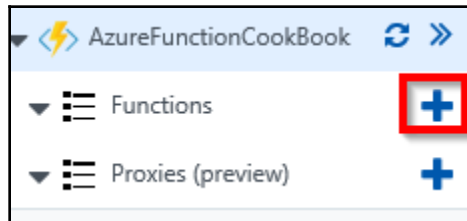
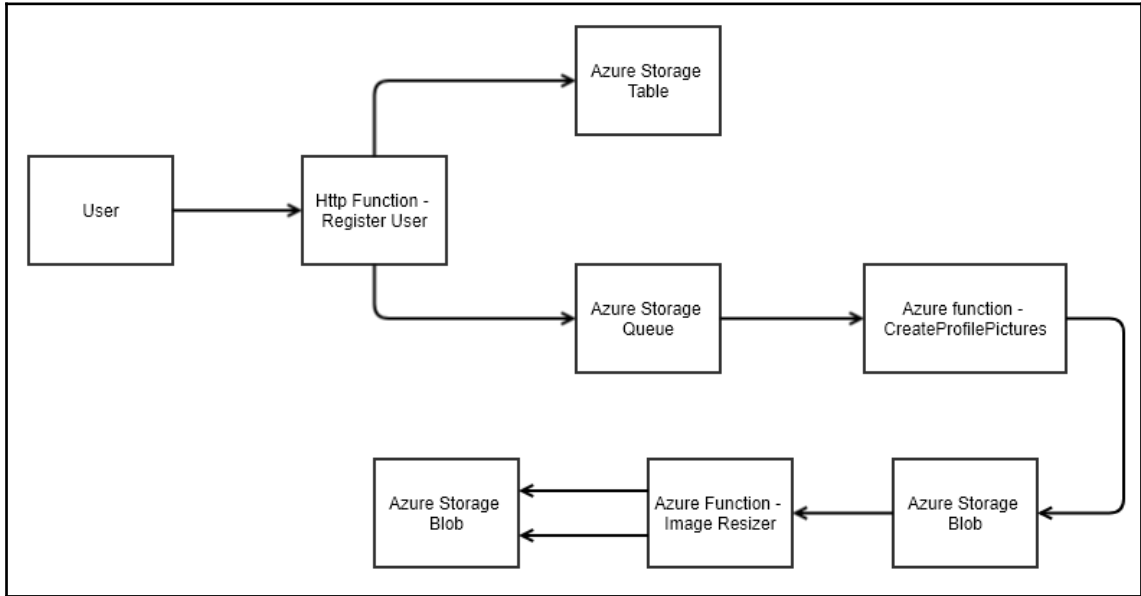


Chapter 01: Developing Cloud Applications Using Function Triggers and Bindings




Azure Functions for .NET - getting started


Follow our Quickstart guide to author and publish a function [Learn more](#)

1 CHOOSE A DEVELOPMENT ENVIRONMENT


2 CREATE A FUNCTION

 **Visual Studio**


Use Visual Studio to author, build, and run .NET functions

 **VS Code**

Use Visual Studio Code to author your functions

 **Any editor + Core Tools**

Write functions using your favorite editor and the Azure Functions Core Tools


 **In-portal**

Author functions quickly in the portal


[Continue](#)

✓ CHOOSE A DEVELOPMENT ENVIRONMENT


2 CREATE A FUNCTION

 **Webhook + API**

A function that will be run whenever it receives an HTTP request

 **Timer**


A function that will be run on a specified schedule


 **More templates...**


View all templates available to this function app


[Back](#) [Finish and view templates](#)


Choose a template below or [go to the quickstart](#)



 Search by trigger, language, or description

Scenario: All 

 **HTTP trigger**
A function that will be run whenever it receives an HTTP request, responding based on data in the body or query string

Authorization level 

Anonymous 

 View files Test  Keys

URL

View files Test

HTTP method
POST

Query
+ Add parameter

Headers
There are no headers
+ Add header

Request body

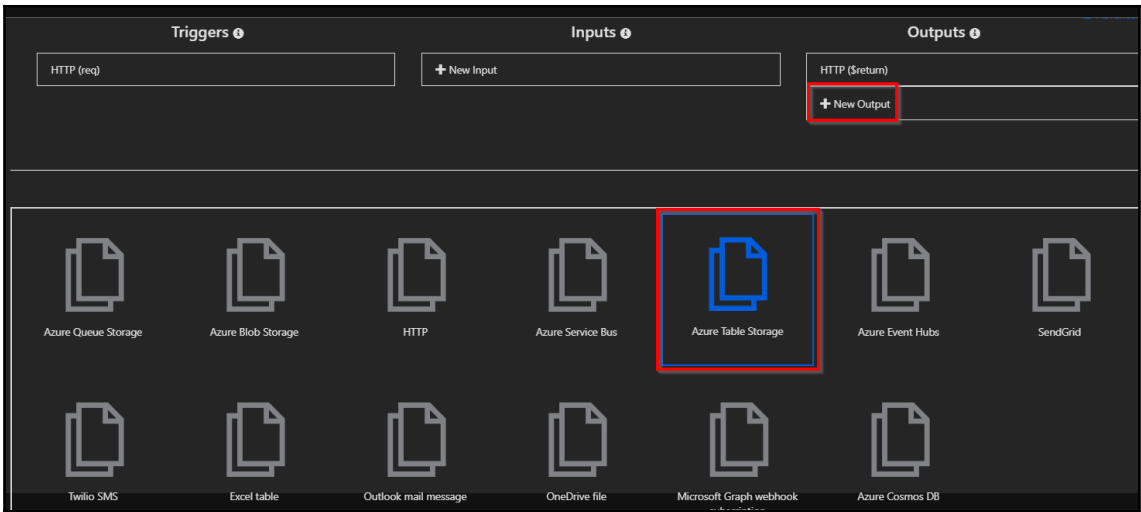
```
1 {  
2   "firstname": "Bill",  
3   "lastname": "Gates"  
4 }
```

Output

✓ Status: 200 OK

"Hello Bill Gates"

▶ Run



Azure Table Storage output [delete](#)

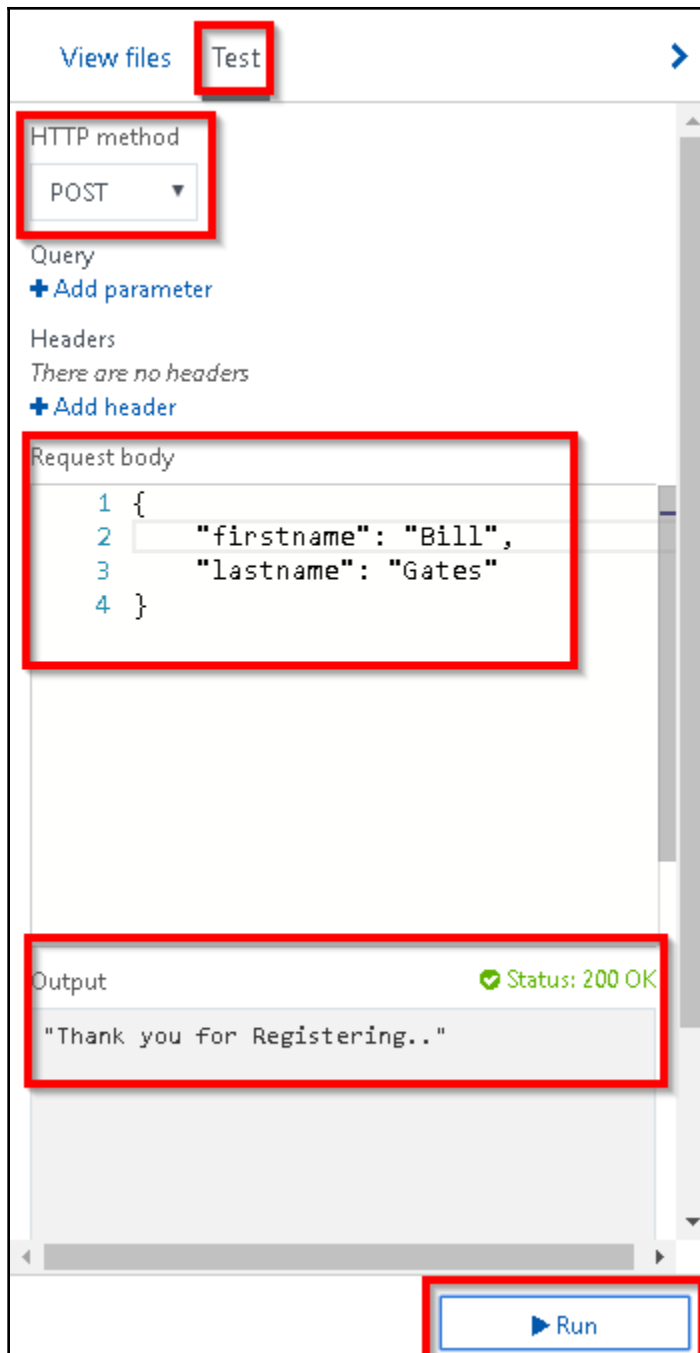
Table parameter name ⓘ

Table name ⓘ

Use function return value

Storage account connection ⓘ [show value](#)

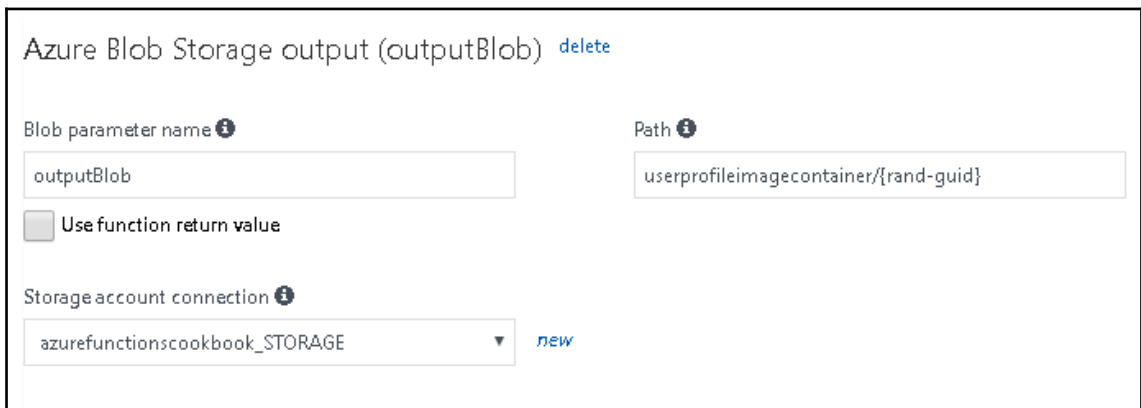
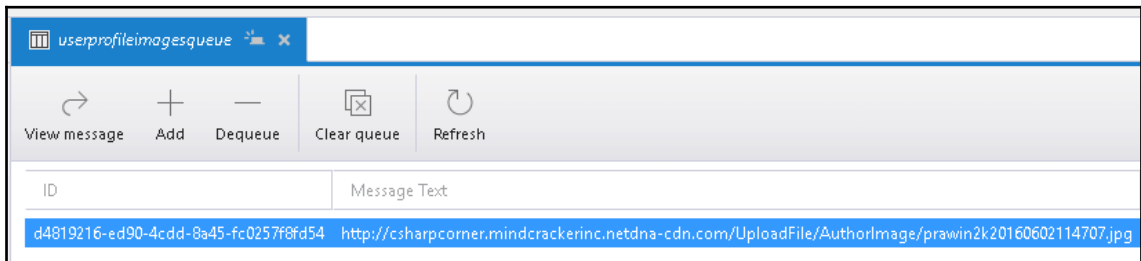
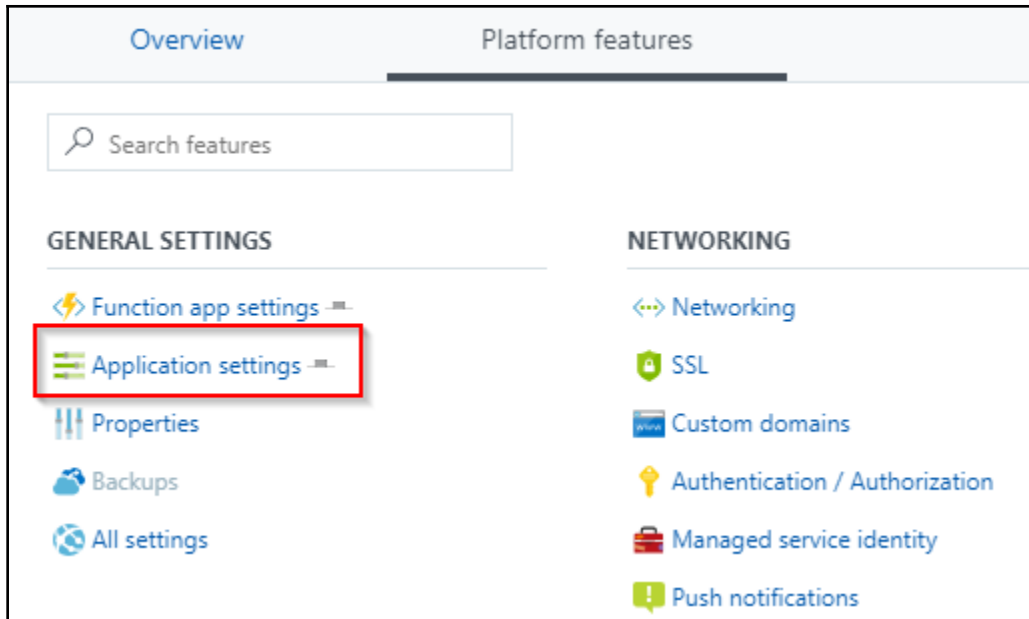
[new](#)



| PartitionKey | RowKey | Timestamp | FirstName | LastName |
|--------------|--------------------------------------|--------------------------|-----------|----------|
| p1 | 411e5c64-0129-4393-b74a-b4e395e37c88 | 2018-01-08T16:54:18.034Z | Bill | Gates |

App settings

| | | | |
|----------------------------------|------------------------------------|--------------------------|--------------|
| AzureWebJobsDashboard | DefaultEndpointsProtocol=h.. | <input type="checkbox"/> | Slot setting |
| AzureWebJobsStorage | DefaultEndpointsProtocol=h.. | <input type="checkbox"/> | Slot setting |
| FUNCTIONS_EXTENSION_VE... | ~1 | <input type="checkbox"/> | Slot setting |
| WEBSITE_CONTENTAZUREFI... | DefaultEndpointsProtocol=h.. | <input type="checkbox"/> | Slot setting |
| WEBSITE_CONTENTSHARE | azurefunctionscookbook3f7... | <input type="checkbox"/> | Slot setting |
| WEBSITE_NODE_DEFAULT_V... | 6.5.0 | <input type="checkbox"/> | Slot setting |
| azurefunctionscookbook_ST... | DefaultEndpointsProtocol=h.. | <input type="checkbox"/> | Slot setting |
| <input type="text" value="Key"/> | <input type="text" value="Value"/> | <input type="checkbox"/> | Slot setting |




```
Logs
2018-09-06T14:54:40 Welcome, you are now connected to log-streaming service.
2018-09-06T14:54:54.507 [Info] Script for function 'CreateProfilePictures' changed. Reloading.
2018-09-06T14:54:54.666 [Info] Compilation succeeded.
```

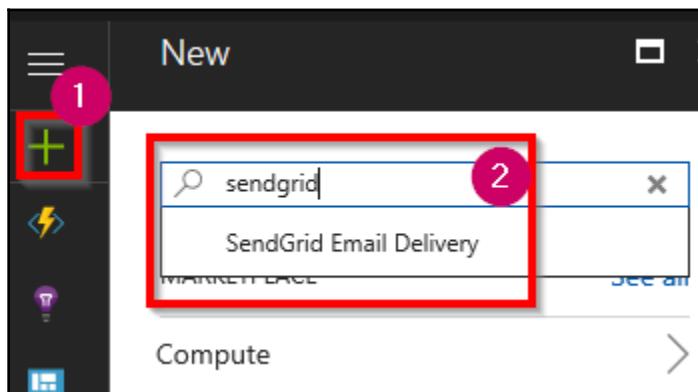
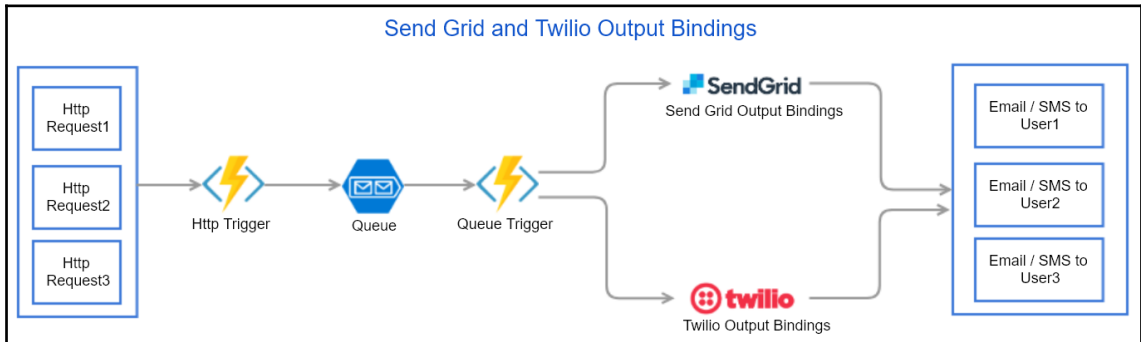
userprofileimagecontainer



Upload Download Open New Folder Copy URL Select all Copy Paste Rename Delete Refresh

userprofileimagecontainer


| Name | Last Modified | Blob Type | Content Type |
|--------------------------------------|-------------------------------|------------|--------------------------|
| 30542e55-1ec1-42d1-a479-199c8908c37a | Sun, 21 May 2017 05:58:15 GMT | Block Blob | application/octet-stream |



Chapter 02: Working with Notifications Using the SendGrid and Twilio Services





Create a New SendGrid Acc...  



CREATE


* Name
azurecookbook 


* Password 
..... 

* Confirm Password
..... 



* Subscription
Developer Program Benefit 

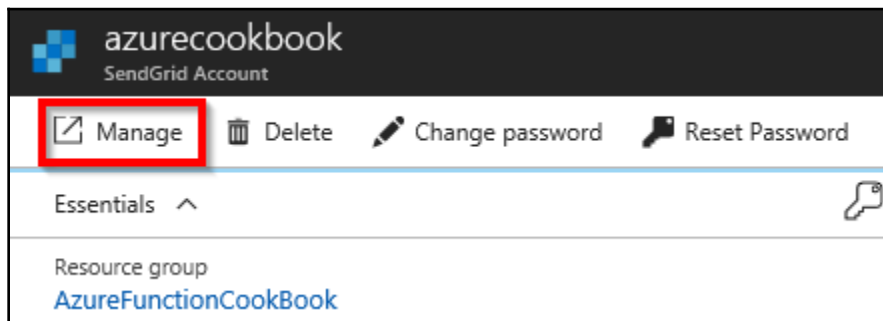
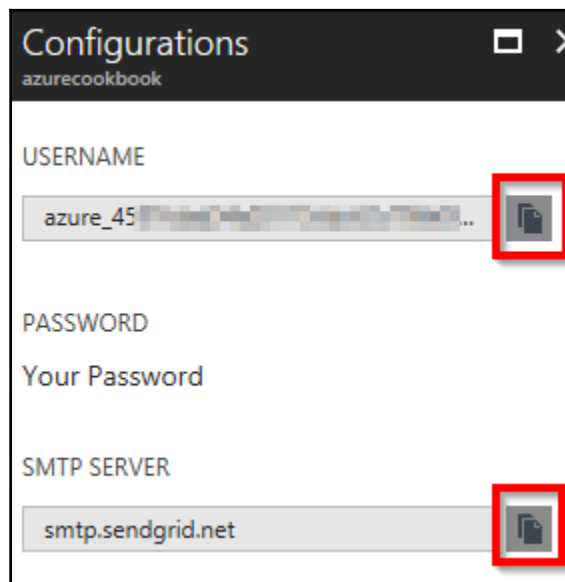
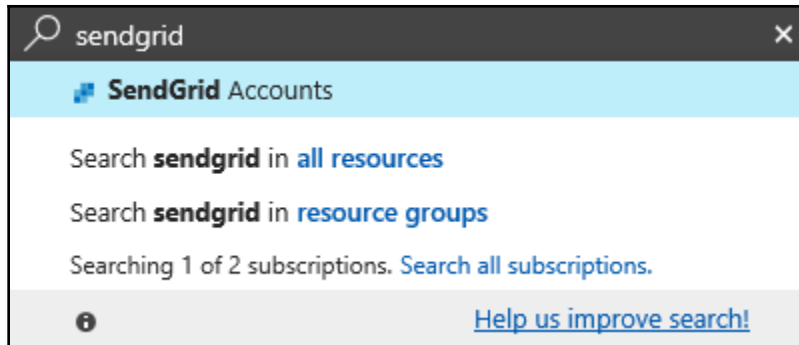
* Resource group 
 Create new Use existing
AzureFunctionCookBook 

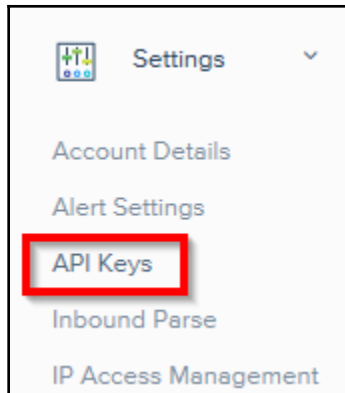
* Pricing tier 
free

Promotion Code 

Pin to dashboard

 **Create**  Automation options





API Keys

Create API Key



Get started creating API Keys

API keys help protect the sensitive areas of your SendGrid account (e.g. contacts and account settings). To control and limit access of API users, you can create multiple API keys, each with different permissions.



API Key Created

Please copy this key and save it somewhere safe.
For security reasons, we cannot show it to you again

Copied!

SG.iZXNnZ_PS5adDFh4fT6jaQ...LfMmAKS67x6DgAOpWzmPNRo

Done

SendGridApiKey

SG.4gDUetFsT1eDf3rHeyFyz...

Slot setting

...

Key

Value

Slot setting

...


Azure Queue Storage output

Message parameter name ⓘ


Queue name ⓘ

Use function return value

Storage account connection ⓘ [show value](#)
 new

 **Azure Queue Storage trigger**

A function that will be run whenever a message is added to a specified Azure Storage queue

 Azure Queue Storage trigger

New Function

Name:

Azure Queue Storage trigger

Queue name ⓘ

Storage account connection ⓘ *new* [show value](#)

```
Logs Console
2018-11-10T06:21:22 Welcome, you are now connected to log-streaming service.
2018-11-10T06:22:22 No new trace in the past 1 min(s).
2018-11-10T06:23:22 No new trace in the past 2 min(s).
2018-11-10T06:24:22 No new trace in the past 3 min(s).
2018-11-10T06:25:22 No new trace in the past 4 min(s).
2018-11-10T06:26:03.548 [Information] Executing 'Functions.SendNotifications' (Reason='New queue message detected on 'notificationqueue'.', Id=04604bc6-0300-4397-9ec8-fb7a9d03f210)
2018-11-10T06:26:03.726 [Information] C# Queue trigger function processed:
2018-11-10T06:26:03.726 [Information] Executed 'Functions.SendNotifications' (Succeeded, Id=04604bc6-0300-4397-9ec8-fb7a9d03f210)
```


SendGrid output

| | |
|--|---|
| Message parameter name ⓘ <input type="text" value="message"/> | SendGrid API Key App Setting ⓘ show value <input type="text" value="SendGrid-APKey"/> <i>new</i> |
| <input type="checkbox"/> Use function return value | From address ⓘ <input type="text" value="donotreply@example.com"/> |
| To address ⓘ <input type="text" value="prawin2k@gmail.com"/> | Message Text ⓘ <input type="text" value="Hi Admin, A new user got registered successfully. Than"/> |
| Message subject ⓘ <input type="text" value="New User got Registered Successfully"/> | |
| <input type="button" value="Save"/> | <input type="button" value="Cancel"/> |

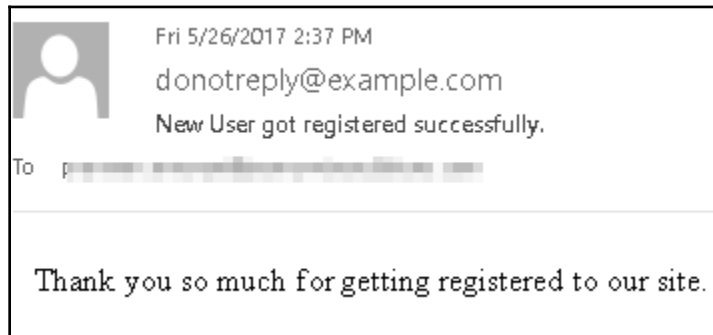
SendGrid output

⚠ Extensions not Installed

This integration requires the following extensions.

- ⚠ Microsoft.Azure.WebJobs.Extensions.SendGrid

[Install](#)



SendGrid output [x delete](#)

Message parameter name ⓘ

Use function return value

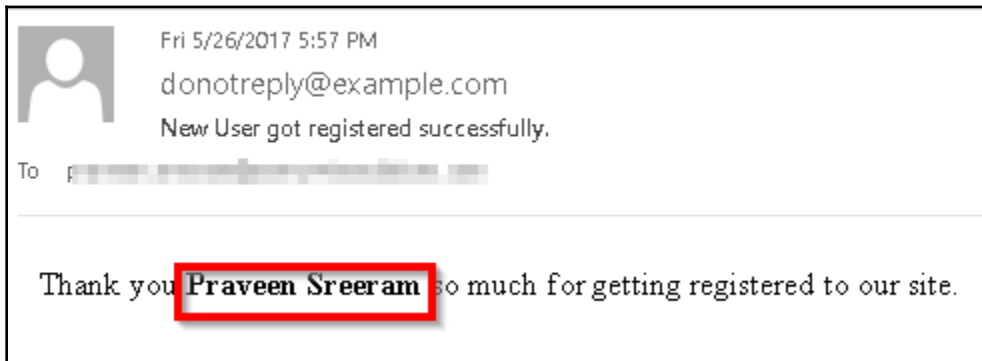
To address ⓘ

Message subject ⓘ

SendGrid API Key App Setting ⓘ [show value](#)
 [new](#)

From address ⓘ

Message Text ⓘ

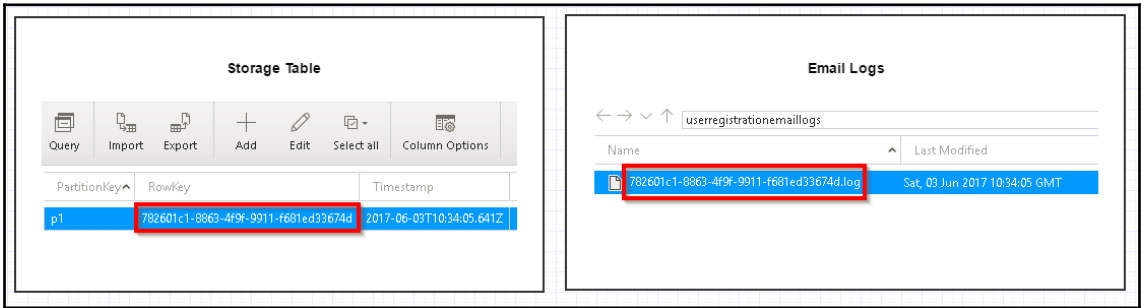
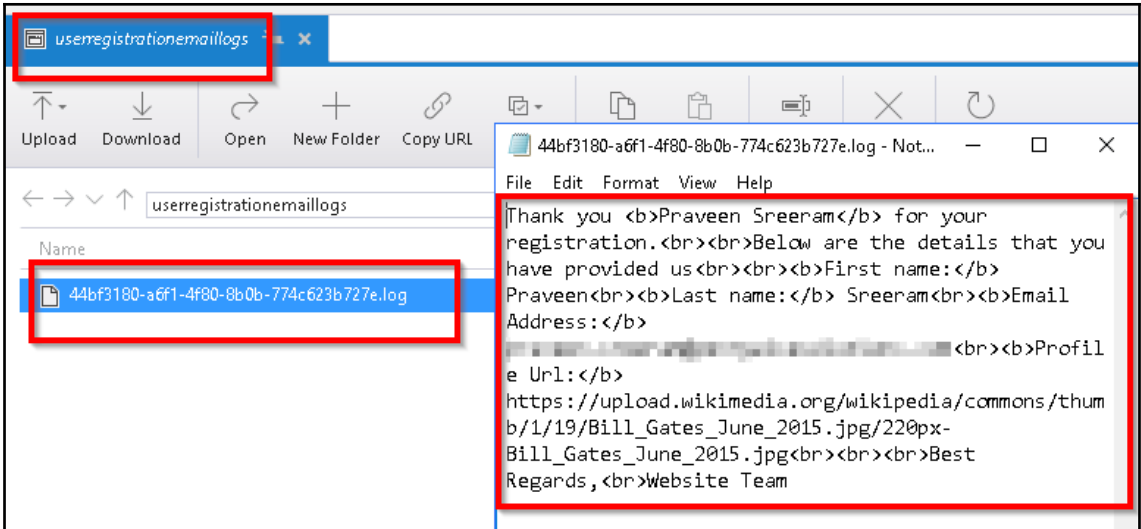


Blob parameter name ⓘ

Use function return value

Storage account connection ⓘ [show value](#)
 [new](#)

Path ⓘ





donotreply@example.com via [sendgrid.me](#)

to me ▾

Thank you **Praveen Sreeram** for your registration.

Below are the details that you have provided us

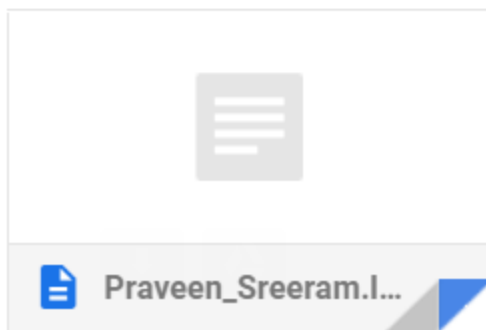
First name: Praveen

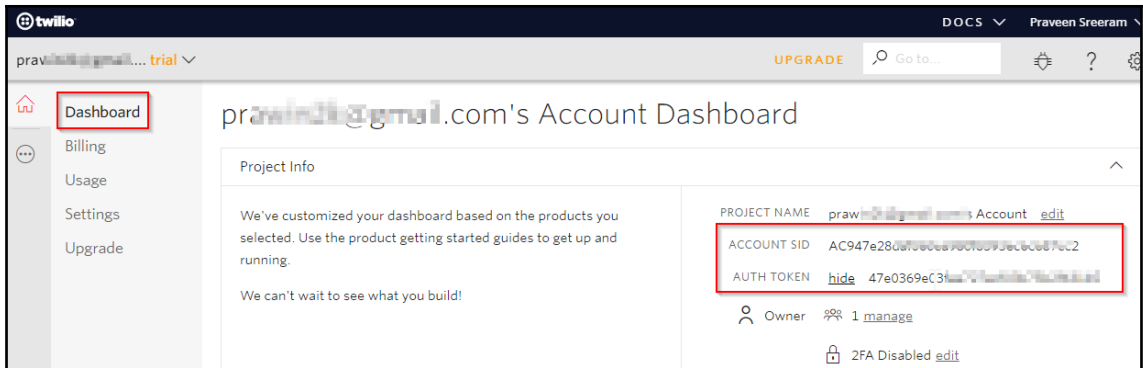


Last name: Sreeram

Email Address: [praveen.sreeram@gmail.com](#)

Best Regards,
Website Team





The screenshot shows the Twilio Account Dashboard for the account 'pravin2@gmail.com'. The 'Dashboard' link in the left sidebar is highlighted with a red box. The main content area is titled 'pravin2@gmail.com's Account Dashboard' and contains a 'Project Info' section. In this section, the 'ACCOUNT SID' and 'AUTH TOKEN' are highlighted with a red box. The 'AUTH TOKEN' is partially obscured by a 'hide' button.

twilio DOCS Praveen Sreeram

pravin2@gmail.com trial UPGRADE Go to...

Dashboard

pravin2@gmail.com's Account Dashboard

Project Info

We've customized your dashboard based on the products you selected. Use the product getting started guides to get up and running.

We can't wait to see what you build!

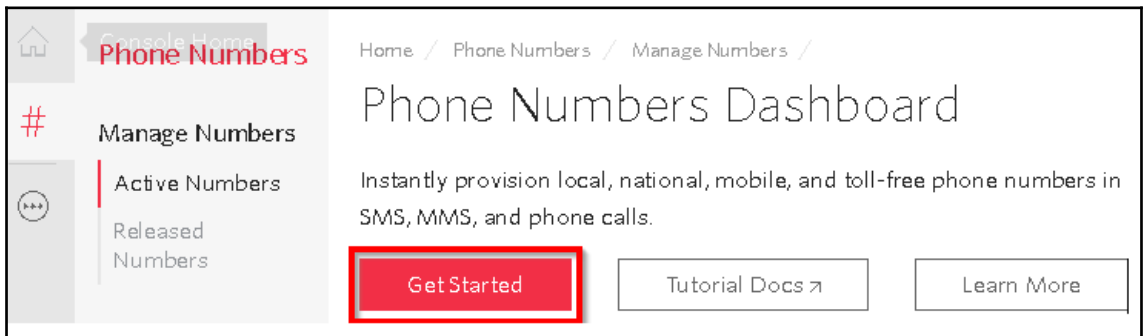
PROJECT NAME pravin2@gmail.com's Account edit

ACCOUNT SID AC947e28d0af606a70c0093ec6c08fec2

AUTH TOKEN hide 47e0369eC31... [obscured]

Owner 1 manage

2FA Disabled edit



The screenshot shows the Twilio Phone Numbers Dashboard. The 'Phone Numbers' link in the left sidebar is highlighted with a red box. The main content area is titled 'Phone Numbers Dashboard' and contains a 'Get Started' button, which is also highlighted with a red box. The 'Tutorial Docs' and 'Learn More' buttons are also visible.

Console Home Phone Numbers

Home / Phone Numbers / Manage Numbers /

Phone Numbers Dashboard

Instantly provision local, national, mobile, and toll-free phone numbers in SMS, MMS, and phone calls.

Get Started Tutorial Docs Learn More



The screenshot shows the 'Get Started with Phone Numbers' page. The main heading is 'Get Started with Phone Numbers'. Below the heading, there is a sub-heading 'Getting started with Twilio's phone numbers is easy! Search for local, toll-free, or mobile'. At the bottom of the page, there is a prominent red button with the text 'Get your first Twilio phone number', which is highlighted with a red box.

