f5-79266f544b0b).

Select a subscription and tenant (Type a number or Enter for no changes):

Tenant: Default Directory
Subscription: Azure subscription 1 (6b09f008-6934-4533-97f5-79266f544b0b)

[Announcements]
With the new Azure CLI login experience, you can select the subscription you want to use more easily. Learn more about it and its configuration at https://go.microsoft.com/fwlink/?
linkid=2271236

If you encounter any problem, please open an issue at https://aka.ms/azclibug

[Warning] The login output has been updated. Please be aware that it no longer displays the full list of available subscriptions by default.

muzzammil [ ~ ]$
```

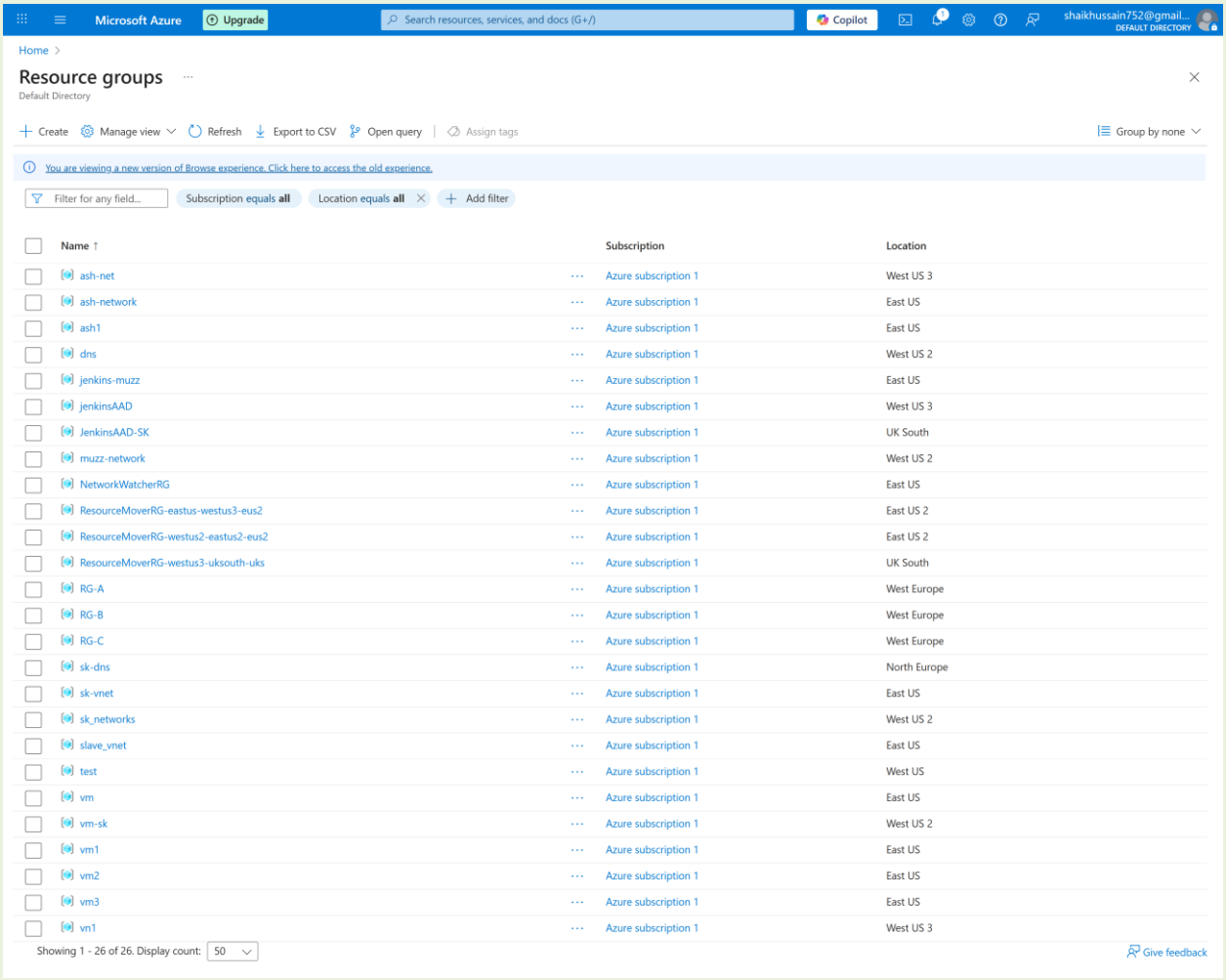
To check the resource groups present in azure run command **az group list -o table**

