**Use Powershell, Deploy VM and Configure Storage accounts - Assignments**

**Prerequisites:**

1. **Access to Azure Portal**: Ensure you have access to the Azure portal and appropriate permissions to create resources.
2. **Azure Subscription**: You need an active Azure subscription to create resources.
3. **PowerShell**: Ensure PowerShell is installed on your local machine or use Azure Cloud Shell.
4. **Azure PowerShell Module**: Install the Azure PowerShell module if it's not already installed.
5. **Azure Resource Group**: Decide which resource group you want to deploy the VM and storage accounts into, or create a new one if needed.

**Necessary Details:**

1. **Azure Subscription ID**: You can find this in the Azure portal under Subscriptions or by running Get-AzSubscription in PowerShell.
2. **Resource Group Name**: Name of the resource group where you want to deploy resources.
3. **Virtual Machine Details**:
   * **VM Name**: Name for your virtual machine.
   * **VM Size**: Size of the VM (e.g., Standard\_DS1\_v2).
   * **Operating System**: Choose the operating system (Windows/Linux).
   * **Username and Password**: Credentials for accessing the VM.
   * **Virtual Network and Subnet**: Decide the virtual network and subnet for the VM.
   * **Public IP Address (Optional)**: Decide if you need a public IP address for the VM.
   * **Availability Set (Optional)**: If deploying multiple VMs, decide if they need to be part of an availability set.
4. **Storage Account Details**:
   * **Storage Account Name**: Name for your storage account.
   * **Resource Group**: The same resource group where the VM will be deployed or a different one.
   * **Location**: Choose the location for the storage account.
   * **Account Kind**: Choose between StorageV2 (general-purpose v2), BlobStorage (blob storage account), or others depending on your requirements.
   * **Replication**: Choose the replication type for redundancy (e.g., LRS, GRS).
   * **Access Tier**: Decide the access tier for your data (Hot/Cool).
   * **Network Configuration**: Decide network configurations like firewall rules, VNet integration (if required).

Once you have gathered these prerequisites and details, you can proceed with writing the PowerShell script to deploy the VM and configure storage accounts accordingly. Make sure to authenticate to Azure using Connect-AzAccount cmdlet before executing any Azure commands.

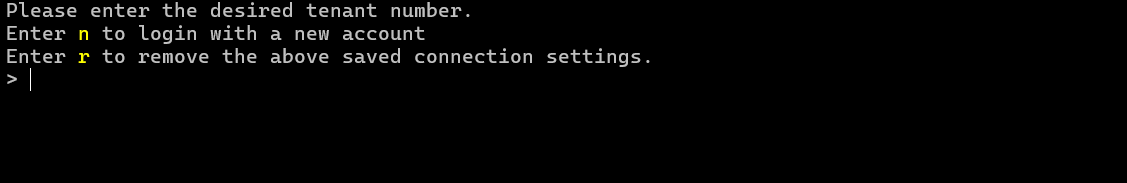
**1. Step-by-Step Guide for VM Deployment**