Get Started with Phone Numbers

Getting started with Twilio's phone numbers is easy! Search for local, toll-free, or mobile

Get your first Twilio phone number

Home / Phone Numbers / Manage Numbers /

Phone Numbers

Number Voice URL

| + | NUMBER | FRIENDLY NAME | CAPABILITIES | | | |
|---|------------------------|----------------|--------------|-----|-----|-----|
| | | | VOICE | FAX | SMS | MMS |
| | +1 410-394-9663 | (410) 394-9663 | | | | |
| | Solomons, MD | | | | | |

Home / Phone Numbers /

Verified Caller IDs

+

Number Friendly Name

| NUMBER | FRIENDLY NAME |
|--------------------------|------------------|
| +919849[REDACTED] | 919849[REDACTED] |

```
TwilioAccountSID    AC947e28[REDACTED]e..
TwilioAuthToken     47e0369eC[REDACTED]
```

Twilio SMS output [x delete](#)

Message parameter name ⓘ

objsmsmessage

Use function return value

Auth Token setting ⓘ

TwilioAuthToken

Message text ⓘ

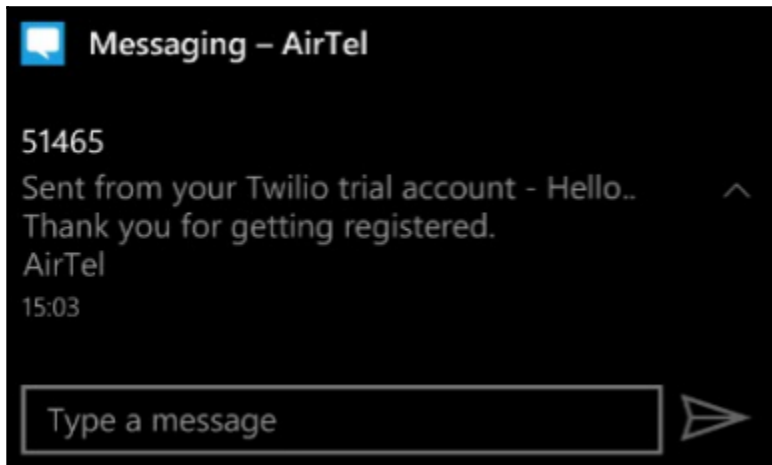
Message text

Account SID setting ⓘ

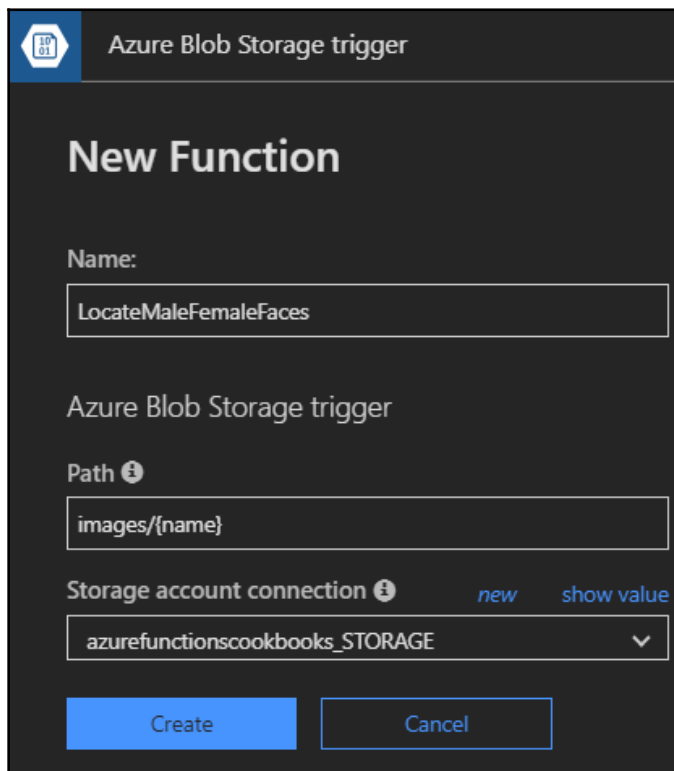
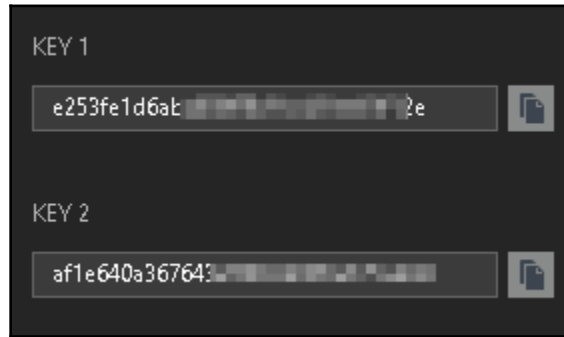
TwilioAccountSid

From number ⓘ

+14103949663



Chapter 03: Seamless Integration of Azure Functions with Azure Services



Azure Table Storage output [✕ delete](#)

Table parameter name ⓘ

Table name ⓘ

Use function return value

Storage account connection ⓘ [show value](#)
 [new](#)

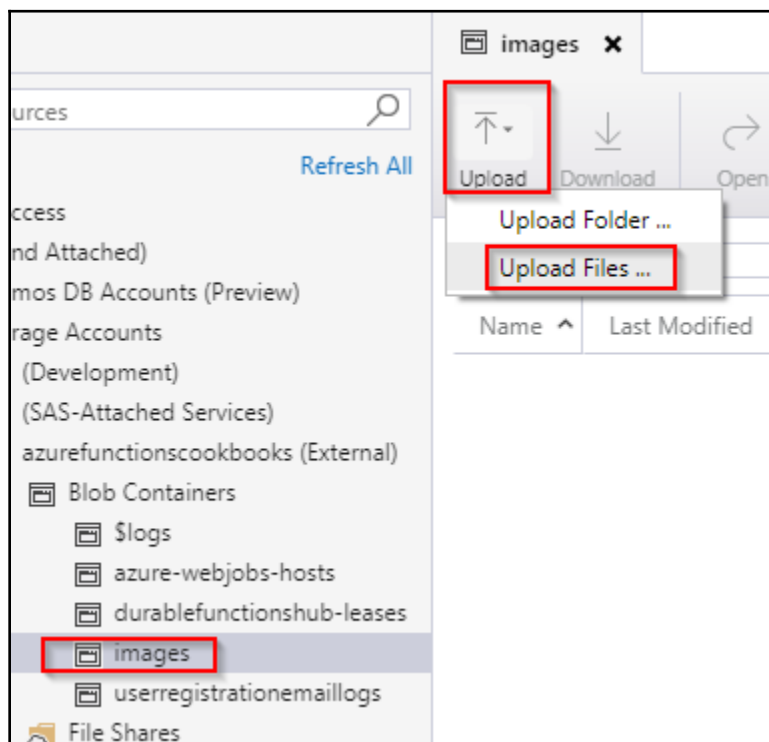
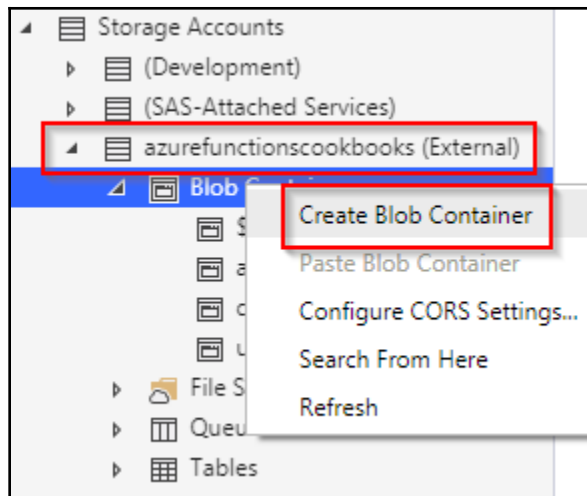
Azure Table Storage output

Table parameter name ⓘ

Table name ⓘ

Use function return value

Storage account connection ⓘ [show value](#)
 [new](#)



| Female | | | | | | Male | | | | | |
|---------------------|--------|--------|-------|--------|------------|-------------------|--------|--------|-------|--------|--------|
| faceFeMaleRectangle | | | | | | MalefaceRectangle | | | | | |
| Query | Import | Export | Add | Edit | Select all | Query | Import | Export | Add | Edit | Select |
| PartitionKey | Left | Top | Width | Height | | PartitionKey | Left | Top | Width | Height | R |
| Functions | 535 | 182 | 165 | 165 | | Functions | 373 | 182 | 161 | 161 | 09 |

SQL Cookbookdatabase
SQL database

Search (Ctrl+/)

- Overview
- Activity log
- Tags
- Diagnose and solve problems
- Quick start

Copy Restore Export Set server firewall Delete Connect with...

Resource group (change)
AzureFunctionCookBooks

Status
Online

Location
Southeast Asia

Subscription (change)

Subscription ID

Server name
azurecookbooks.database.windows.net

Elastic database pool
No elastic pool

Connection strings
[Show database connection strings](#)

Pricing tier
Basic (5 DTUs)

Oldest restore point
No restore point available

Database connection strings
Azurecookbook

ADO.NET JDBC ODBC PHP

ADO.NET (SQL authentication)

```
Server=tcp:....._433;Initial Catalog=Azurecookbook;Persist Security Info=False;User ID={your_username};Password={your_password};MultipleActiveResultSets=False;Encrypt=True;Trust Server Certificate=False;Connection Timeout=30;
```

Download ADO.NET driver for SQL server

SQLQuery4.sql - az...okbookadmin (118))* × SQLQuery3.sql - not connected SQLQuery2.sql - not connected

```
1 select * from employeeinfo
2
3
```

100 % <

Results Messages

| | PKEmployeeId | firstname | lastname | email | devicelist |
|---|--------------|-----------|----------|---------------------|----------------------------|
| 1 | 1 | Praveen | Kumar | praveen@example.com | [{ 'Type': 'Mobile Pho... |

Create logic app

Logic App


* Name
NotifyWhenTweetedByPopularUser ✓

* Subscription
[Blurred]

* Resource group ⓘ
 Create new Use existing
AzureFunctionCookBooks

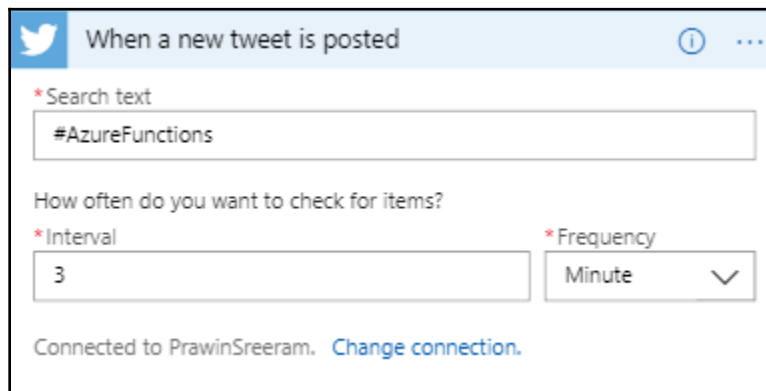
Location
South Central US

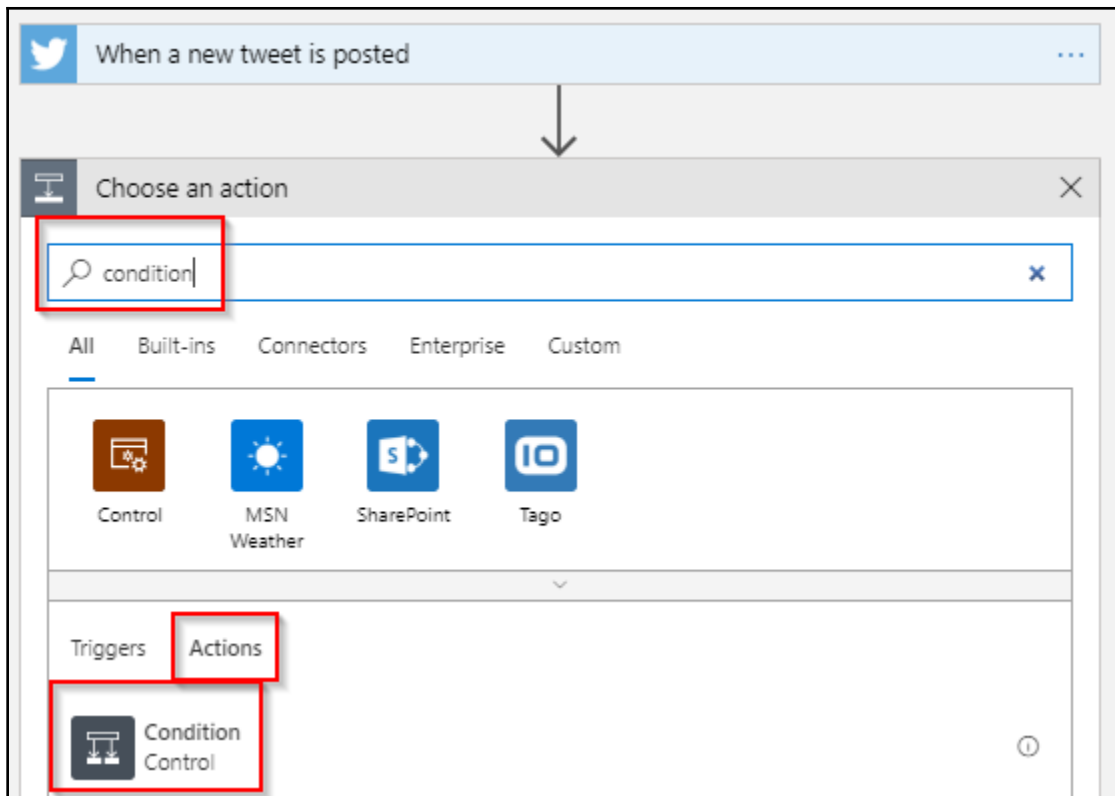
Log Analytics ⓘ
 On Off

 You can add triggers and actions to your Logic App after creation.

Pin to dashboard

[Create](#) [Automation options](#)





Condition

And

Choose a value is equal to Choose a value ...

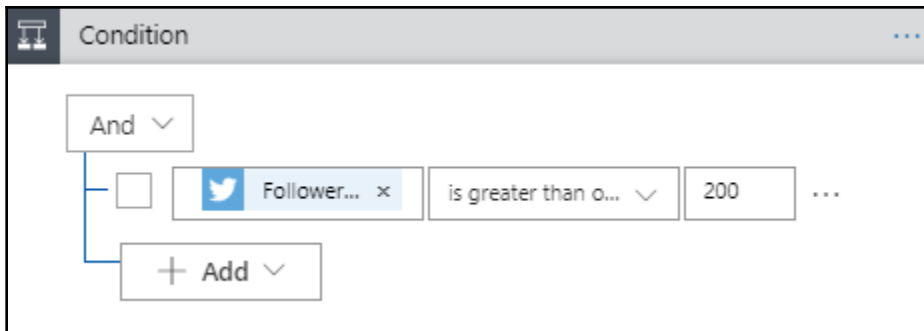
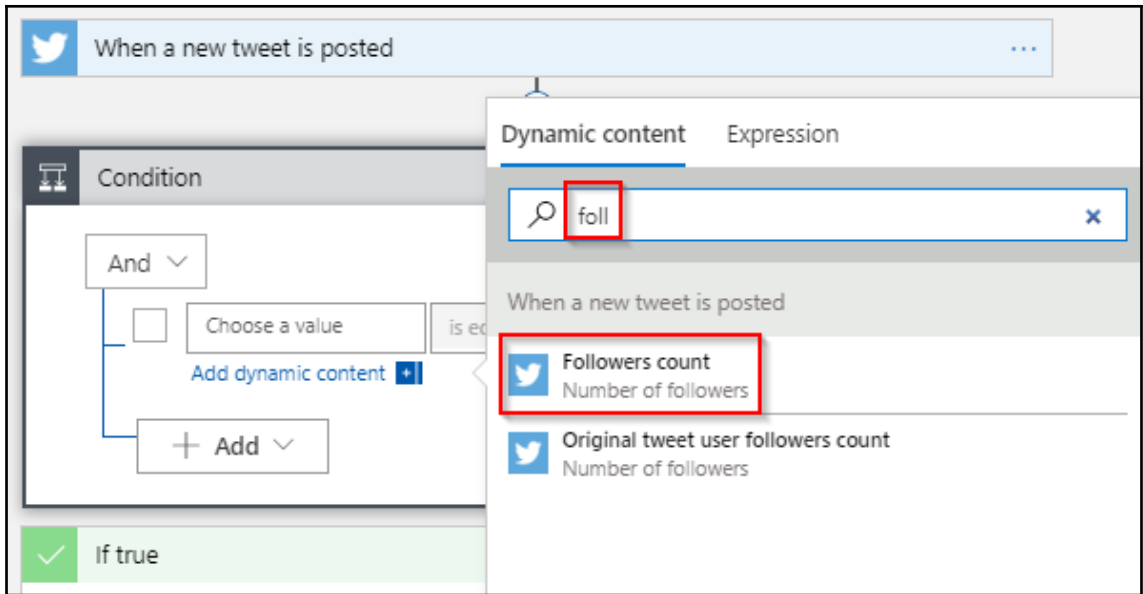
+ Add

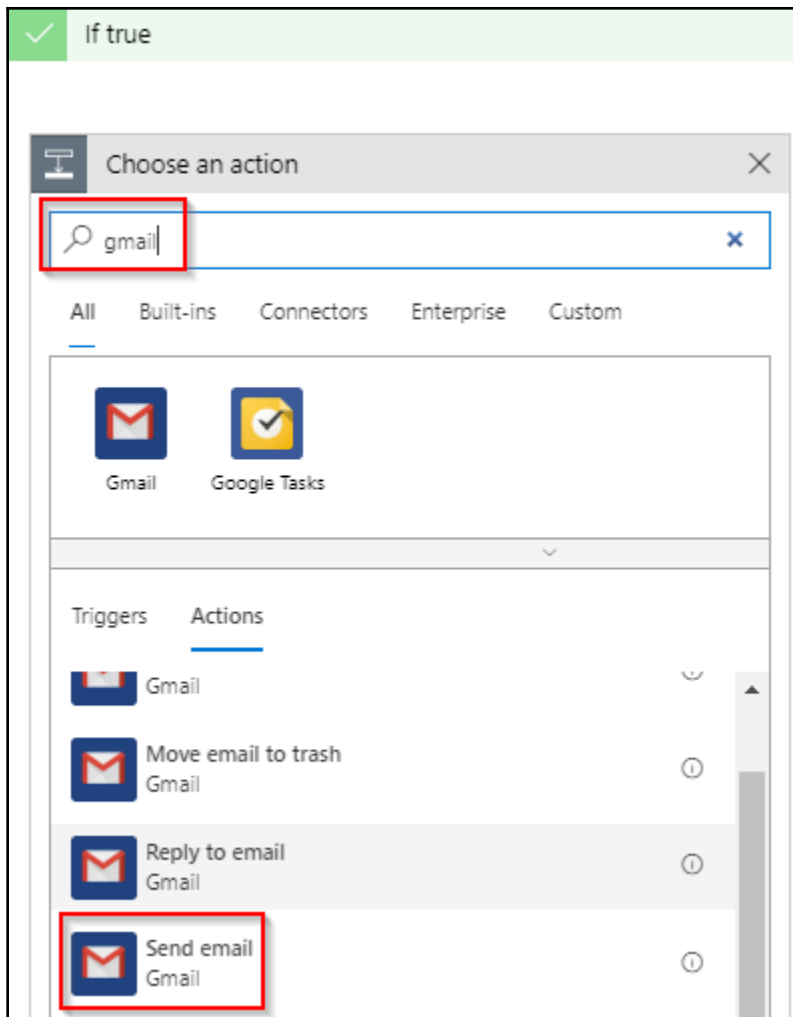
✓ If true

Add an action

✗ If false

Add an action





✉ Send email
ⓘ ...

***To**

Subject

🐦 Name × with 🐦 Followers count × followers posted a tweet

Body

🐦 Tweet text ×

Add dynamic content +

Attachments Name - 1

Attachments Content - 1

Attachments Content-Type - 1

+ Add new item

[Show advanced options](#) ▼

Connected to praveens@praveens.com. [Change connection.](#)

Prawin Sreeram @PrawinSreeram · now ▼

What is Serverless Computing? Exploring #AzureFunctions

0 10 20 30 40

What is Serverless Computing? Exploring Azure ...

There's a lot of confusing terms in the Cloud space. And that's not counting the term 'Cloud.' ;) IaaS (Infrastructure ...

hanselman.com

[35]

Runs history

All Start t... Pick a date... Pick a time

Specify the run identifier to open monitor view dire..

| STATUS | START TIME | IDENTIFIER | DURATION |
|-------------|-------------|---------------|---------------|
| ✔ Succeeded | 6/10/201... | 0858704493... | 704 Millis... |
| ✔ Succeeded | 6/10/201... | 0858704494... | 126 Millis... |

Sat 6/10/2017 10:13 PM

praveen [redacted]

Prawin Sreeram with 238 followers posted a tweet

To praveen [redacted]

What is Serverless Computing? Exploring #AzureFunctions <https://t.co/0wgNBpVbJL>

SendGrid output

Message parameter name ⓘ

message

SendGrid API Key App Setting ⓘ show value

SendGrid-APKey new

Use function return value

From address ⓘ

From address

To address ⓘ

To address

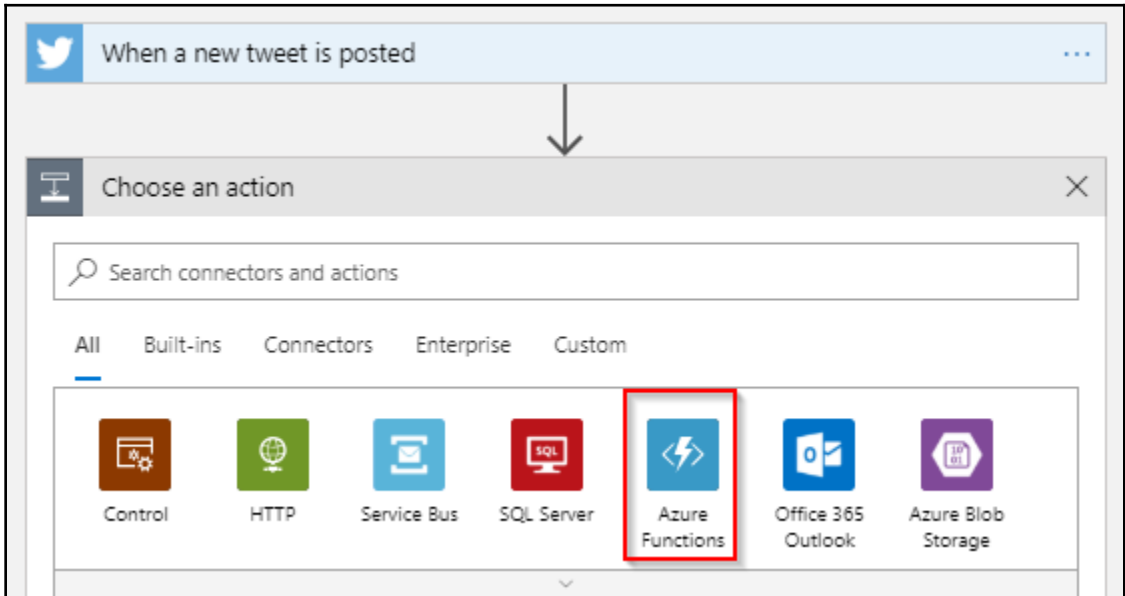
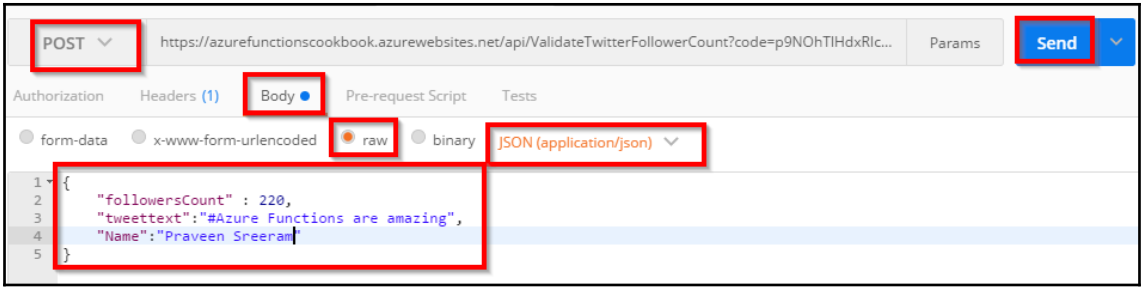
Message Text ⓘ

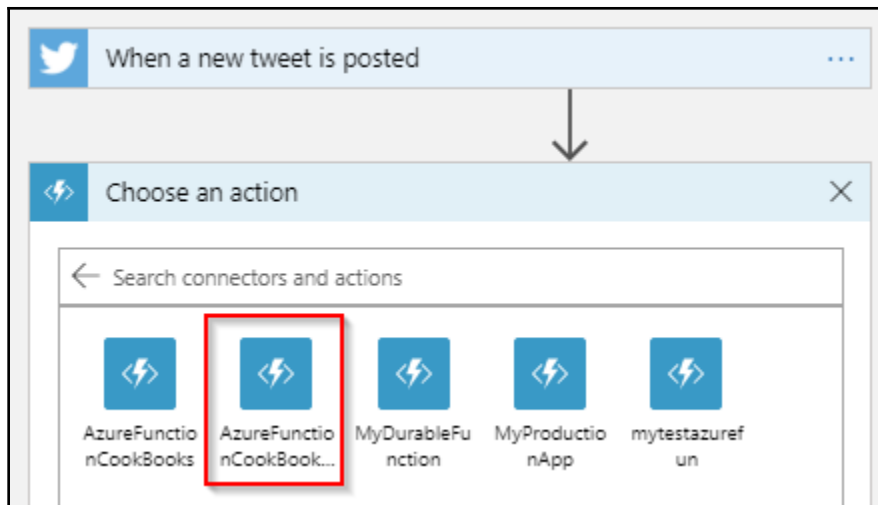
Message Text

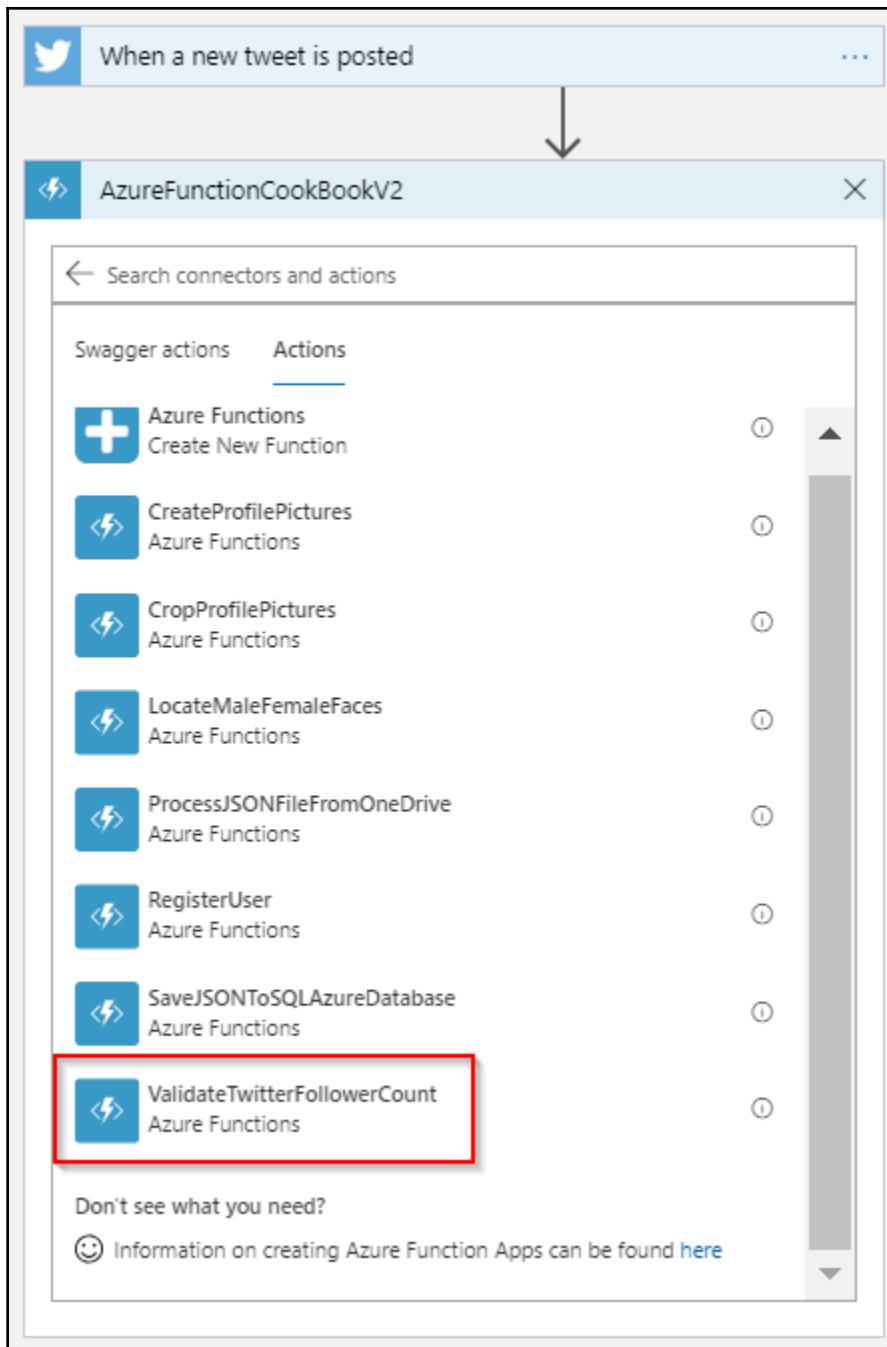
Message subject ⓘ

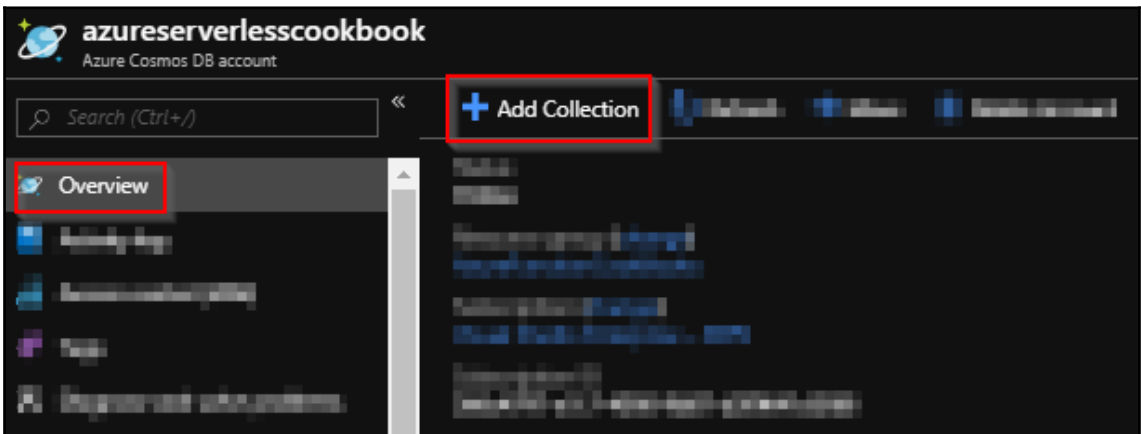
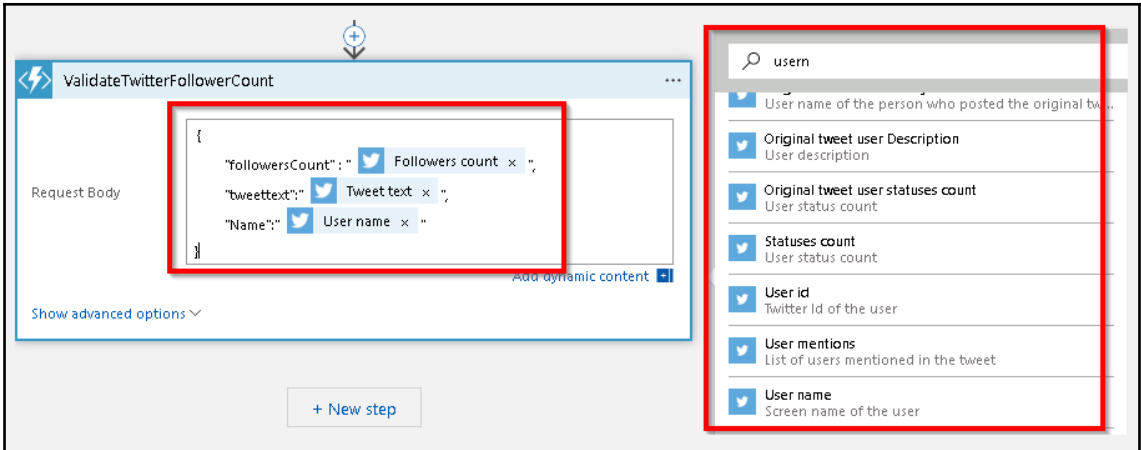
Message subject

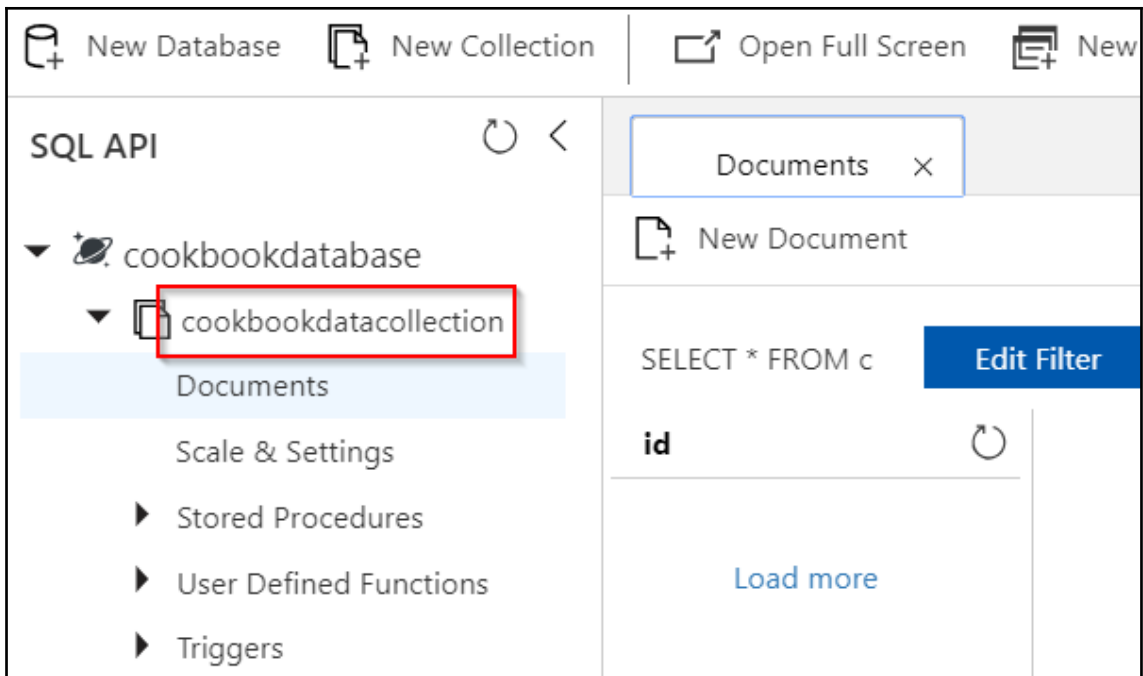
Save Cancel











Add Azure Function



Create an Azure Function with an Azure Cosmos DB trigger that listens to the change feed of a collection. Click here to read more about Azure Functions and Azure Cosmos DB integration.

