

ONLINE LAB: Configuring Azure Key Vault Using Portal / PowerShell

Your Challenge

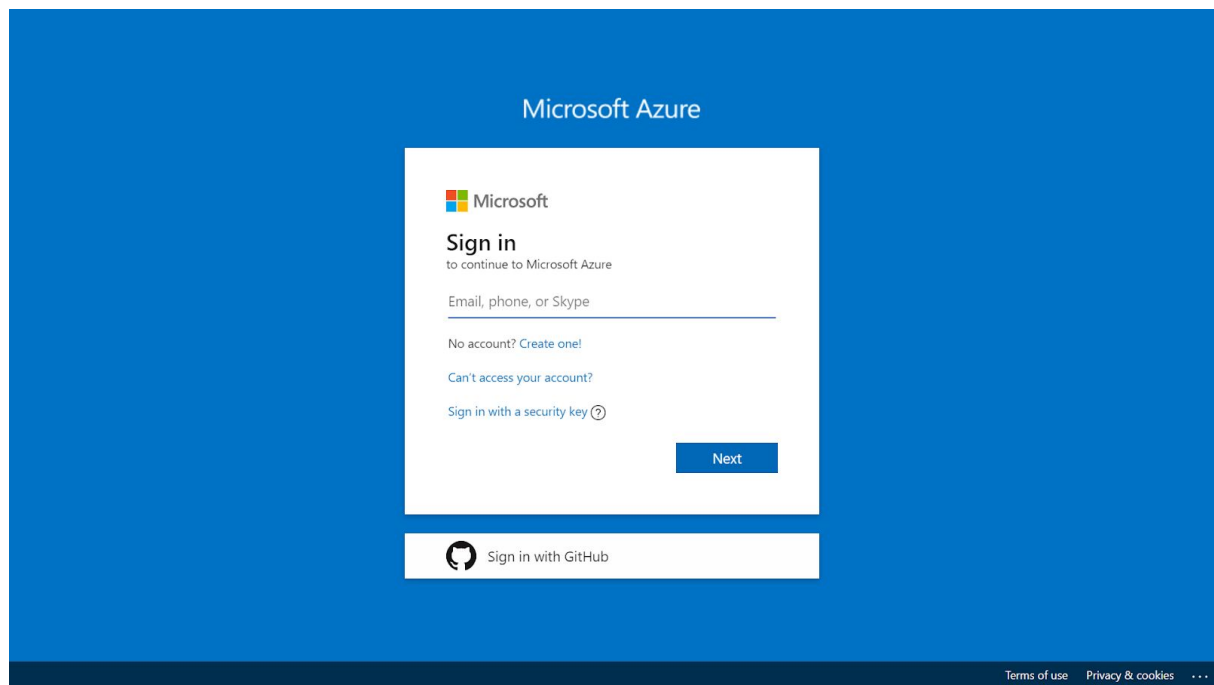
- Create a resource group named **keyvaultgrp** (Portal) / **keyvaultpsgrp** (PowerShell).
- Create a new Key Vault with **a unique name** in that group.
- Add a secret to that vault, with the key and value of whatever you wish.
- Manage secret in the key vault.
- Clean up all of your resources created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

Microsoft Azure

Search resources, services, and docs (G+/)

Home > Subscriptions > VS Enterprise – MPN AK - Resource groups > Create a resource group

Create a resource group

Basics Tags Review + create

Resource group - A container that holds related resources for an Azure solution. The resource group can include all the resources for the solution, or only those resources that you want to manage as a group. You decide how you want to allocate resources to resource groups based on what makes the most sense for your organization. [Learn more](#)

Project details

* Subscription VS Enterprise – MPN AK

* Resource group keyvaultgrp

Resource details

* Region (Europe) West Europe

Review + create < Previous Next : Tags >

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

Microsoft Azure

Search resources, services, and docs (G+)

Home > Resource groups > keyvaultgrp > Marketplace > Key Vault > Create key vault

Create key vault

Basics Access policy Virtual network Tags Review + create

Azure Key Vault is a cloud service used to manage keys, secrets, and certificates. Key Vault eliminates the need for developers to store security information in their code. It allows you to centralize the storage of your application secrets which greatly reduces the chances that secrets may be leaked. Key Vault also allows you to securely store secrets and keys backed by Hardware Security Modules or HSMs. The HSMs used are Federal Information Processing Standards (FIPS) 140-2 Level 2 validated. In addition, key vault provides logs of all access and usage attempts of your secrets so you have a complete audit trail for compliance. [Learn more](#)

