



# CDW Documentation

## Azure Speech & Translator with Key Vault Integration

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# Azure Speech & Translator with Key Vault Integration

## □ Overview

This setup securely connects to Azure **Speech-to-Text** and **Translator** services using secrets stored in **Azure Key Vault**, accessed via ``DefaultAzureCredential``.

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## □ Azure Key Vault Setup

1. **Create a Key Vault** in Azure Portal. 2. Add the following **secrets**:

Secret Name	Example Value
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<code>`speech-key`</code>	(Your Azure Speech API key)
<code>`speech-region`</code>	<code>`eastus`</code>
<code>`translator-key`</code>	(Your Translator API key)
<code>`translator-region`</code>	<code>`global`</code>

3. Assign the executing identity (e.g. user or Managed Identity):

- Role: **Key Vault Secrets User**
  - Scope: Your Key Vault resource
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## □ Local Setup (Developer Machine)

### 1. Install tools:

```
`` bash brew install azure-cli pip install azure-identity azure-keyvault-secrets azure-cognitiveservices-speech requests ``
```

### 2. Authenticate:

```
`` bash az login ``
```

This enables ``DefaultAzureCredential`` to work locally.

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## □ Full Python Script Using Azure Key Vault

```
```python
import azure.cognitiveservices.speech as speechsdk
import requests
from azure.identity import DefaultAzureCredential
from azure.keyvault.secrets import SecretClient

# □ Load secrets from Azure Key Vault
VAULT_NAME = "your-keyvault-name" # Replace with your Key Vault name
KV_URI = f"https://{VAULT_NAME}.vault.azure.net"
credential = DefaultAzureCredential()
secret_client = SecretClient(vault_url=KV_URI, credential=credential)

# Fetch secrets
speech_key = secret_client.get_secret("speech-key").value
speech_region = secret_client.get_secret("speech-region").value
translator_key = secret_client.get_secret("translator-key").value
translator_region = secret_client.get_secret("translator-region").value

# □ Language settings
SPEECH_LANGUAGE = "en-US"
TARGET_LANGUAGE = "ta" # Tamil

# □ Speech Recognition
speech_config = speechsdk.SpeechConfig(subscription=speech_key,
region=speech_region)
speech_config.speech_recognition_language = SPEECH_LANGUAGE
recognizer = speechsdk.SpeechRecognizer(speech_config=speech_config)

print("□ Say something...")
result = recognizer.recognize_once()

if result.reason == speechsdk.ResultReason.RecognizedSpeech:
    text = result.text
    print("□ Recognized:", text)

    # □ Translate
    endpoint =
f"https://api.cognitive.microsofttranslator.com/translate?api-version=3.0&to
={TARGET_LANGUAGE}"
    headers = {
        "Ocp-Apim-Subscription-Key": translator_key,
        "Ocp-Apim-Subscription-Region": translator_region,
        "Content-Type": "application/json"
    }
    body = [{"text": text}]
    response = requests.post(endpoint, headers=headers, json=body)

    if response.status_code == 200:
```

```
        translated = response.json()[0]["translations"][0]["text"]
        print(f" Translated ({TARGET_LANGUAGE}): {translated}")
    else:
        print(" Translation failed:", response.status_code)
        print("", response.text)

elif result.reason == speechsdk.ResultReason.NoMatch:
    print(" Speech not recognized.")
elif result.reason == speechsdk.ResultReason.Canceled:
    print(" Error:", result.cancellation_details.reason)
...

```

## Test result

```
(azure_env) yogamur@LT-APLC02FX2MKMD6N ~ % python speech_translate_key_vault.py
Say something...
Recognized: How is your day going?
Translated (ta): உங்கள் நாள் எப்படி போகிறது?

```