1 Select collection

Select the collection to monitor for changes. Your Azure Function will receive batches of changed items to be processed.

cookbookdatacollection

2 Create Azure Function

Select an Azure Function app

AzureFunctionCookBookV2

* Name your Azure Function

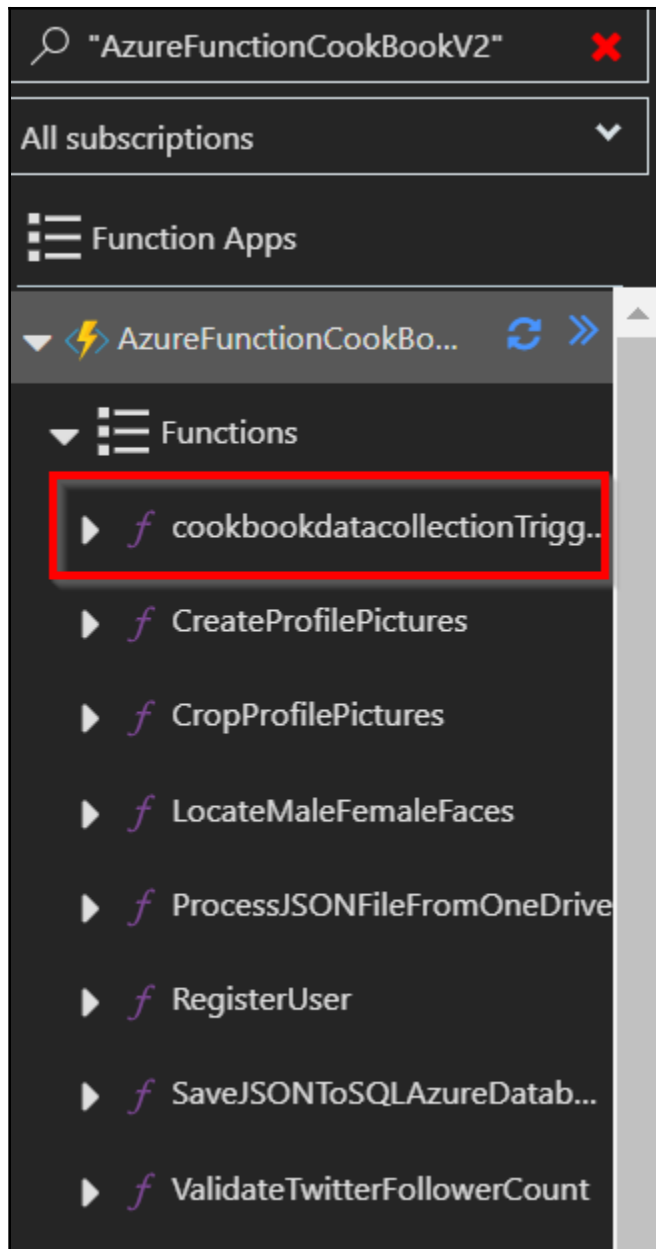
cookbookdatacollectionTrigger

Function language

C#

Save

Discard



SQL API

- cookbookdatabase
 - leases
 - cookbookdatacollection
 - Documents**
 - Scale & Settings
 - Stored Procedures
 - User Defined Functions
 - Triggers

Documents x

New Document Save Discard

SELECT * FROM c Edit Filter

id

Load more

```

1 {
2   "id": "replace_with_new_document_id"
3 }

```

Logs

```

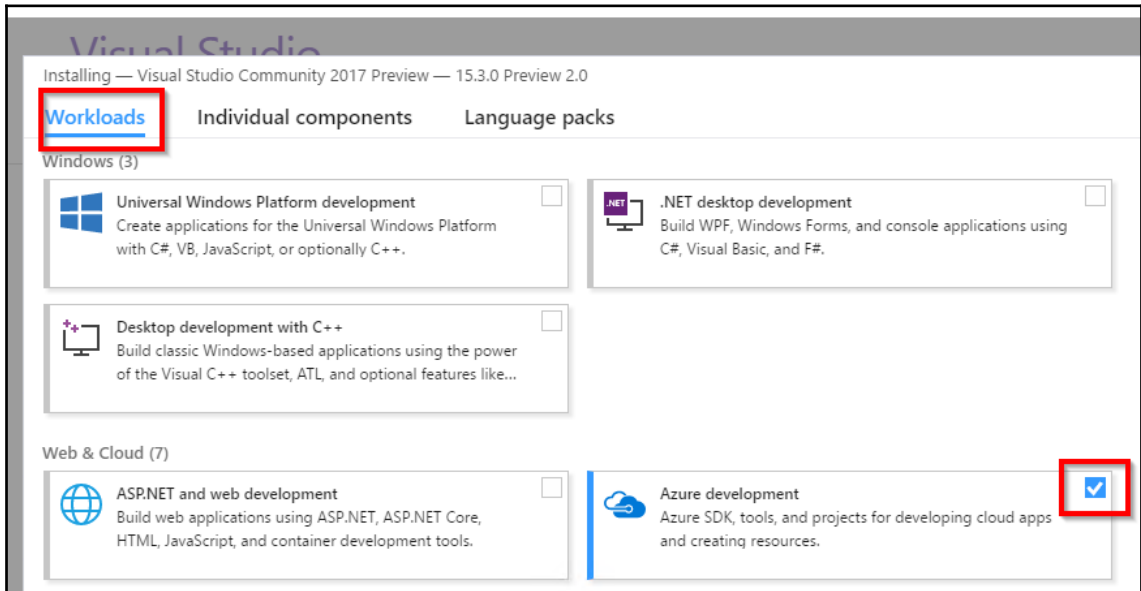
2018-11-10T19:38:00 Welcome, you are now connected to log-streaming service.
2018-11-10T19:38:15.739 [Information] Executing 'Functions.cookbookdatacollectionTrigger' (Reason='New changes on collection cookbookdatacollection at
2018-11-10T19:38:15.71516842' Id=eacae5ec-4ea2-4d4b-9b08-9ab8548568d8)
2018-11-10T19:38:15.767 [Information] Documents modified 1
2018-11-10T19:38:15.767 [Information] First document Id 1
2018-11-10T19:38:15.774 [Information] Executed 'Functions.cookbookdatacollectionTrigger' (Succeeded, Id=eacae5ec-4ea2-4d4b-9b08-9ab8548568d8)

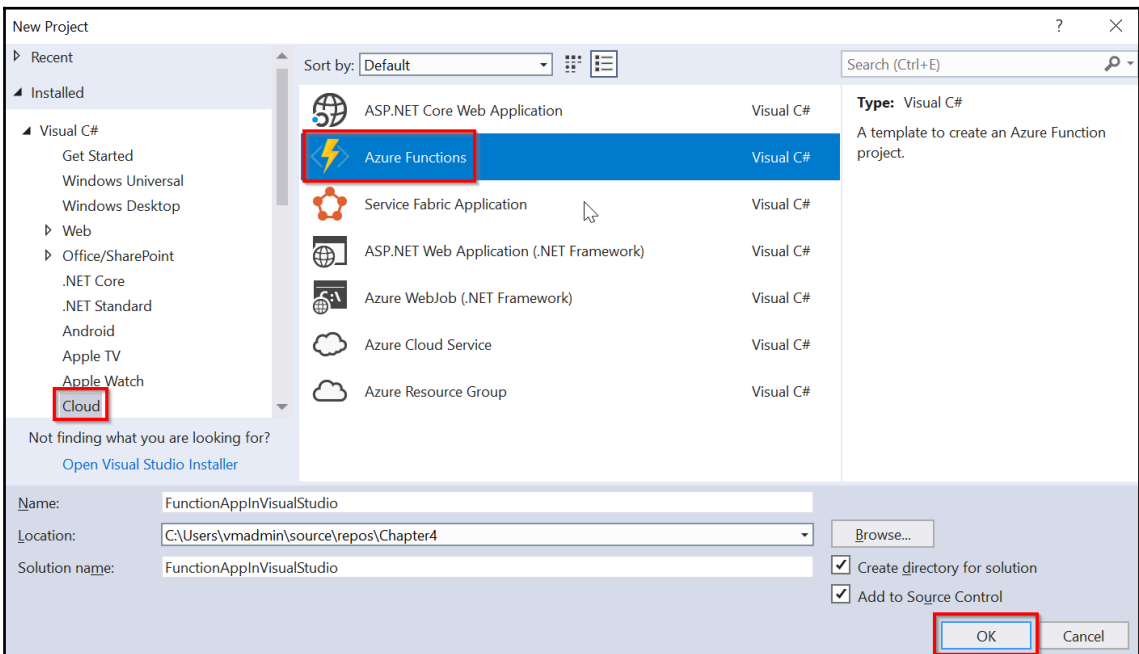
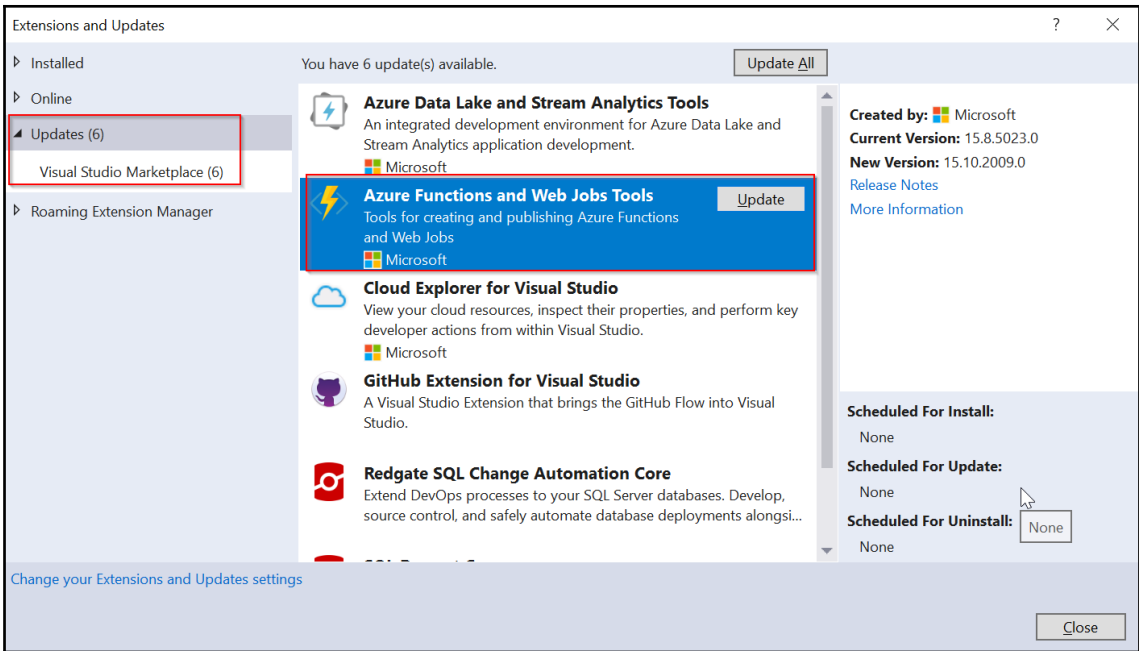
```

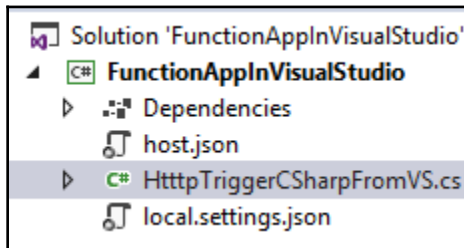
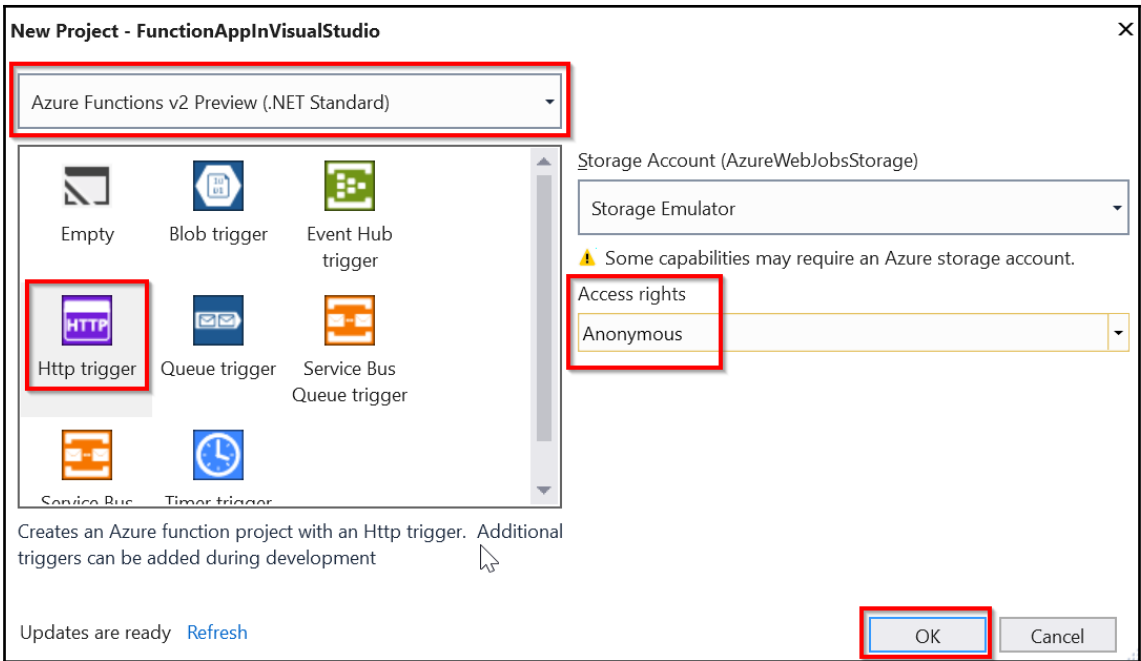
Collections

| ID | DATABASE | THROUGHPUT (RU/S) |
|------------------------|------------------|-------------------|
| leases | cookbookdatabase | 400 |
| cookbookdatacollection | cookbookdatabase | 400 |

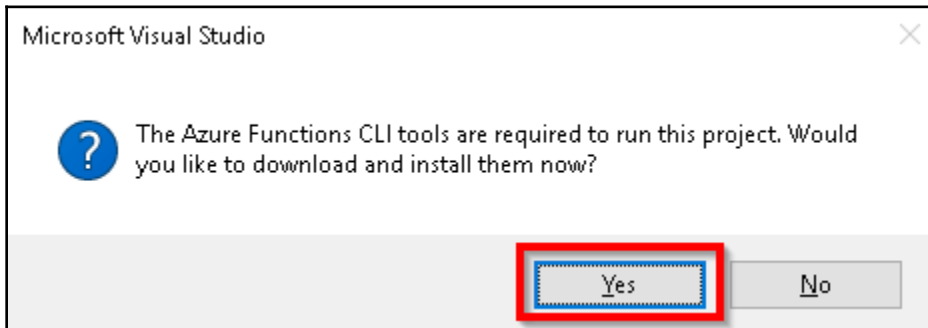
Chapter 04: Understanding the Integrated Developer Experience of Visual Studio Tools







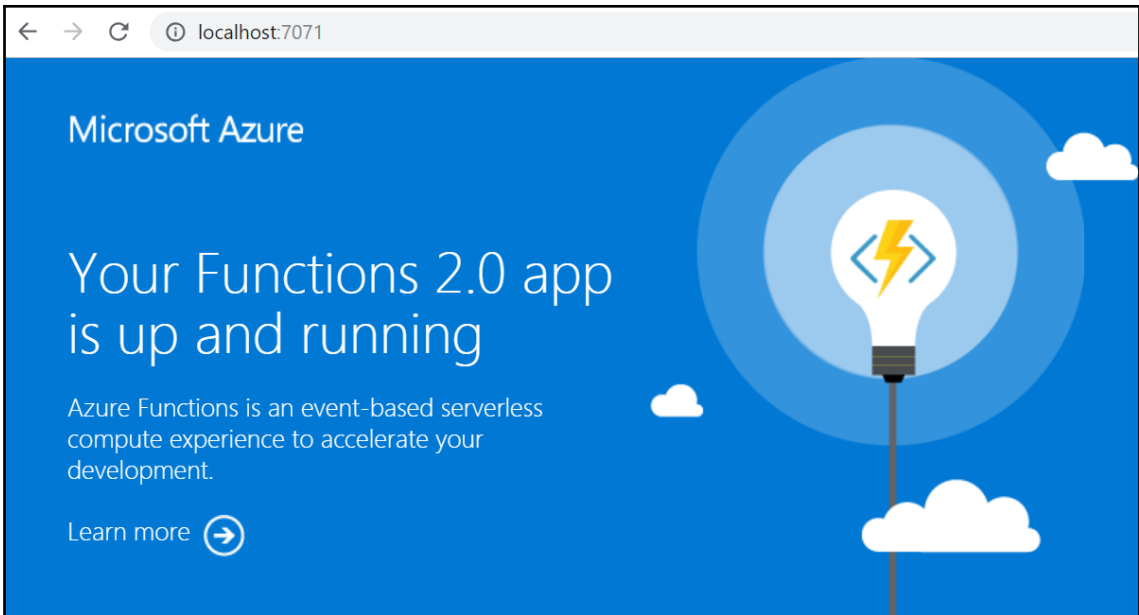
```
HttpTriggerCSharpFromVS.cs  X
FunctionAppInVisualStudio  FunctionAppInVisualStudio.HttpTriggerCSharpFrom  Run(HttpRequest req,
4  using Microsoft.Azure.WebJobs;
5  using Microsoft.Azure.WebJobs.Extensions.Http;
6  using Microsoft.AspNetCore.Http;
7  using Microsoft.Azure.WebJobs.Host;
8  using Newtonsoft.Json;
9
10 namespace FunctionAppInVisualStudio
11 {
12     0 references
13     public static class HttpTriggerCSharpFromVS
14     {
15         [FunctionName("HttpTriggerCSharpFromVS")]
16         0 references
17         public static IActionResult Run([HttpTrigger(AuthorizationLevel.Anonymous, "get",
18             null)]HttpRequest req, TraceWriter log)
19         {
20             log.Info("C# HTTP trigger function processed a request.");
21             string name = req.Query["name"];
22             string requestBody = new StreamReader(req.Body).ReadToEnd();
23             dynamic data = JsonConvert.DeserializeObject(requestBody);
```




```
C:\Users\vmadmin\AppData\Local\AzureFunctionsTools\Releases\2.8.1\cli\func.exe
info: Host.Startup[0]
  Reading host configuration file 'C:\Users\vmadmin\source\repos\Chapter4\FunctionAppInVisualStudio\bin\Debug\netstandard2.0\host.json'
info: Host.Startup[0]
  Host configuration file read:
  {}
[9/23/2018 11:35:17 AM] Initializing Host.
[9/23/2018 11:35:17 AM] Host initialization: ConsecutiveErrors=0, StartupCount=1
[9/23/2018 11:35:17 AM] Starting JobHost
[9/23/2018 11:35:17 AM] Starting Host (HostId=vm2017-1799987705, InstanceId=2e6439d4-91e0-44a1-b7fd-a05n=2.0.12115.0, ProcessId=9760, AppDomainId=1, Debug=False, FunctionsExtensionVersion=)
[9/23/2018 11:35:17 AM] Generating 1 job function(s)
[9/23/2018 11:35:17 AM] Found the following functions:
[9/23/2018 11:35:17 AM] FunctionAppInVisualStudio.HttpTriggerCSharpFromVS.Run
[9/23/2018 11:35:17 AM]
[9/23/2018 11:35:17 AM] Host initialized (608ms)
[9/23/2018 11:35:17 AM] Host started (624ms)
[9/23/2018 11:35:17 AM] Job host started
Hosting environment: Production
Content root path: C:\Users\vmadmin\source\repos\Chapter4\FunctionAppInVisualStudio\FunctionAppInVisual\netstandard2.0
Now listening on: http://0.0.0.0:7071
Application started. Press Ctrl+C to shut down.
Listening on http://0.0.0.0:7071/
Hit CTRL-C to exit...

Http Functions:

    HttpTriggerCSharpFromVS: http://localhost:7071/api/HttpTriggerCSharpFromVS
```



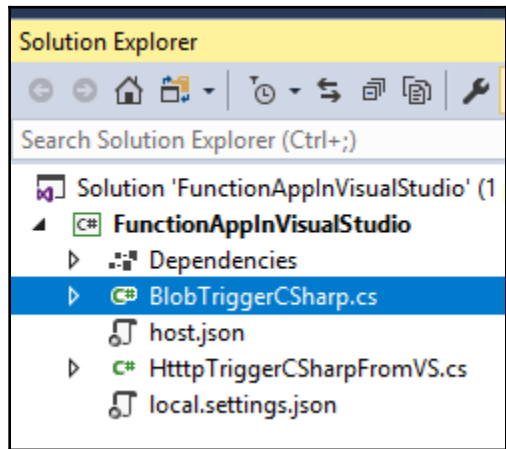
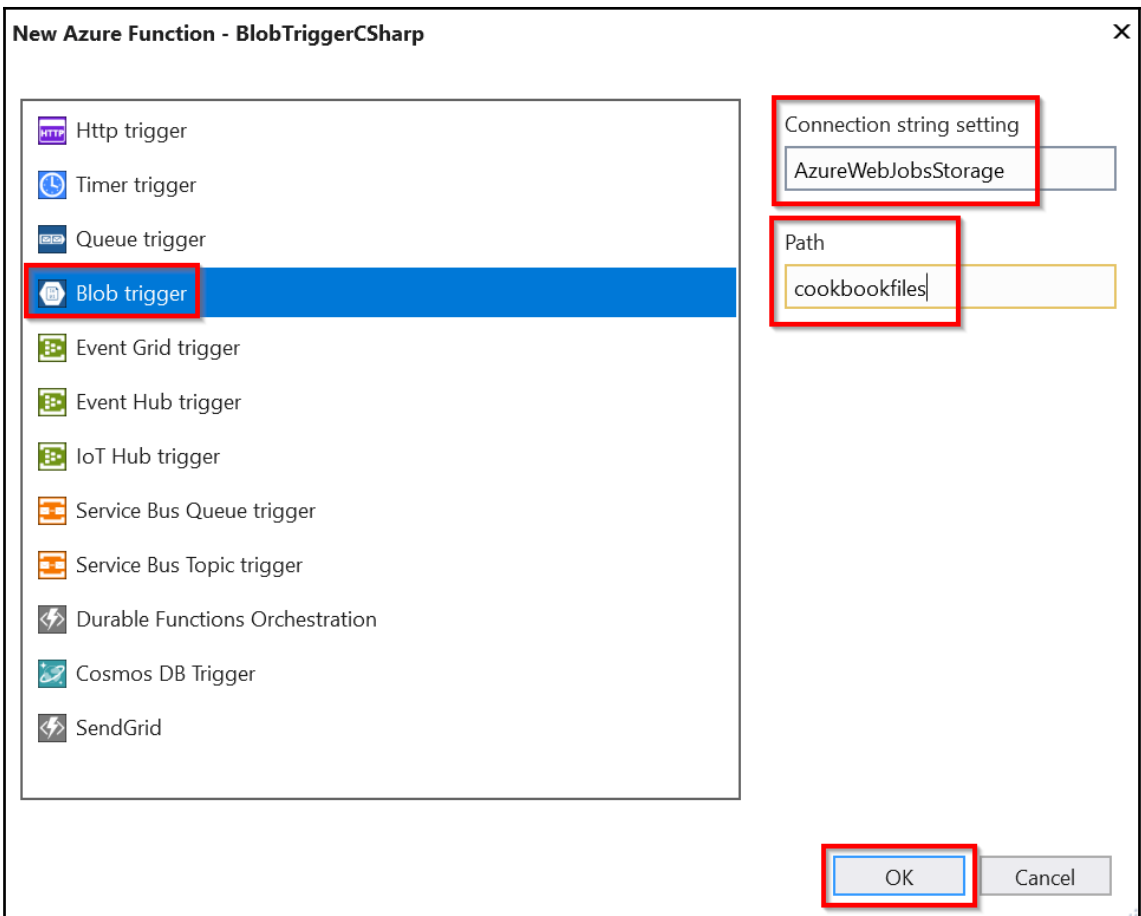
```
10 namespace FunctionAppInVisualStudio
11 {
12     0 references
13     public static class HttpTriggerCSharpFromVS
14     {
15         [FunctionName("HttpTriggerCSharpFromVS")]
16         0 references
17         public static IActionResult Run([HttpTrigger(AuthorizationLevel.Anonym
18             null)]HttpRequest req, TraceWriter log)
19         {
20             log.Info("C# HTTP trigger function processed a request.");
21
22             ▶ string name = req.Query["name"];
23
24             string requestBody = new StreamReader(req.Body).ReadToEnd();
25             dynamic data = JsonConvert.DeserializeObject(requestBody);
26             name = name ?? data?.name;
```

```
▶ string name = req.Query["name"];
    name 🔍 "Praveen Sreeram"
string requestBody = new StreamReader(req.Body).ReadToEnd();
dynamic data = JsonConvert.DeserializeObject(requestBody);
```

← → ↻ ⓘ localhost:7071/api/HttpTriggerCSharpFromVS?name=Praveen%20Sreeram

Hello, Praveen Sreeram

```
Authorization was successful.
9/23/2018 11:45:45 AM] Executing 'HttpTriggerCSharpFromVS' (Reason='This function was programmatically called via the
st APIs.', Id=940a2c99-aabf-40b7-b16f-f3b5e74fbf8b)
9/23/2018 11:45:45 AM] Executed 'HttpTriggerCSharpFromVS' (Succeeded, Id=940a2c99-aabf-40b7-b16f-f3b5e74fbf8b)
info: Microsoft.AspNetCore.Mvc.Infrastructure.ObjectResultExecutor[1]
      Executing ObjectResult, writing value of type 'System.String'.
info: Microsoft.AspNetCore.Hosting.Internal.WebHost[2]
      Request finished in 51.2225ms 200 text/plain; charset=utf-8
info: Microsoft.AspNetCore.Hosting.Internal.WebHost[1]
      Request starting HTTP/1.1 GET http://localhost:7071/api/HttpTriggerCSharpFromVS?name=Praveen%20Sreeram
info: Microsoft.AspNetCore.Authorization.DefaultAuthorizationService[1]
      Authorization was successful.
9/23/2018 11:45:53 AM] Executing 'HttpTriggerCSharpFromVS' (Reason='This function was programmatically called via the
st APIs.', Id=2d33812b-bacc-4d08-aed4-86e1a9c8d67d)
9/23/2018 11:47:00 AM] Executed 'HttpTriggerCSharpFromVS' (Succeeded, Id=2d33812b-bacc-4d08-aed4-86e1a9c8d67d)
info: Microsoft.AspNetCore.Mvc.Infrastructure.ObjectResultExecutor[1]
      Executing ObjectResult, writing value of type 'System.String'.
info: Microsoft.AspNetCore.Hosting.Internal.WebHost[2]
      Request finished in 66926.2838ms 200 text/plain; charset=utf-8
```



Storage account name

azurefunctioncookbooks

key1 ↻

Key

TxhVTtYr4afPG7VbRjLwiU35JXCuUEBy5SCM40p8KCIDNBkqps8esQe/4JzRdELJ06A.LMLw00zCk5w==

Connection string

DefaultEndpointsProtocol=https;AccountName=azurefunctioncookbooks;AccountKey=TxhVTtYr4afPG7VbRjLwiU35JXCuUEBy5SCM40p8KCIDNBkqps8esQe/4JzRdELJ06A.LMLw00zCk5w==

key2 ↻

Key

hz2FbrGU42vkASNkUuj3Wf+

```

local.settings.json  BlobTriggerCSharp.cs  HttpTriggerCSharpFromVS.cs
Schema: <No Schema Selected>
1  {
2    "IsEncrypted": false,
3    "Values": {
4      "AzureWebJobsStorage": "DefaultEndpointsProtocol=htt
5      "AzureWebJobsDashboard": ""
6    }
7  }

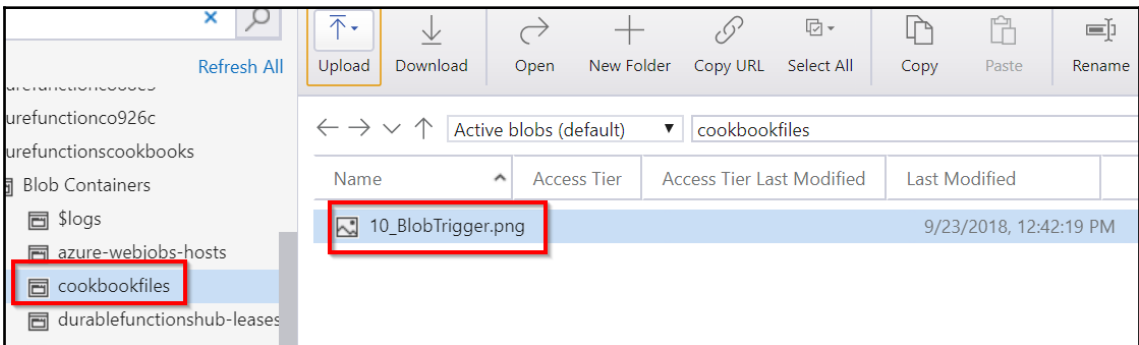
```

```

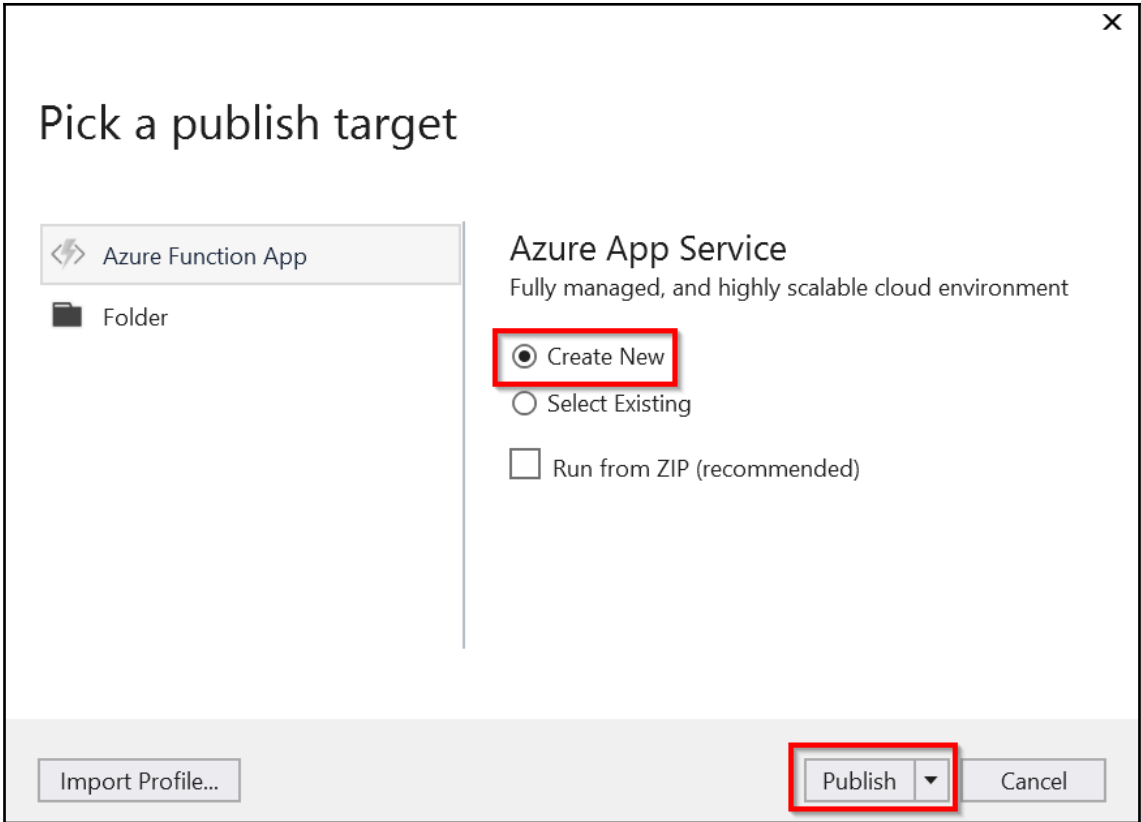
BlobTriggerCSharp.cs  local.settings.json  HttpTriggerCSharpFromVS.cs
FunctionAppInVisualStudio  FunctionAppInVisualStudio.BlobTriggerCSharp  Run(Stream myBlob, string name, ILogger log)
1  using System.IO;
2  using Microsoft.Azure.WebJobs;
3  using Microsoft.Azure.WebJobs.Host;
4  using Microsoft.Extensions.Logging;
5
6  namespace FunctionAppInVisualStudio
7  {
8      0 references
9      public static class BlobTriggerCSharp
10     {
11         [FunctionName("BlobTriggerCSharp")]
12         0 references
13         public static void Run([BlobTrigger("cookbookfiles/{name}", Connection = "AzureWebJobsStorage")]Stream myBlob, string name, ILogger log)
14         {
15             log.LogInformation($"C# Blob trigger function Processed blob\n Name:{name} \n Size: {myBlob.Length} Bytes");
16         }
17     }

```

```
[9/23/2018 12:39:21 PM] Initializing Host.
[9/23/2018 12:39:21 PM] Host initialization: ConsecutiveErrors=0, StartupCount=1
[9/23/2018 12:39:21 PM] Starting JobHost
[9/23/2018 12:39:21 PM] Starting Host (HostId=vm2017-1799987705, InstanceId=35c7497e-6bb8-4454-
n=2.0.12115.0, ProcessId=13672, AppDomainId=1, Debug=False, FunctionsExtensionVersion=)
[9/23/2018 12:39:22 PM] Generating 2 job function(s)
[9/23/2018 12:39:22 PM] Found the following functions:
[9/23/2018 12:39:22 PM] FunctionAppInVisualStudio.BlobTriggerCSharp.Run
[9/23/2018 12:39:22 PM] FunctionAppInVisualStudio.HttpTriggerCSharpFromVS.Run
[9/23/2018 12:39:22 PM]
[9/23/2018 12:39:22 PM] Host initialized (502ms)
[9/23/2018 12:39:25 PM] Host started (3363ms)
[9/23/2018 12:39:25 PM] Job host started
Listening on http://0.0.0.0:7071/
Hit CTRL-C to exit...
Hosting environment: Production
```



```
NuGet: FunctionAppInVisualStudio | BlobTriggerCSharp.cs | local.settings.json | HttpTriggerCSharpFromVS.cs
FunctionAppInVisualStudio | FunctionAppInVisualStudio.BlobTriggerCSharp | Run(Stream myBlob, string name,
1 using System.IO;
2 using Microsoft.Azure.WebJobs;
3 using Microsoft.Azure.WebJobs.Host;
4 using Microsoft.Extensions.Logging;
5
6 namespace FunctionAppInVisualStudio
7 {
8     0 references
9     public static class BlobTriggerCSharp
10    {
11        [FunctionName("BlobTriggerCSharp")]
12        0 references
13        public static void Run([BlobTrigger("cookbookfiles/{name}"), Connection = "AzureWebJobsStorage",
14                               Stream myBlob, string name, ILogger log)
15        {
16            log.LogInformation($"C# Blob trigger function Processed blob\n Name:{name} \n Size:
17                               {myBlob.Length} Bytes");
18        }
19    }
20 }
```



Create App Service

Host your web and mobile applications, REST APIs, and more in Azure

Microsoft account
person24@gmail.com

App Name
FunctionAppInVisualStudioV2

Subscription
Visual Studio Enterprise – MPN

Resource Group
AzureFunctionCookBooks (centralus) [New...](#)

Hosting Plan
CentralUSPlan (Central US, Y1) [New...](#)

Storage Account
azurefunctionscookbooks (centralus) [New...](#)

[Export...](#) [Create](#) [Cancel](#)

Explore additional Azure services

- Create a SQL Database
- Create a storage account

Clicking the Create button will create the following Azure resources


App Service - FunctionAppInVisualStudioV2


Configure App Service Plan


An App Service plan is the container for your app. The App Service plan settings will determine the location, features, cost and compute...