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

* Subscription VS Enterprise – MPN AK

* Resource group keyvaultgrp
[Create new](#)

Instance details

* Key vault name sd-20191008-kv ✓

* Region West Europe

* Pricing tier Standard

Review + create < Previous Next : Access policy >

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

» Home > Resource groups > keyvaultgrp > sd-20191008-kv - Secrets > Create a secret

Create a secret

Upload options

Manual

* Name ⓘ mySecret ✓

* Value 🔑 ✓

Content type (optional)

Set activation date? ⓘ ☐

Set expiration date? ⓘ ☐

Enabled? Yes No

Create

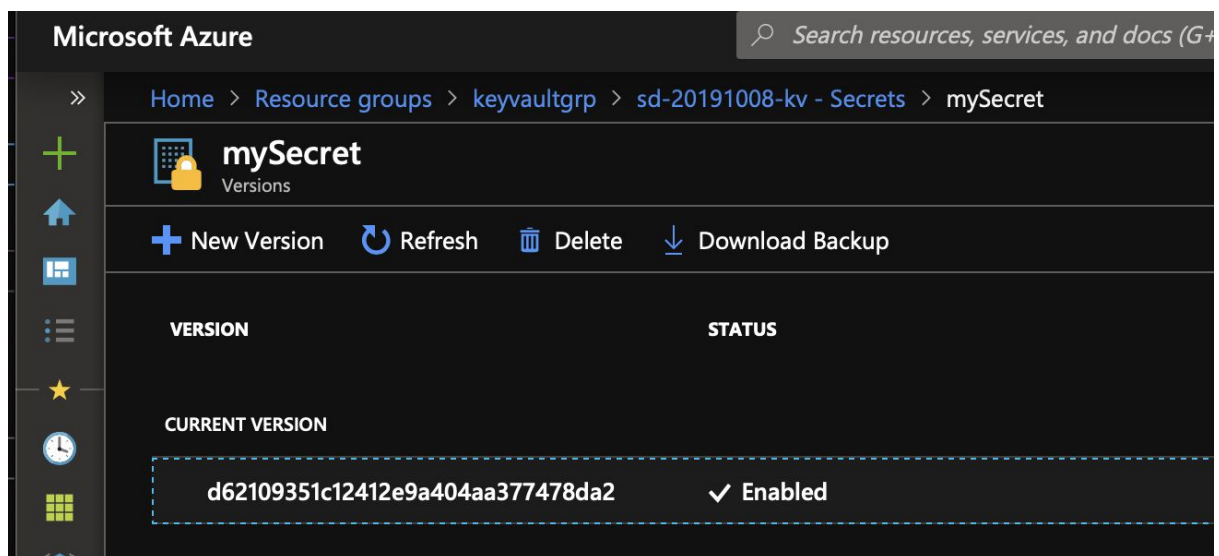
1. In the list of Resource groups, click the new **keyvaultgrp** resource group.
2. Choose the key vault created in the last step, with the unique name that you gave it.
3. In the settings menu on the left, navigate to the “**Secrets**” menu.
4. Select “**Generate/Import**” from the menu.
5. Leave “**Manual**” 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.

