ONLINE LAB: Configuring Azure Key Vault Using Portal / PowerShell
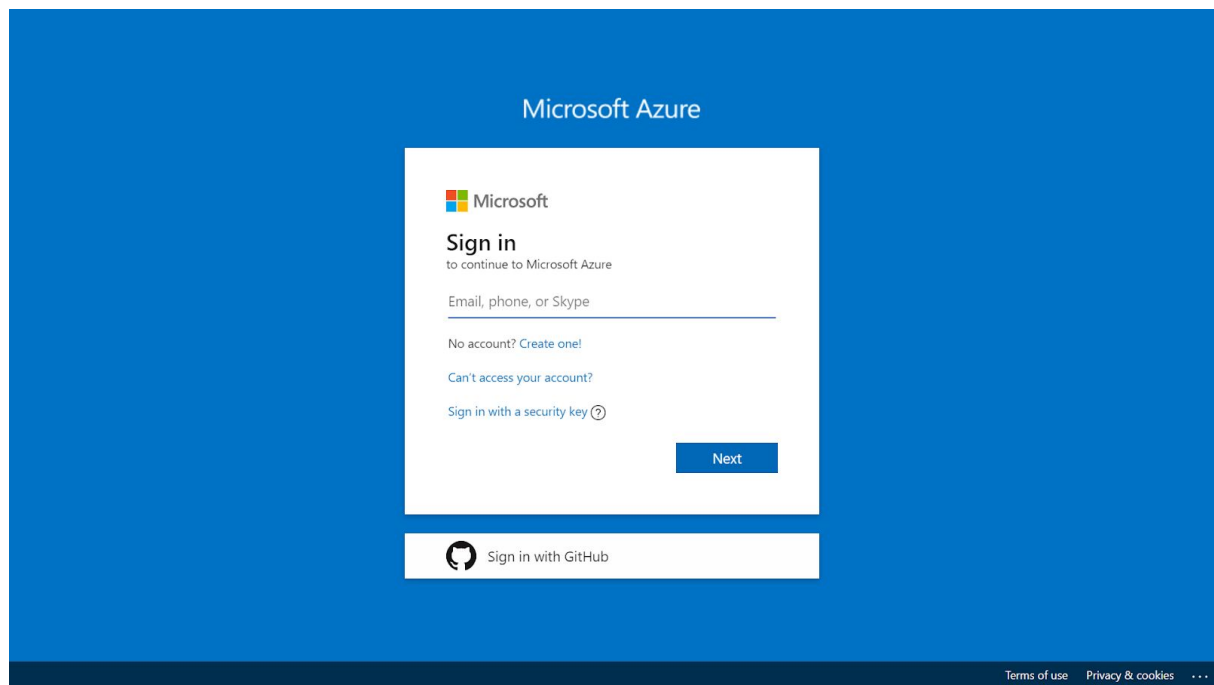
Your Challenge

- Create a resource group named **keyvaultgrp** (Portal) **/ keyvaultpsgrp** (PowerShell).
- Create a new Key Vault with **a unique name** in that group.
- Add a secret to that vault, with the key and value of whatever you wish.
- Manage secret in the key vault.
- Clean up all of your resources created after you're done.

Solution

OPTION 1: Portal

Step 1 Sign Into Azure

Sign into Azure at https://portal.azure.com/

Step 2 Create a resource group

1. In the navigation list, click **Resource groups**.

2. Click **Add** to open the **Resource group** blade.

3. For **Resource group** name, enter **keyvaultgrp**.

4. Select a subscription and a location.

5. Click **Review + Create** to proceed to the last step.

6. Click **Create** to create the resource group.

7. Click **Refresh** to refresh the list of resource groups.

The new resource group appears in your resource groups list.

Step 3 Create Azure Key Vault

1. In the list of Resource groups, click the new **keyvaultgrp** resource group.

2. Click **Add** to open the Azure Marketplace.

3. Enter "**key vault**" in the search box and choose **Key Vault** as a result.

4. Click **Create**.

5. Choose the **keyvaultgrp** from the resource group drop down.

6. Give the key vault **a unique name** that cannot be already selected by anyone else in Azure. It must have between 3 and 24 characters, for example: **sd-20191008-kv**, which follows the pattern: **[YourInitials]-[date]-kv**.