App Service Plan

Location

Size
 

 Consumption App Service Plans are only available for Function Apps

 Deploying: Step 0 of 3

 Function Apps

| NAME ▼ | SUBSCRIPTION ID ▼ | RESOURCE GROUP | LOCATION |
|----------------------------------|---------------------------|-----------------------|----------------|
| AzureFunctionCookBook | Developer Program Benefit | AzureFunctionCookBook | southcentralus |
| cookbookPOC | Developer Program Benefit | cookbookPOC | southindia |
| FunctionAppinVisualStudio | Developer Program Benefit | cookbookPOC | southcentralus |

Publish

 **Azure successfully configured:** [How was your experience?](#)




FunctionAppInVisualStudioV2 - Web Deploy



Publish

[New Profile...](#)

Actions ▼

| | | |
|-----------------------|---|--|
| Site URL | https://functionappinvisua...  | Manage Application Settings... |
| Configuration | Release | Manage Profile Settings... |
| Delete existing files | True | |
| Username | \$FunctionAppInVisualStudioV2 | |
| Password | ***** | |

Publish Started

```
FunctionAppInVisualStudio -> C:\Users\vmadmin\source\repos\Chapter4\FunctionAppInVisualStudio
\FunctionAppInVisualStudio.dll
```

```
FunctionAppInVisualStudio -> C:\Users\vmadmin\source\repos\Chapter4\FunctionAppInVisualStudio
```

```
Updating file (FunctionAppInVisualStudioV2\bin\extensions.json).
```

```
Updating file (FunctionAppInVisualStudioV2\BlobTriggerCSharp\function.json).
```

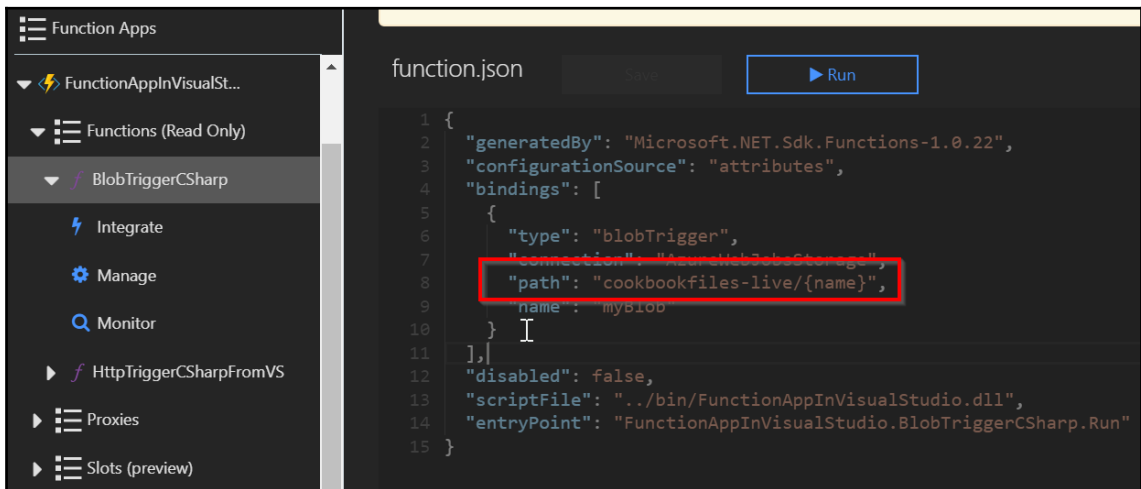
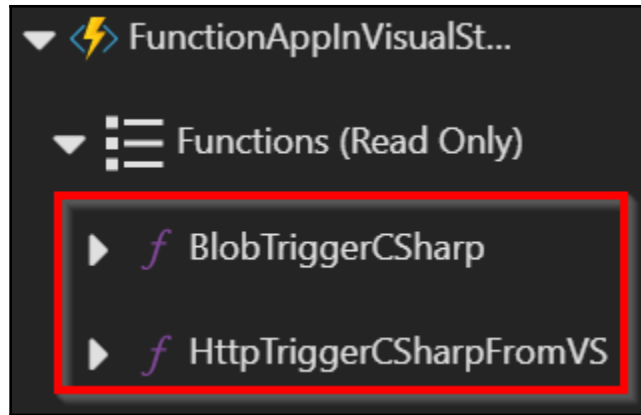
```
Updating file (FunctionAppInVisualStudioV2\FunctionAppInVisualStudio.deps.json).
```

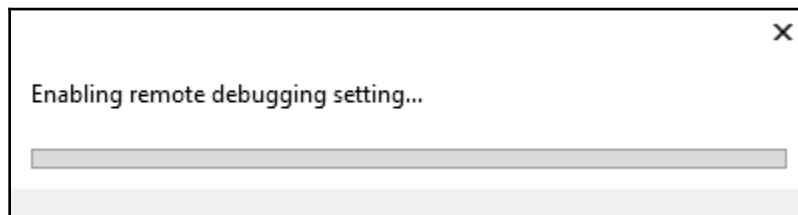
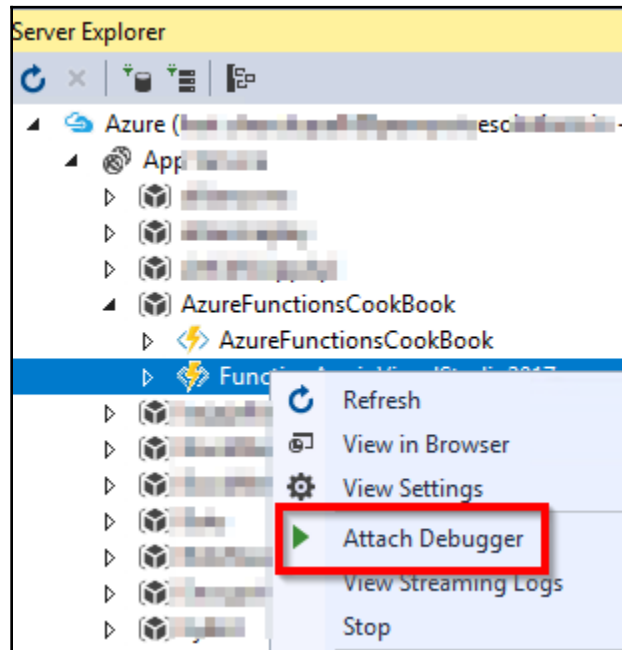
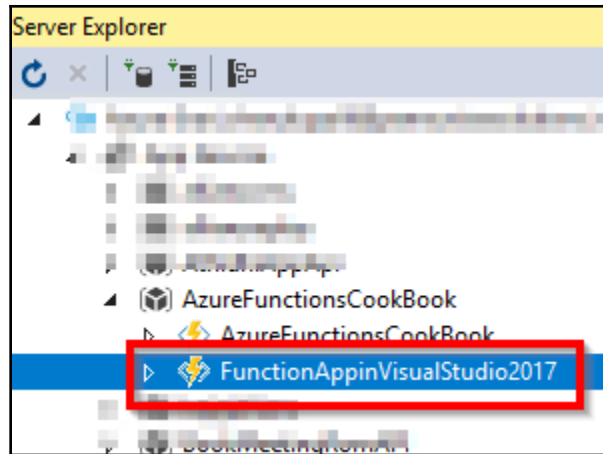
```
Updating file (FunctionAppInVisualStudioV2\host.json).
```

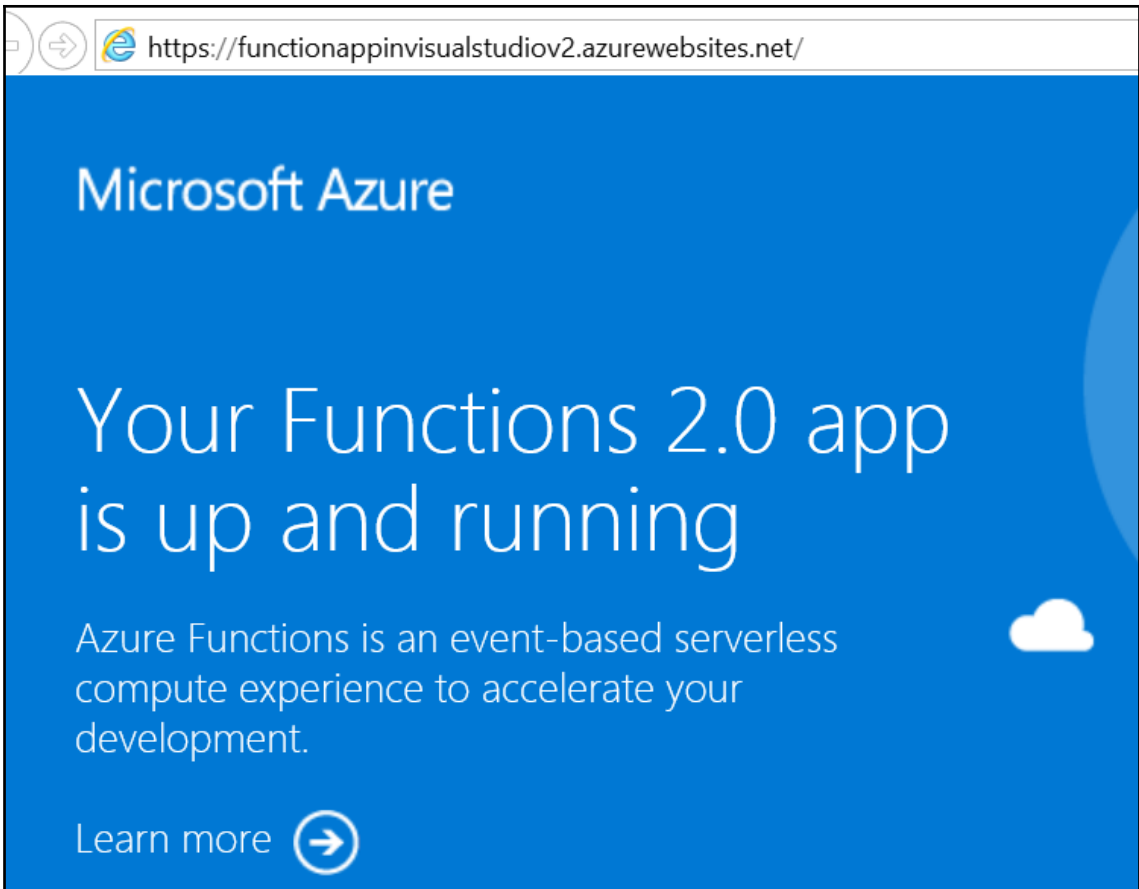
```
Updating file (FunctionAppInVisualStudioV2\HttpTriggerCSharpFromVS\function.json).
```

```
Publish Succeeded.
```

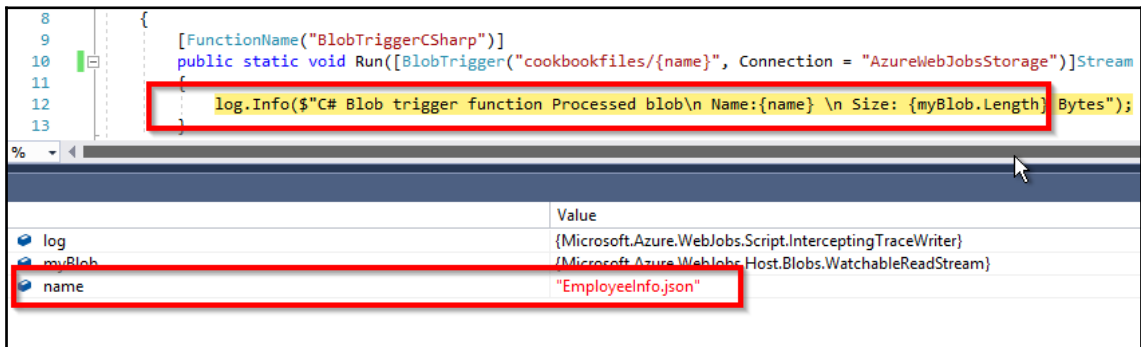
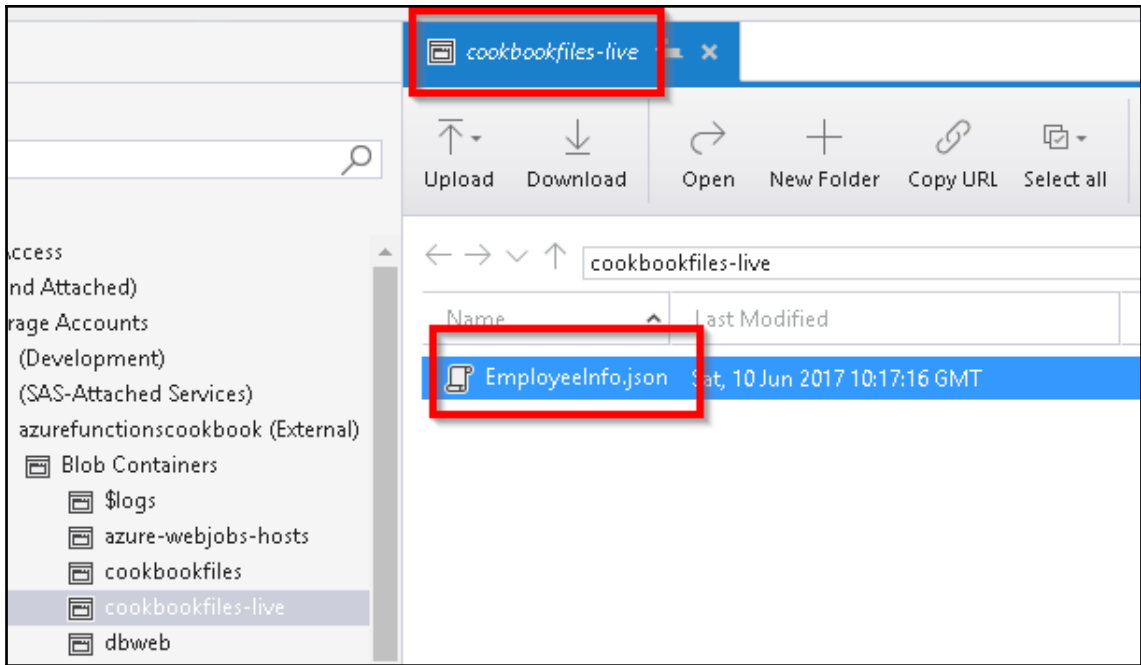
```
Publish completed.
```







The image is a screenshot of a web browser window. The address bar at the top shows the URL `https://functionappinvisualstudio2.azurewebsites.net/`. The main content area has a solid blue background. At the top left, the text "Microsoft Azure" is displayed in white. Below this, the main heading "Your Functions 2.0 app is up and running" is written in a large, white, sans-serif font. Underneath the heading, a paragraph of white text reads: "Azure Functions is an event-based serverless compute experience to accelerate your development." To the right of this paragraph is a small white icon of a cloud. At the bottom left, the text "Learn more" is followed by a white circular button containing a right-pointing arrow.



Create container registry □ ×

* Registry name
cookbookregistry ✓
.azurecr.io

* Subscription
Visual Studio Enterprise – MPN ▼

* Resource group
AzureFunctionCookBooks ▼
[Create new](#)

* Location
Central US ▼

* Admin user ⓘ
Enable Disable

* SKU ⓘ
Basic ▼

Create [Automation options](#)

cookbookregistry - Access keys
Container registry

Search (Ctrl+/)

- Overview
- Activity log
- Access control (IAM)
- Tags
- Quick start
- Events

Settings

- Access keys**
- Locks
- Automation script

Services

- Repositories

Registry name: cookbookregistry

Login server: cookbookregistry.azurecr.io

Admin user:

Username: cookbookregistry

| NAME | PASSWORD |
|-----------|---|
| password | FjLabQQ... <input type="button" value="Copy"/> <input type="button" value="Refresh"/> |
| password2 | CnH2... <input type="button" value="Copy"/> <input type="button" value="Refresh"/> |

```
[FunctionName("HttpTriggerCSharpFromVS")]
0 references
public static IActionResult Run([HttpTrigger(AuthorizationLevel.Anonymous, "get", "post", Route = null)]HttpRequest req)
{
    //log.Info("C# HTTP trigger function processed a request.");

    string name = req.Query["name"];

    string requestBody = new StreamReader(req.Body).ReadToEnd();
    dynamic data = JsonConvert.DeserializeObject(requestBody);
    name = name ?? data?.name;

    return name != null
        ? (ActionResult)new OkObjectResult($"Hello, {name} - From Docker")
        : new BadRequestObjectResult("Please pass a name on the query string or in the request body");
}
```

```
C:\Users\vmadmin\source\repos\Chapter4\FunctionAppInVisualStudio\FunctionAppInVisualStudio> docker build -t functionsindocker .
Sending build context to Docker daemon 36.51MB
Step 1/2 : FROM microsoft/azure-functions-dotnet-core2.0:2.0
--> 35c818e033e2
Step 2/2 : COPY . .
--> b81847dc3c70
Successfully built b81847dc3c70
Successfully tagged functionsindocker:latest
```



```
C:\Users\vmadmin\source\repos\Chapter4\FunctionAppInVisualStudio\FunctionAppInVisualStudio>docker run -p 2302:80 functionsindocker
Hosting environment: Production
Content root path: /
Now listening on: http://[::]:80
Application started. Press Ctrl+C to shut down.
```

← → ↻ 🌐 localhost:2302/api/HttpTriggerCSharpFromVS?name=Praveen%20Sreeram

Hello , Praveen Sreeram

```
C:\Users\vmadmin\source\repos\Chapter4\FunctionAppInVisualStudio\FunctionAppInVisualStudio>docker tag functionsindocker cookbookregistry.azurecr.io/functionsindocker:v1
C:\Users\vmadmin\source\repos\Chapter4\FunctionAppInVisualStudio\FunctionAppInVisualStudio>docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
cookbookregistry.azurecr.io/functionsindocker    v1                 b81847dc9c70       13 minutes ago     430MB
microsoft/azure-functions-dotnet-core2.0        2.0                35c818e833e2       6 days ago         394MB
```

```
C:\Users\vmadmin\source\repos\Chapter4\FunctionAppInVisualStudio\FunctionAppInVisualStudio>az login
Note, we have launched a browser for you to login. For old experience with device code, use "az login --use-device-code"
You have logged in. Now let us find all the subscriptions to which you have access...
[
  {
    "cloudName": "AzureCloud",
    "id": "366c4797-e7c7-11e8-8000-000000000000",
    "isDefault": true,
    "name": "Visual Studio Enterprise \u2013 Praveen Sreeram",
    "state": "Enabled",
    "tenantId": "8ef7b61f-88aa-441b-b0dc-000000000000",
    "user": {
      "name": "praveen.sreeram@gmail.com",
      "type": "user"
    }
  }
]
```

```
C:\Users\vmadmin\source\repos\Chapter4\FunctionAppInVisualStudio\FunctionAppInVisualStudio>az acr login --name cookbookregistry
Login Succeeded
C:\Users\vmadmin\source\repos\Chapter4\FunctionAppInVisualStudio\FunctionAppInVisualStudio>
```

```
C:\Users\vmadmin\source\repos\Chapter4\FunctionAppInVisualStudio\FunctionAppInVisualStudio>docker push cookbookregistry.azurecr.io/functionsindocker:v1
The push refers to repository [cookbookregistry.azurecr.io/functionsindocker]
3f58e334a394: Pushed
6f9d355b1699: Pushed
e954f34d5c2b: Pushed
c30f8864b2d9: Pushed
60add06a0c0d: Pushed
8b15606a9e3e: Pushed
v1: digest: sha256:2beca04c3ffaf2ded6df71eff718f084184010ea5f5deac9f4dcec1c6ab0d9c size: 1588
C:\Users\vmadmin\source\repos\Chapter4\FunctionAppInVisualStudio\FunctionAppInVisualStudio>
```



cookbookregistry - Repositories

Container registry

Search (Ctrl+)



Refresh

Settings



Access keys



Locks



Automation script

Services



Repositories



Webhooks



Search to filter repositories ...

REPOSITORIES

functionsindocker

Home > New > Function App

Function App

Create

* App name
CookbookFunctionInDocker ✓
.azurewebsites.net

* Subscription
Visual Studio Enterprise – MPN

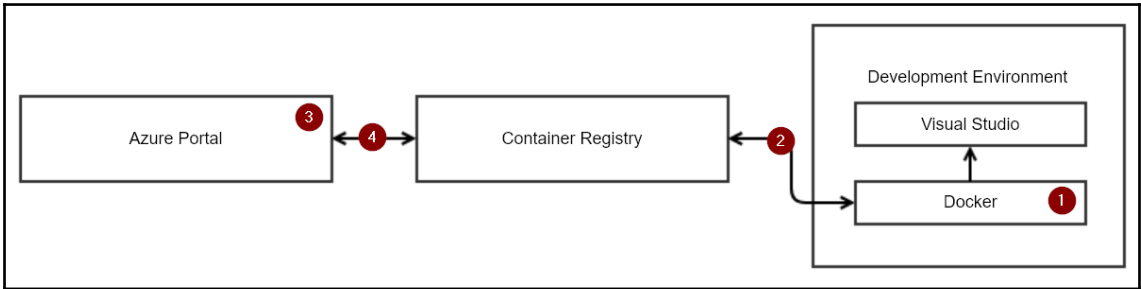
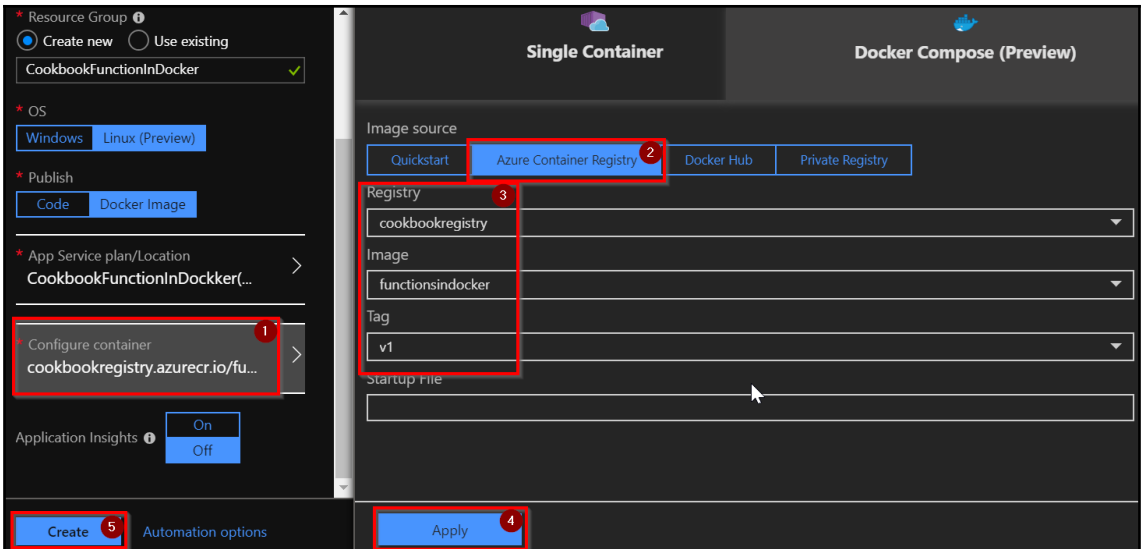
* Resource Group ⓘ
 Create new Use existing
CookbookFunctionInDocker ✓

* OS
Windows Linux (Preview)

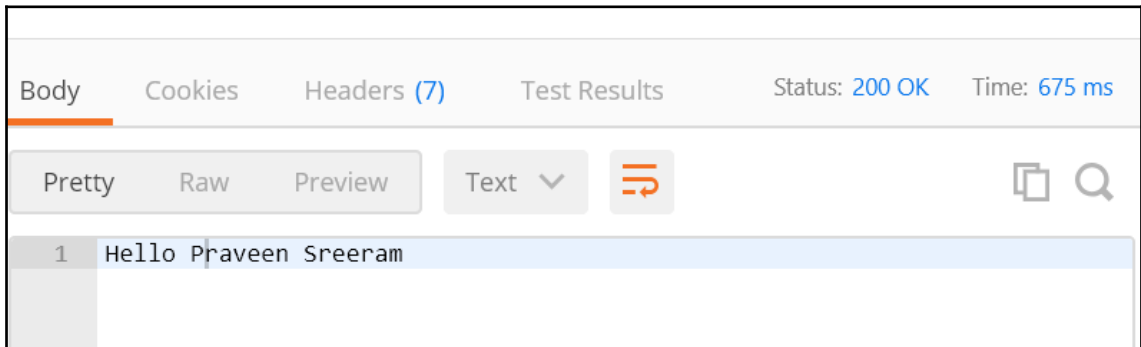
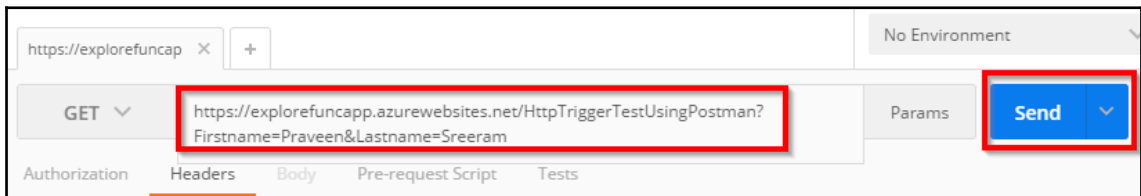
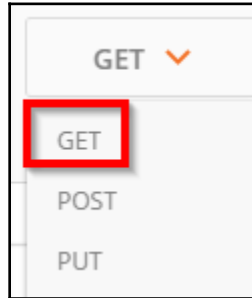
* Publish
Code Docker Image

* App Service plan/Location
CookbookFunctionInDocker(...) >

Create Automation options



Chapter 05: Exploring Testing Tools for the Validation of Azure Functions





Azure Blob Storage trigger

A function that will be run whenever a blob is added to a specified container



New Function

Name:

Azure Blob Storage trigger

Path ⓘ

Storage account connection ⓘ

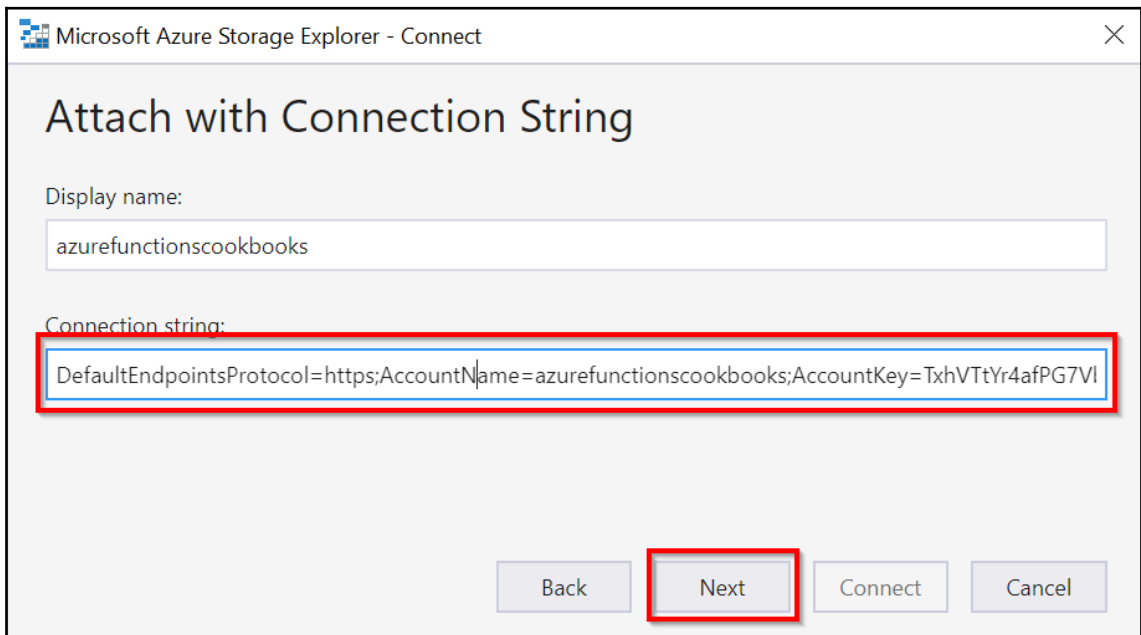
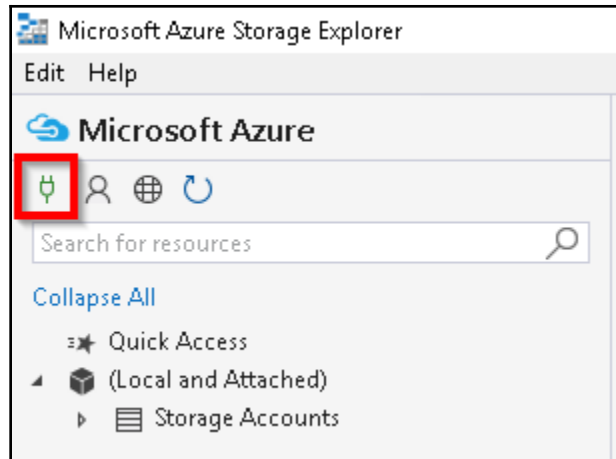
new

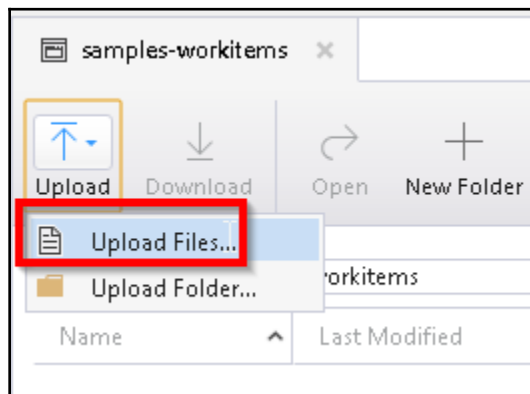
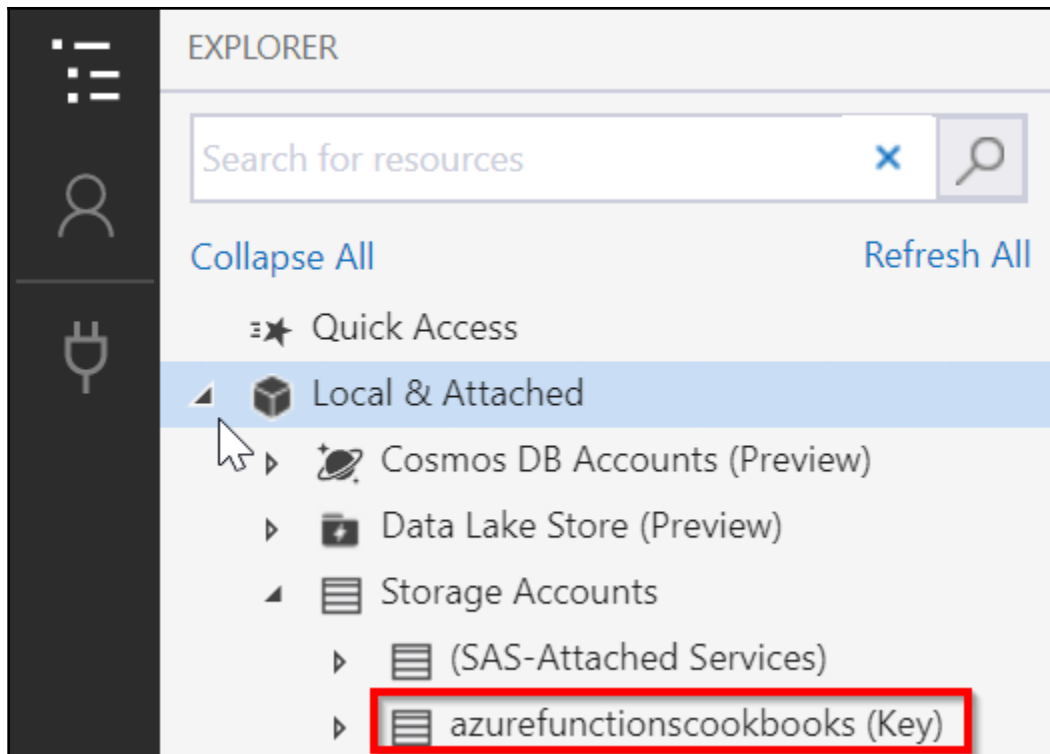
[show value](#)




Create

Cancel





```
2018-09-27T02:52:35 Welcome, you are now connected to log-streaming service.
2018-09-27T02:53:35 No new trace in the past 1 min(s).
2018-09-27T02:54:35 No new trace in the past 2 min(s).
2018-09-27T02:55:35 No new trace in the past 3 min(s).
2018-09-27T02:56:35 No new trace in the past 4 min(s).
2018-09-27T02:57:35 No new trace in the past 5 min(s).
2018-09-27T02:58:35 No new trace in the past 6 min(s).
2018-09-27T02:59:15.577 [Info] Function started (Id=a07da295-103d-4bad-94b1-0113389bffffa)
2018-09-27T02:59:15.638 [Info] C# Blob trigger function Processed blob
Name: 1_BlobTemplate.png
Size: 12254 Bytes
2018-09-27T02:59:15.638 [Info] Function completed (Success, Id=a07da295-103d-4bad-94b1-0113389bffffa, Duration=72ms)
```

 Azure Queue Storage trigger

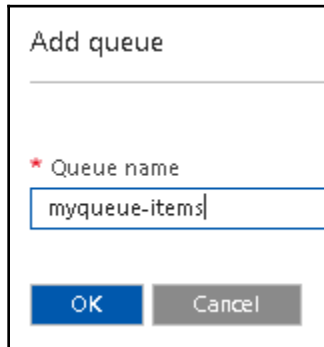
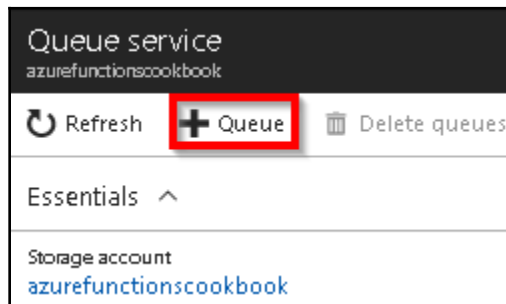
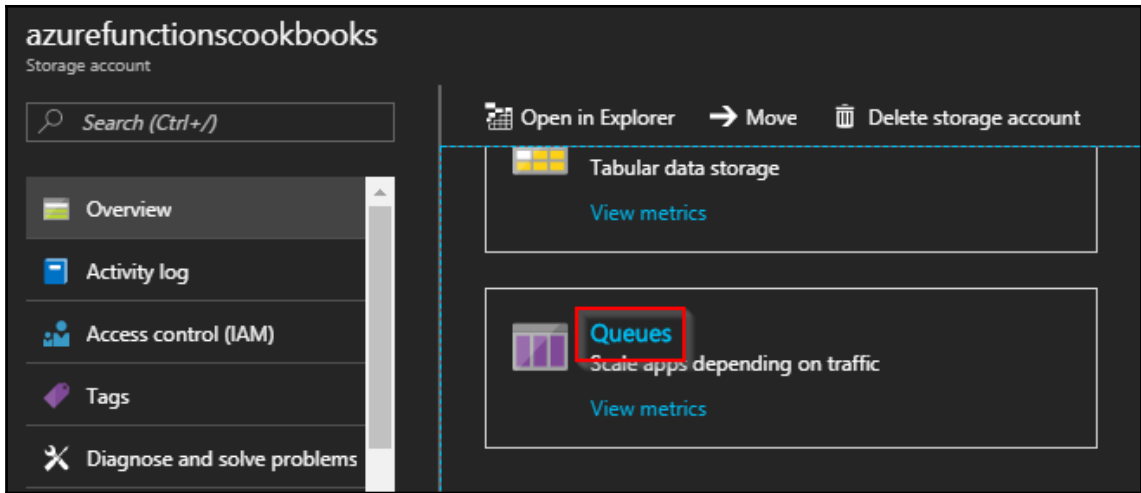
New Function

Name:

Azure Queue Storage trigger

Queue name ⓘ

Storage account connection ⓘ *new* [show value](#)



Refresh **+ Add message** Dequeue message Clear queue

Add message to queue

* Message text

This is a queue message created for testing queues ✓

* Expires in:

7 Days

Encode the message body in Base64 ⓘ

OK Cancel

```
2018-09-27T03:01:11 Welcome, you are now connected to log-streaming service.
2018-09-27T03:02:11 No new trace in the past 1 min(s).
2018-09-27T03:03:11 No new trace in the past 2 min(s).
2018-09-27T03:03:37.216 [Info] Function started (Id=935287b1-e661-4249-85ef-6010ab20459a)
2018-09-27T03:03:37.247 [Info] C# Queue trigger function processed: This is a queue message created for testing queues
2018-09-27T03:03:37.247 [Info] Function completed (Success, Id=935287b1-e661-4249-85ef-6010ab20459a, Duration=28ms)
```

HTTP trigger (req) [delete](#)

Allowed HTTP methods [?]

