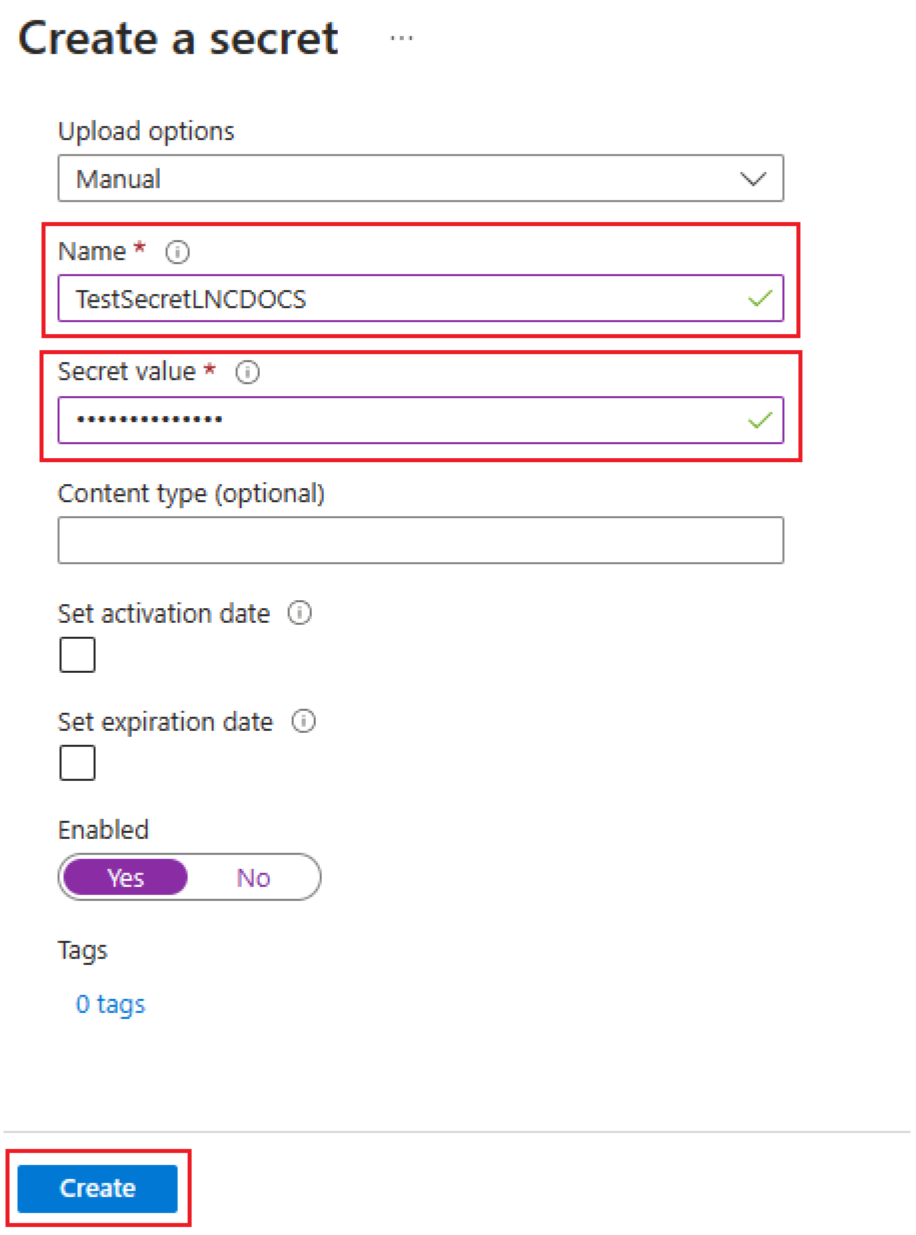
Create reference to Azure Key Vault content from function code

> Requirements: Basic Azure Function knowledge and access to an Azure Key Vault & Azure Function.

This topic shows you how to work with secrets from Azure Key Vault in your Azure Functions code without requiring any code changes. Azure Key Vault is a service that provides centralized secrets management, with full control over access policies and audit history. This article uses managed identities to access other resources.

Add your secret to Azure Key Vault

First, the secret must be created in the Azure Key Vault. For this, an Azure Key Vault must exist and the permissions to create a new item must be available. There you can insert the secret that you want to use later in the code.