```
muzzammil [ ~ ]$ az group list -o table
Name                                Location     Status
----------------------------------  -----------  ---------
ResourceMoverRG-westus3-uksouth-uks  uksouth      Succeeded
JenkinsAAD-SK                       uksouth      Succeeded
ResourceMoverRG-westus2-eastus2-eus2  eastus2      Succeeded
ResourceMoverRG-eastus-westus3-eus2  eastus2      Succeeded
jenkins-muzz                        eastus       Succeeded
NetworkWatcherRG                    eastus       Succeeded
vm                                  eastus       Succeeded
vm1                                 eastus       Succeeded
vm2                                 eastus       Succeeded
vm3                                 eastus       Succeeded
sk-vnet                             eastus       Succeeded
slave_vnet                          eastus       Succeeded
ash1                                eastus       Succeeded
ash-network                         eastus       Succeeded
sk-dns                              northeurope  Succeeded
vm-sk                               westus2      Succeeded
muzz-network                        westus2      Succeeded
sk_networks                         westus2      Succeeded
vn1                                 westus3      Succeeded
dns                                 westus2      Succeeded
jenkinsAAD                          westus3      Succeeded
ash-net                             westus3      Succeeded
RG-A                                westeurope   Succeeded
RG-B                                westeurope   Succeeded
RG-C                                westeurope   Succeeded
muzzammil [ ~ ]$
```

To create a resource run the command **az group create -n test -l westus,** here we are giving group name as **test** and location as **westus**

```
muzzammil [ ~ ]$ az group create -n test -l westus
{
  "id": "/subscriptions/6b09f008-6934-4533-97f5-79266f544b0b/resourceGroups/test",
  "location": "westus",
  "managedBy": null,
  "name": "test",
  "properties": {
    "provisioningState": "Succeeded"
  },
  "tags": null,
  "type": "Microsoft.Resources/resourceGroups"
}
muzzammil [ ~ ]$
```

The resource group **test** is created



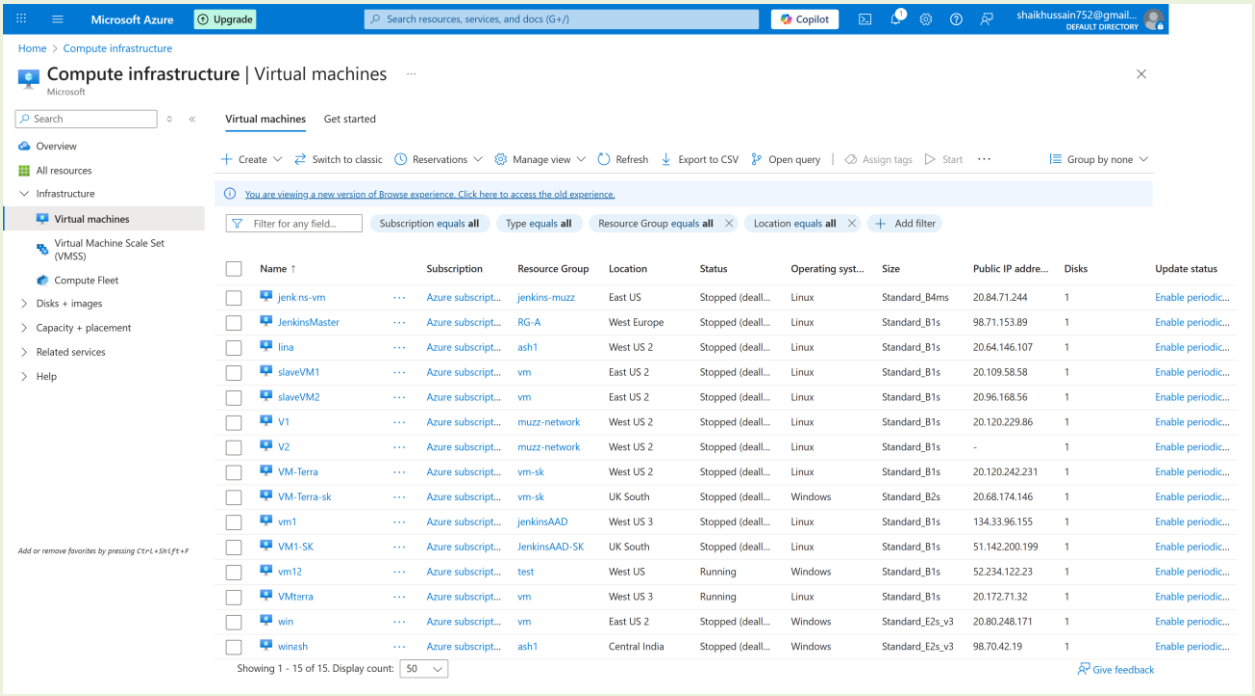
To check the VM in the azure run the command **az vm list -o table**