Selected methods ▼

Mode [?]

Standard ▼

Request parameter name [?]

req

Route template [?]

Route template

Authorization level [?]

Anonymous ▼

Selected HTTP methods [?]


| | | |
|----------------------------------|---|---------------------------------|
| <input type="checkbox"/> GET | <input checked="" type="checkbox"/> POST | <input type="checkbox"/> DELETE |
| <input type="checkbox"/> HEAD | <input checked="" type="checkbox"/> PATCH | <input type="checkbox"/> PUT |
| <input type="checkbox"/> OPTIONS | <input type="checkbox"/> TRACE | |

[Save](#) [Cancel](#)


Slots (preview)




Enable deployment slots (preview).

Known issues:

 Logic apps integration with Functions does not work when Slots(preview) is enabled. Opting into this preview feature will reset any pre-existing secrets. Function secrets can be found under the **'Manage'** node for each function.

Off On

⌵  MyProductionApp-V2

- ▶  Functions +
- ▶  Proxies
- ▶  Slots (preview) +

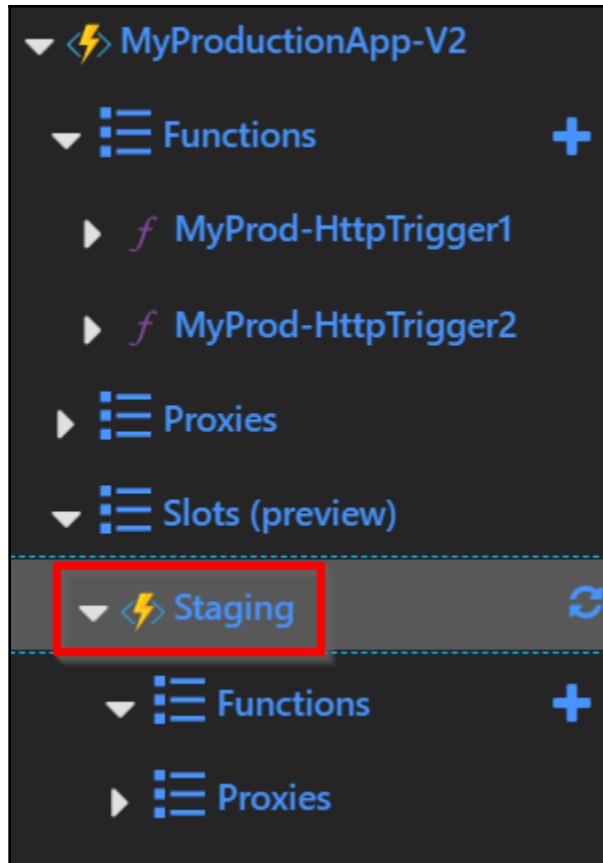
Create a new deployment slot

Deployment slots let you deploy different versions of your function app to different URLs. You can test a certain version and then swap content and configuration between slots.

Name ⓘ

Staging

Create



Deployment slots
myproductionapp-staging

+ Add Slot **Swap**

| NAME | STATUS | APP SERVICE PLAN |
|-----------------|---------|------------------|
| myproductionapp | Running | CentralUSPlan |

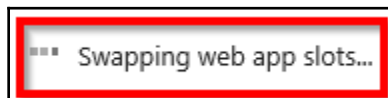
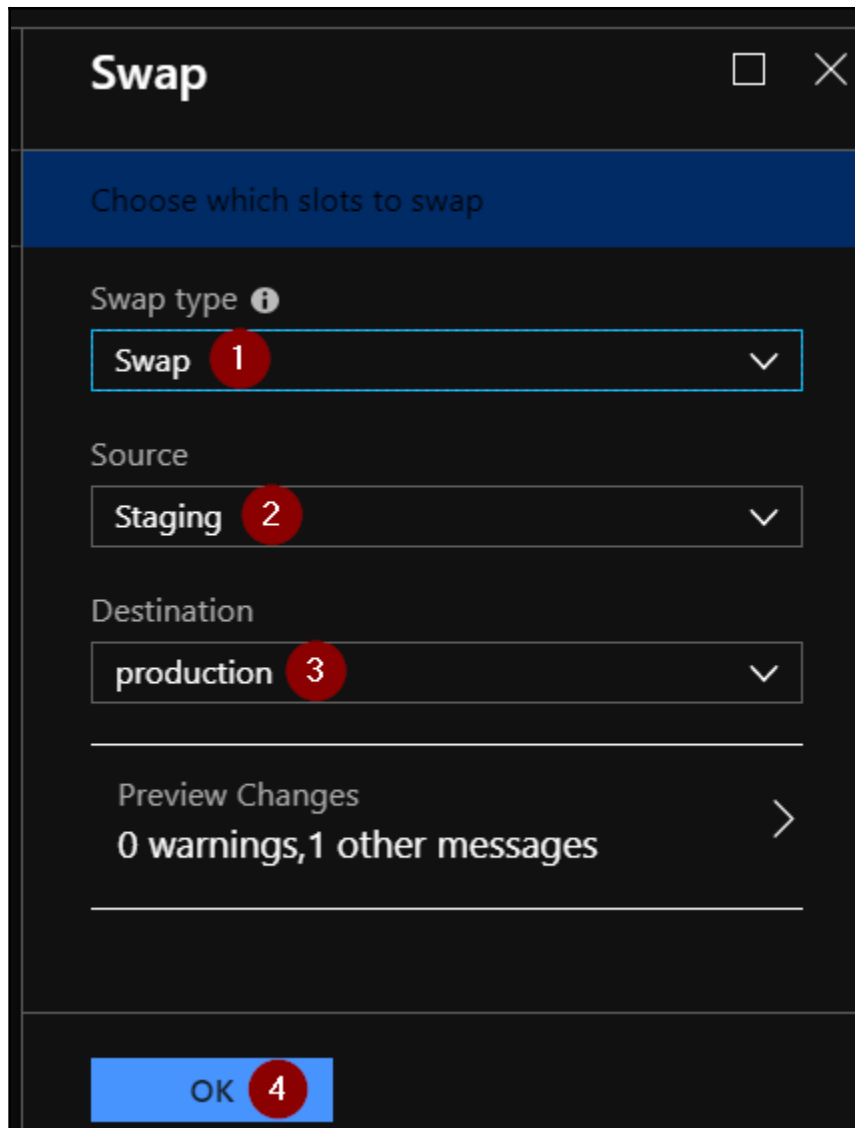
Click on the 'Swap' command above to start the swap operation.

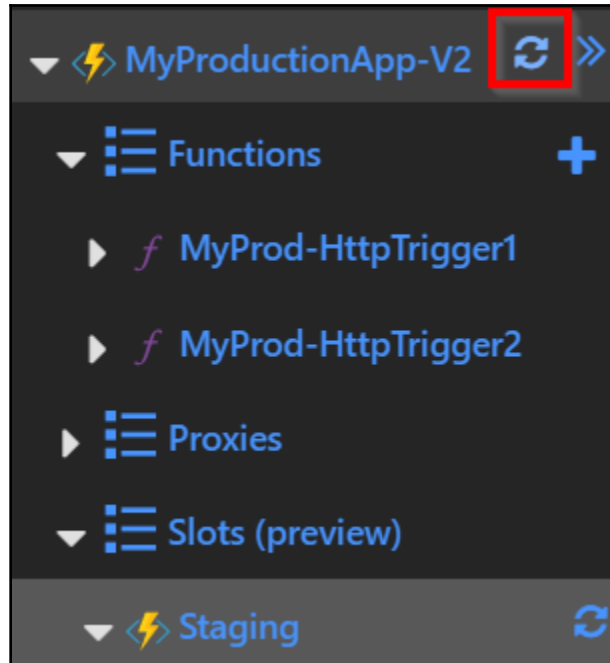
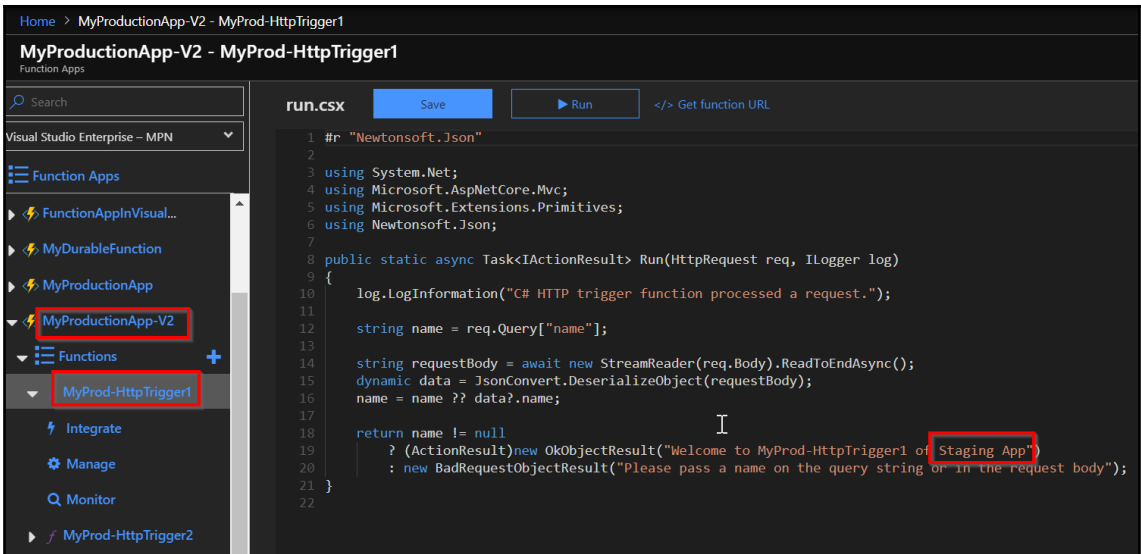
Deployment slots
myproductionapp-v2-staging

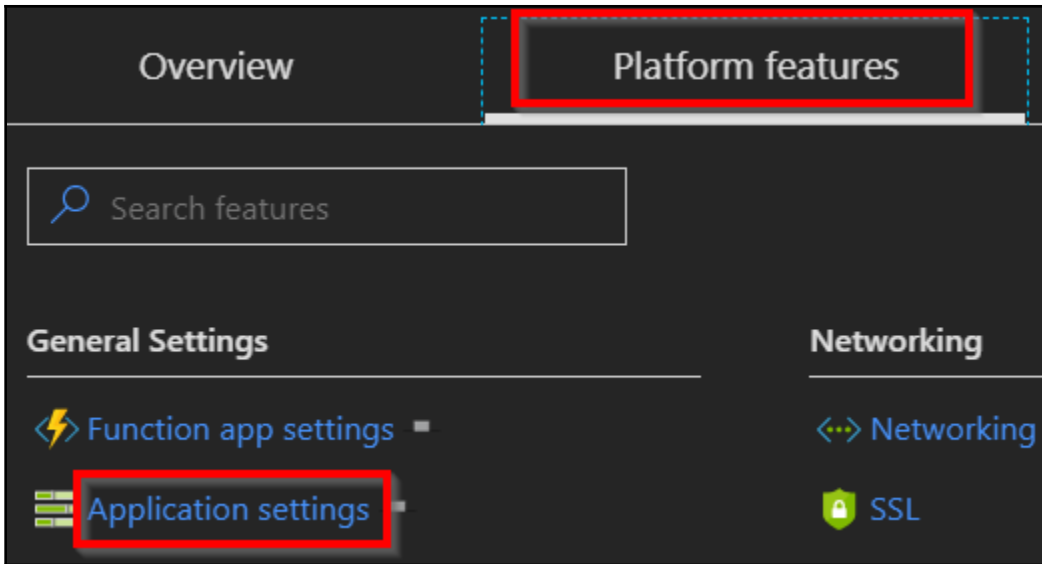
+ Add Slot **Swap**

| NAME | STATUS | APP SERVICE PLAN |
|--------------------|---------|------------------|
| myproductionapp-v2 | Running | CentralUSPlan |

Click on the 'Swap' command above to start the swap operation.







Application settings

| APP SETTING NAME | VALUE | SLOT SETTING |
|--------------------------------|--|-------------------------------------|
| AzureWebJobsSecretStorageType | Blob | <input checked="" type="checkbox"/> |
| AzureWebJobsStorage | DefaultEndpointsProtocol=https;AccountName=myproductionappb23f;Acco... | <input type="checkbox"/> |
| FUNCTION_APP_EDIT_MODE | readwrite | <input type="checkbox"/> |
| FUNCTIONS_EXTENSION_VERSION | ~2 | <input type="checkbox"/> |
| FUNCTIONS_WORKER_RUNTIME | dotnet | <input type="checkbox"/> |
| WEBSITE_CONTENTAZUREFILECON... | DefaultEndpointsProtocol=https;AccountName=myproductionappb23f;Acco... | <input type="checkbox"/> |
| WEBSITE_CONTENTSHARE | myproductionapp-v2-493c497c | <input type="checkbox"/> |
| WEBSITE_NODE_DEFAULT_VERSION | 8.11.1 | <input type="checkbox"/> |

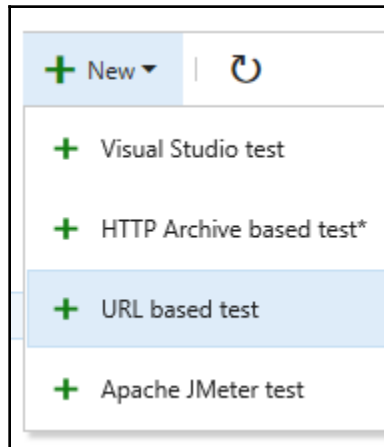
Create a new deployment slot

Deployment slots let you deploy different versions of your function app to different URLs, between slots.

Azure functions slots (preview) is currently disabled. To enable, visit [function app settings](#).

AzureDeveloper-poc ▾ Dashboards Code Work Pipelines **Test** Wiki

Parameters Configurations Runs **Load test**




Load test*: LoadTestFunctionApp ×

| HTTP method | URL |
|-------------|---|
| GET | https://myproductionapp.azurewebsites.net/api/LoadTestHttpTrigger |




Headers

+ Add header

Query String Parameters

Load test*: LoadTestFunctionApp 

Web Scenarios Settings

 Save  Run test  Import .HAR file

Load test*: LoadTestFunctionApp | [Runs](#)

Web Scenarios [Settings](#)

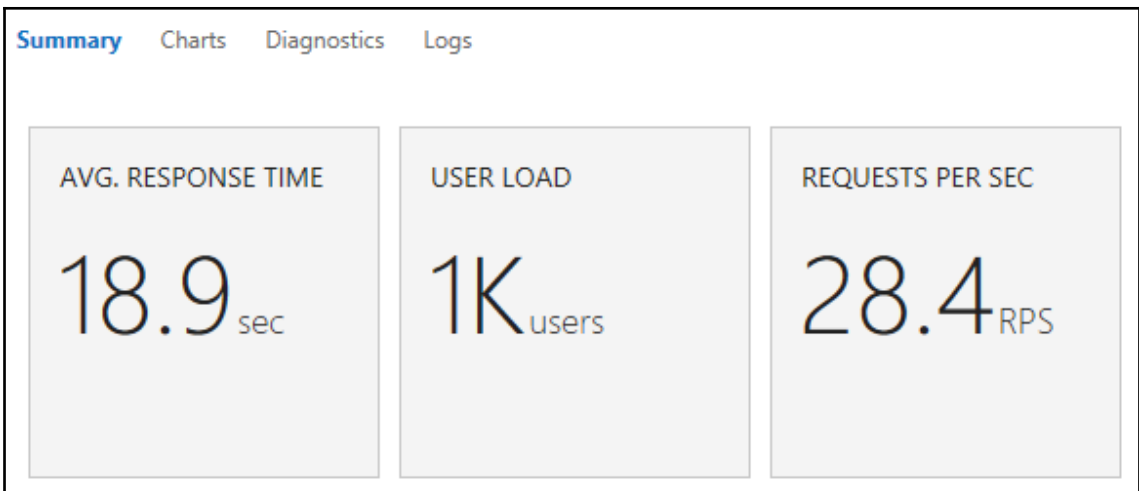
[Save](#) [Run test](#) [Import .HAR file](#)

| | |
|------------------------------|---|
| Run duration (minutes) | <input type="text" value="20"/> |
| Load pattern | <input type="text" value="Step"/> ▾ |
| Max v-users | <input type="text" value="1000"/> |
| Start user count | <input type="text" value="10"/> |
| Step duration (seconds) | <input type="text" value="10"/> |
| Step user count (users/step) | <input type="text" value="10"/> |
| Warmup duration (seconds) | <input type="text" value="0"/> |
| Browser mix | <input type="text" value="IE - 60%, Chrome - 40%"/> ▾ |

Load test*: LoadTestFunctionApp [✎](#)

[Web Scenarios](#) [Settings](#)

[Save](#) [Run test](#) [Import .HAR file](#)



```
C:\Users\vmadmin\myazureclifunc>func init
Select a worker runtime:
dotnet
node
```

Disk (C:) > Users > vmadmin > myazureclifunc

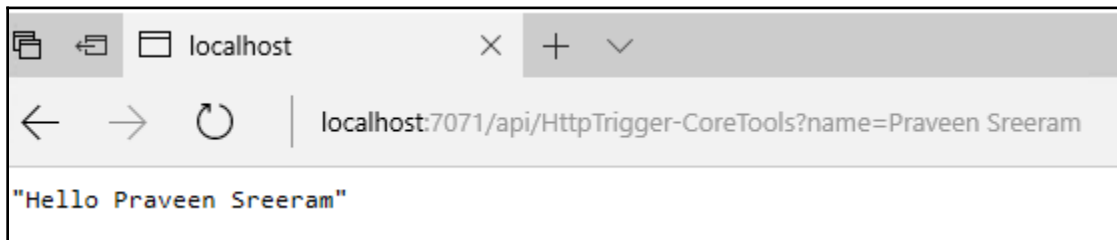
| Name | Date modified |
|-----------------------|--------------------|
| .vscode | 9/29/2018 11:23 AM |
| host | 9/29/2018 11:23 AM |
| local.settings | 9/29/2018 11:23 AM |
| myazureclifunc.csproj | 9/29/2018 11:23 AM |

```
C:\Users\vmadmin\myazureclifunc>func new
Select a template:
QueueTrigger
HttpTrigger
BlobTrigger
TimerTrigger
DurableFunctionsOrchestration
SendGrid
EventHubTrigger
ServiceBusQueueTrigger
ServiceBusTopicTrigger
EventGridTrigger
CosmosDBTrigger
IoTHubTrigger
```

```
C:\Users\vmadmin\myazureclifunc>func new
Select a template: Function name: HttpTrigger-CoreTools
HttpTrigger-CoreTools

The function "HttpTrigger-CoreTools" was created successfully from the "HttpTrigger" template.
C:\Users\vmadmin\myazureclifunc>_
```

```
EXPLORER
C# HttpTrigger_CoreTools.cs x
OPEN EDITORS
x HttpTrigger_CoreTools.cs
MYAZURECLIFUNC
  .vscode
  .gitignore
  {} host.json
  C# HttpTrigger_CoreTools.cs
  {} local.settings.json
  myazureclifunc.csproj
5 using Microsoft.AspNetCore.Mvc;
6 using Microsoft.Azure.WebJobs;
7 using Microsoft.Azure.WebJobs.Extensions.Http;
8 using Microsoft.AspNetCore.Http;
9 using Microsoft.Azure.WebJobs.Host;
10 using Microsoft.Extensions.Logging;
11 using Newtonsoft.Json;
12
13 namespace myazureclifunc
14 {
15     public static class HttpTrigger_CoreTools
16     {
17         [FunctionName("HttpTrigger_CoreTools")]
18         public static async Task<ActionResult> Run([HttpTrigger(AuthorizationLevel.Function, "get",
19             {
20                 log.LogInformation("C# HTTP trigger function processed a request.");
21
22                 string name = req.Query["name"];
23
24                 string requestBody = await new StreamReader(req.Body).ReadToEndAsync();
25                 dynamic data = JsonConvert.DeserializeObject(requestBody);
26                 name = name ?? data?.name;
27
28                 return name != null
29                     ? (ActionResult)new OkObjectResult($"Hello, {name}")
30                     : new BadRequestObjectResult("Please pass a name on the query string or in the request body.");
31             }
32         }
33     }
}
```



Application Insights

Monitor web app performance and usage

Name ⓘ

FunctionMonitoring ✓

* Application Type ⓘ

ASP.NET web application ▾

* Subscription

Visual Studio Enterprise – MPN ▾

* Resource Group ⓘ

Create new Use existing

AzureFunctionCookBooks ▾

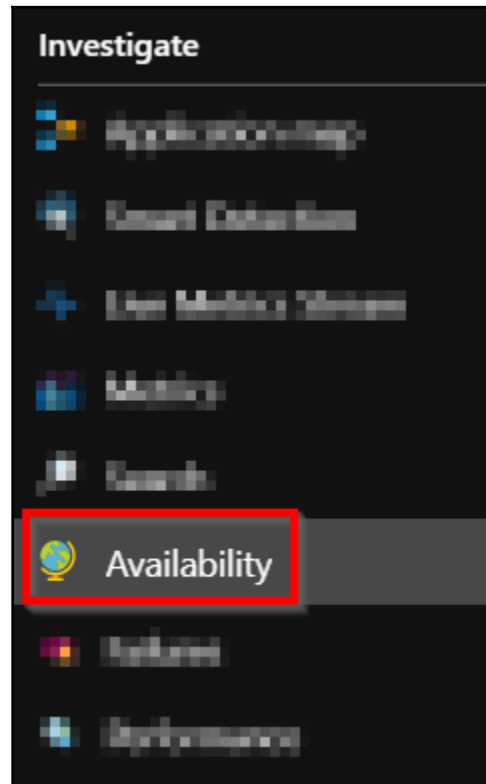
* Location

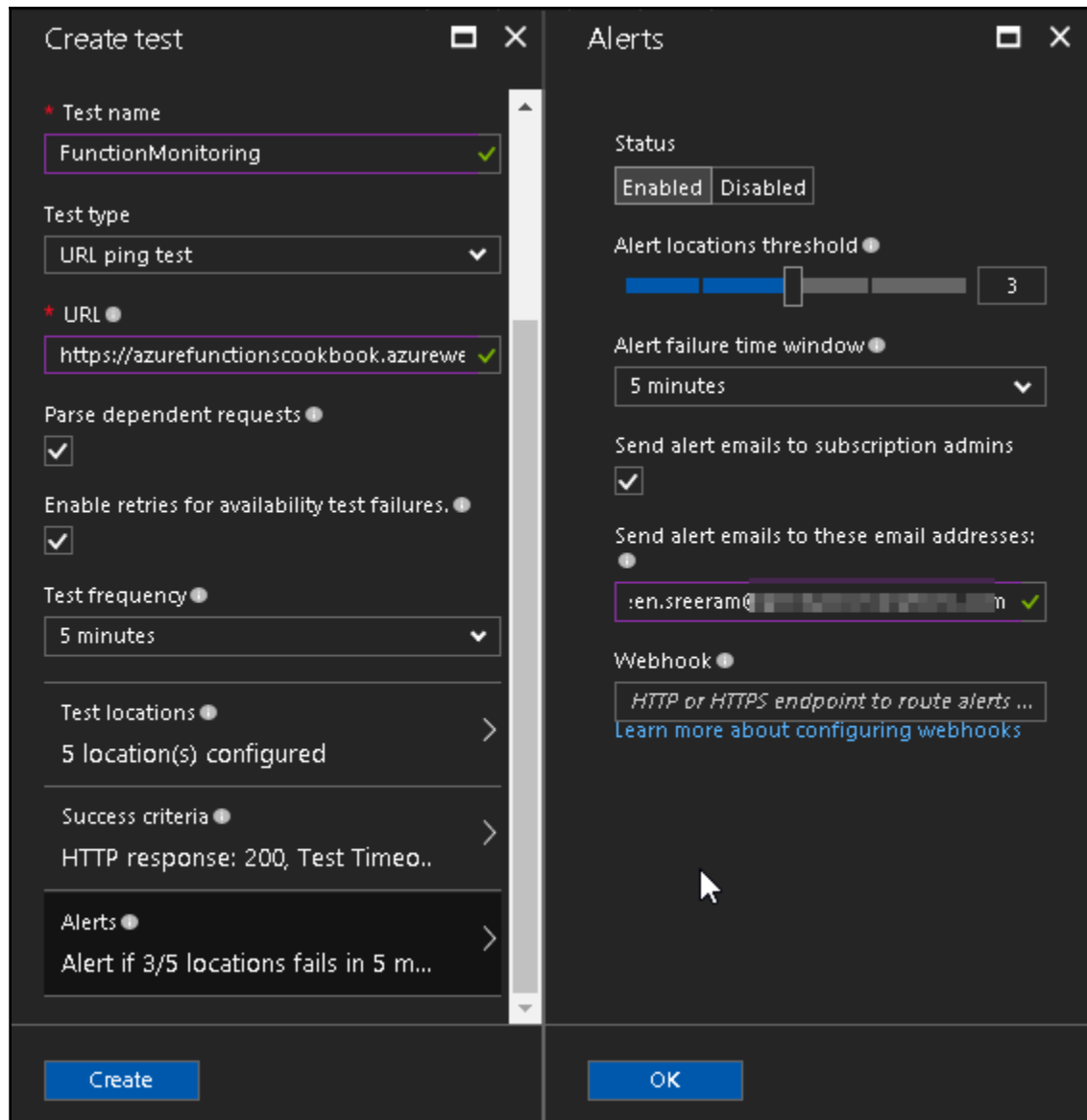
South Central US ▾

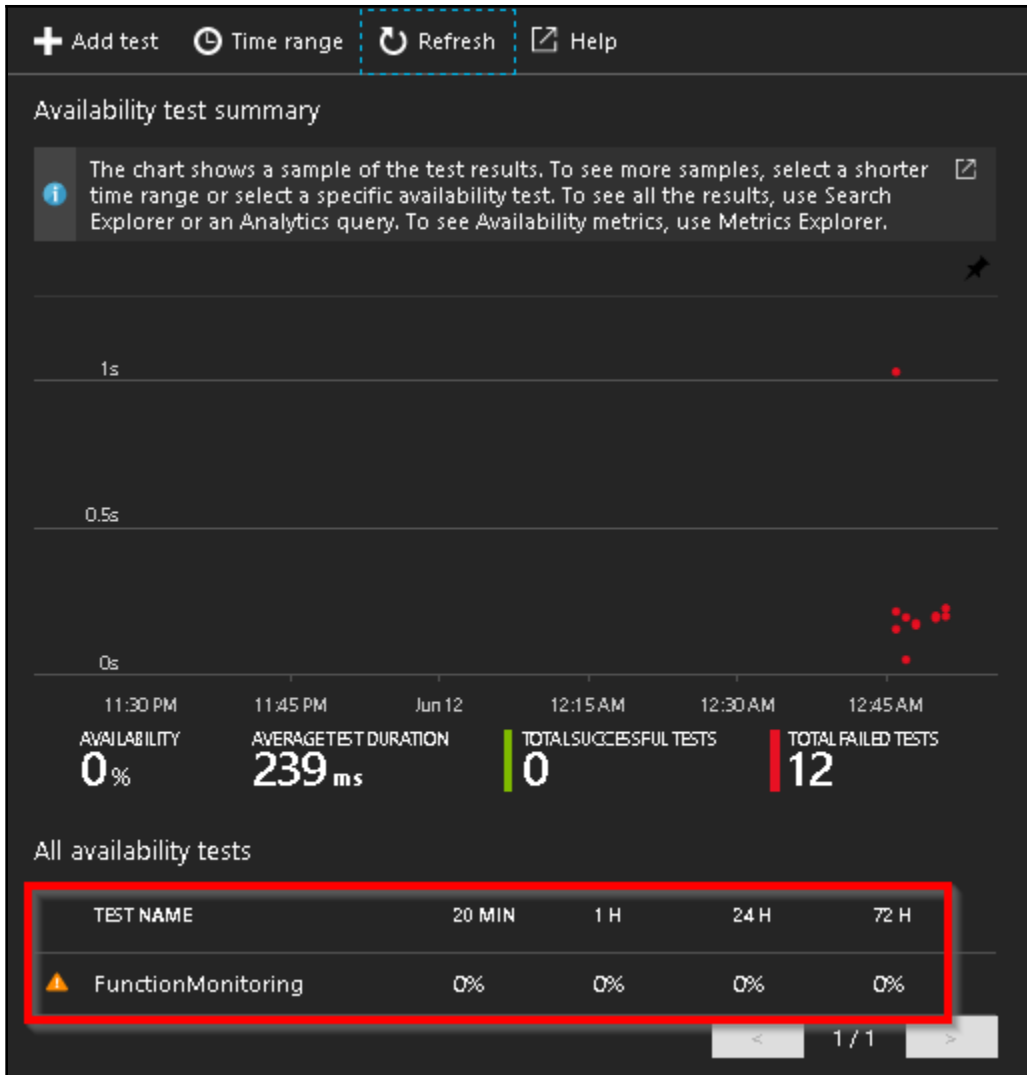
Create Automation options

URL

<https://azurefunctioncookbookv2.azurewebsites.net>









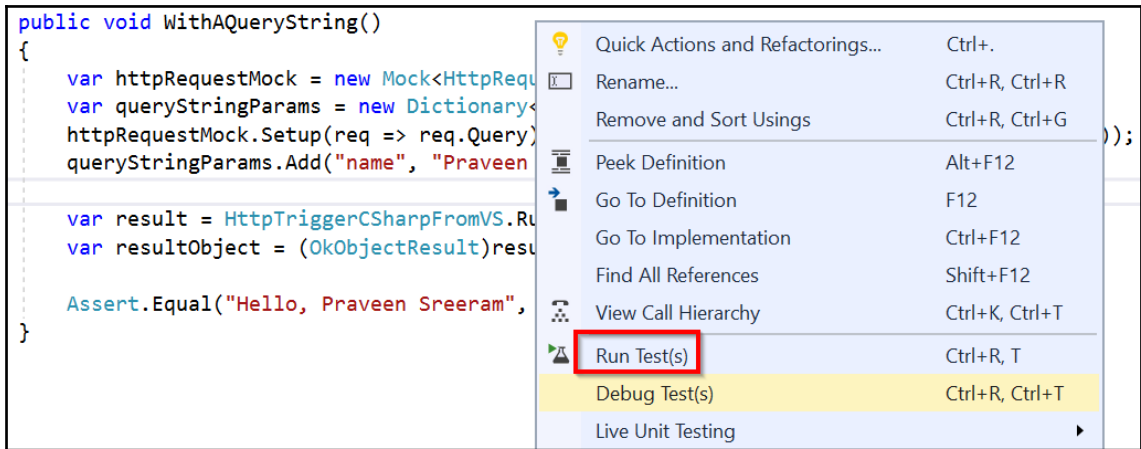
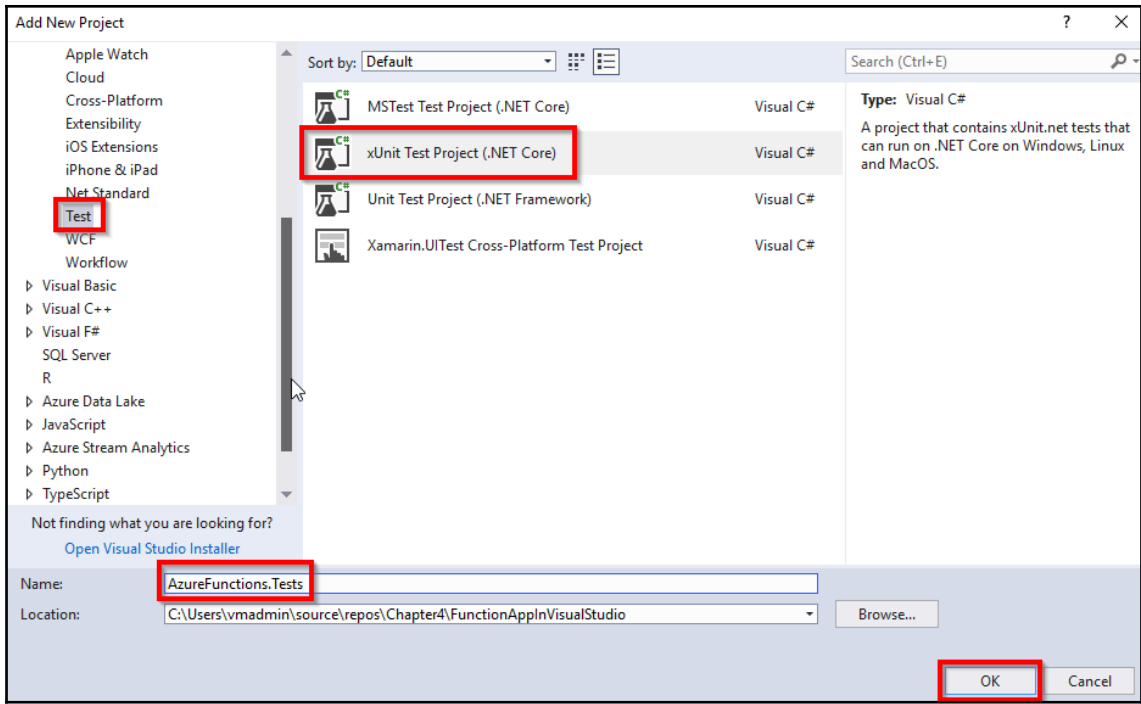
Azure Application Insights