Create a secret

Upload options
Manual

Name *
TestSecretLNCDOCS

Secret value *
••••••••••••••

Content type (optional)

Set activation date
☐

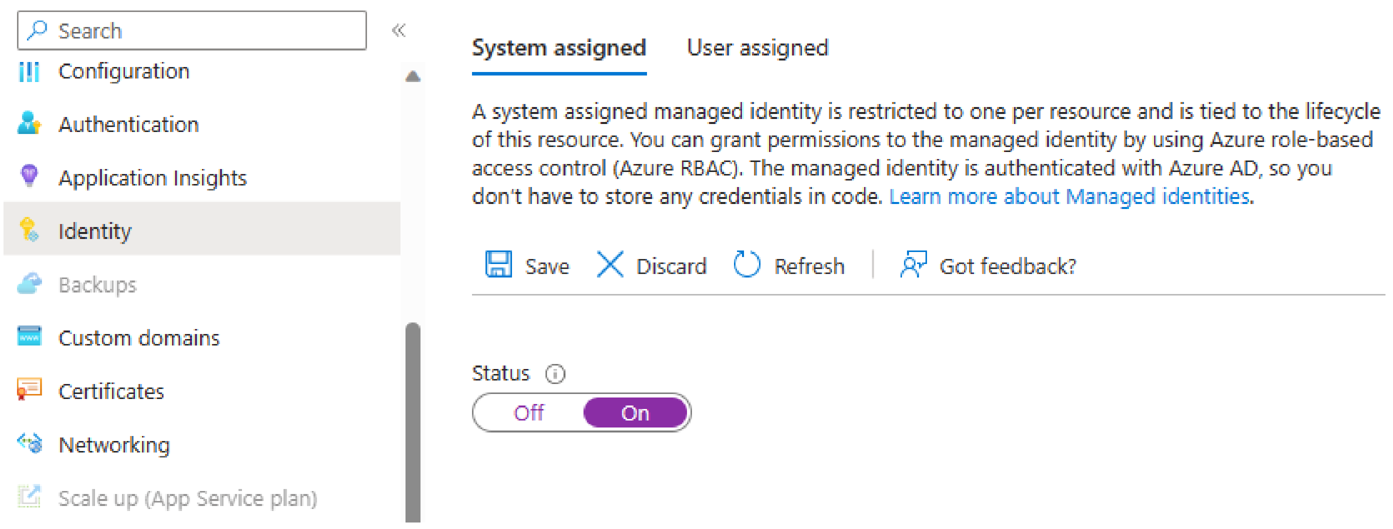
Set expiration date
☐

Enabled
[✓ Yes] No

Tags
0 tags

Create managed identity of function

To be able to display the secret in the Function code, you have to activate the Managed Identity in the Function App. You can do this via the menu item "Identity" and then switch the status to "On" under "System assigned". Don't forget to save your selection.

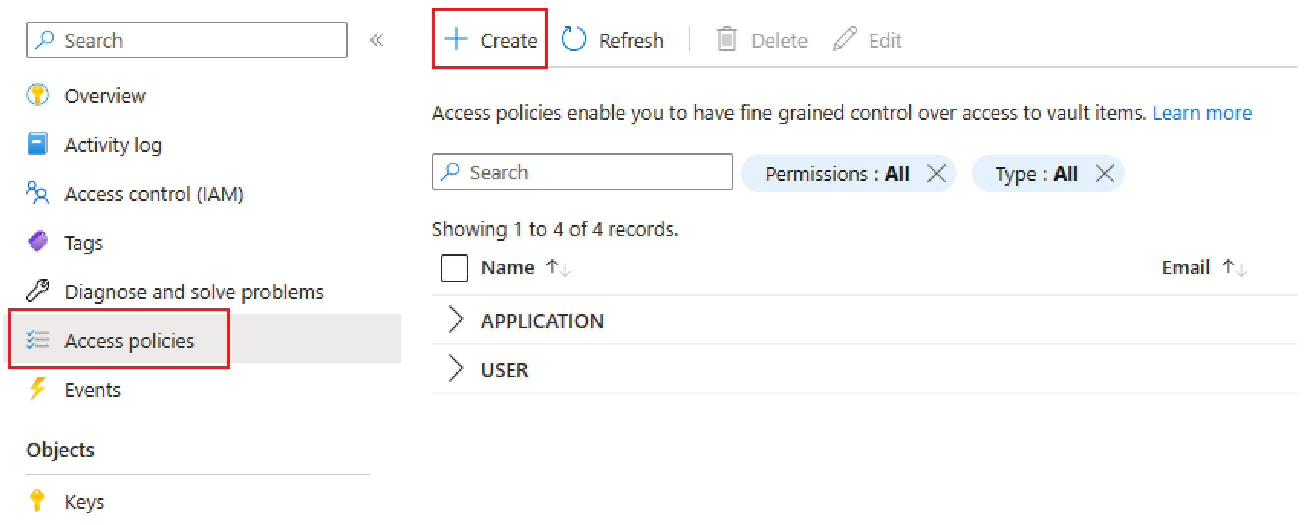


A system assigned managed identity is restricted to one per resource and is tied to the lifecycle of this resource. You can grant permissions to the managed identity by using Azure role-based access control (Azure RBAC). The managed identity is authenticated with Azure AD, so you don't have to store any credentials in code. Learn more about Managed identities.