**1.1. Authentication to Azure:**

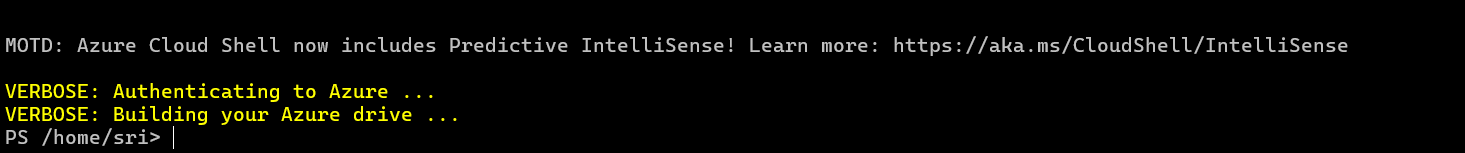
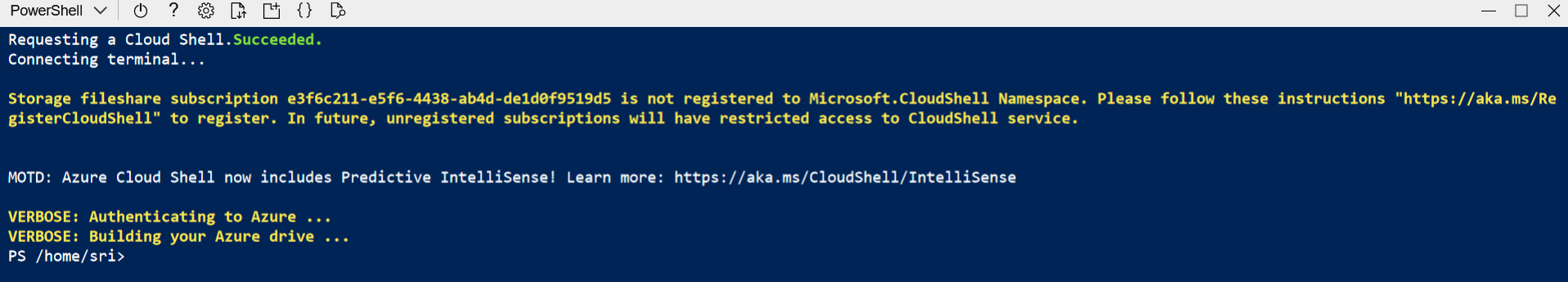
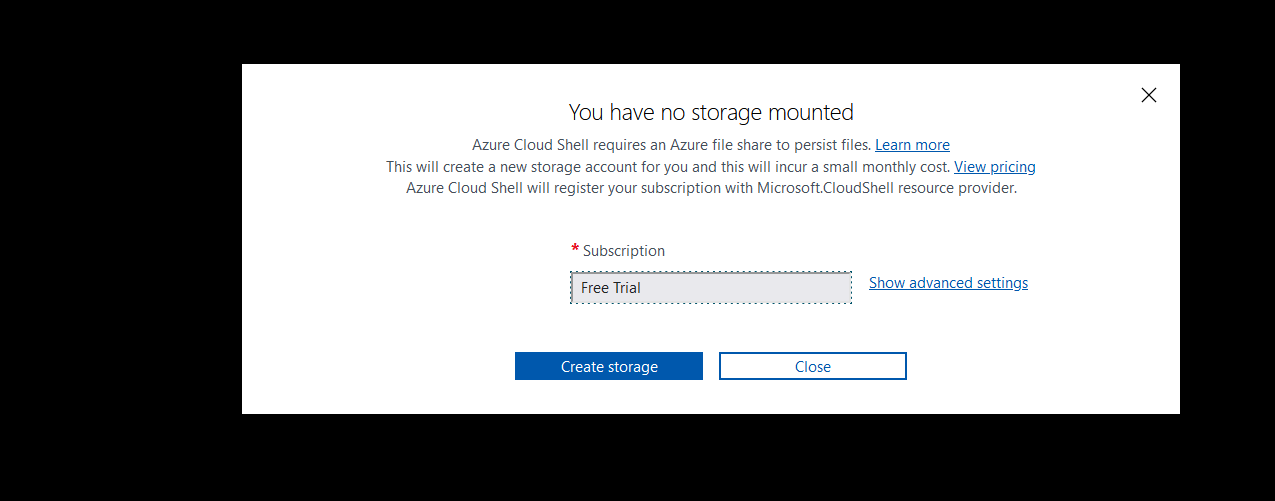
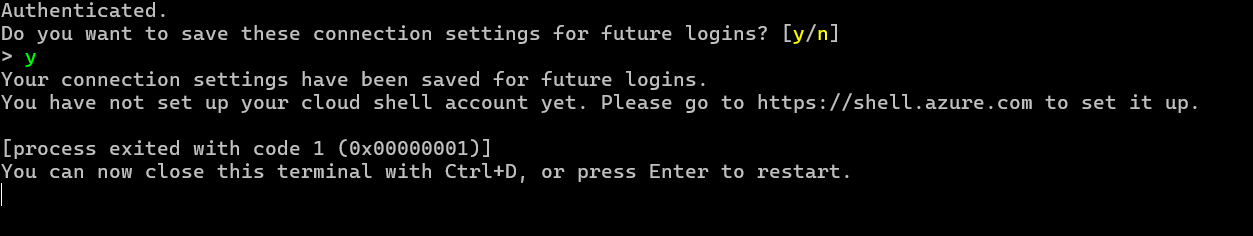
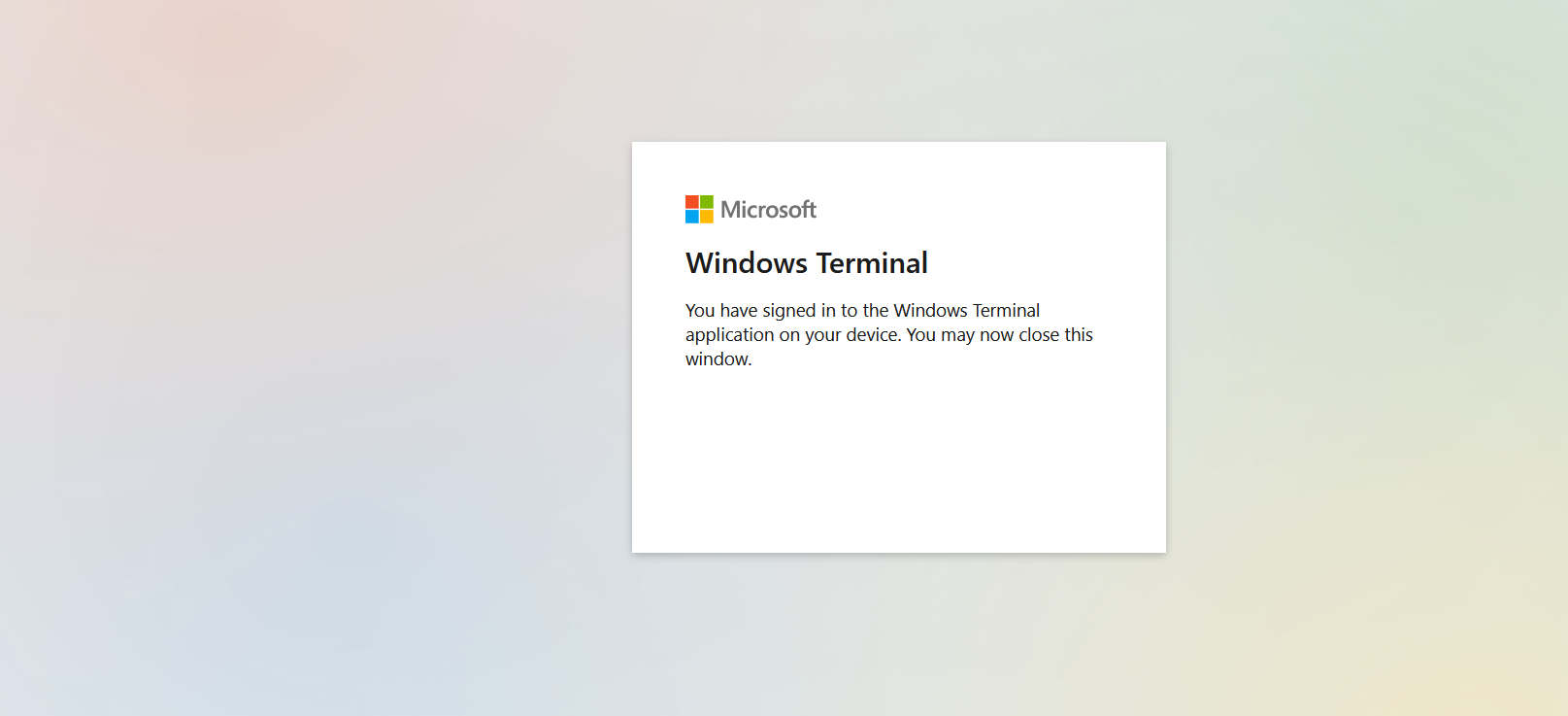