```
muzzammil [ ~ ]$ az vm list -o table
Name           ResourceGroup    Location      Zones
-------------  ---------------  ------------  -------
jenkins-vm     JENKINS-MUZZ     eastus        1
slaveVM1       VM               eastus2       1
slaveVM2       VM               eastus2       1
win            VM               eastus2       2
JenkinsMaster  RG-A             westeurope
winash         ASH1             centralindia  2
lina           ASH1             westus2       3
V1             MUZZ-NETWORK     westus2       3
V2             MUZZ-NETWORK     westus2       3
VM-Terra       VM-SK            westus2       3
VM1-SK         JENKINSAAD-SK    uksouth
VM-Terra-sk    VM-SK            uksouth       1
vm1            JENKINSAAD       westus3       1
VMterra        VM               westus3       1
muzzammil [ ~ ]$
```

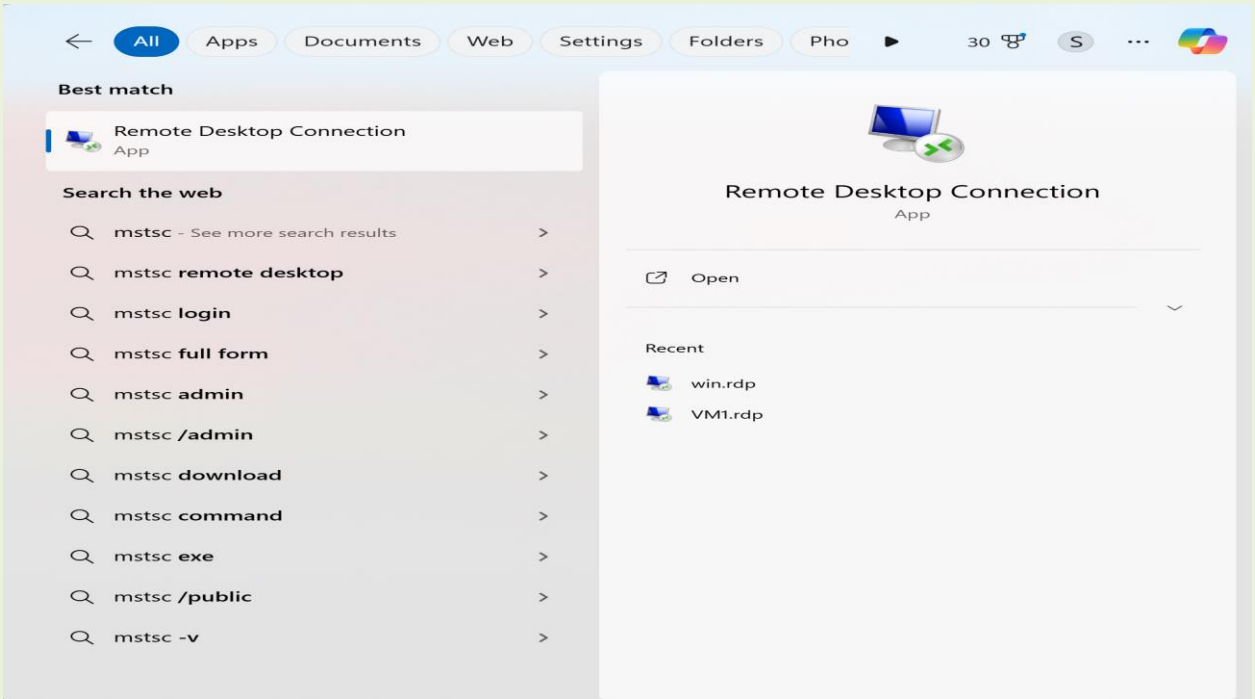
Create a VM using command **az vm create –g test –n vm12 –size Standard B1s,** here the group name is **test** and VM name is **vm12** and size we are giving as **Standard B1s**