7. Choose the same subscription and location as the resource group.

8. Choose **Standard Pricing tier**.

9. Click **Review + Create** to proceed to the last step.

10. Click **Create** to create the storage account.

11. Wait for the deployment to complete. It should take 30 seconds or so.

The new key vault appears in your resource group.

Step 4 Add secret to the vault

1. In the list of Resource groups, click the new **keyvaultgrp** resource group.

2. Choose the key vault created in the last step, with the unique name that you gave it.

3. In the settings menu on the left, navigate to the "**Secrets**" menu.

4. Select "**Generate/Import**" from the menu.

5. Leave "**Manual**" as upload options.

6. Enter "**mySecret**" as the name.

7. Enter "**myValue**" as the value.

8. Leave the other options with default / no values.

9. Click **Create** to create the secret.

The new created secret should be listed on the secrets lists.

Step 5 Manage secret in the vault

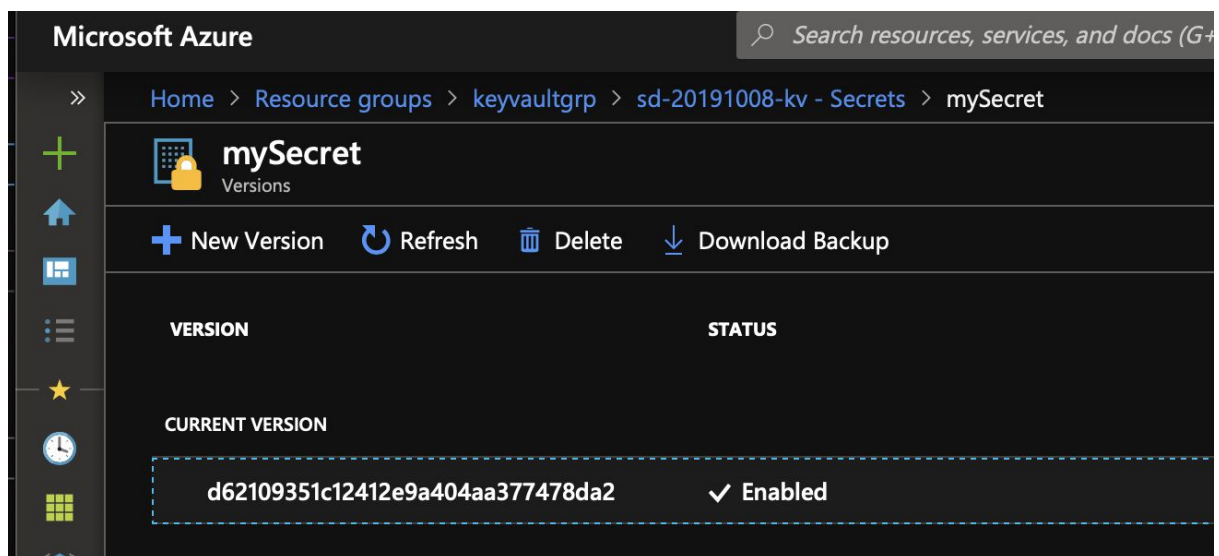1. In the list of Resource groups, click the new **keyvaultgrp** resource group.