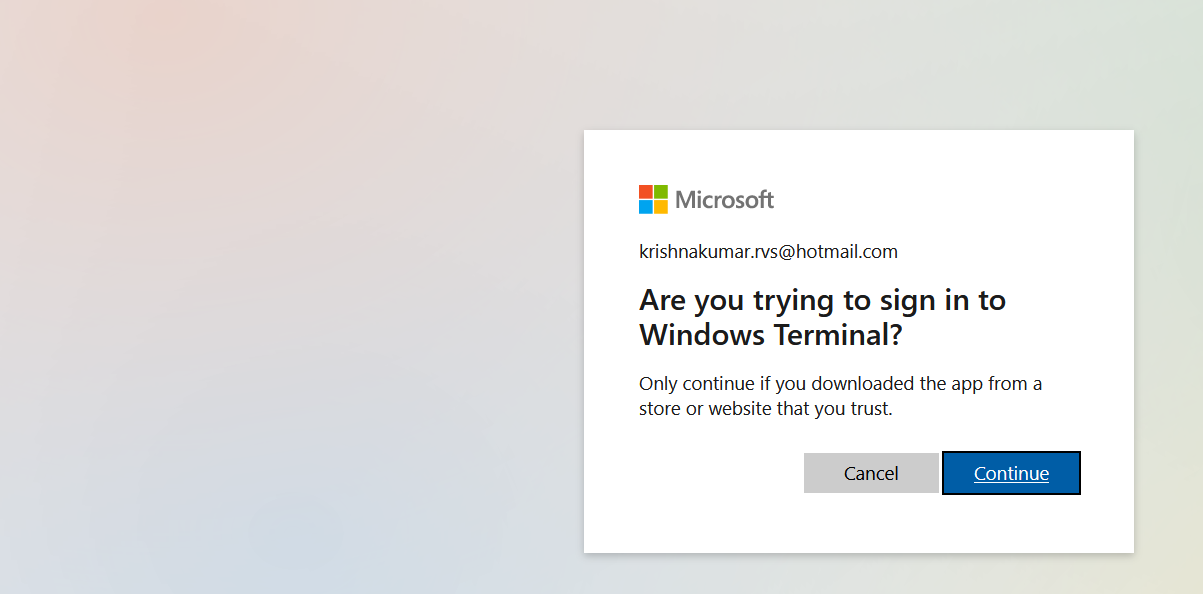
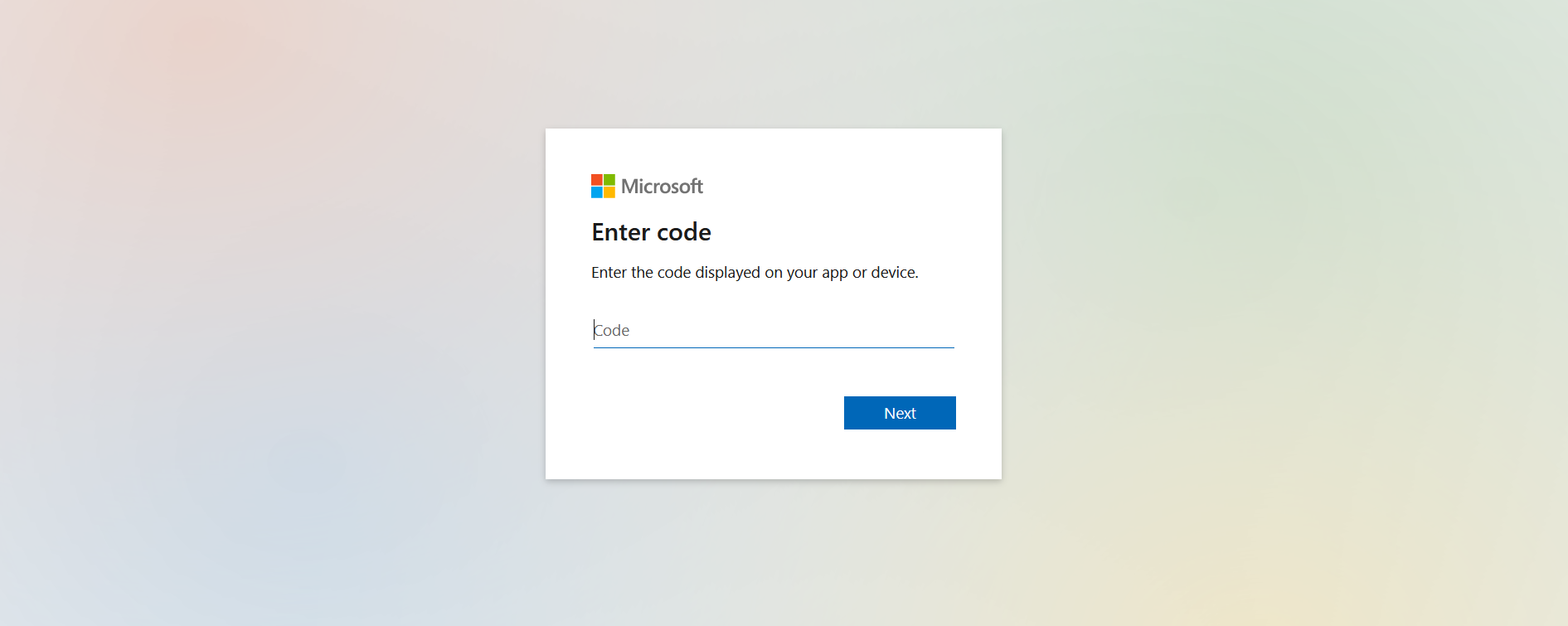
Before you can interact with Azure resources using PowerShell, you need to authenticate to Azure. Run the following command and follow the instructions to sign in:

powershell

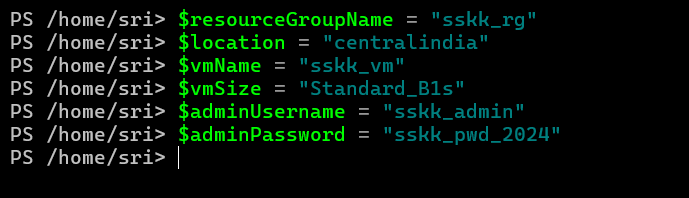
Connect-AzAccount



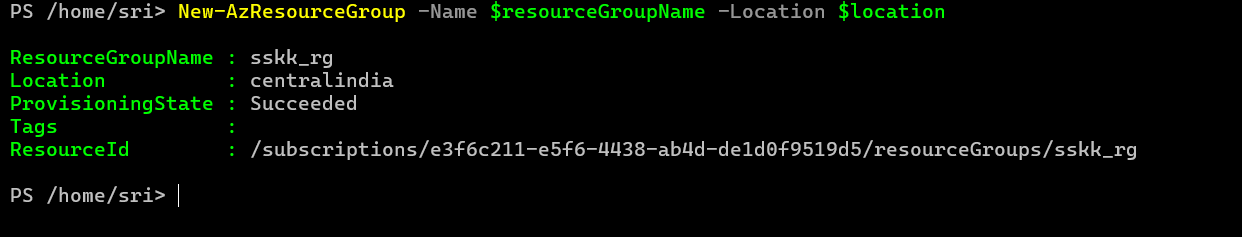




**Set Variables:** Define variables for your VM deployment, such as the resource group name, VM name, location, VM size, operating system, admin username, and admin password.



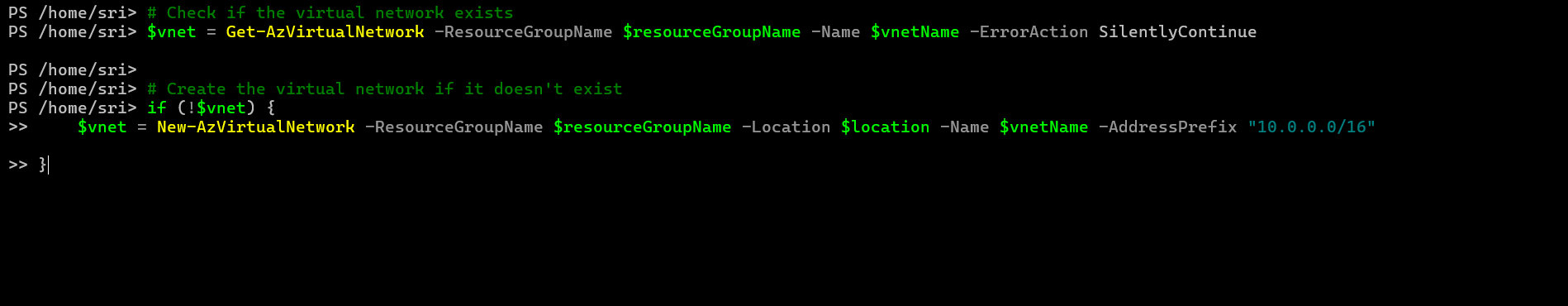
 **Create Resource Group (if necessary):** You can either create a new resource group or use an existing one.