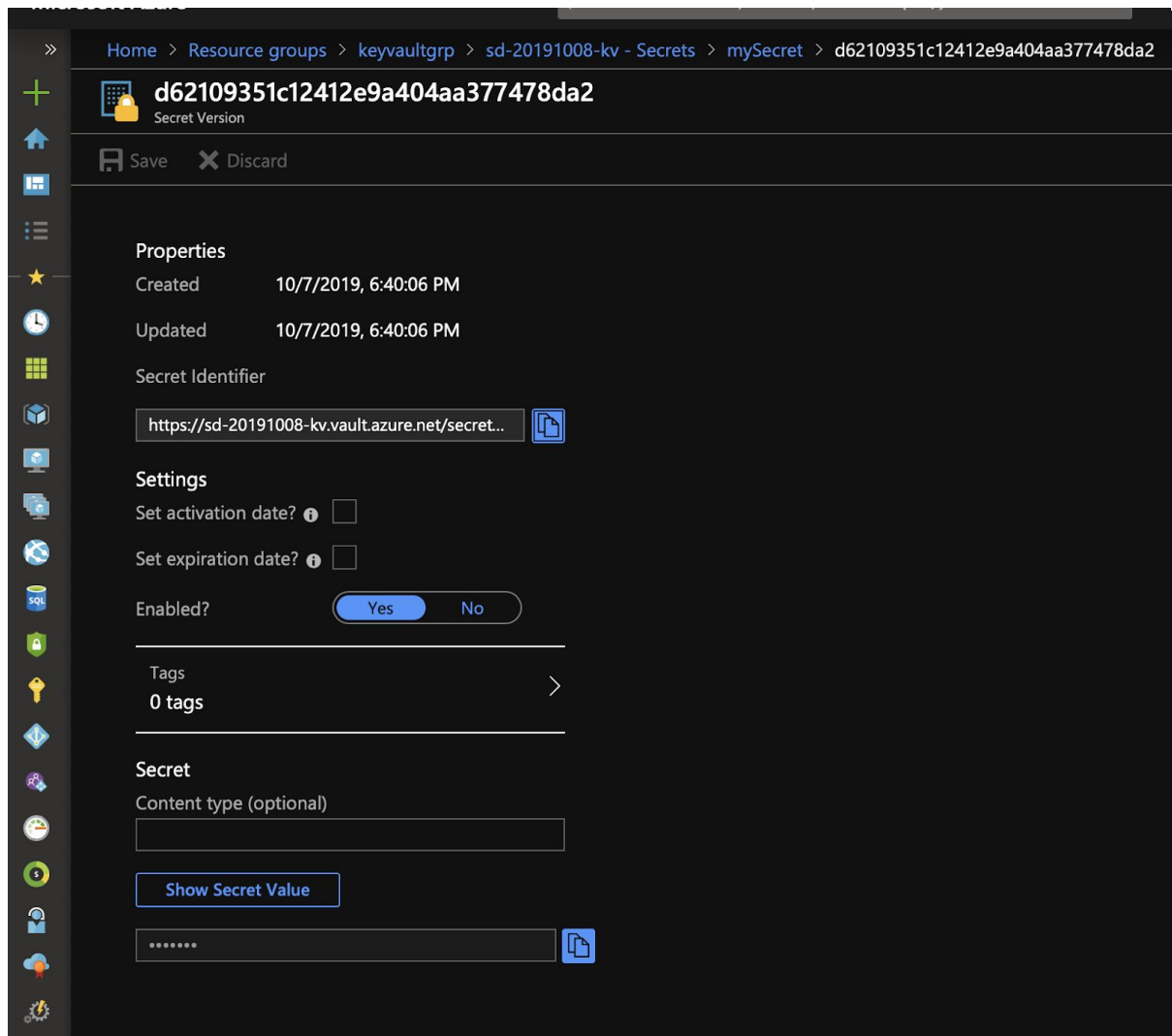
The new created secret should be listed on the secrets lists.

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.