2. Choose the key vault created in the last step, with the unique name that you gave it.

3. In the settings menu on the left, navigate to the "**Secrets**" menu.

4. Select the "**mySecret**" from the list.

5. From that page you can view the value and properties of the secret by clicking the hash of the desired version:
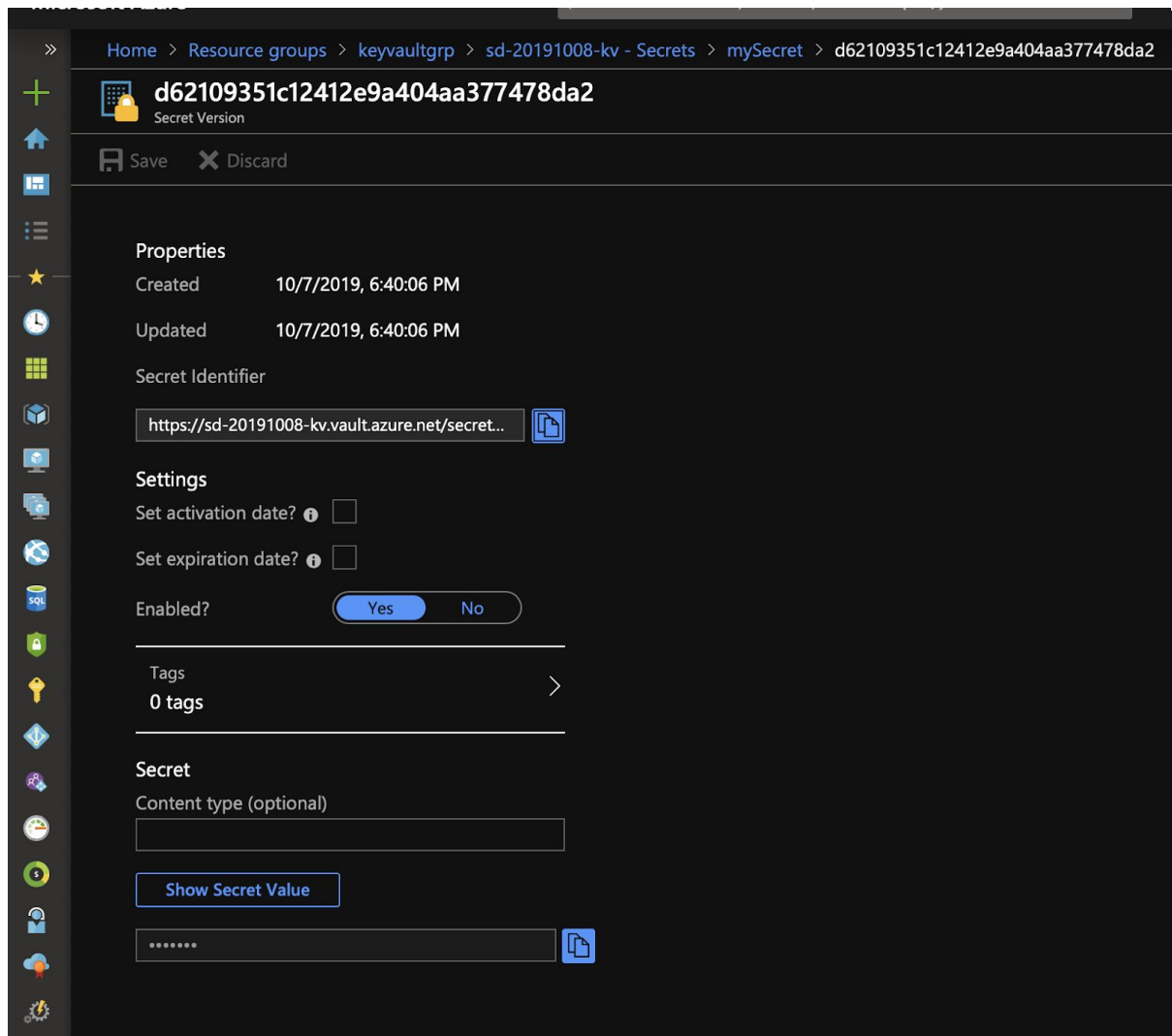
It contains the URL for the secret identifier.