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**virtual network**

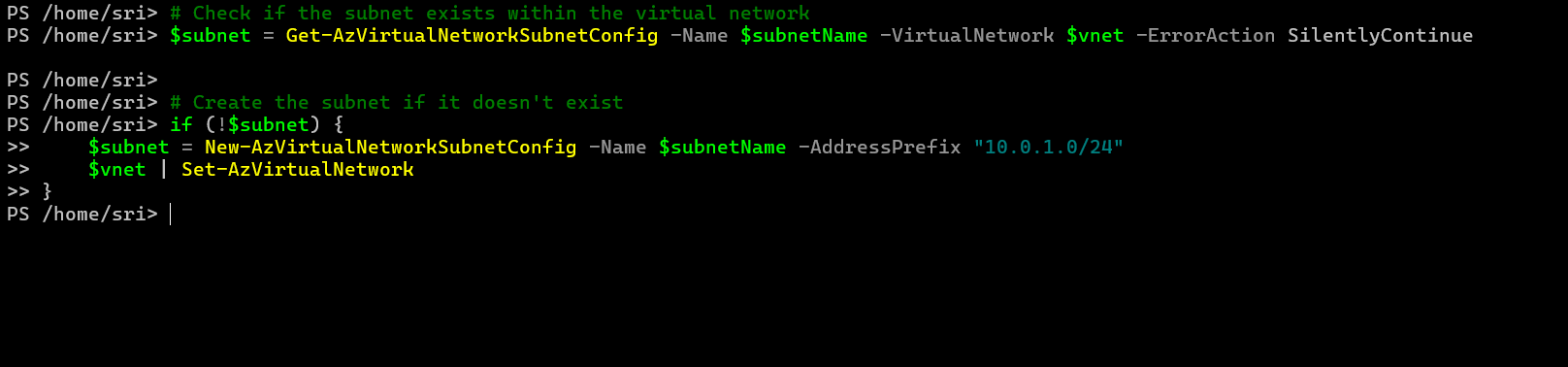
Check if the virtual network exists

Create the virtual network if it doesn't exist



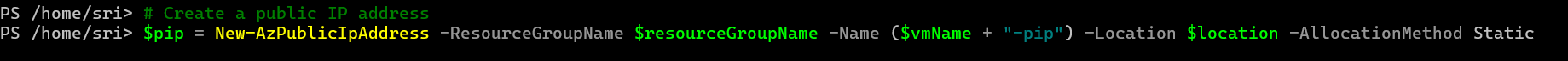
**subnet**

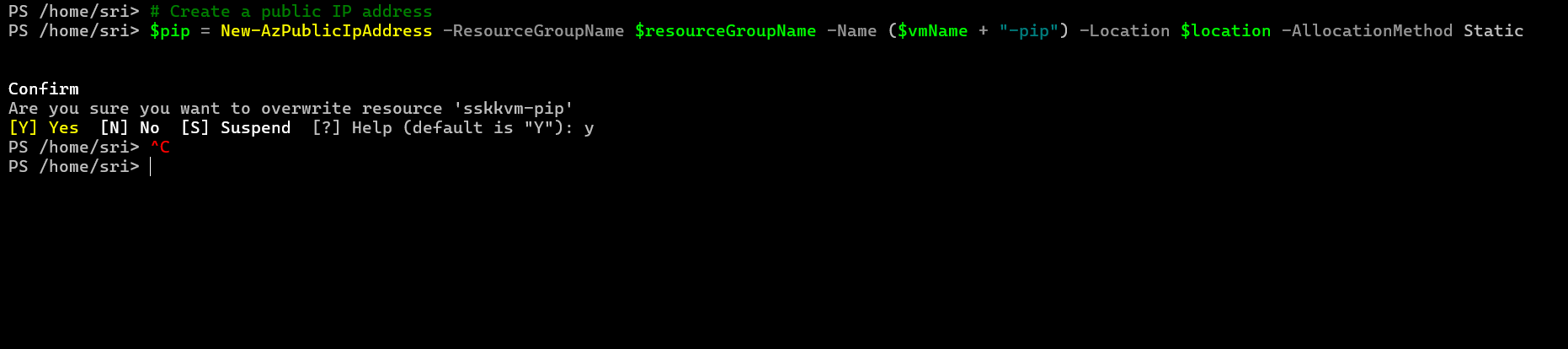
# Create the subnet if it doesn't exist



**public IP address**

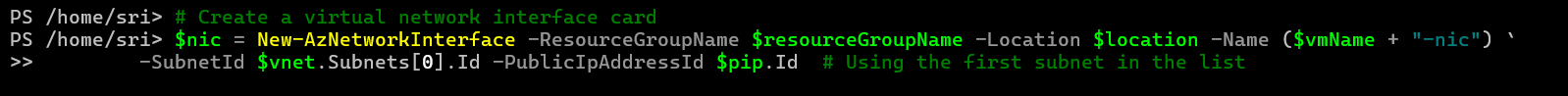
# Create a public IP address





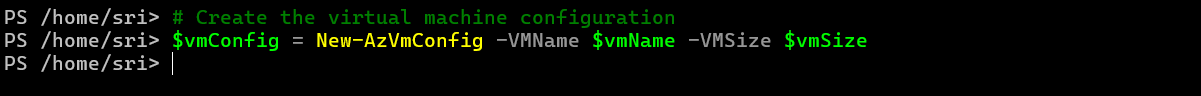
**virtual network interface card**

# Create a virtual network interface card



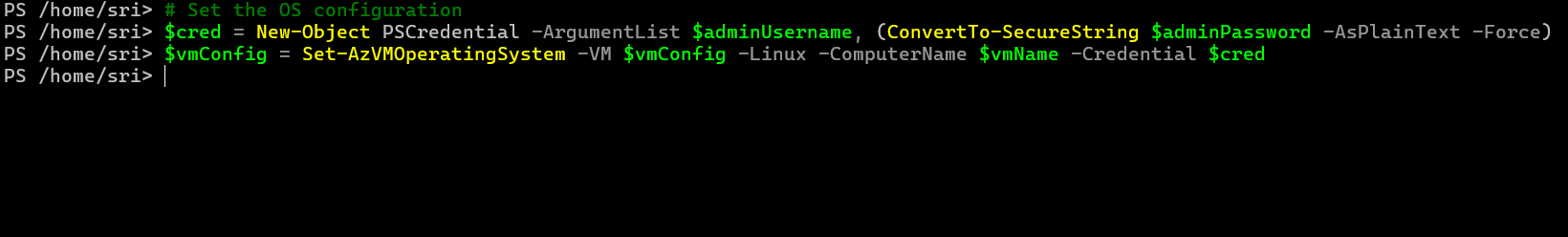