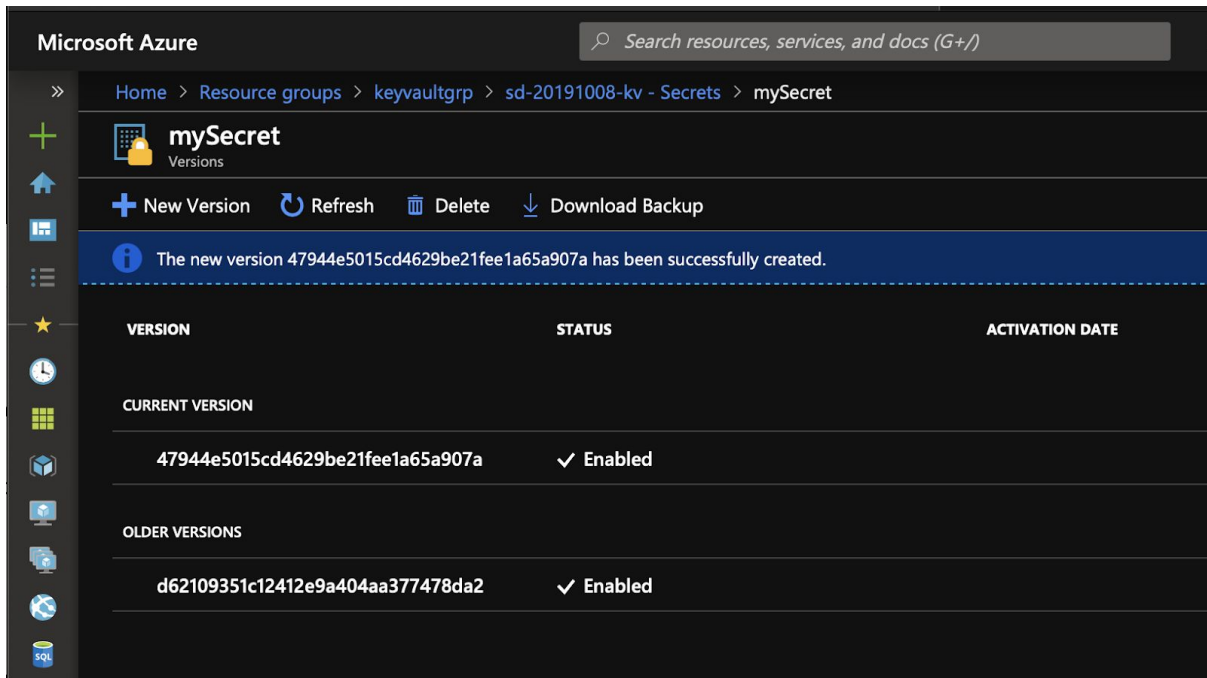
5. From that page you can view the value and properties of the secret by clicking the hash of the desired version:



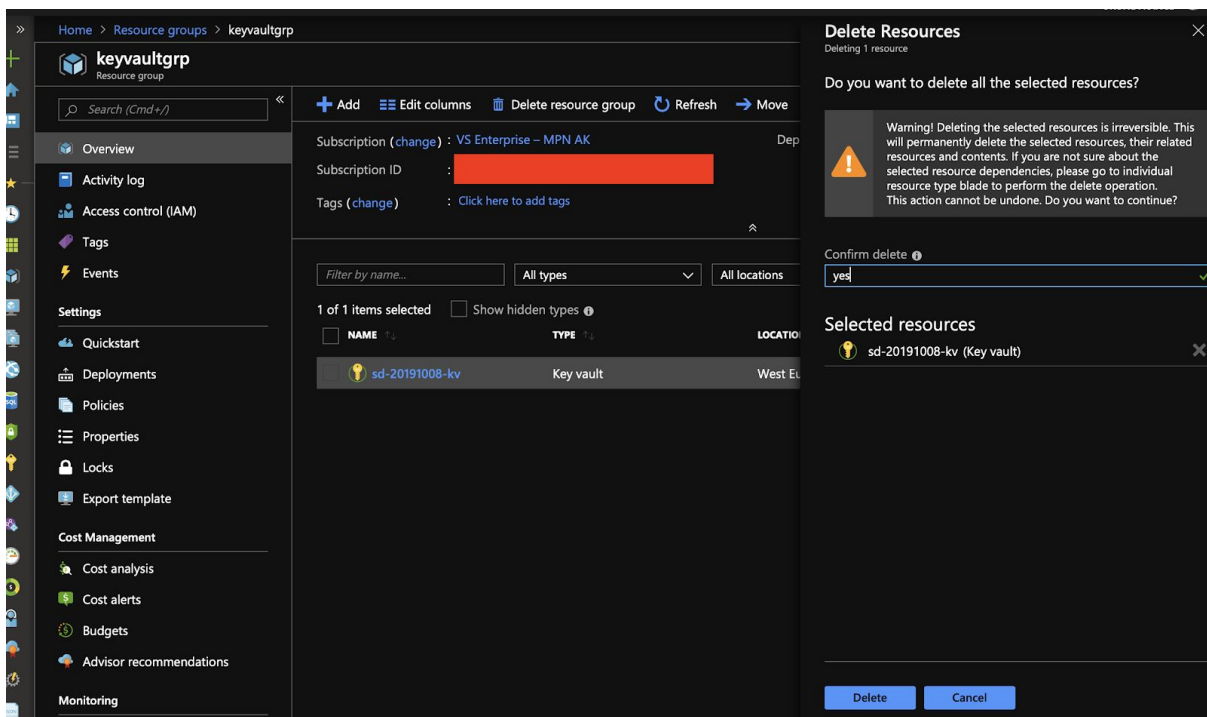
It contains the URL for the secret identifier.