Status: Off [✓ On]

Create access policy

Then you can go back to the Key Vault and create a new access policy under "Access policies" -> "Create".

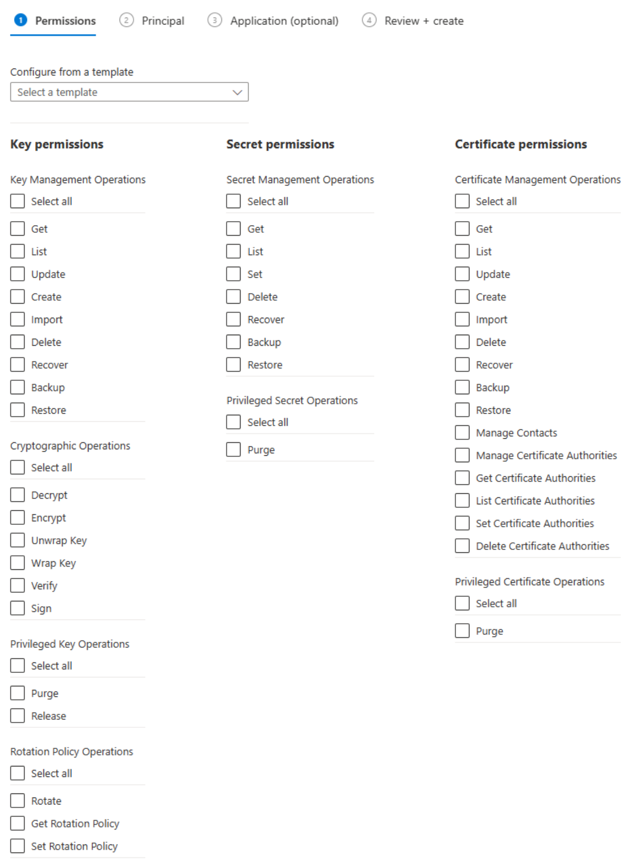


Access policies enable you to have fine grained control over access to vault items. Learn more

Showing 1 to 4 of 4 records.

Name	Email
APPLICATION	
USER	

There you have to select the desired permissions. The Azure Function then connects to the Key Vault with these permissions. To read only the secret content, only the "Get" permission under "Secret permissions" is used.



Configure from a template

Select a template

Key permissions

Key Management Operations
- [ ] Select all
- [ ] Get
- [ ] List
- [ ] Update
- [ ] Create
- [ ] Import
- [ ] Delete
- [ ] Recover
- [ ] Backup
- [ ] Restore

Cryptographic Operations
- [ ] Select all
- [ ] Decrypt
- [ ] Encrypt
- [ ] Unwrap Key
- [ ] Wrap Key
- [ ] Verify
- [ ] Sign

Privileged Key Operations
- [ ] Select all
- [ ] Purge
- [ ] Release

Rotation Policy Operations
- [ ] Select all
- [ ] Rotate
- [ ] Get Rotation Policy
- [ ] Set Rotation Policy

Secret permissions

Secret Management Operations
- [ ] Select all
- [ ] Get
- [ ] List
- [ ] Set
- [ ] Delete
- [ ] Recover
- [ ] Backup
- [ ] Restore

Privileged Secret Operations
- [ ] Select all
- [ ] Purge

Certificate permissions

Certificate Management Operations
- [ ] Select all
- [ ] Get
- [ ] List
- [ ] Update
- [ ] Create
- [ ] Import
- [ ] Delete
- [ ] Recover
- [ ] Backup
- [ ] Restore
- [ ] Manage Contacts
- [ ] Manage Certificate Authorities
- [ ] Get Certificate Authorities
- [ ] List Certificate Authorities
- [ ] Set Certificate Authorities
- [ ] Delete Certificate Authorities

Privileged Certificate Operations
- [ ] Select all
- [ ] Purge

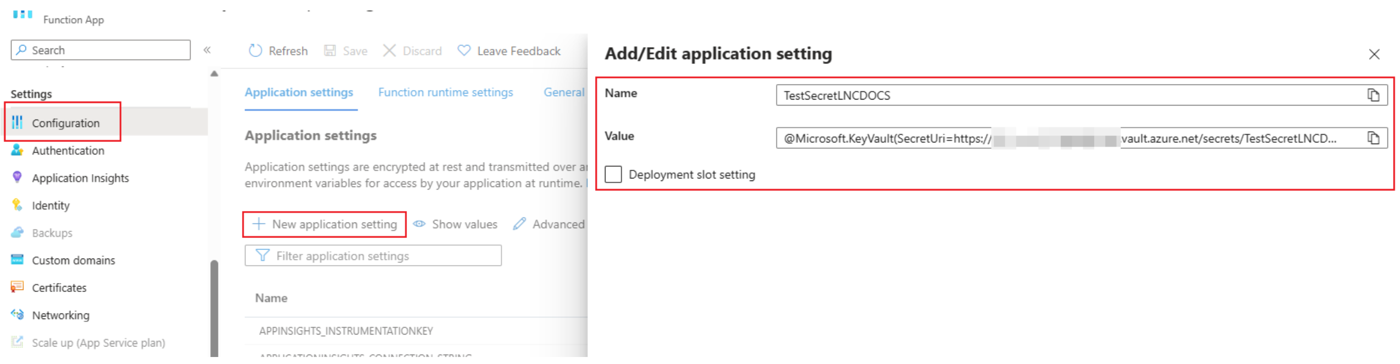
At the end you have to select the managed identity of the Azure Function and save the access policy.