**virtual machine configuration**

# Create the virtual machine configuration



**OS configuration**

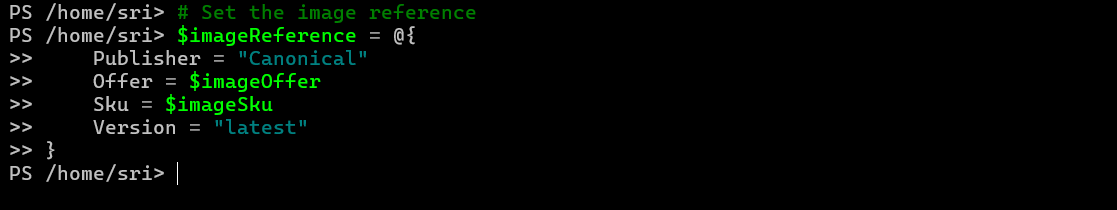
# Set the OS configuration



**image reference**

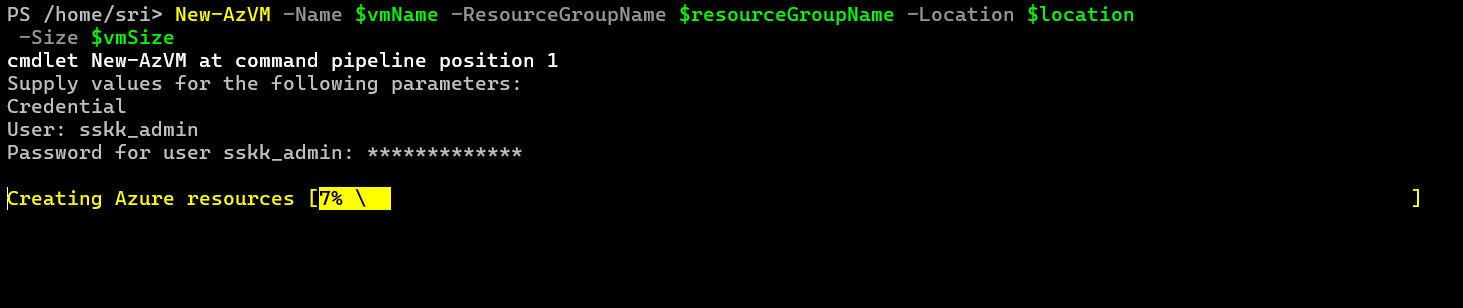
# Set the image reference

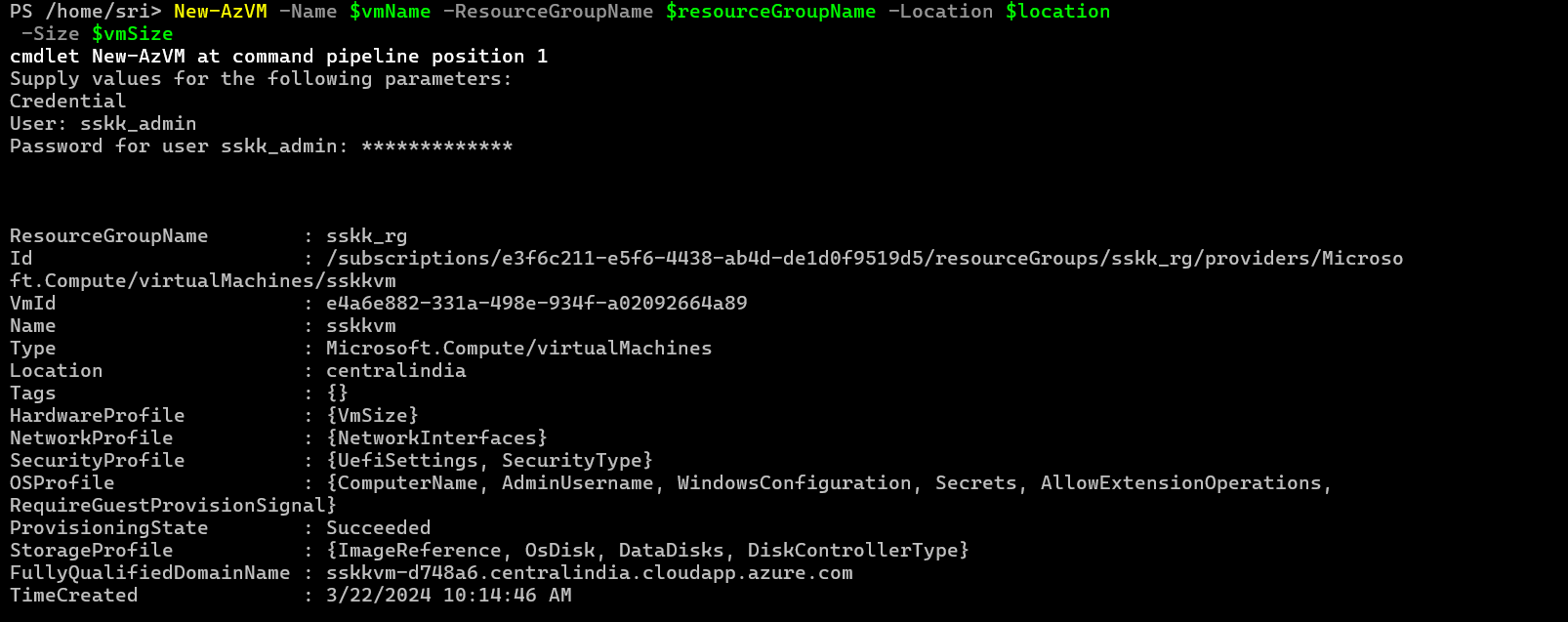
}

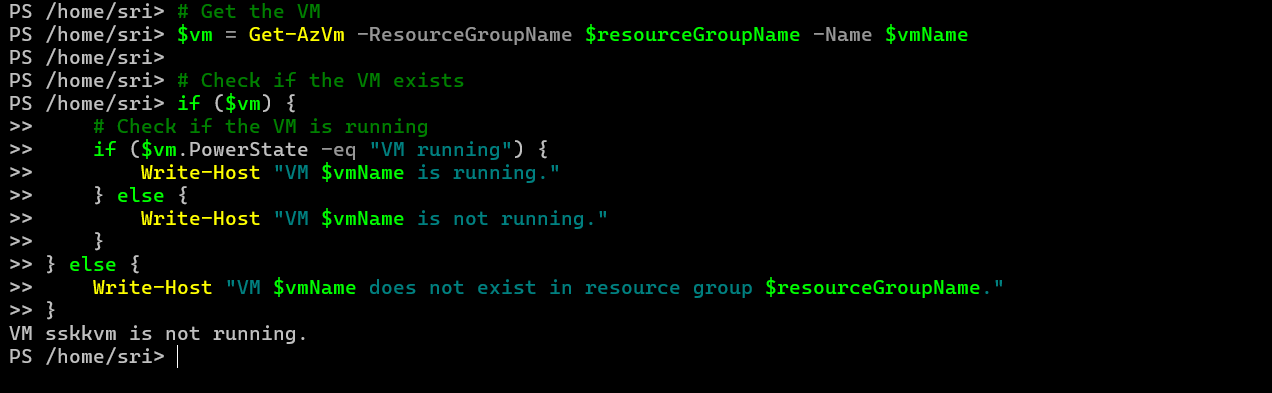


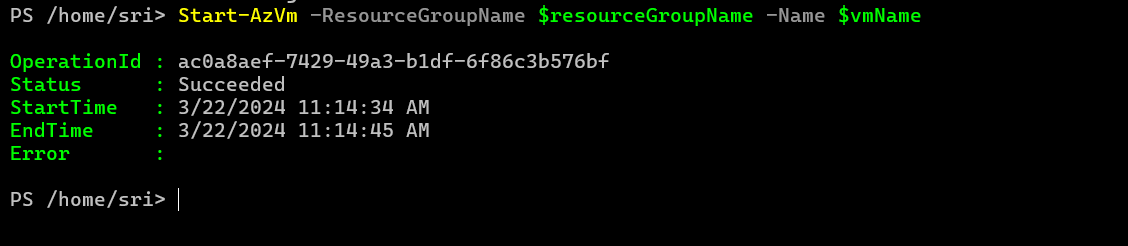
# Create the VM using the specified configuration

 **Create VM:** Finally, create the VM using the configured settings.









**2. Step-by-Step Guide for Storage Account Configuration**

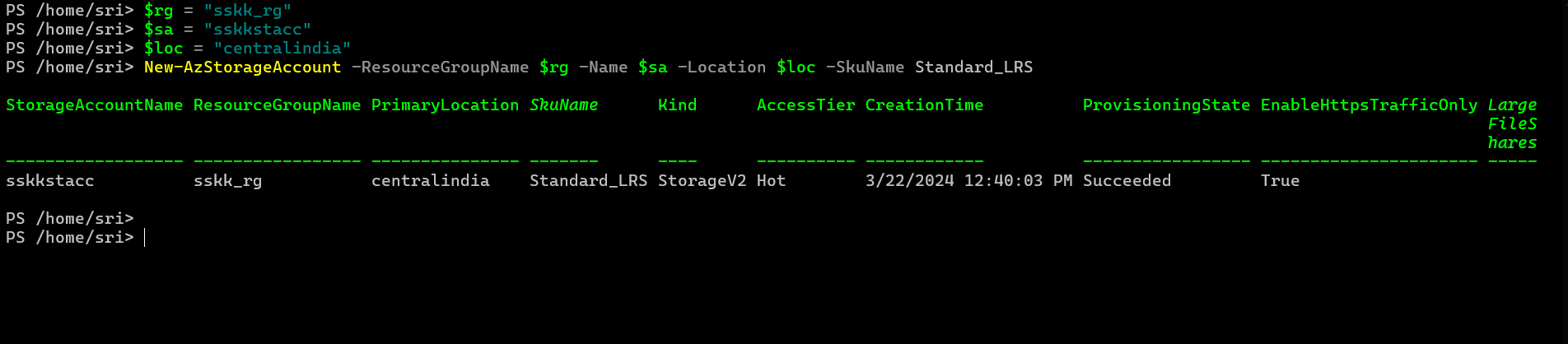
* 1. **Sign in to Azure Portal:**