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



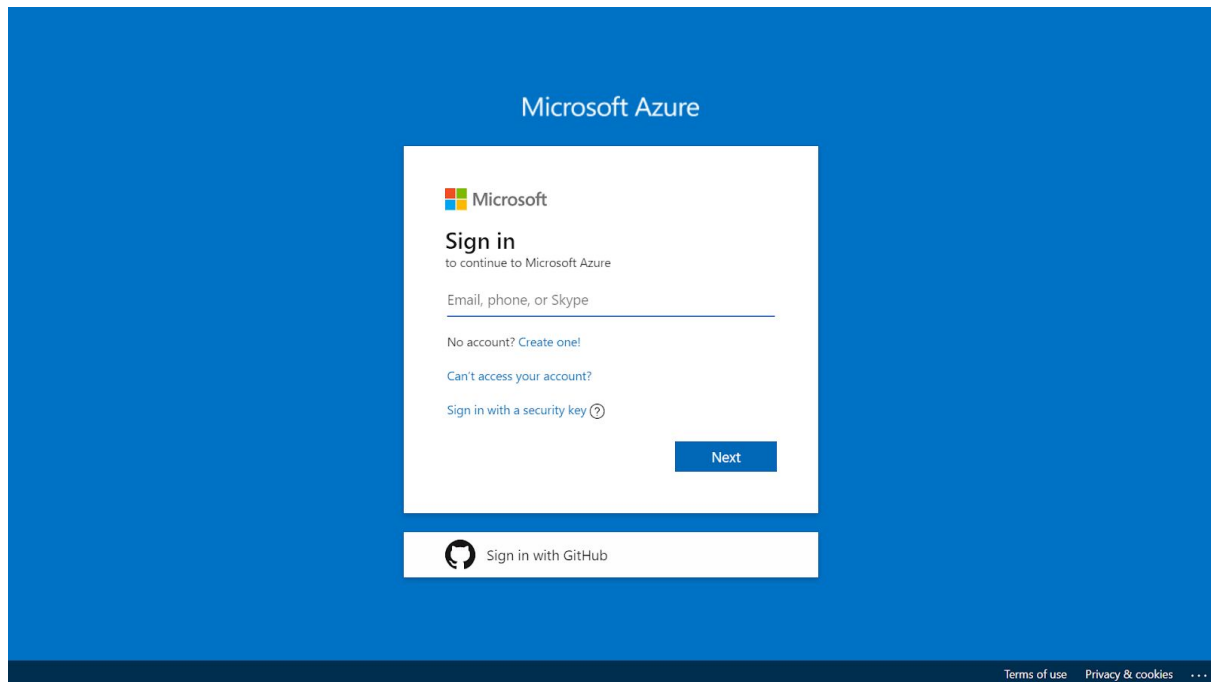
1. In the navigation list, click **Resource groups**.
2. Click **keyvaultgrp** to open the resource group.
3. Click **Delete resource group** to delete the resource group.
4. On the **Are you sure you want to delete** blade, type the resource group name:
keyvaultgrp.

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

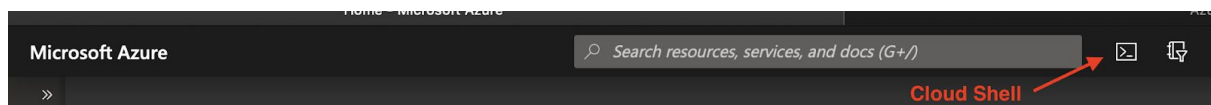
OPTION 2: PowerShell

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:

```
Azure:/
PS Azure:\> $location = "WestEurope"
Azure:/
PS Azure:\> $rgName = "keyvaultpsgrp"
Azure:/
PS Azure:\> New-AzResourceGroup -Name $rgName -Location $location

ResourceGroupName : keyvaultpsgrp
Location           : westeurope
ProvisioningState  : Succeeded
Tags               :
ResourceId         : /subscriptions/[REDACTED]/resourceGroups/keyvaultpsgrp
```

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/[REDACTED]/resourceGroups/keyvaultpsgrp/providers/Mic
                           rosoft.KeyVault/vaults/sd-20191008-ps-kv
Vault URI                 : https://sd-20191008-ps-kv.vault.azure.net/
Tenant ID                 : [REDACTED]
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 was 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 "[YourUserPrincipalName]"
$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:\>
```