6. Or create new version by clicking "**New Version**" button. The portal shows the same UI as in the previous step.

7. Specify "**myValue2**" as the value.

8. Leave the other options with default / no values.

9. Click **Create** to create the secret.

The new created secret value should be listed on versions list of the "**mySecret**".
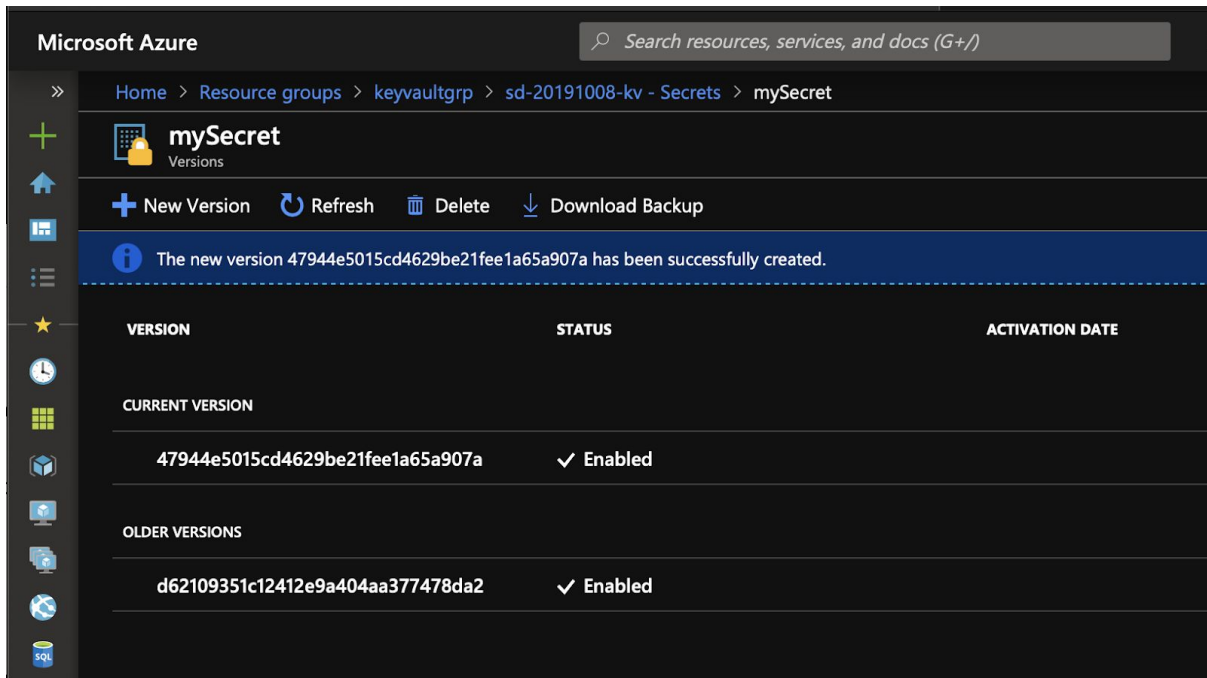
Step 6 Clean up
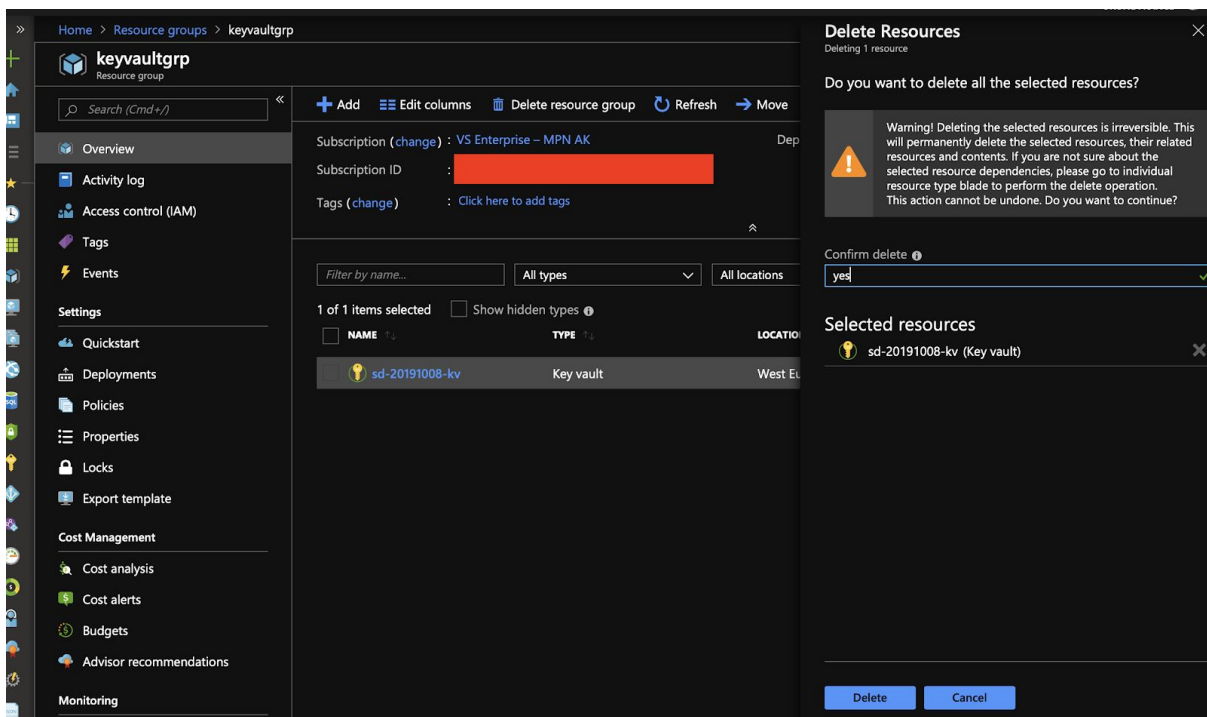
1. In the navigation list, click **Resource groups**.