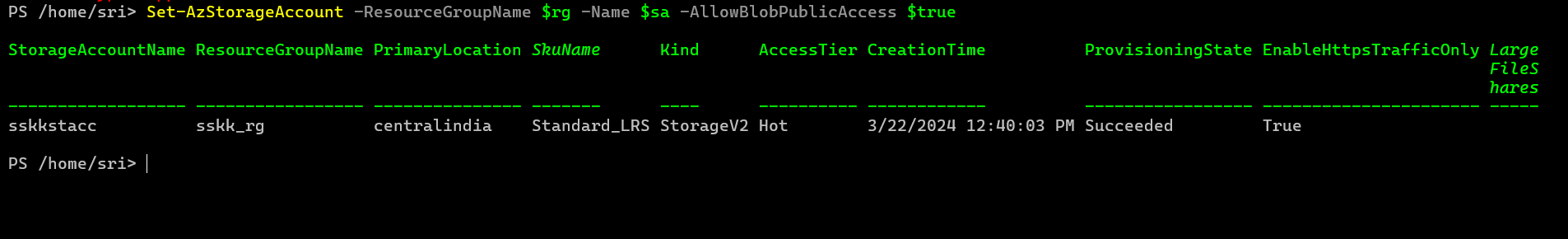
Navigate to the Azure Portal (<https://portal.azure.com>) and sign in with your Azure account credentials.

* 1. **Select Storage Accounts:**

In the Azure Portal dashboard, locate and click on "Storage accounts" in the left-hand menu.

* 1. **Create a New Storage Account:**





* 1. **Accessing Storage Account:**

Once the storage account is created, navigate to it from the storage accounts list.

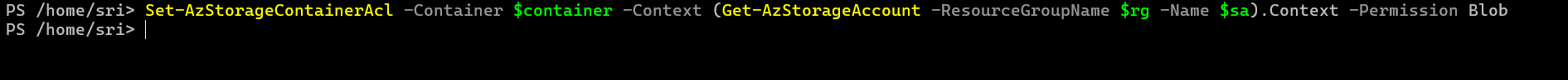
* 1. **Creating Containers:**

Within the storage account, locate the "Containers" option and click on it.

Click on the "+ Container" button to create a new container.