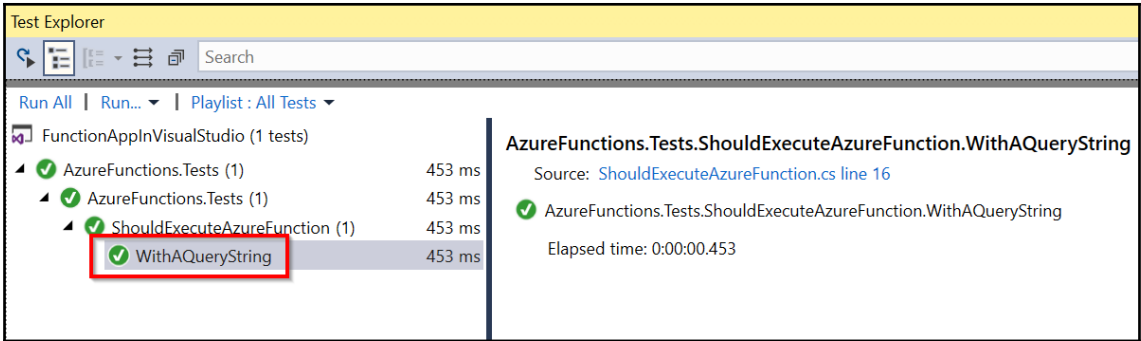
 WARNING

"functionmonitoring-functionsmonitoring" failed at 3 locations for 5 minutes

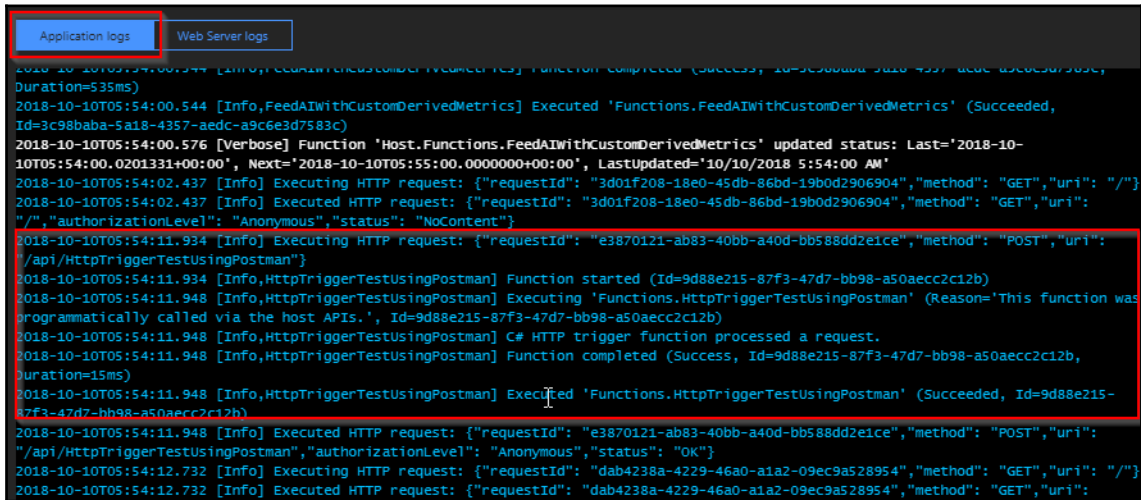
[View application in Azure Portal](#)

[View web test in Azure Portal](#)





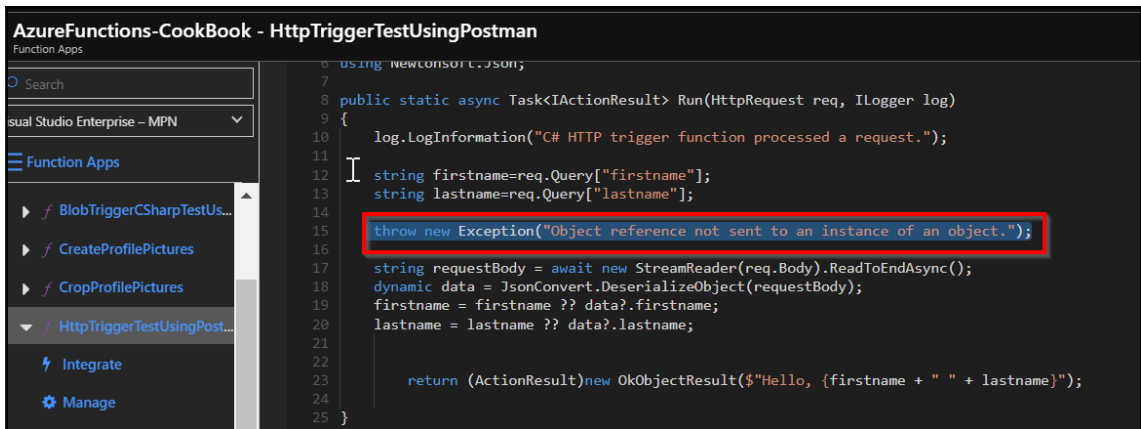
Chapter 06: Monitoring and Troubleshooting Azure Serverless Services



The screenshot displays the 'Application logs' tab in Azure Application Insights. It shows a series of log entries for a function named 'HttpTriggerTestUsingPostman'. A red box highlights a specific log entry at 2018-10-10T05:54:11.934, which indicates that the function completed successfully. The log entry includes details such as the request ID, method (POST), URI, and the function's status (Succeeded). Other logs show the function being executed via HTTP requests and the function's internal logic being processed.

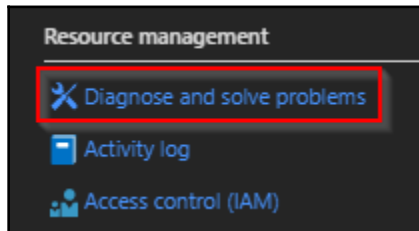
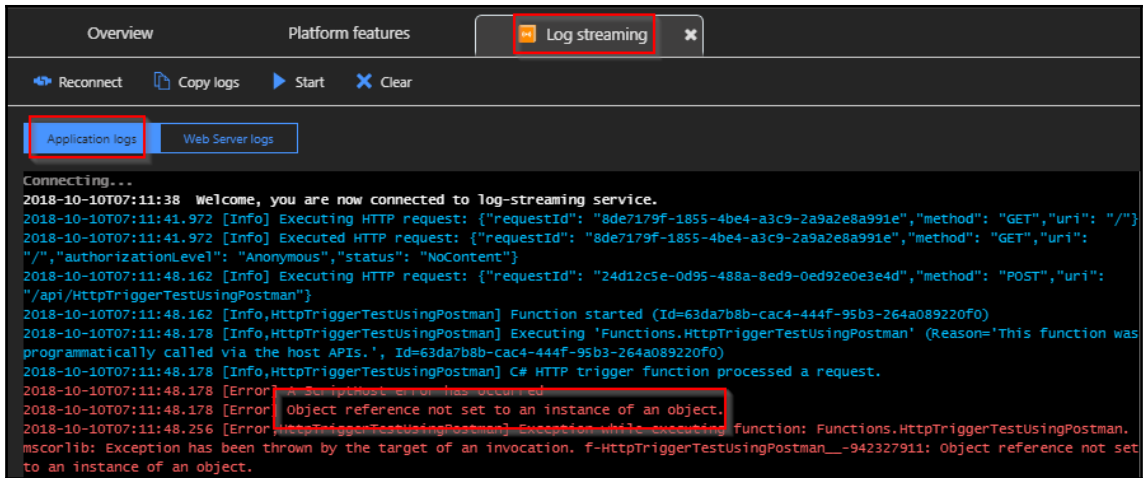
```
2018-10-10T05:54:00.544 [Info,FeedAIWithCustomDerivedMetrics] Function completed (Succeeded, Id=3c98baba-5a18-4357-aedc-a9c6e3d7583c, Duration=535ms)
2018-10-10T05:54:00.544 [Info,FeedAIWithCustomDerivedMetrics] Executed 'Functions.FeedAIWithCustomDerivedMetrics' (Succeeded, Id=3c98baba-5a18-4357-aedc-a9c6e3d7583c)
2018-10-10T05:54:00.576 [Verbose] Function 'Host.Functions.FeedAIWithCustomDerivedMetrics' updated status: Last='2018-10-10T05:54:00.0201331+00:00', Next='2018-10-10T05:55:00.0000000+00:00', LastUpdated='10/10/2018 5:54:00 AM'
2018-10-10T05:54:02.437 [Info] Executing HTTP request: {"requestId": "3d01f208-18e0-45db-86bd-19b0d2906904","method": "GET","uri": "/"}
2018-10-10T05:54:02.437 [Info] Executed HTTP request: {"requestId": "3d01f208-18e0-45db-86bd-19b0d2906904","method": "GET","uri": "/", "authorizationLevel": "Anonymous","status": "NoContent"}
2018-10-10T05:54:11.934 [Info] Executing HTTP request: {"requestId": "e3870121-ab83-40bb-a40d-bb588dd2e1ce","method": "POST","uri": "/api/HttpTriggerTestUsingPostman"}
2018-10-10T05:54:11.934 [Info,HttpTriggerTestUsingPostman] Function started (Id=9d88e215-87f3-47d7-bb98-a50aecc2c12b)
2018-10-10T05:54:11.948 [Info,HttpTriggerTestUsingPostman] Executing 'Functions.HttpTriggerTestUsingPostman' (Reason='This function was programmatically called via the host APIs.', Id=9d88e215-87f3-47d7-bb98-a50aecc2c12b)
2018-10-10T05:54:11.948 [Info,HttpTriggerTestUsingPostman] C# HTTP trigger function processed a request.
2018-10-10T05:54:11.948 [Info,HttpTriggerTestUsingPostman] Function completed (Success, Id=9d88e215-87f3-47d7-bb98-a50aecc2c12b, Duration=15ms)
2018-10-10T05:54:11.948 [Info,HttpTriggerTestUsingPostman] Executed 'Functions.HttpTriggerTestUsingPostman' (Succeeded, Id=9d88e215-87f3-47d7-bb98-a50aecc2c12b)
2018-10-10T05:54:11.948 [Info] Executed HTTP request: {"requestId": "e3870121-ab83-40bb-a40d-bb588dd2e1ce","method": "POST","uri": "/api/HttpTriggerTestUsingPostman","authorizationLevel": "Anonymous","status": "OK"}
2018-10-10T05:54:12.732 [Info] Executing HTTP request: {"requestId": "dab4238a-4229-46a0-a1a2-09ec9a528954","method": "GET","uri": "/"}
2018-10-10T05:54:12.732 [Info] Executed HTTP request: {"requestId": "dab4238a-4229-46a0-a1a2-09ec9a528954","method": "GET","uri": "/"}

```



The screenshot shows the source code for the 'HttpTriggerTestUsingPostman' function in Visual Studio Code. The code is written in C# and uses the Azure Functions SDK. A red box highlights a line of code that throws an exception: `throw new Exception("Object reference not sent to an instance of an object.");`. The code also shows the function's logic for processing an HTTP request, including logging, querying the request for 'firstname' and 'lastname', and returning a response.

```
AzureFunctions-CookBook - HttpTriggerTestUsingPostman
Function Apps
Search
Visual Studio Enterprise - MPN
Function Apps
  BlobTriggerCSharpTestUs...
  CreateProfilePictures
  CropProfilePictures
  HttpTriggerTestUsingPost...
  Integrate
  Manage
using Newtonsoft.Json;
public static async Task<IActionResult> Run(HttpRequest req, ILogger log)
{
    log.LogInformation("C# HTTP trigger function processed a request.");
    string firstname=req.Query["firstname"];
    string lastname=req.Query["lastname"];
    throw new Exception("Object reference not sent to an instance of an object.");
    string requestBody = await new StreamReader(req.Body).ReadToEndAsync();
    dynamic data = JsonConvert.DeserializeObject(requestBody);
    firstname = firstname ?? data?.firstname;
    lastname = lastname ?? data?.lastname;
    return (ActionResult)new OkObjectResult($"Hello, {firstname + " " + lastname}");
}
```

Home

Search App Service Diagnostics

App Service Diagnostics

Use App Service Diagnostics to investigate how your app is performing, diagnose issues, and discover how to improve your application. Select the problem category that best matches the information or tool that you're interested in:

Availability and Performance

Is your Function App performing slower than normal? Investigate performance issues or just check the health of your Function App.

Keywords

Downtime **5xx Errors** 4xx Errors CPU

Memory Slowness

Function Availability and Performance [View Full Report >](#)

- ✔ Application Crashes >
- !** **Function Executions and Errors** >

! Detected function(s) having execution failure rate more than 1%. ^

| Description | Function (by failure rate) | Total Executions | Failure Rate(%) | Top Exception |
|-------------|-----------------------------|------------------|-----------------|--|
| | HttpTriggerTestUsingPostman | 15 | 20% | Type : System.NullReferenceException Total Count : 2 Message : Object reference not set to an instance of an object. |

Recommended Action Please review your functions code/config to see which part is causing the error and apply the fixes appropriately.

Monitor [Monitor Azure Functions Using Application Insights](#)

```

run.csx Save Run </> Get function URL
Logs Errors and Warnings Console
2018-10-10T07:10:41.536 [Info] Function started (Id=1f833837-850c-410e-839f-c9bdecda3fc1)
2018-10-10T07:10:41.695 [Info] C# HTTP trigger function processed a request.
2018-10-10T07:10:41.695 [Info] The configuration value is 0
2018-10-10T07:10:41.695 [Info] Function completed (Success, Id=1f833837-850c-410e-839f-c9bdecda3fc1,
Duration=163ms)
2018-10-10T07:10:49.273 [Info] Function started (Id=b4f2f58e-78eb-4eea-92fe-55f76d11917f)
2018-10-10T07:10:49.273 [Info] C# HTTP trigger function processed a request.
2018-10-10T07:10:49.273 [Info] The configuration value is 0
2018-10-10T07:10:49.273 [Info] Function completed (Success, Id=b4f2f58e-78eb-4eea-92fe-55f76d11917f,
Duration=1ms)
2018-10-10T07:11:24.458 [Info] Script for function 'HttpTriggerTestUsingPostman' changed. Reloading.
2018-10-10T07:11:24.555 [Info] Compilation succeeded
2018-10-10T07:11:25.744 [Info] Function started (Id=3f18353b-ccd8-4da0-b085-7fcf4d26341a)
2018-10-10T07:11:25.869 [Info] C# HTTP trigger function processed a request.
2018-10-10T07:11:25.994 [Error] Exception while executing function: Functions.HttpTriggerTestUsingPostman.
mscorlib: Exception has been thrown by the target of an invocation. f-HttpTriggerTestUsingPostman__-942327911:
Object reference not set to an instance of an object.
2018-10-10T07:11:26.056 [Error] Function completed (Failure, Id=3f18353b-ccd8-4da0-b085-7fcf4d26341a,
Duration=297ms)
  
```

Search for resources

Collapse All Refresh All

Close Query Import Export Add Edit Select all Column Options Delete Table Statistics Refresh

And/Or Field Type Operator Value

RowKey String = 3f18353b-ccd8-4da0-b085-7fc4d26341a

+ Add new clause

Advanced Options

| PartitionKey | RowKey | Timestamp | EndTime | StartTime |
|--------------|-------------------------------------|--------------------------|--------------------------|------------|
| | 3f18353b-ccd8-4da0-b085-7fc4d26341a | 2018-10-10T07:12:09.912Z | 2018-10-10T07:11:26.056Z | 2018-10-10 |

Tables

- \$MetricsCapacityBlob
- \$MetricsHourPrimaryTransactionsBlob
- \$MetricsHourPrimaryTransactionsFile
- \$MetricsHourPrimaryTransactionsQueue
- \$MetricsHourPrimaryTransactionsTable
- AzureWebJobsHostLogs201809
- AzureWebJobsHostLogs201810**
- AzureWebJobsHostLogscommon

Microsoft Azure Storage Explorer - Edit Entity

Edit Entity

| Property Name | Type | Value |
|---------------------------------|----------|---|
| Timestamp | DateTime | 2018-10-10T07:12:09.912Z |
| ArgumentsJson | String | {"req":{"Method: POST, Uri: https://azurefu |
| EndTime | DateTime | 2018-10-10T07:11:26.056Z |
| ErrorDetails | String | Exception has been thrown by the target |
| FunctionInstanceHeartbeatExpiry | DateTime | 2018-10-10T07:14:24.831Z |
| FunctionName | String | HttpTriggerTestUsingPostman |
| LogOutput | String | Object reference not set to an instance of |
| StartTime | DateTime | 2018-10-10T07:11:25.744Z |
| TriggerReason | String | This function was programmatically calle |

Add Property

Cancel Update

Home > FunctionsMonitoring

FunctionsMonitoring

Application Insights

Search (Ctrl+) <<

★ Application Dashboard 🗨 Getting started 🔍 Search 📊 Analytics 💡 Monitor resource group 🔄 Refresh 😊 Feedback 📌 Favorites

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Resource group (change)
AzureFunctionsCookBook

Subscription (change)
Visual Studio Enterprise – MPN

Tags (change)
Click here to add tags

Status

Subscription ID
[redacted]

Location
South Central US

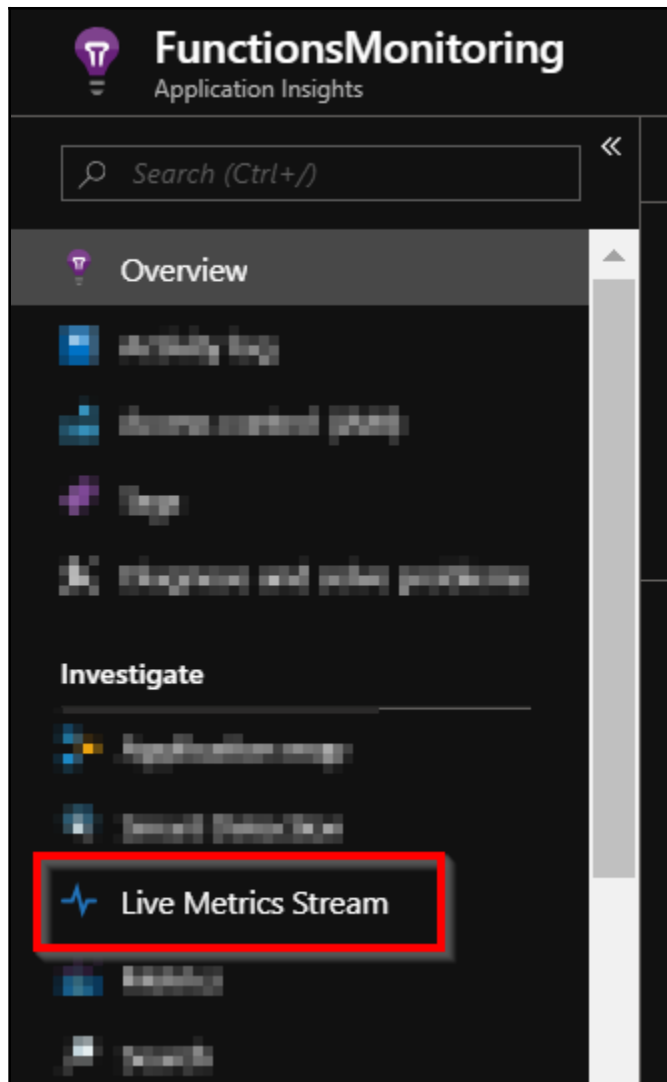
Instrumentation Key
f7fdb060-[redacted]

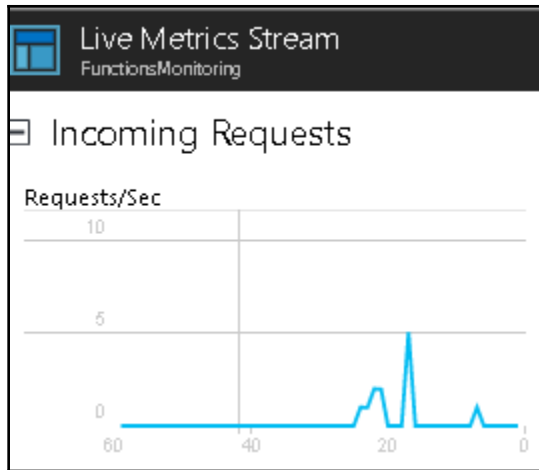
Application settings

i Application Settings are encrypted at rest and transmitted over an encrypted channel. You can

Hide Values Show Values

| APP SETTING NAME | VALUE |
|--------------------------------|------------------------------|
| APPINSIGHTS_INSTRUMENTATIONKEY | f7fdb060-[redacted] |
| azurefunctioncookbooks_STORAGE | Hidden value. Click to edit. |
| AzureWebJobsDashboard | Hidden value. Click to edit. |





```

run.csx Save Run </> Get function URL
Log: console
2018-10-02T09:18:33 welcome, you are now connected to log-streaming service.
2018-10-02T09:18:41.058 [Information] Executing 'Functions.HttpTriggerCSharp1' (Reason='This function was programmatically called via the host APIs.', Id=4ea36c7a-2ca9-443d-9fb9-951bf5f25126)
2018-10-02T09:18:41.059 [Information] C# HTTP trigger function processed a request with the input value Azure Test Run 1
2018-10-02T09:18:41.060 [Information] Executed 'Functions.HttpTriggerCSharp1' (Succeeded, Id=4ea36c7a-2ca9-443d-9fb9-951bf5f25126)
2018-10-02T09:18:53.725 [Information] Executing 'Functions.HttpTriggerCSharp1' (Reason='This function was programmatically called via the host APIs.', Id=bd62e53d-93f1-4740-a7ba-c9d06349df92)
2018-10-02T09:18:53.725 [Information] C# HTTP trigger function processed a request with the input value Azure Test Run 2
2018-10-02T09:18:53.726 [Information] Executed 'Functions.HttpTriggerCSharp1' (Succeeded, Id=bd62e53d-93f1-4740-a7ba-c9d06349df92)
2018-10-02T09:19:06.991 [Information] Executing 'Functions.HttpTriggerCSharp1' (Reason='This function was programmatically called via the host APIs.', Id=16bcd6da-4650-43e5-92a6-91258360daa1)
2018-10-02T09:19:06.991 [Information] C# HTTP trigger function processed a request with the input value Azure Test Run 3
2018-10-02T09:19:06.992 [Information] Executed 'Functions.HttpTriggerCSharp1' (Succeeded, Id=16bcd6da-4650-43e5-92a6-91258360daa1)
  
```

Home > FunctionsMonitoring

FunctionsMonitoring

Application Insights

Search (Ctrl+/)

- Application (Default)
- Logging (Default)
- Search
- Analytics**
- Monitor resource group

Overview

- Summary log
- Errors (4/4)
- Logs

Recent group (1 range)

Subscription by

Log (range)

Watch more recent logs

Home > FunctionsMonitoring > Logs

Logs
FunctionsMonitoring

New Query 1* + Help Settings Query

FunctionsMonitoring Run Time range: Last 24 hours Save Copy link Export Set alert

Schemas Filter (preview) < traces | sort by timestamp desc

Filter by name or type...

Collapse all

Active

- FunctionsMonitoring
 - APPLICATION INSIGHTS
 - traces
 - customEvents
 - pageViews
 - requests
 - dependencies
 - exceptions
 - availabilityResults
 - customMetrics
 - performanceCounters
 - browserTimings

Favorite applications

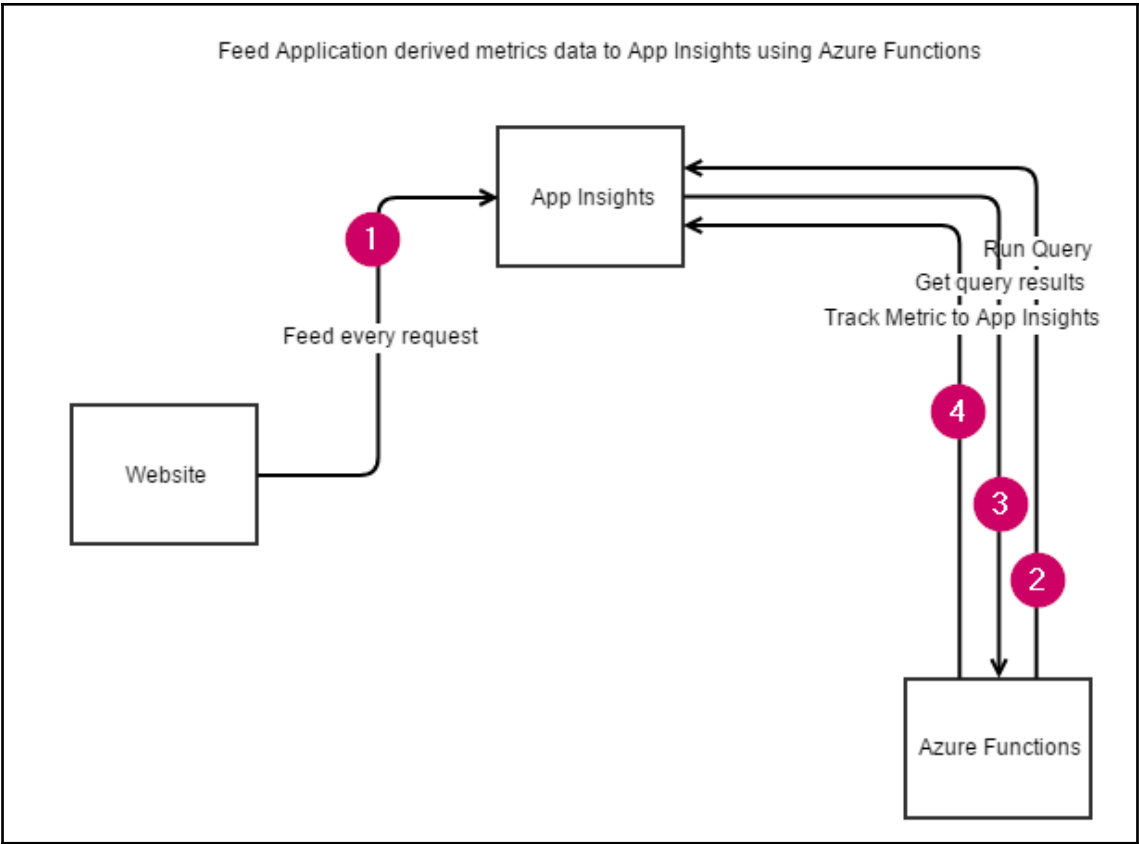
Completed. Showing results from the last 24 hours. 00:00:05.088 21
Display time (UTC+)

TABLE CHART Columns

Drag a column header and drop it here to group by that column

| timestamp (UTC) | message | severityLevel | itemType |
|-------------------------|---|---------------|----------|
| 2018-10-02T09:45:35.503 | Stopping JobHost | 1 | trace |
| 2018-10-02T09:24:37.162 | Executed 'Functions.HttpTriggerCSharp' (Succeeded, Id=6ac9a67d-9ea8-4d22-b5a0-bec4deb8ae19) | 1 | trace |
| 2018-10-02T09:24:37.161 | C# HTTP trigger function processed a request with the input value Azure Test Run 3 | 1 | trace |
| 2018-10-02T09:24:37.161 | Executing 'Functions.HttpTriggerCSharp' (Reason= This function was programmatically called via the host APIs., ...) | 1 | trace |
| 2018-10-02T09:24:28.075 | Executed 'Functions.HttpTriggerCSharp' (Succeeded, Id=c543e99d-1ff7-4ade-88ed-a31a5bd11586) | 1 | trace |
| 2018-10-02T09:24:28.067 | C# HTTP trigger function processed a request with the input value Azure Test Run 2 | 1 | trace |
| 2018-10-02T09:24:28.062 | Executing 'Functions.HttpTriggerCSharp' (Reason= This function was programmatically called via the host APIs., ...) | 1 | trace |
| 2018-10-02T09:24:00.213 | Executed 'Functions.HttpTriggerCSharp' (Succeeded, Id=c24dd2f1-8fde-43f6-b39f-ca3bf83b4ec6) | 1 | trace |
| 2018-10-02T09:24:00.150 | C# HTTP trigger function processed a request with the input value Azure Test Run 1 | 1 | trace |
| 2018-10-02T09:23:59.787 | Executing 'Functions.HttpTriggerCSharp' (Reason= This function was programmatically called via the host APIs., ...) | 1 | trace |

Feed Application derived metrics data to App Insights using Azure Functions



Application settings



Application Settings are encrypted at rest and transmitted over an encrypted channel.

Hide Values

Show Values

| APP SETTING NAME | VALUE |
|--|-------------------------------------|
| APPINSIGHTS_INSTRUMENTATIONKEY | <i>Hidden value. Click to edit.</i> |
| AzureWebJobsStorage | <i>Hidden value. Click to edit.</i> |
| FUNCTIONS_EXTENSION_VERSION | ~1 |
| FUNCTIONS_WORKER_RUNTIME | <i>Hidden value. Click to edit.</i> |
| WEBSITE_CONTENTAZUREFILECONNECTIONSTRING | <i>Hidden value. Click to edit.</i> |
| WEBSITE_CONTENTSHARE | <i>Hidden value. Click to edit.</i> |
| WEBSITE_NODE_DEFAULT_VERSION | <i>Hidden value. Click to edit.</i> |

[+ Add new setting](#)

Choose a template below or go to the quickstart

🔍 scheduled analytics



Language: C#

Scenario: Monitoring



Application Insights scheduled analytics

A function that derives metrics by performing deep analysis of app telemetry with Application Insights

C#

Home > FunctionsMonitoring - API Access

FunctionsMonitoring - API Access

Application Insights

api 1 × ← + Create API key 🗑 Delete API key 🔗 Help

Configure

🔑 API Access 2

Application ID 🔗 3

ec1cf6e0-1186-4eee-a562-67333e47a39b

| API KEY DESCRIPTION | LAST USED | CREATED ON | PERMISSIONS |
|--|-----------|------------|-------------|
| You haven't set up any API keys. Click 'Create API key' to get started. Learn more | | | |

Create API key

Create an API key to read Application Insights data.

API keys are used by applications outside the browser to access this resource.

Your API keys should be managed like passwords. Keep them secret.

Provide a description to help you identify this API key in the future. ⓘ

DerivedMetrics

Choose what this API key will allow apps to do:


- Read telemetry ⓘ
- Write annotations ⓘ
- Authenticate SDK control channel ⓘ

Generate key


Create API key □ ×

Create an API key to read Application Insights data.

API keys are used by applications outside the browser to access this resource.
Your API keys should be managed like passwords. Keep them secret.