2. Click **keyvaultgrp** to open the resource group.

3. Click **Delete resource group** to delete the resource group.

4. On the **Are you sure you want to delete** blade, type the resource group name:
   keyvaultgrp.

5. Click **Delete** to delete the resource group.

OPTION 2: PowerShell

Step 1 Sign Into Azure Cloud Shell

1. Sign into Azure at https://portal.azure.com/
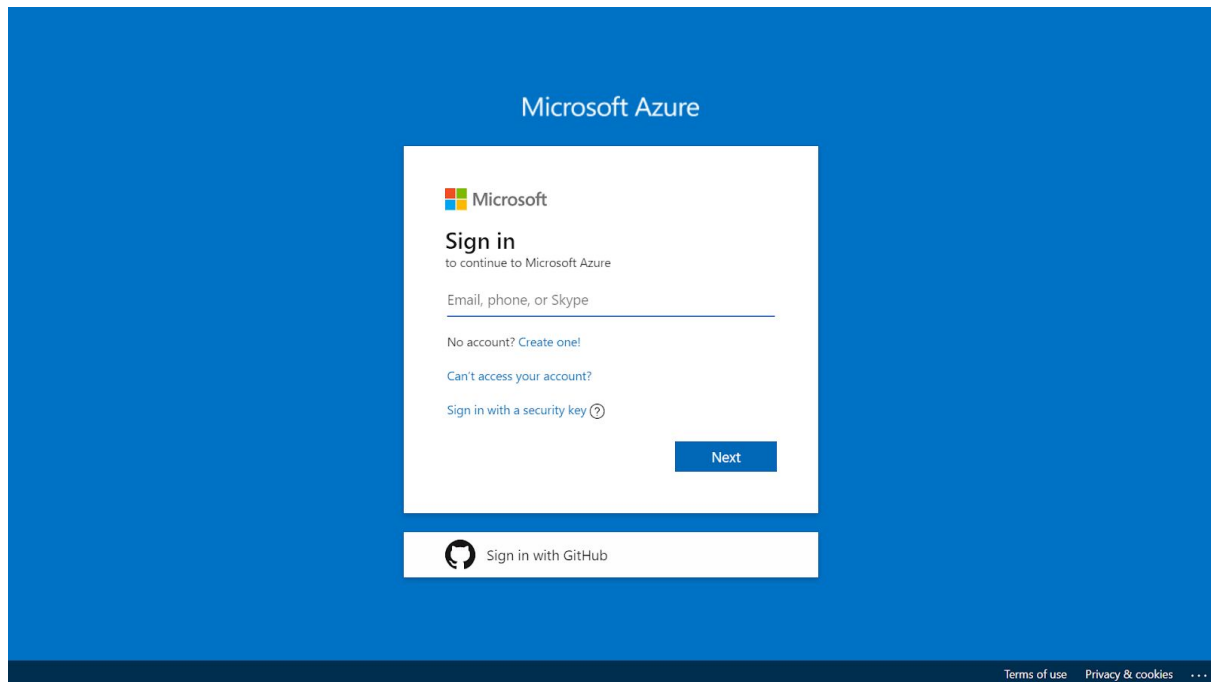
2. On the main menu, click on the Cloud Shell icon.