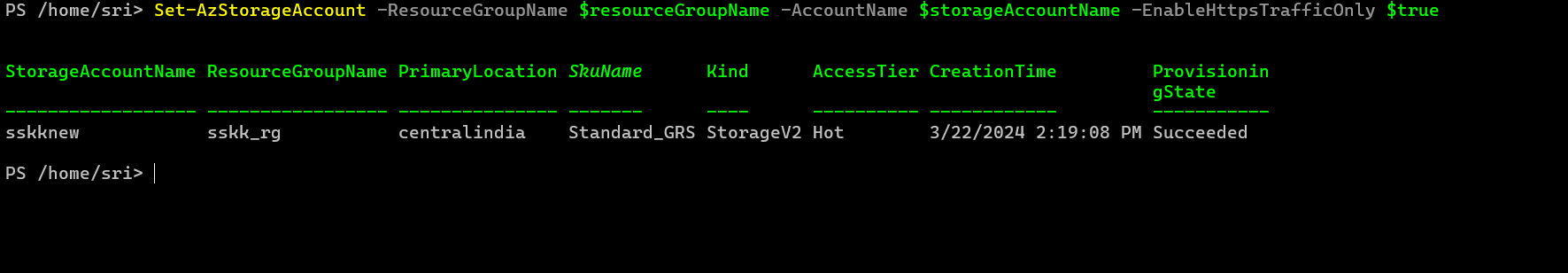
Enter a unique name for the container and set the access level (e.g., "Private" or "Blob")

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* 1. **configuring storage accounts in Azure**





Following these steps will guide you through the process of configuring storage accounts in Azure. Make sure to document each step and configuration for future reference and auditing purposes.

**PowerShell Scripts for Automation**

**Script for VM Deployment:**

powershell

# Authenticate to Azure

Connect-AzAccount

# Set variables

$resourceGroupName = "YourResourceGroup"

$location = "YourLocation"

$vmName = "YourVMName"

$vmSize = "Standard\_DS1\_v2"

$adminUsername = "YourAdminUsername"

$adminPassword = "YourAdminPassword"

$osDiskName = "YourOSDiskName"

$osDiskSizeGB = 128

$osType = "Windows" # or "Linux" if deploying a Linux VM

# Create a new resource group

New-AzResourceGroup -Name $resourceGroupName -Location $location

# Create a virtual machine configuration

$vmConfig = New-AzVMConfig -VMName $vmName -VMSize $vmSize

$vmConfig = Set-AzVMOperatingSystem -VM $vmConfig -Windows -ComputerName $vmName -Credential (Get-Credential -UserName $adminUsername -Message "Enter your password")

# Set up OS disk configuration

$osDiskConfig = New-AzDiskConfig -AccountType Standard\_LRS -Location $location -CreateOption FromImage -DiskSizeGB $osDiskSizeGB -OsType $osType

$osDisk = New-AzDisk -DiskName $osDiskName -Disk $osDiskConfig -ResourceGroupName $resourceGroupName

# Attach OS disk to VM

$vmConfig = Set-AzVMOSDisk -VM $vmConfig -ManagedDiskId $osDisk.Id -CreateOption Attach -Windows

# Create the VM

New-AzVM -ResourceGroupName $resourceGroupName -Location $location -VM $vmConfig

**Script for Storage Account Configuration:**

powershell

# Authenticate to Azure

Connect-AzAccount

# Set variables

$resourceGroupName = "YourResourceGroup"

$storageAccountName = "YourStorageAccountName"

$location = "YourLocation"

$skuName = "Standard\_LRS" # Choose your desired account type

# Create a storage account

New-AzStorageAccount -ResourceGroupName $resourceGroupName -Name $storageAccountName -Location $location -SkuName $skuName

**Combined Script for VM and Storage Account Deployment:**

powershell

# Authenticate to Azure

Connect-AzAccount

# Set variables

$resourceGroupName = "YourResourceGroup"

$location = "YourLocation"

$vmName = "YourVMName"

$vmSize = "Standard\_DS1\_v2"

$adminUsername = "YourAdminUsername"

$adminPassword = "YourAdminPassword"

$osDiskName = "YourOSDiskName"

$osDiskSizeGB = 128

$osType = "Windows" # or "Linux" if deploying a Linux VM

$storageAccountName = "YourStorageAccountName"

$skuName = "Standard\_LRS" # Choose your desired account type

# Create a new resource group

New-AzResourceGroup -Name $resourceGroupName -Location $location

# Create a storage account

New-AzStorageAccount -ResourceGroupName $resourceGroupName -Name $storageAccountName -Location $location -SkuName $skuName

# Create a virtual machine configuration

$vmConfig = New-AzVMConfig -VMName $vmName -VMSize $vmSize

$vmConfig = Set-AzVMOperatingSystem -VM $vmConfig -Windows -ComputerName $vmName -Credential (Get-Credential -UserName $adminUsername -Message "Enter your password")

# Set up OS disk configuration

$osDiskConfig = New-AzDiskConfig -AccountType Standard\_LRS -Location $location -CreateOption FromImage -DiskSizeGB $osDiskSizeGB -OsType $osType

$osDisk = New-AzDisk -DiskName $osDiskName -Disk $osDiskConfig -ResourceGroupName $resourceGroupName

# Attach OS disk to VM

$vmConfig = Set-AzVMOSDisk -VM $vmConfig -ManagedDiskId $osDisk.Id -CreateOption Attach -Windows

# Create the VM

New-AzVM -ResourceGroupName $resourceGroupName -Location $location -VM $vmConfig

These scripts can be customized with your specific configurations and executed to automate the deployment of virtual machines and storage accounts in Azure using PowerShell. Make sure to replace placeholders such as "YourResourceGroup", "YourLocation", "YourVMName", "YourAdminUsername", "YourAdminPassword", "YourOSDiskName", "YourStorageAccountName", etc., with your actual values.