 Key:

Make sure you copy this key now. We don't store it, and after you close this blade you won't be able to see it again.



| APP SETTING NAME | VALUE |
|------------------|-------------------------------------|
| AI_APP_ID | <i>Hidden value. Click to edit.</i> |
| AI_APP_KEY | <i>Hidden value. Click to edit.</i> |
| AI_IKEY | <i>Hidden value. Click to edit.</i> |

The screenshot shows a query execution interface with a dark theme. At the top left, there is a blue button with a play icon and the text "Run", which is highlighted with a red box. To its right is a rounded button labeled "Time range: Set in query". Below these is a text area containing the SQL query: `requests`, `where timestamp > now(-48h)`, and `summarize count()`. This text area is also highlighted with a red box. Below the query, the status "Completed" is displayed. Underneath, there are two view options: "TABLE" (selected) and "CHART", followed by a "Columns" dropdown menu. A greyed-out instruction reads "Drag a column header and drop it here to group by that column". Below this is a table header with a column labeled "count_" and a filter icon. The first row of the table shows a value of "1,227", which is highlighted with a red box.

```
requests
| where timestamp > now(-48h)
| summarize count()
```

Completed

TABLE | CHART | Columns ▾

Drag a column header and drop it here to group by that column

| count_ |
|---------|
| > 1,227 |


```

29 public static async Task Run(TimerInfo myTimer, TraceWriter log)
30 {
31     if (myTimer.IsPastDue)
32     {
33         log.Warning($"[Warning]: Timer is running late! Last ran
34     }
35
36     // [CONFIGURATION_REQUIRED] update the query accordingly for
37     // be sure to run it against Application Insights Analytics
38     // output should be a number if sending derived metrics
39     // [Application Insights Analytics] https://docs.microsoft.com
40     aw = ScheduledAnalyticsRun
41     {
42         name: "Requests per hour",
43         query: @"
44 requests
45 | where timestamp > now(-1h)
46 | summarize count()
47     ",
48     };
49 }

```

Timer trigger (myTimer) [delete](#)

Timestamp parameter name ⓘ

myTimer

Schedule ⓘ

0*/1*****

Refresh

Application Insights Instance: FunctionsMonitoring

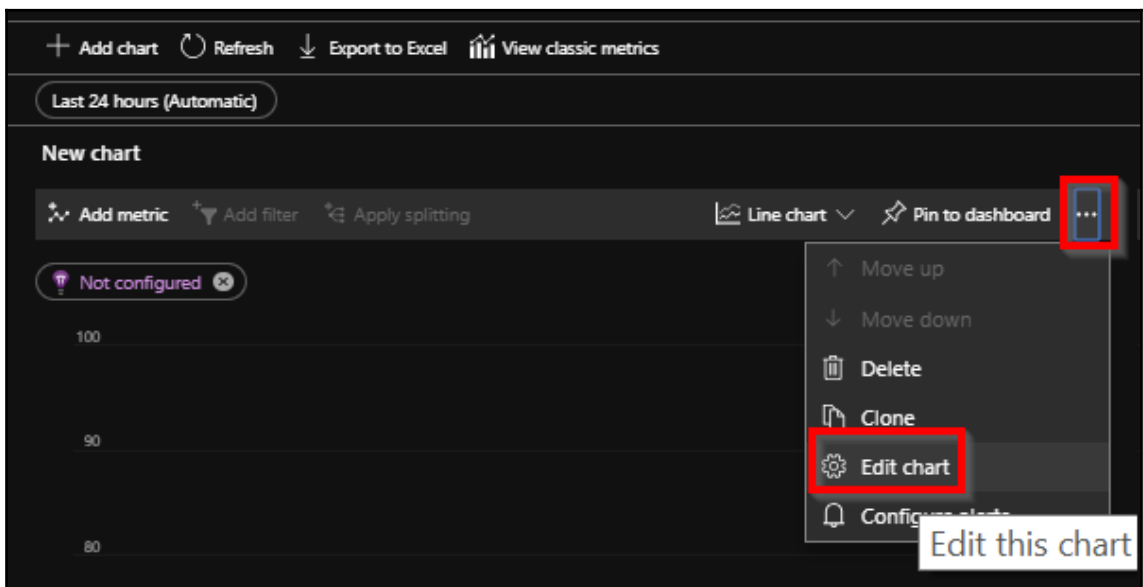
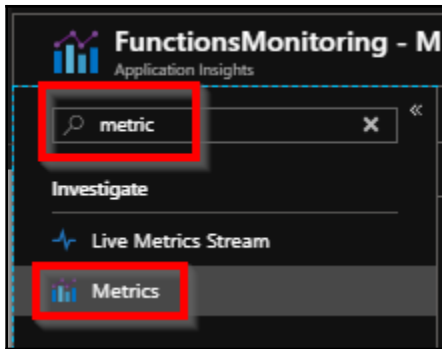
Success count in last 30 days: 2

Error count in last 30 days: 0

Query returned 2 items

Run in Application Insights

| DATE (UTC) ▾ | SUCCESS ▾ | RESULT CODE ▾ | DURATION (MS) ▾ | OPERATION ID ▾ |
|-------------------------|-----------|---------------|-----------------|--------------------------------------|
| 2018-10-03 07:10:00.024 | ✓ | 0 | 512.7174 | 67b80b02-dc40-47a4-80a8-c464c77b4817 |
| 2018-10-03 07:09:20.197 | ✓ | 0 | 1731.7136 | 16162177-e786-4055-807a-7c9428b50541 |



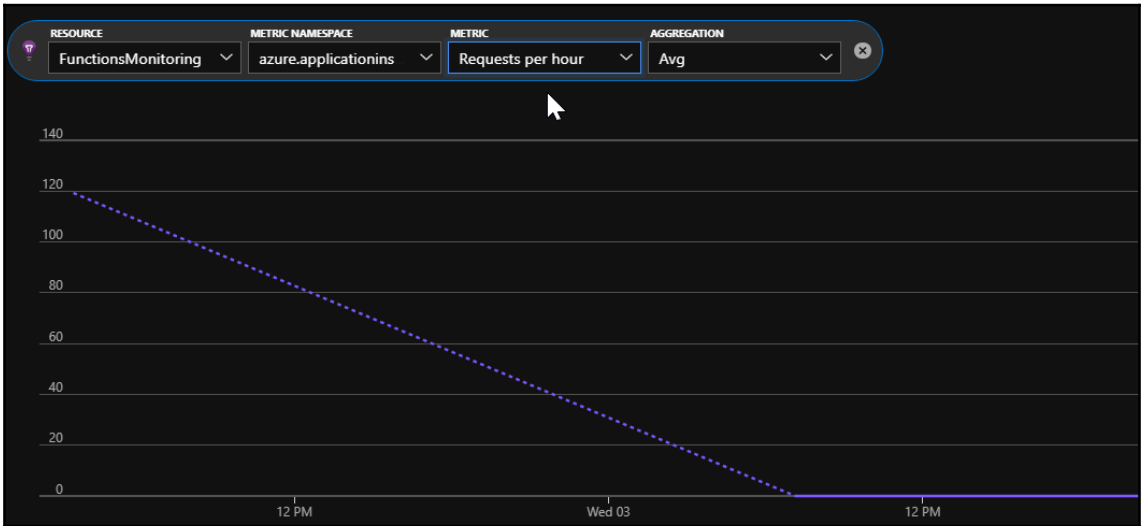
New chart

+ Add metric + Add filter + Apply splitting

| RESOURCE | METRIC NAMESPACE | METRIC | AGGREGATION |
|---------------------|----------------------|--------|-----------------|
| FunctionsMonitoring | azure.applicationins | req | Select value(s) |

- Requests per hour
- ViewRealTimeRequestCount Count
- ViewRealTimeRequestCount Duration
- ViewRealTimeRequestCount Failures
- ViewRealTimeRequestCount Success Rate
- ViewRealTimeRequestCount Successes

Select a metric to see data appear on this chart.




Choose a template below or [go to the quickstart](#)

✖

Language: ▼

Scenario: ▼

 Application Insights scheduled digest

A function that sends a daily Application Insights telemetry report via email

Application Insights scheduled digest

New Function

Language:
C#

Name:
DailyApplicationInsightsDigest

Timer trigger

Schedule ⓘ
0 0 1 ***

SendGrid output

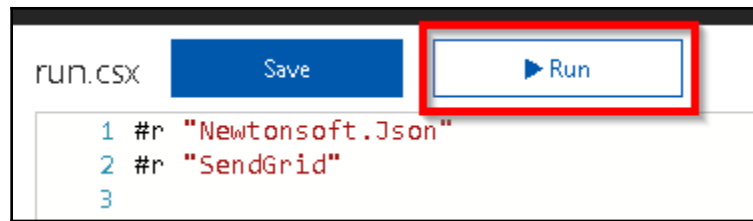
SendGrid API Key App Setting ⓘ *new* [show value](#)
SendGridApiKey

From address ⓘ
Application Insights <ai-noreply@mail.windowsazure.com>

To address ⓘ
prawin21@xxxxxxxxxxxxx

Create Cancel

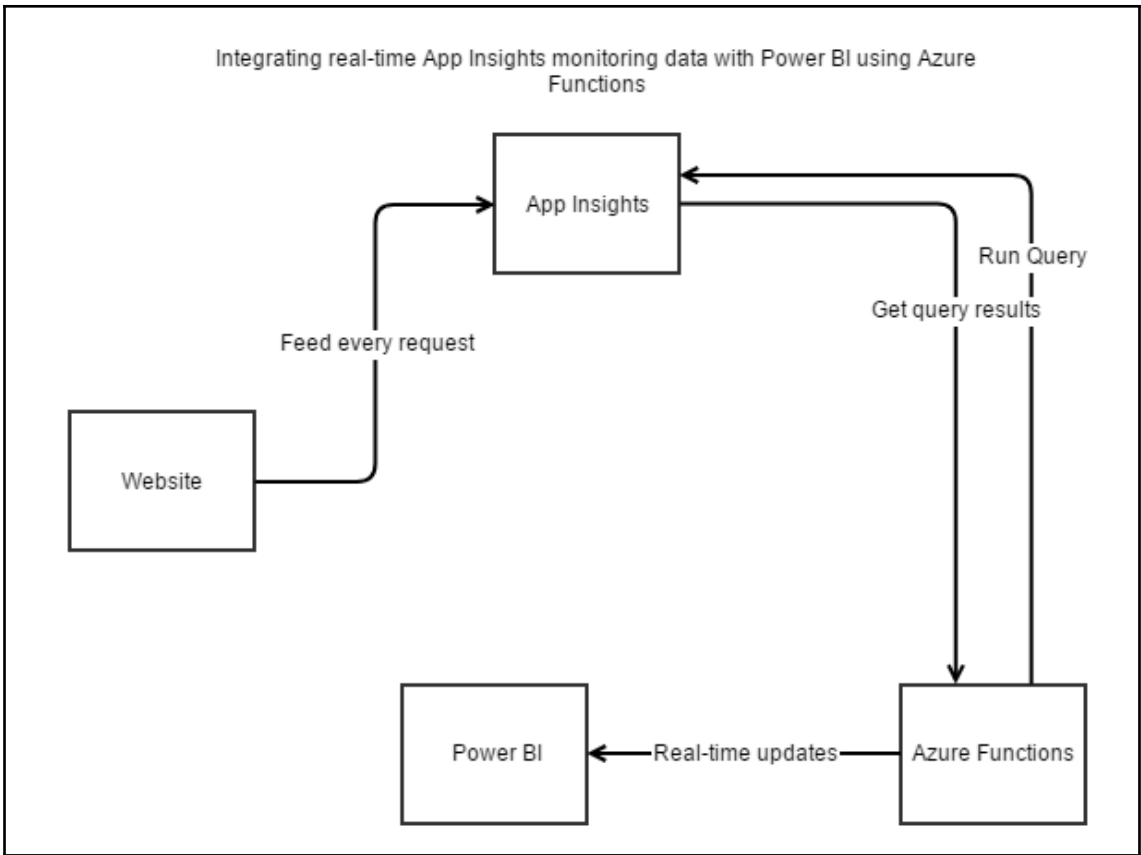
```
// [CONFIGURATION_REQUIRED] configure {appName} accordingly for your app/email  
string appName = "Azure Function Serverless Cookbook";
```



Azure Function Serverless Cookbook Daily telemetry report 6/25/2017

The following data shows insights based on telemetry from last 24 hours.

| | |
|-----------------------------|----------------|
| Total requests | 470,256 |
| Failed requests | 1,263 |
| Average response time | 77.78 ms |
| <hr/> | |
| Total dependencies | 0 |
| Failed dependencies | 0 |
| Average response time | ----- ms |
| <hr/> | |
| Total views | 0 |
| Total exceptions | 180 |
| <hr/> | |
| Overall Availability | 100.0 % |
| Average response time | 457.8 ms |



Get Data

Need more guidance? [Try this tutorial](#) or [watch a video](#)

Discover content

My organization

Discover apps published by other people in your organization.

Get

Services

Choose apps from online services that you use.

Get

Create new content

Files

Bring in your reports, workbooks, or data from Excel, Power BI Desktop or CSV files.

Get

Databases

Use Power BI Desktop to connect to data in Azure SQL Database and more.

Get

More ways to create your own content

[Samples](#)

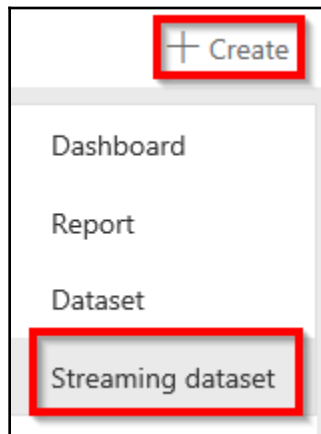
[Organizational Content Packs](#)

[Solution Templates](#)

[Service Content Packs](#)

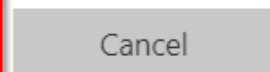
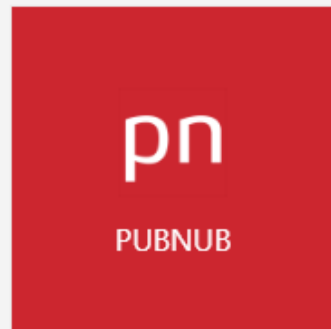
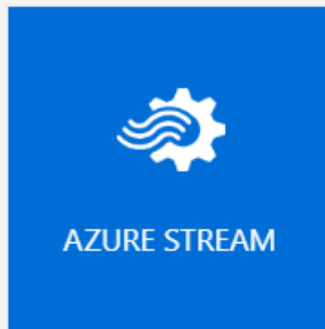
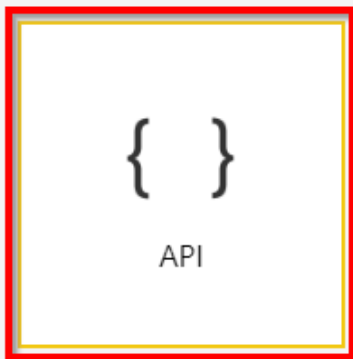
[Partner Showcase](#)

Skip



New streaming dataset

Choose the source of your data



Create a streaming dataset and integrate our API into your device or application to send data. [Learn more about the API.](#)

Dataset name *

Requests

Values from stream *

RequestsPerSecond

Number



Enter a new value name

Text

```
[
  {
    "RequestsPerSecond" : 98.6
  }
]
```

Historic data analysis

Back

Create

Cancel

✓ Streaming dataset created

The schema for Requests is created.

Push URL

<https://api.powerbi.com/beta/e6...lat>

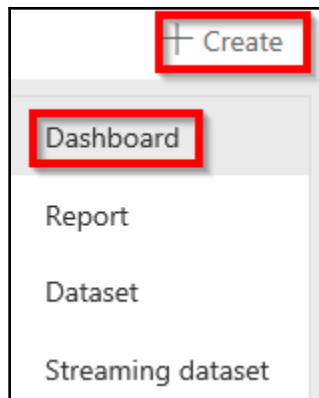
Raw

cURL

PowerShell

```
[  
  {  
    "RequestsPerSecond" : 98.6  
  }  
]
```

Done



A dialog box titled "Create dashboard" with a close button (X) in the top right corner. Below the title, the text "Dashboard name" is followed by a text input field containing the text "ApplicationHealth". At the bottom of the dialog, there are two buttons: a yellow "Create" button and a grey "Cancel" button. Both buttons are highlighted with a red border.

Add tile

Select source

MEDIA



Web content



Image



Text box



Video

REAL-TIME DATA



Custom Streaming
Data



Next

Cancel

Add a custom streaming data tile

Choose a streaming dataset

+ Add streaming dataset

YOUR DATASETS

Requests

[Manage datasets](#)



Back

Next

Cancel

Visualization Type

Card

Fields

RequestPerSecond

+ Add value


[Manage datasets](#)

Back Next Cancel

Choose a template below or [go to the quickstart](#)

Language:

Scenario:

 Application Insights Power BI

A function that pushes real-time availability data from Application Insights to Power BI

Application Insights Power BI

New Function

Language:

C#

Name:

ViewRealTimeRequestCount

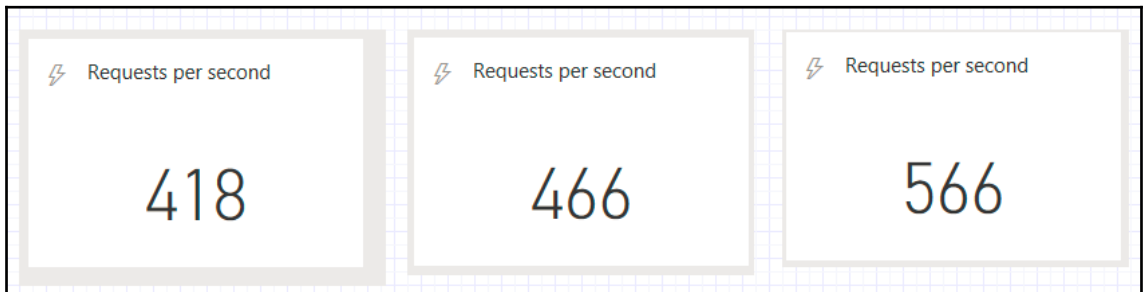
Timer trigger

Schedule ⓘ

0 * * * * *


Create

Cancel



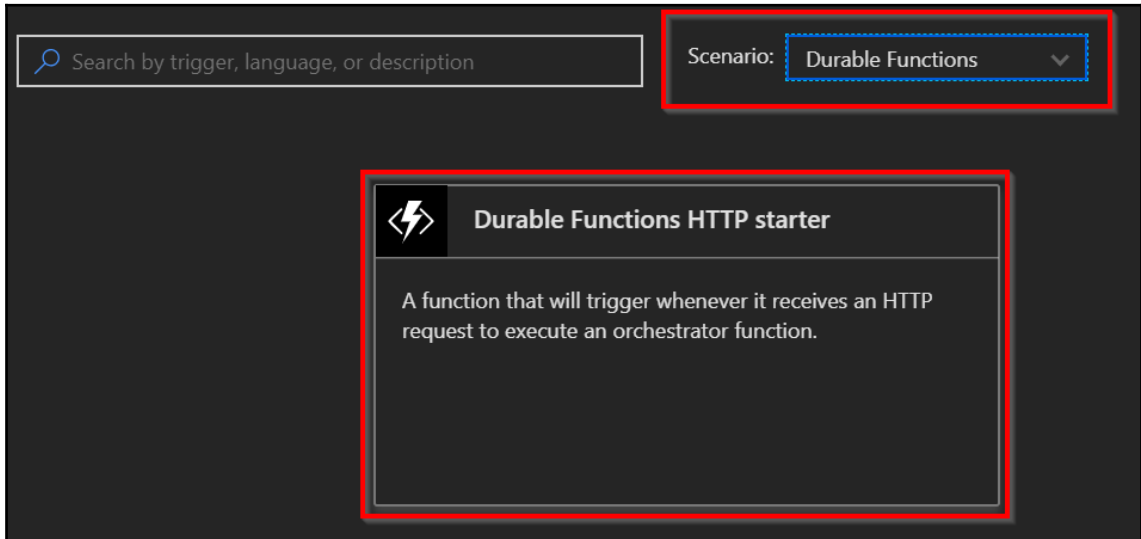
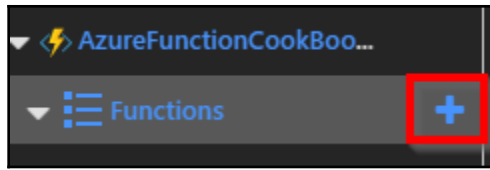
Chapter 07: Developing Reliable Serverless Applications Using Durable Functions

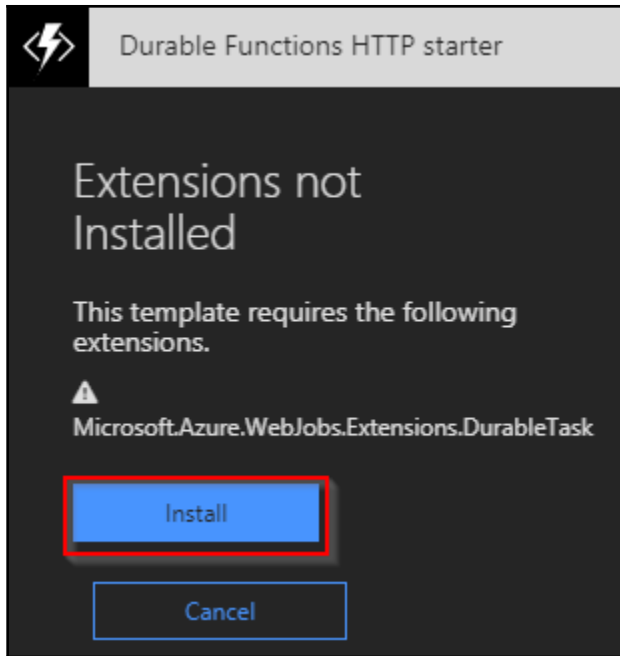
Application settings

 Application Settings are encrypted at rest and transmitted in your browser by using the controls below.

[Hide Values](#) [Show Values](#)

| APP SETTING NAME | VALUE |
|--------------------------|-------------------------------------|
| AzureWebJobsStorage | <i>Hidden value. Click to edit.</i> |
| FUNCTIONS_EXTENSION_VE | ~2 |
| FUNCTIONS_WORKER_RU... | <i>Hidden value. Click to edit.</i> |
| WEBSITE_CONTENTAZURE... | <i>Hidden value. Click to edit.</i> |
| WEBSITE_CONTENTSHARE | <i>Hidden value. Click to edit.</i> |
| WEBSITE_NODE_DEFAULT_... | <i>Hidden value. Click to edit.</i> |







Extensions not Installed

🔄 Installing template dependencies. You will be able to create a function once this is done. Dependency installation happens in the background and can take up to 2 minutes. You can close this blade and continue to use the portal during this time.

Install

Close



Durable Functions HTTP starter

**Extension
Installation
Succeeded**

Continue



New Function


Name:

HttpStart

Create

Cancel

 Advanced editor

Outputs 

HTTP (\$return)

 New Output



Durable Functions orchestrator

An orchestrator function that invokes activity functions in a sequence.



Durable Functions orchestrator

New Function

Name:

Create

Cancel



Durable Functions activity

A function that will be run whenever an Activity is called by an orchestrator function.

POST

https://mydurablefunction.azurewebsites.net/api/orchestrators/DurableFuncManager

Params

Send

Pretty

Raw


Preview

JSON



```
1 {
2   "id": "f3c4c46a0bdc419bad00c9c94b406e4"
3   "statusQueryGetUri": "https://mydurablefunction.azurewebsites.net/admin/extensions/DurableTaskConfiguration/instances/f3c4c46a0bdc419bad00c9c94b406e4?taskHub=DurableFunctionsHub&connection=Storage",
4   "sendEventPostUri": "https://mydurablefunction.azurewebsites.net/admin/extensions/DurableTaskConfiguration/instances/f3c4c46a0bdc419bad00c9c94b406e4/raiseEvent/{eventName}?taskHub=DurableFunctionsHub&connection=Storage",
5   "terminatePostUri": "https://mydurablefunction.azurewebsites.net/admin/extensions/DurableTaskConfiguration/instances/f3c4c46a0bdc419bad00c9c94b406e4/terminate?reason={text}&taskHub=DurableFunctionsHub&connection=Storage"
6 }
```

Body Cookies Headers (8) Test Results


Pretty Raw Preview JSON 

```

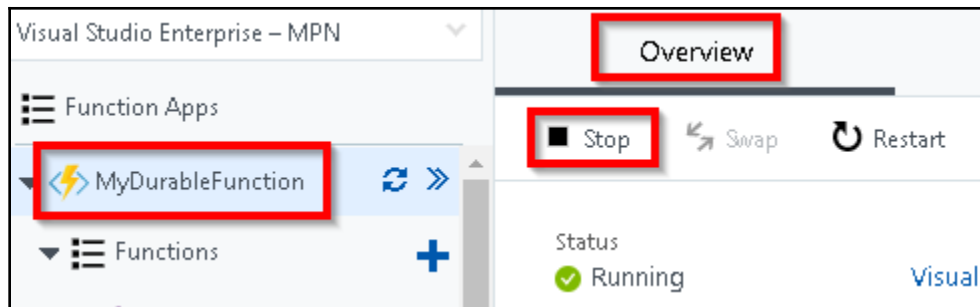
1 {
2   "instanceId": "53a8eca4e20b43e59718516397e94f0e",
3   "runtimeStatus": "Completed",
4   "input": null,
5   "customStatus": null,
6   "output": [
7     "Hello Welcome Cookbook Readers!"
8   ],
9   "createdTime": "2018-10-21T16:46:42Z",
10  "lastUpdatedTime": "2018-10-21T16:46:49Z"
11 }

```

| EventType | ExecutionId |
|-----------------------|----------------------------------|
| OrchestratorStarted | a426ec4dabe44527a6aeae14290802c1 |
| ExecutionStarted | a426ec4dabe44527a6aeae14290802c1 |
| TaskScheduled | a426ec4dabe44527a6aeae14290802c1 |
| OrchestratorCompleted | a426ec4dabe44527a6aeae14290802c1 |
| OrchestratorStarted | a426ec4dabe44527a6aeae14290802c1 |
| TaskCompleted | a426ec4dabe44527a6aeae14290802c1 |
| ExecutionCompleted | a426ec4dabe44527a6aeae14290802c1 |
| OrchestratorCompleted | a426ec4dabe44527a6aeae14290802c1 |

https://mydurablefun  + ... No Environment

POST <https://mydurablefunction.azurewebsites.net/api/orchestrators/GenerateBARCode> Params **Send**

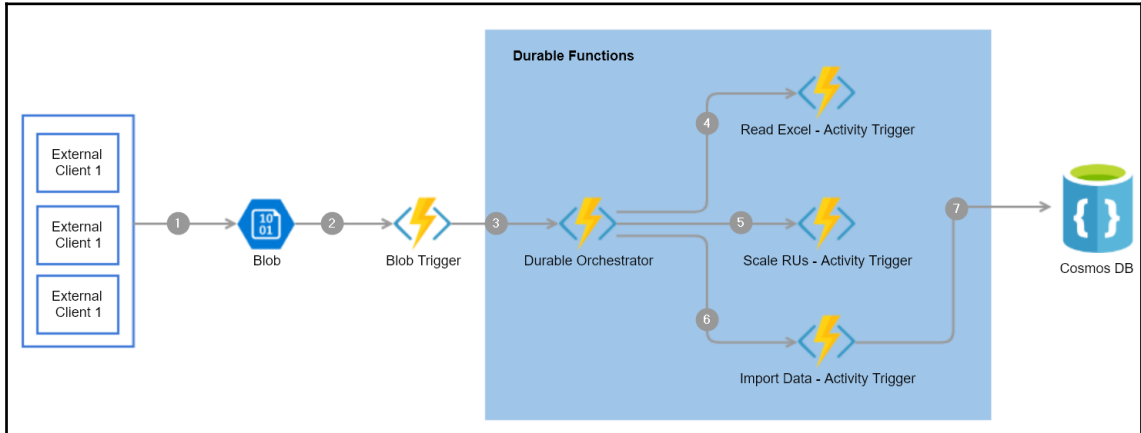


| EventType | ExecutionId | IsPlayed | _Timestamp | Input | Name |
|-----------------------|----------------------------------|----------|--------------------------|-------|-----------------|
| OrchestratorStarted | cf36ba2c05344390896fe2dcbb898189 | false | 2018-01-19T16:34:56.005Z | | |
| ExecutionStarted | cf36ba2c05344390896fe2dcbb898189 | true | 2018-01-19T16:34:46.159Z | null | GenerateBARCode |
| TaskScheduled | cf36ba2c05344390896fe2dcbb898189 | false | 2018-01-19T16:35:06.009Z | | GetAllCustomers |
| OrchestratorCompleted | cf36ba2c05344390896fe2dcbb898189 | false | 2018-01-19T16:35:06.010Z | | |

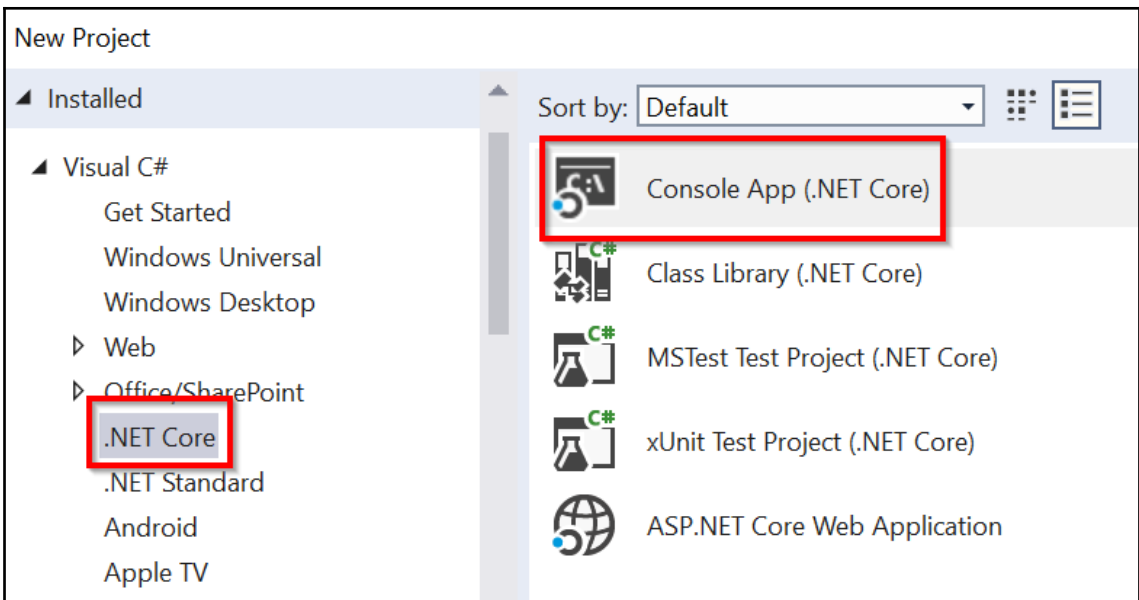
| EventType | ExecutionId | IsPlayed | _Timestamp | Input | Name |
|-----------------------|----------------------------------|----------|--------------------------|-------|--------------------------------|
| TaskScheduled | cf36ba2c05344390896fe2dcbb898189 | false | 2018-01-19T16:42:23.523Z | | CreateBARCodeImagesPerCustomer |
| OrchestratorStarted | cf36ba2c05344390896fe2dcbb898189 | false | 2018-01-19T16:34:56.005Z | | |
| TaskScheduled | cf36ba2c05344390896fe2dcbb898189 | false | 2018-01-19T16:35:06.009Z | | GetAllCustomers |
| OrchestratorCompleted | cf36ba2c05344390896fe2dcbb898189 | false | 2018-01-19T16:35:06.010Z | | |
| OrchestratorStarted | cf36ba2c05344390896fe2dcbb898189 | false | 2018-01-19T16:41:51.507Z | | |
| TaskCompleted | cf36ba2c05344390896fe2dcbb898189 | true | 2018-01-19T16:41:50.516Z | | |
| ExecutionStarted | cf36ba2c05344390896fe2dcbb898189 | true | 2018-01-19T16:34:46.159Z | null | GenerateBARCode |
| TaskScheduled | cf36ba2c05344390896fe2dcbb898189 | false | 2018-01-19T16:42:23.523Z | | CreateBARCodeImagesPerCustomer |
| TaskScheduled | cf36ba2c05344390896fe2dcbb898189 | false | 2018-01-19T16:42:23.523Z | | CreateBARCodeImagesPerCustomer |
| TaskScheduled | cf36ba2c05344390896fe2dcbb898189 | false | 2018-01-19T16:42:23.523Z | | CreateBARCodeImagesPerCustomer |
| TaskScheduled | cf36ba2c05344390896fe2dcbb898189 | false | 2018-01-19T16:42:23.523Z | | CreateBARCodeImagesPerCustomer |

WEBSITE_CONTENTSHARE mydurablefunction8c72

Chapter 08: Bulk Import of Data Using Azure Durable Functions and Cosmos DB



| Emp Id | Name | Email | PhoneNumber |
|--------|----------|--|-------------|
| 1 | Vijay | Vijay@vijay.com | 1111111111 |
| 2 | Vivek | Vivek@vivek.com | 2222222222 |
| 3 | Vineesha | vineesha@vineesha.com | 3333333333 |
| 4 | Praveen | Praveen@praveen.com | 4444444444 |
| 5 | Nishit | nishit@nishit.com | 5555555555 |
| 6 | Ragi | ragi@ragi.com | 6666666666 |
| 7 | Uma | uma@uma.com | 7777777777 |
| 8 | Harsha | harsha@harsha.com | 8888888888 |



```
appsettings.json
```

Schema: <http://json.schemastore.org/appsettings>

```
1 {
2   "ConnectionStrings": {
3     "StorageConnection":
4       "DefaultEndpointsProtocol=https;AccountName=azurefunctions[REDACTED];AccountKey=TxhVtYr4aFPg7VbRjLwiU85JXqsU28yP[REDACTED];EndpointSuffix=core.windows.net"
5   }
6 }
```

Properties

appsettings.json File Properties

Advanced

| | |
|--------------------------|---------------|
| Build Action | None |
| Copy to Output Directory | Copy if newer |
| Custom Tool | |
| Custom Tool Namespace | |

Misc

| | |
|-----------|-------------------|
| File Name | appsettings.json |
| Full Path | C:\Users\vmadmin\ |

```
Successfully Uploaded.
Press any key to continue . . .
```

Home > Storage accounts > azurefunctioncookbooks - Blobs > excelimports

excelimports
Container

Overview

Access Control (IAM)