Create environment variable link

Then a link to the Key Vault can be created. To do this, you must create a new application secret under "New application setting" in the Function App under "Configuration".

Here you first enter the name of the variable that you want to address in the code. Under "Value" you have to insert the following content and complete it with your values:

@Microsoft.KeyVault(SecretUri=https://<keyvaultname>.vault.azure.net/secrets/<secretname>



Application settings

Application settings are encrypted at rest and transmitted over a environment variables for access by your application at runtime.

Name

APPINSIGHTS_INSTRUMENTATIONKEY

Add/Edit application setting

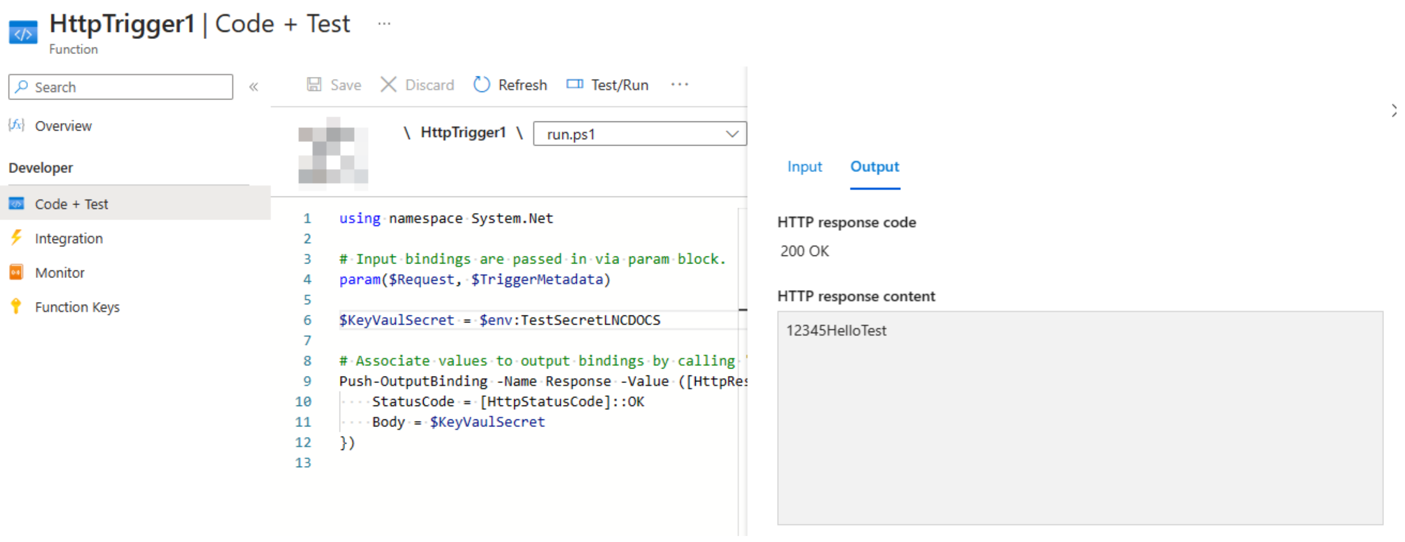
Name	TestSecretLNCDOCS
Value	@Microsoft.KeyVault(SecretUri=https://[redacted]vault.azure.net/secrets/TestSecretLNCD...

- [ ] Deployment slot setting

Get environment variable content

Then you can read the variable in your function code using the environment as follows:

$env:<secretname>



```
using namespace System.Net

# Input bindings are passed in via param block.
param($Request, $TriggerMetadata)

$KeyVaulSecret = $env:TestSecretLNCDOCS

# Associate values to output bindings by calling '
Push-OutputBinding -Name Response -Value ([HttpRes
    StatusCode = [HttpStatusCode]::OK
    Body = $KeyVaulSecret
})
```

HTTP response code

200 OK

HTTP response content

```
12345HelloTest
```

Thus, the values can be stored securely without all user accounts needing authorization.

Revision #4
Created 24 May 2023 09:15:31
Updated 21 July 2024 15:11:16