Or navigate to https://shell.azure.com.
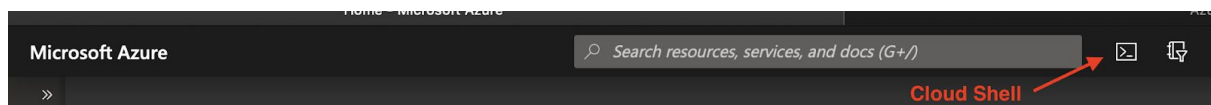
Step 2 Create a resource group

1. If your account has access to multiple subscription, please select the appropriate subscription by:
   a. Listing the subscriptions for which your account has access:

```
Get-AzSubscription
```

   b. Selecting the desired subscription:

```
Select-AzSubscription -Subscription "[YourSubscriptionNameOrId]"
```

2. Create the **Resource group** with given name **keyvaultpsgrp** and desired location, like **westeurope**, by executing the command:

```
$location = "WestEurope"

$rgName = "keyvaultpsgrp"

New-AzResourceGroup -Name $rgName -Location $location
```

3. You should get the following output of the above command:

The new resource group appears in your resource groups list or when executing the command:

```
Get-AzResourceGroup
```

Step 3 Create Azure Key Vault

1. In the previously created resource group "**keyvaultpsgrp**", create key vault with **a unique name** that cannot be already selected by anyone else in Azure. It must have between 3 and 24 characters, for example: **sd-20191008-ps-kv**, which follows the pattern: **[YourInitials]-[date]-ps-kv**, by executing the command:

```
$vaultName = "sd-20191008-ps-kv"

New-AzKeyVault -Name $vaultName -ResourceGroupName $rgName -Location $location
```

You should get the following output of the above command:

```
PS Azure:\> $vaultName = "sd-20191008-ps-kv"
Azure:/
PS Azure:\> New-AzKeyVault -Name $vaultName -ResourceGroupName "keyvaultpsgrp" -Location $location

Vault Name                       : sd-20191008-ps-kv
Resource Group Name              : keyvaultpsgrp
Location                         : WestEurope
Resource ID                      : /subscriptions/                                    /resourceGroups/keyvaultpsgrp/providers/Mic
                                   rosoft.KeyVault/vaults/sd-20191008-ps-kv
Vault URI                        : https://sd-20191008-ps-kv.vault.azure.net/
Tenant ID                        :
SKU                              : Standard
Enabled For Deployment?          : False
Enabled For Template Deployment? : False
Enabled For Disk Encryption?     : False
Soft Delete Enabled?             :
Access Policies                  :
Network Rule Set                 :
                                   Default Action                : Allow
                                   Bypass                        : AzureServices
                                   IP Rules                      :
                                   Virtual Network Rules         :

Tags                             :

WARNING: Access policy is not set. No user or application have access permission to use this vault. This can happen if the vault w
as created by a service principal. Please use Set-AzKeyVaultAccessPolicy to set access policies.

Azure:/
PS Azure:\>
```