```
muzzammil [ ~ ]$ az vm create -g test -n vm12 --size Standard_B1s
The default value of '--size' will be changed to 'Standard_D2s_v5' from 'Standard_DS1_v2' in a future release.

Admin Password:
Confirm Admin Password:
{
  "fqdns": "",
  "id": "/subscriptions/6b09f008-6934-4533-97f5-79266f544b0b/resourceGroups/test/providers/Microsoft.Compute/virtualMachines/vm12",
  "location": "westus",
  "macAddress": "00-0D-3A-59-64-63",
  "powerState": "VM running",
  "privateIpAddress": "10.0.0.4",
  "publicIpAddress": "52.234.122.23",
  "resourceGroup": "test"
}
muzzammil [ ~ ]$
```

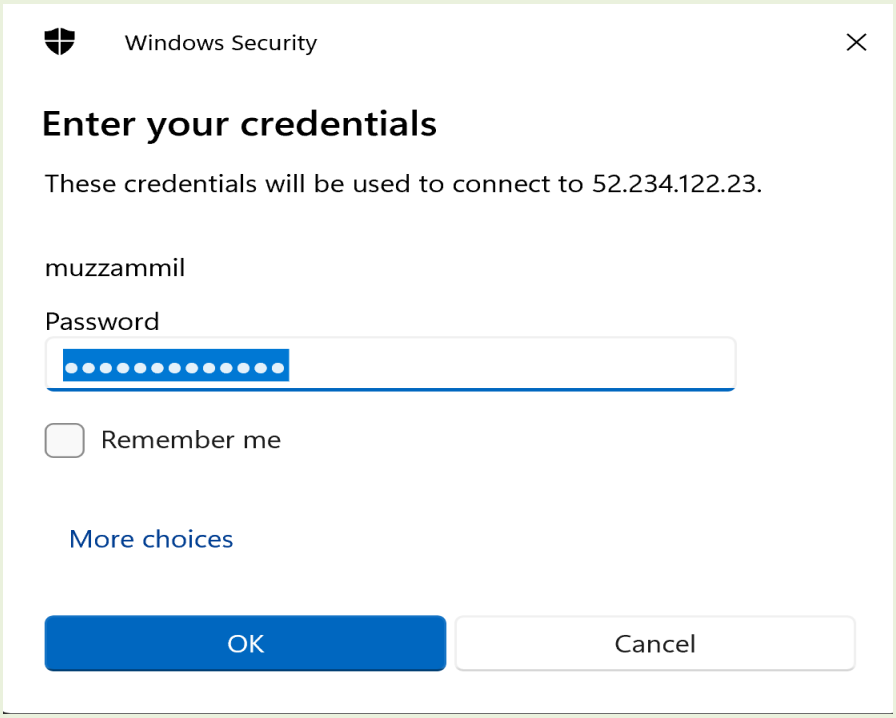
The VM **vm12** is created