2. In order to manage secrets, you have to add **Access Policy** to yourself.

    a. Find the Azure AD corresponding to your name:

```
Get-AzADUser -StartsWith "[YourName]"
```

    b. Select the user:

```
$adUser = Get-AzAdUser -UserPrincipalName "[YourUserPincipalName]"

$adObjectId = $adUser.Id

Set-AzKeyVaultAccessPolicy -VaultName $vaultName -ResourceGroupName

$rgName -ObjectId $adObjectId -PermissionsToSecrets get, list, set
```

3. The new key vault group appears in your resource group "**keyvaultpsgrp**" or when executing the command:

```
Get-AzKeyVault -ResourceGroupName $rgName
```

Step 4 Add secret to the vault

1. In order to add "**mySecret**" secret with the "**myValue**" as the value, type the command:

```
$secretName = "mySecret"

$secretValue = ConvertTo-SecureString -String "myValue" -AsPlainText
-Force

Set-AzKeyVaultSecret -VaultName $vaultName -Name $secretName -SecretValue
$secretValue
```

2. The output of the command should be like:

```
PS Azure:\> $secretName = "mySecret"
Azure:/
PS Azure:\> $secretValue = ConvertTo-SecureString -String "myValue"  -AsPlainText -Force
Azure:/
PS Azure:\> Set-AzKeyVaultSecret -VaultName $vaultName -Name $secretName -SecretValue $secretValue

Vault Name   : sd-20191008-ps-kv
Name         : mySecret
Version      : 6396867e08164a73aaca2900738c905e
Id           : https://sd-20191008-ps-kv.vault.azure.net:443/secrets/mySecret/6396867e08164a73aaca2900738c905e
Enabled      : True
Expires      :
Not Before   :
Created      : 10/7/19 6:09:45 PM
Updated      : 10/7/19 6:09:45 PM
Content Type :
Tags         :
```

The new created secret should be listed on the secrets lists or by executing command:

```
Get-AzKeyVaultSecret -VaultName $vaultName
```

Step 5 Manage secret in the vault

1. In order to list the versions of the "**mySecret**" secret, execute the command:

```
Get-AzKeyVaultSecret -VaultName $vaultName -Name $secretName
-IncludeVersions
```

2. To add "**myValue2**" as the second version of the "**mySecret**" secret, type:

```
$secretValue2 = ConvertTo-SecureString -String "myValue2"  -AsPlainText
-Force

Set-AzKeyVaultSecret -VaultName $vaultName -Name $secretName -SecretValue
$secretValue2
```

3. And the first command of this step will return now two versions:

```
PS Azure:\> Get-AzKeyVaultSecret -VaultName $vaultName -Name $secretName -IncludeVersions

Vault Name   : sd-20191008-ps-kv
Name         : mySecret
Version      : e94dac6885a0495ebfbbccdb49fd860b
Id           : https://sd-20191008-ps-kv.vault.azure.net:443/secrets/mySecret/e94dac6885a0495ebfbbccdb49fd860b
Enabled      : True
Expires      :
Not Before   :
Created      : 10/7/19 6:18:39 PM
Updated      : 10/7/19 6:18:39 PM
Content Type :
Tags         :

Vault Name   : sd-20191008-ps-kv
Name         : mySecret
Version      : 6396867e08164a73aaca2900738c905e
Id           : https://sd-20191008-ps-kv.vault.azure.net:443/secrets/mySecret/6396867e08164a73aaca2900738c905e
Enabled      : True
Expires      :
Not Before   :
Created      : 10/7/19 6:09:45 PM
Updated      : 10/7/19 6:09:45 PM
Content Type :
Tags         :
```

Step 6 Clean up

1. Using the Cloud Shell delete the "**keyvaultpsgrp**" resource group:

```
Remove-AzResourceGroup  -ResourceGroupName $rgName
```

2. Confirm by typing **[Y] Yes**.

```
PS Azure:\> Remove-AzResourceGroup –ResourceGroupName $rgName

Confirm
Are you sure you want to remove resource group 'keyvaultpsgrp'
[Y] Yes  [N] No  [S] Suspend  [?] Help (default is "Y"): Y
True
Azure:/
PS Azure:\>
```