Search for Remote desktop connection using **mstsc** in search

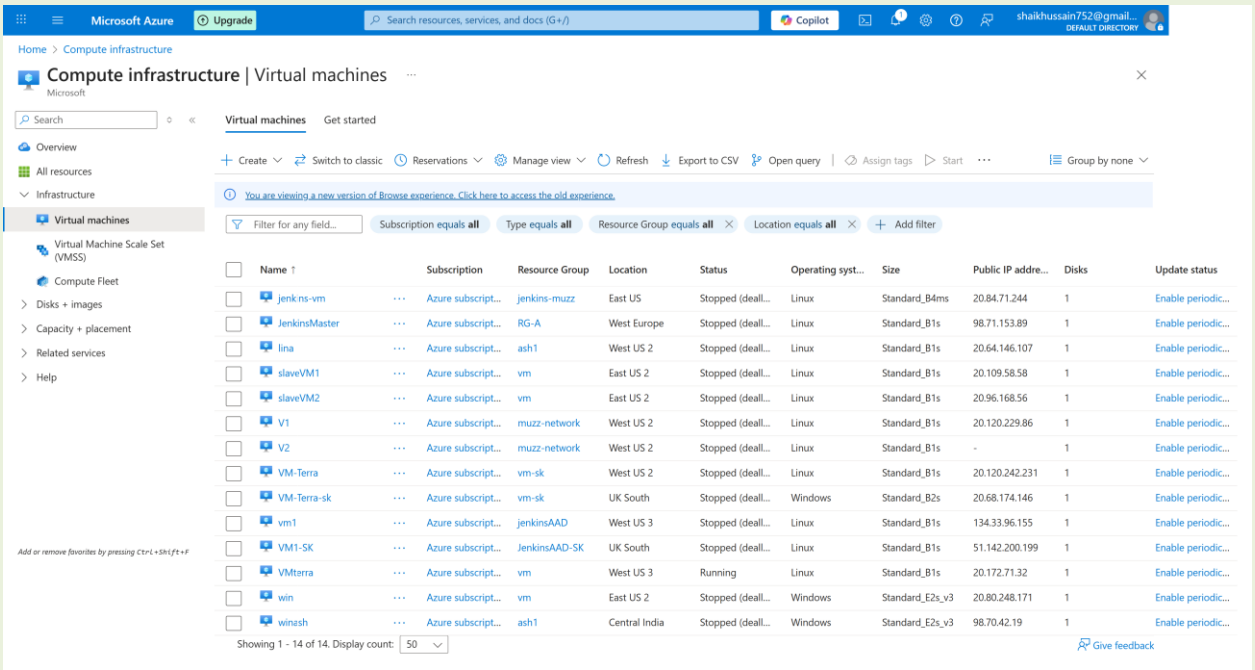


Enter the Credentials and give password and click on **Ok**



To delete the VM run the command **az vm delete –g test –n vm12,** here the group name is **test** and VM name is **vm12**

The VM **v12** is deleted



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 in
formation, 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",

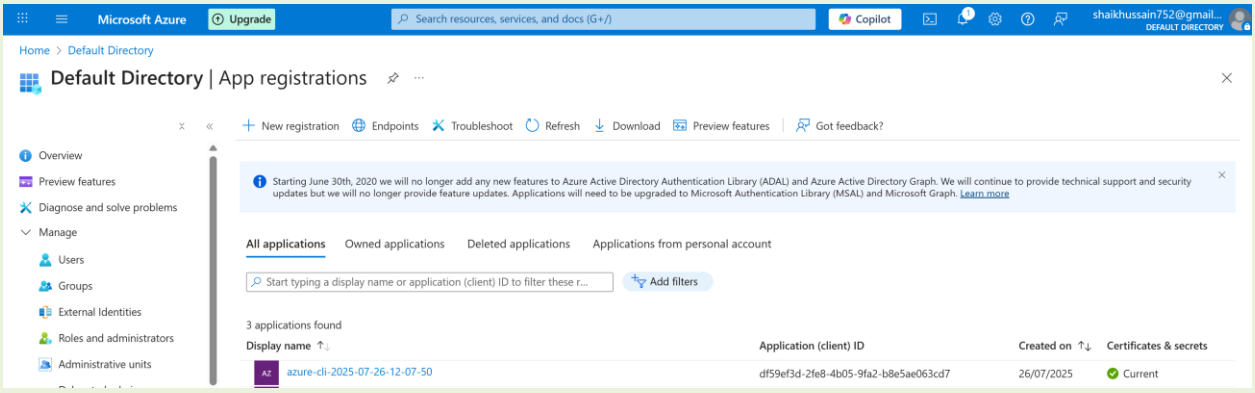
"displayName": "azure-cli-2025-07-26-12-07-50",

"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-w3CUrUct21wvt1Y9VkZ7cti"
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