Settings

- Access policy
- Properties
- Metadata

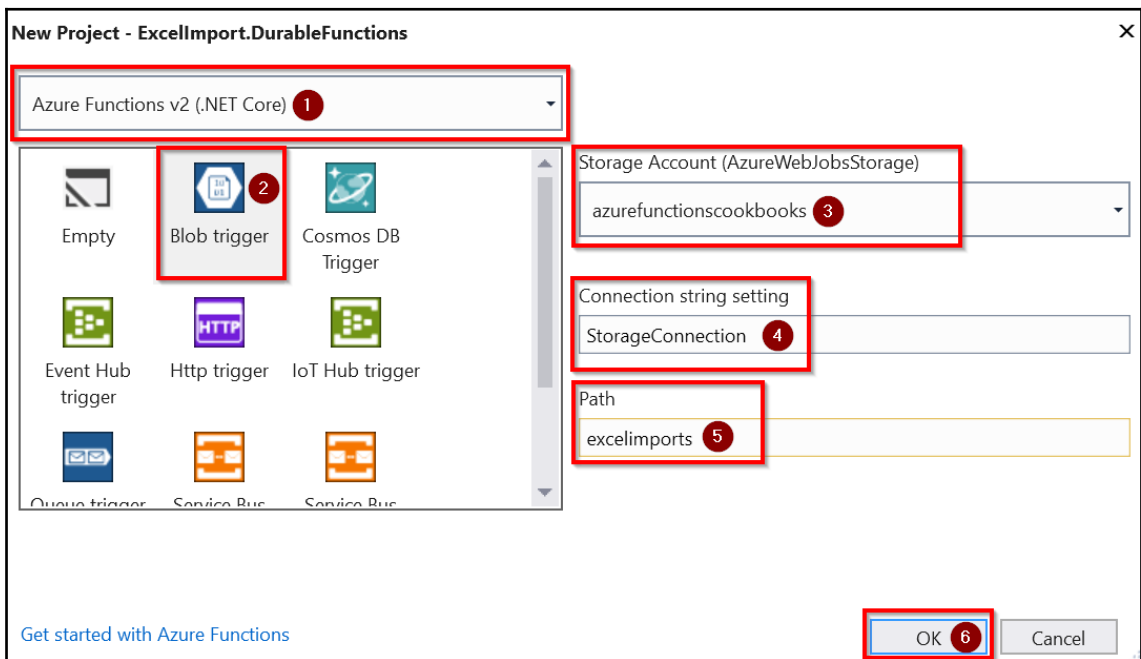
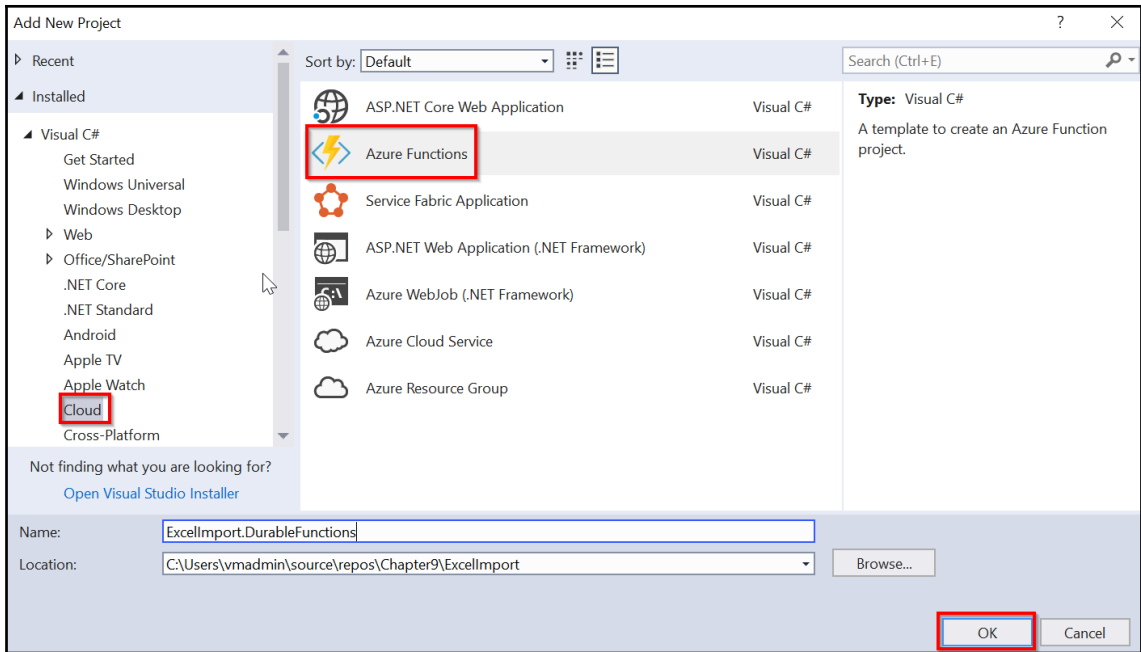
Upload Refresh Delete Acquire lease Break lease View

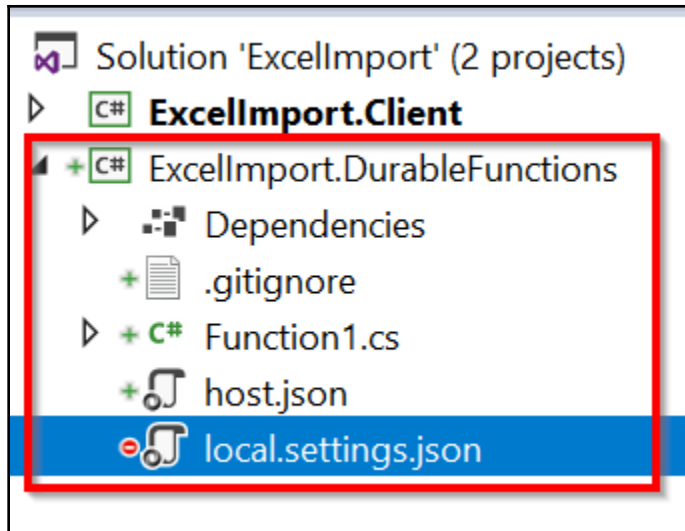
Azure now supports using Role-Based Access Control (RBAC) to manage access to blobs. Learn

Location: excelimports

Search blobs by prefix (case-sensitive)

| NAME | MODIFIED |
|--|------------------------|
| EmployeeInformation407be2ea-7f9d-486e-a53d-1468885b... | 10/31/2018, 1:50:30 PM |





```

local.settings.json
Schema: <No Schema Selected>
1  {
2  "IsEncrypted": false,
3  "Values": {
4  "AzureWebJobsStorage":
    "DefaultEndpointsProtocol=https;AccountName=azurefunctionscookbooks;AccountKey=7xh97TtF+LefP67Vh3Lud409112QaU2BpRf3C6M7PwQ2v8v8aQe/
    wS9pM21E3044L2P411L1+3065pC6k8u=;BlobEndpoint=https://azurefunctionscookbooks.blob.core.windows.net/;TableEndpoint=https://
    azurefunctionscookbooks.table.core.windows.net/;QueueEndpoint=https://azurefunctionscookbooks.queue.core.windows.net/;FileEndpoint=https://
    azurefunctionscookbooks.file.core.windows.net/",
5  "FUNCTIONS_WORKER_RUNTIME": "dotnet",
6  "StorageConnection":
    "DefaultEndpointsProtocol=https;AccountName=azurefunctionscookbooks;AccountKey=7xh97TtF+LefP67Vh3Lud409112QaU2BpRf3C6M7PwQ2v8v8aQe/
    wS9pM21E3044L2P411L1+3065pC6k8u=;EndpointSuffix=core.windows.net"
7  }
8  }

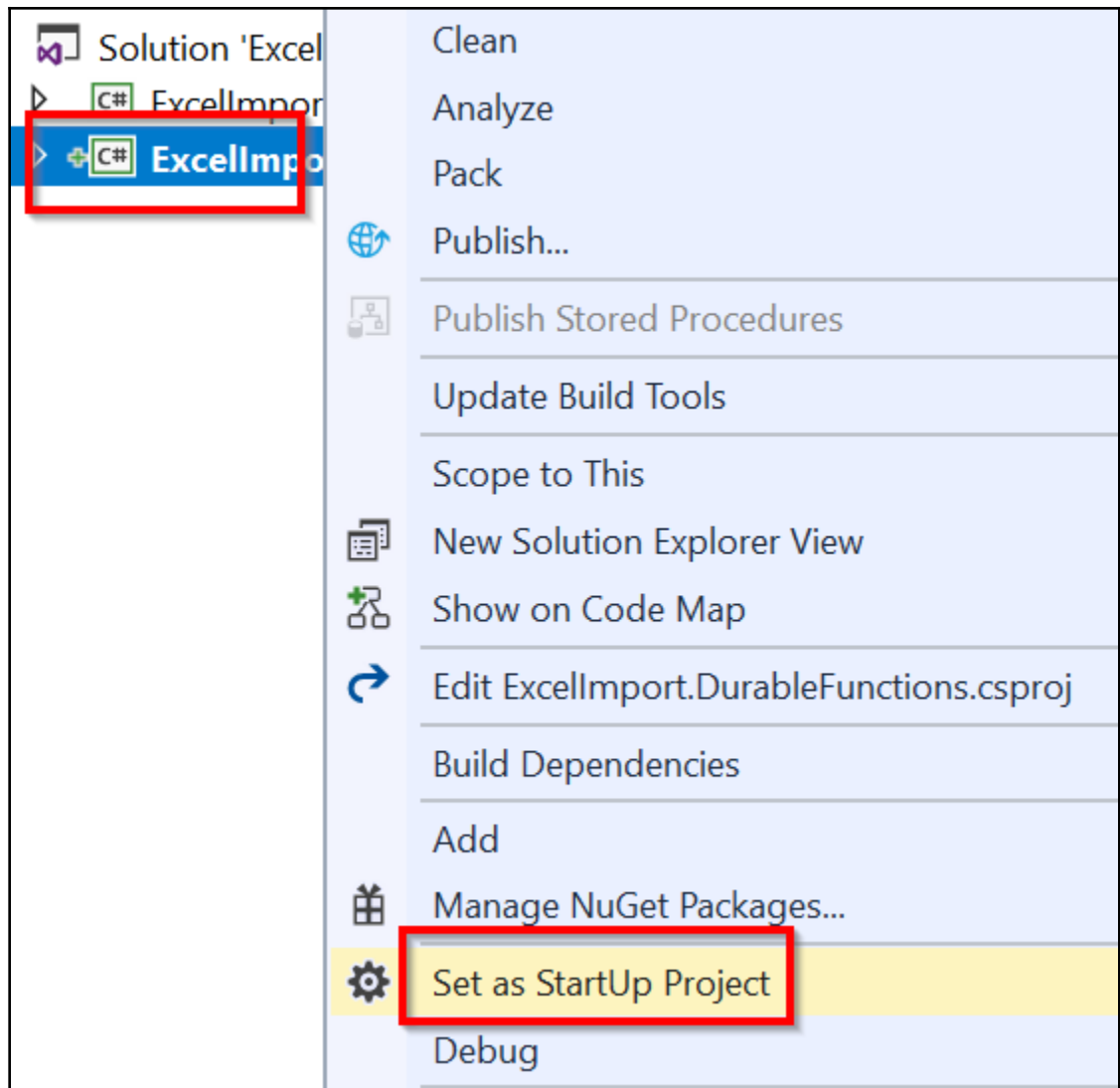
```

```

ExcellImportBlobTrigger.cs
ExcelImport.DurableFunctions
using Microsoft.Azure.WebJobs;
using Microsoft.Azure.WebJobs.Host;
using Microsoft.Extensions.Logging;

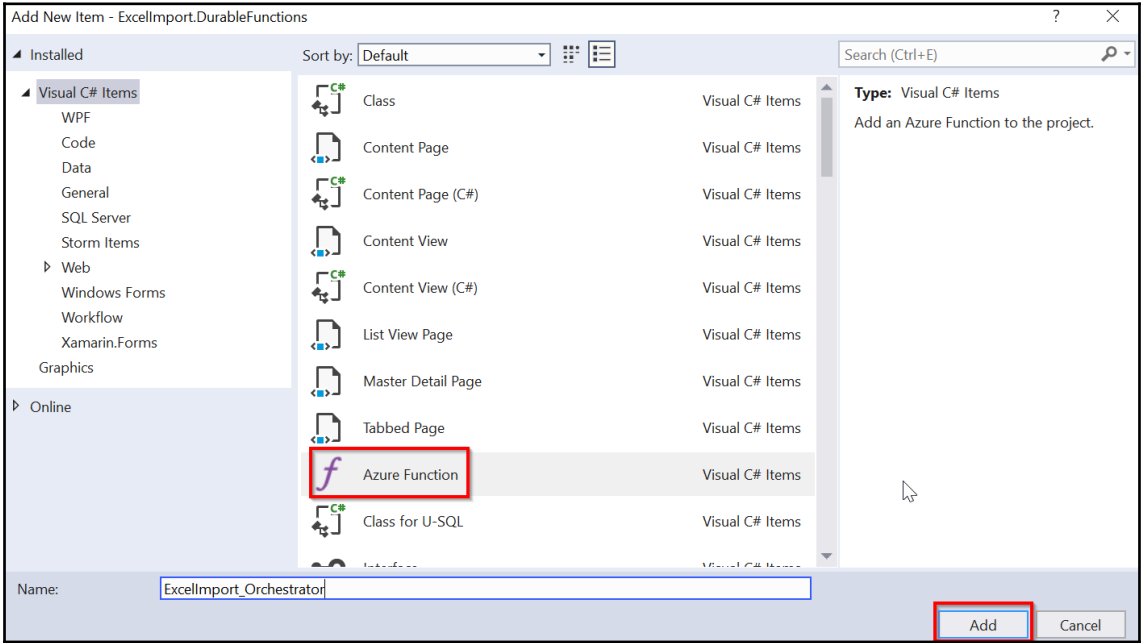
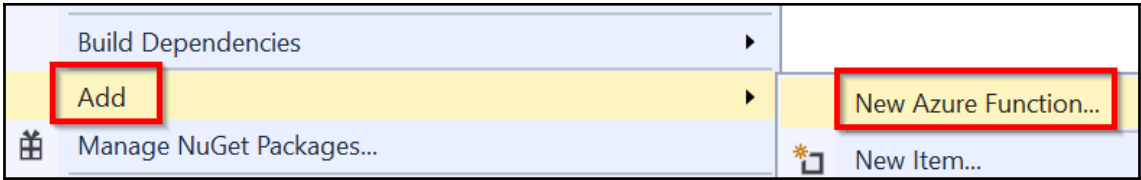
namespace ExcelImport.DurableFunctions
{
    0 references | 0 changes | 0 authors, 0 changes
    public static class ExcelImportBlobTrigger
    {
    9  [FunctionName("ExcelImportBlobTrigger")]
    10 public static void Run([BlobTrigger("excelimports/{name}"), Connection =
        "StorageConnection")]Stream myBlob, string name, ILogger log)
    11 {
    12     log.LogInformation($"C# Blob trigger function Processed blob\n Name:{name}
        \n Size: {myBlob.Length} Bytes");
    13 }
    14 }
    15 }
    16 }

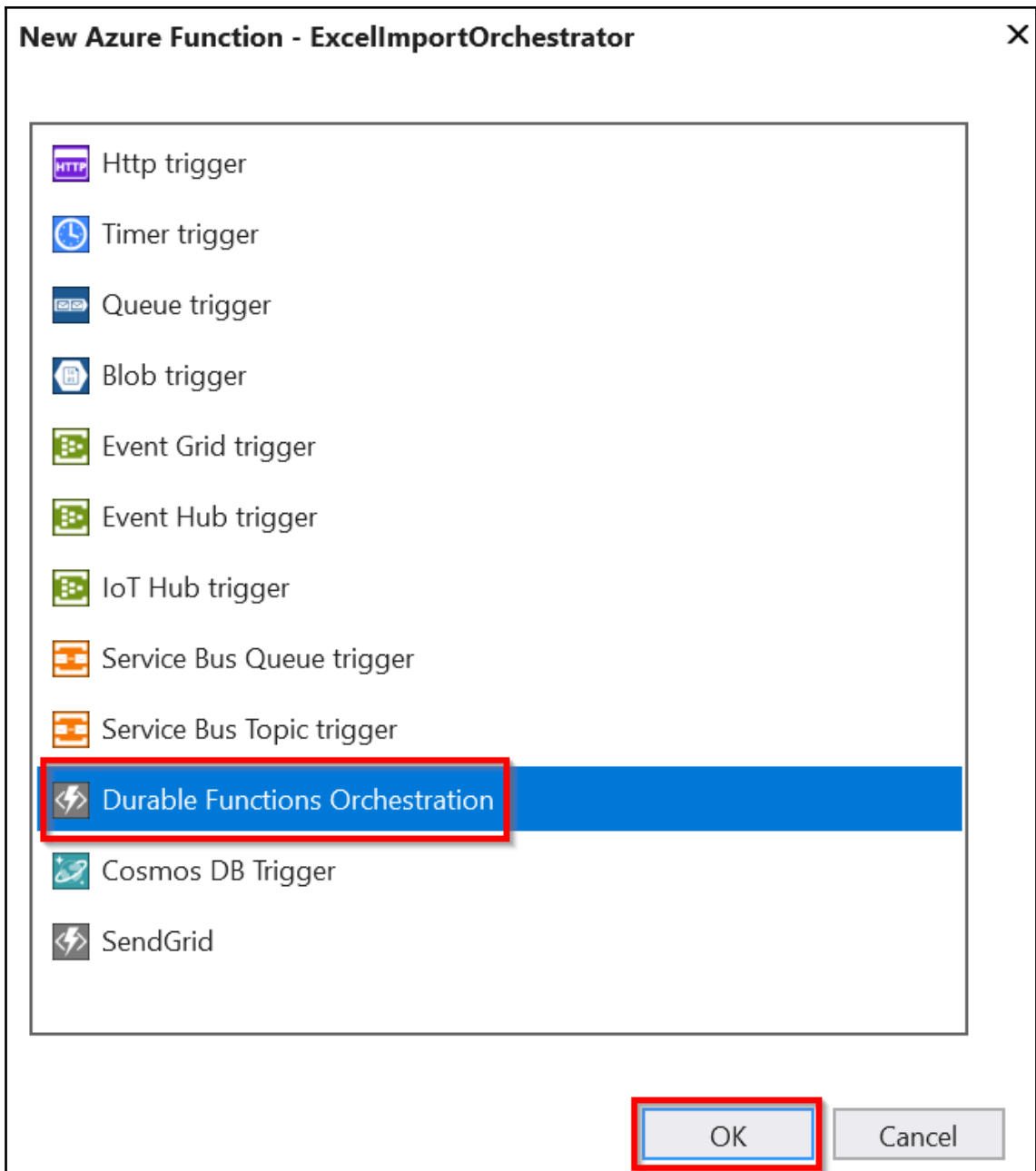
```

```
C:\Users\vmadmin\AppData\Local\AzureFunctionsTools\Releases\2.10.1\cli\func.exe
[10/31/2018 3:37:55 PM] Reading host configuration file 'C:\Users\vmadmin\source\repos\Chapte
DurableFunctions\bin\Debug\netcoreapp2.1\host.json'
[10/31/2018 3:37:55 PM] Host configuration file read:
[10/31/2018 3:37:55 PM] {
[10/31/2018 3:37:55 PM]   "version": "2.0"
[10/31/2018 3:37:55 PM] }
[10/31/2018 3:37:56 PM] Initializing Host.
[10/31/2018 3:37:56 PM] Host initialization: ConsecutiveErrors=0, StartupCount=1
[10/31/2018 3:37:56 PM] Starting JobHost
[10/31/2018 3:37:57 PM] Starting Host (HostId=vm2017-1617097310, InstanceId=4f084e09-c991-42e
n=2.0.12134.0, ProcessId=15724, AppDomainId=1, Debug=False, FunctionsExtensionVersion=)
[10/31/2018 3:37:57 PM] Loading functions metadata
[10/31/2018 3:37:57 PM] 1 functions loaded
[10/31/2018 3:37:57 PM] Generating 1 job function(s)
[10/31/2018 3:37:57 PM] Found the following functions:
[10/31/2018 3:37:57 PM] ExcelImport.DurableFunctions.ExcelImportBlobTrigger.Run
[10/31/2018 3:37:57 PM]
[10/31/2018 3:37:57 PM] Host initialized (732ms)
[10/31/2018 3:38:01 PM] Host started (4664ms)
[10/31/2018 3:38:01 PM] Job host started
Hosting environment: Production
Content root path: C:\Users\vmadmin\source\repos\Chapter9\ExcelImport\ExcelImport.DurableFunc
.1
Now listening on: http://0.0.0.0:7071
Application started. Press Ctrl+C to shut down.
Listening on http://0.0.0.0:7071/
Hit CTRL-C to exit...
```

```
[10/31/2018 3:37:57 PM] Loading functions metadata
[10/31/2018 3:37:57 PM] 1 functions loaded
[10/31/2018 3:37:57 PM] Generating 1 job function(s)
[10/31/2018 3:37:57 PM] Found the following functions:
[10/31/2018 3:37:57 PM] ExcelImport.DurableFunctions.ExcelImportBlobTrigger.Run
[10/31/2018 3:37:57 PM]
[10/31/2018 3:37:57 PM] Host initialized (732ms)
[10/31/2018 3:38:01 PM] Host started (4664ms)
[10/31/2018 3:38:01 PM] Job host started
Hosting environment: Production
Content root path: C:\Users\vmadmin\source\repos\Chapter9\ExcelImport\ExcelImport.DurableFunctions\bin\Debug\netcoreapp2
.1
Now listening on: http://0.0.0.0:7071
Application started. Press Ctrl+C to shut down.
Listening on http://0.0.0.0:7071/
Hit CTRL-C to exit...
[10/31/2018 3:38:07 PM] Executing 'ExcelImportBlobTrigger' (Reason='New blob detected: excelimports/EmployeeInformation4
97be2ea-7f9d-486e-a53d-1468885bc03b', Id=aa52d1dd-b538-4e8d-95c3-c2e873ab743c)
```

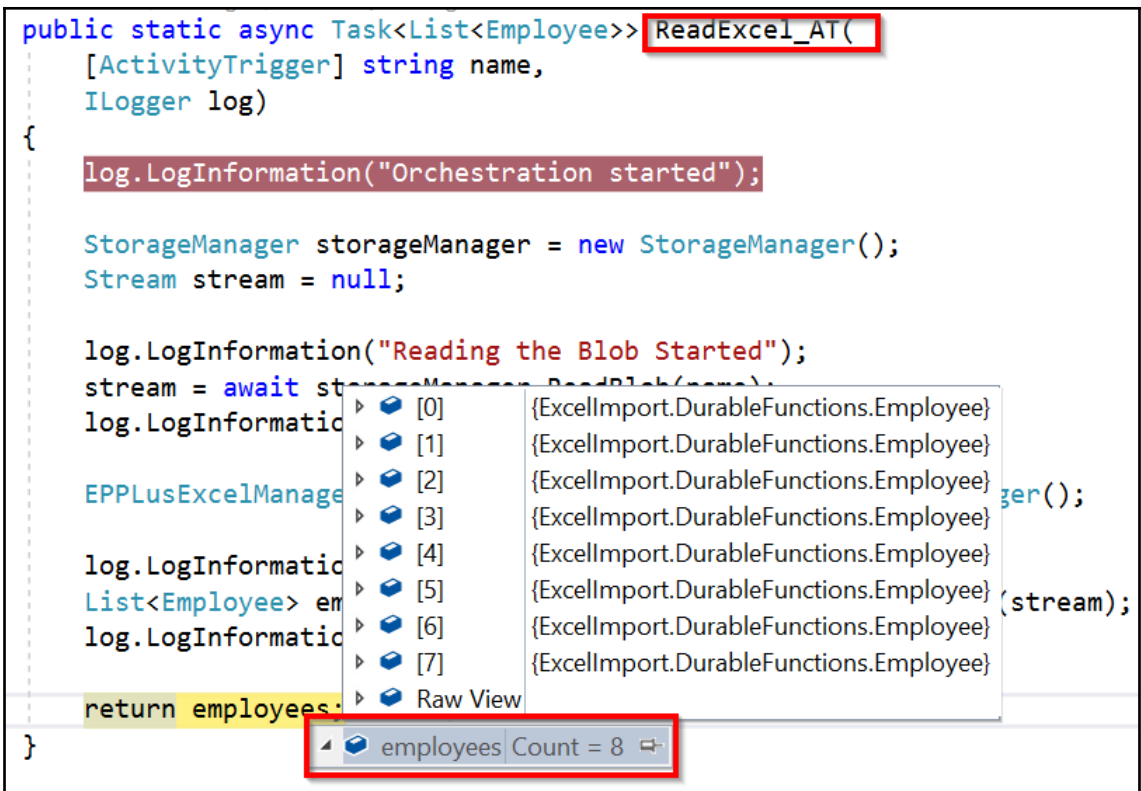




```
ExcelImport_Orchestrator.cs  ExcelImportBlobTrigger.cs
ExcelImport.DurableFunctions  ExcelImport.DurableFunctions.ExcelImport_Orchestrator  RunOrchestrator(
10  {
11      0 references | 0 changes | 0 authors, 0 changes
12      public static class ExcelImport_Orchestrator
13      {
14          [FunctionName("ExcelImport_Orchestrator")]
15          0 references | 0 changes | 0 authors, 0 changes
16          public static async Task<List<string>> RunOrchestrator(
17              [OrchestrationTrigger] DurableOrchestrationContext context)
18          {
19              var outputs = new List<string>();
20
21              // Replace "hello" with the name of your Durable Activity Function.
22              outputs.Add(await context.CallActivityAsync<string>("ExcelImport_Orchestrator_Hello", "Tokyo"));
23              outputs.Add(await context.CallActivityAsync<string>("ExcelImport_Orchestrator_Hello", "Seattle"));
24              outputs.Add(await context.CallActivityAsync<string>("ExcelImport_Orchestrator_Hello", "London"));
25
26              // returns ["Hello Tokyo!", "Hello Seattle!", "Hello London!"]
27              return outputs;
28          }
29      }
30  }
```

```
local.settings.json  TriggeredFunctionExecutor.cs
Schema: <No Schema Selected>
1  {
2      "IsEncrypted": false,
3      "Values": {
4          "AzureWebJobsStorage":
5              "DefaultEndpointsProtocol=https;AccountName=azurefunctionscookbooks;AccountKey=TxhVTtYr4fPG7VbRjLwU35JXQsU2By9I9CM43pUTCDDRDvtqJss8zsQe/
6              d3zXdZE336X1EFiLVId5zCkBw==;BlobEndpoint=https://azurefunctionscookbooks.blob.core.windows.net;/TableEndpoint=https://
7              azurefunctionscookbooks.table.core.windows.net;/QueueEndpoint=https://azurefunctionscookbooks.queue.core.windows.net;/FileEndpoint=https://
8              azurefunctionscookbooks.file.core.windows.net/";
9          "FUNCTIONS_WORKER_RUNTIME": "dotnet";
10         "StorageConnection":
11             "DefaultEndpointsProtocol=https;AccountName=azurefunctionscookbooks;AccountKey=TxhVTtYr4fPG7VbRjLwU35JXQsU2By9I9CM43pUTCDDRDvtqJss8zsQe/
12             d3zXdZE336X1EFiLVId5zCkBw==;EndpointSuffix=core.windows.net"
13     }
14 }
15 }
```

```
public static async Task<List<Employee>> ReadExcel_AT(  
    [ActivityTrigger] string name,  
    ILogger log)  
{  
    log.LogInformation("Orchestration started");  
  
    StorageManager storageManager = new StorageManager();  
    Stream stream = null;  
  
    log.LogInformation("Reading the Blob Started");  
    stream = await storageManager.ReadBlob(name);  
    log.LogInformation("Blob Read Completed");  
  
    EPPlusExcelManager excelManager = new EPPlusExcelManager(log);  
    log.LogInformation("Excel Read Started");  
    List<Employee> employees = excelManager.ReadExcel(stream);  
    log.LogInformation("Excel Read Completed");  
  
    return employees;  
}
```



The screenshot shows a Visual Studio code editor with a C# method named `ReadExcel_AT`. The method signature is `public static async Task<List<Employee>> ReadExcel_AT([ActivityTrigger] string name, ILogger log)`. The method body contains several logging statements and a call to `storageManager.ReadBlob(name)` to get a `Stream`. It then uses `EPPlusExcelManager` to read the Excel data from the stream into a `List<Employee>` named `employees`. The `return employees;` line is highlighted in yellow. A debugger window is open over the `employees` variable, showing a list of 8 objects of type `ExcelImport.DurableFunctions.Employee`. The debugger window also shows a summary bar for the `employees` variable with the text `employees Count = 8`.

Add Collection ✕

* Database id ⓘ
 Create new Use existing
cookbookdb ▼

* Collection Id ⓘ
EmployeeCollection

* Storage capacity ⓘ
Fixed (10 GB) Unlimited

* Throughput (400 - 10,000 RU/s) ⓘ
400 - +

Estimated spend (USD): \$0.032 hourly / \$0.77 daily.
Choose unlimited storage capacity for more than 10,000 RU/s.

Unique keys ⓘ
+ Add unique key

OK

```
local.settings.json
Schema: <No Schema Selected>
1 {
2   "IsEncrypted": false,
3   "Values": {
4     "AzureWebJobsStorage":
5       "DefaultEndpointsProtocol=https;AccountName=azurefunctioncookbooks;AccountKey=TWmTfYr4g4F9E7V9K0LwJ0S1aQz6L3By80K0M4pJtCT0A0FngIz6B1tQm/
6       dJ2AZ0Z336K1CF1ELV1005ZCK0w==;BlobEndpoint=https://azurefunctioncookbooks.blob.core.windows.net;/TableEndpoint=https://
7       azurefunctioncookbooks.table.core.windows.net;/QueueEndpoint=https://azurefunctioncookbooks.queue.core.windows.net/";
8     "FUNCTIONS_WORKER_RUNTIME": "dotnet",
9     "StorageConnection":
10      "DefaultEndpointsProtocol=https;AccountName=azurefunctioncookbooks;AccountKey=TWmTfYr4g4F9E7V9K0LwJ0S1aQz6L3By80K0M4pJtCT0A0FngIz6B1tQm/
11      dJ2AZ0Z336K1CF1ELV1005ZCK0w==;EndpointSuffix=core.windows.net";
12    },
13   "ConnectionStrings": {
14     "StorageConnection":
15      "DefaultEndpointsProtocol=https;AccountName=azurefunctioncookbooks;AccountKey=TWmTfYr4g4F9E7V9K0LwJ0S1aQz6L3By80K0M4pJtCT0A0FngIz6B1tQm/
16      dJ2AZ0Z336K1CF1ELV1005ZCK0w==;EndpointSuffix=core.windows.net";
17     "CosmosDBConnectionString": "AccountEndpoint=https://
18     azurefunctioncookbooks.documents.azure.com:443/;AccountKey=8f88g11eM7Sp24f8u1J0R7T5r0Dm0f8r1U0V14885A2130L30Kagz0UR3C0p0raF138j11AMPVAr1
19     9g==;"
20   }
21 }
```

Home > azurefunctioncookbooks - Data Explorer

azurefunctioncookbooks - Data Explorer

Azure Cosmos DB account

Search (Ctrl+)

- Overview
- Activity log
- Access control (IAM)
- Tags
- Diagnose and solve proble...
- Quick start
- Data Explorer**
- Notifications
- Settings
 - Replicate data globally

SQL API

- cookbookdb
 - EmployeeCollection
 - Documents
 - Scale & Settings**
 - Stored Procedures
 - User Defined Functions
 - Triggers

Scale & Setti... x

Save Discard

Scale

Storage capacity
Fixed

Throughput (400 - 10,000 RU/s)
500

Estimated spend (USD): \$0.040 hourly / \$0.96 daily.

Settings

SQL API

Scale & Setti... Documents x

New Document Update Discard Delete

cookbookdb

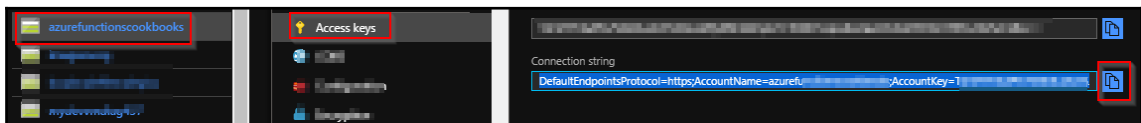
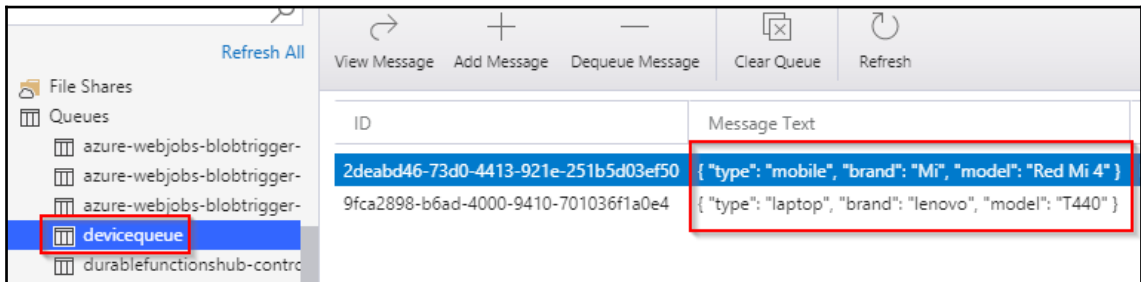
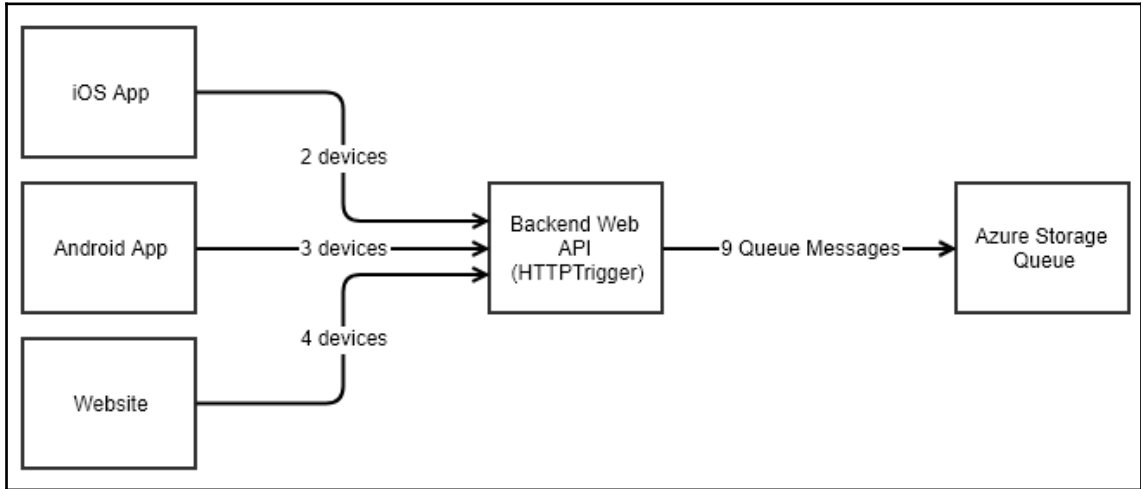
- EmployeeCollection
 - Documents
 - Scale & Settings
 - Stored Procedures
 - User Defined Functions
 - Triggers

SELECT * FROM c Edit Filter

| id |
|--------------------------------------|
| 49fbae3d-1909-4a4e-ae56-7d43431b... |
| 830c492e-28d5-4b5d-8cac-0566b644... |
| 385102f6-174e-44cd-895e-2cc01c06... |
| 41da8cc3-4506-45c1-ac4d-b52b56bf... |
| 0fc67bc9-3740-4ae0-91ac-fb614a8f6... |
| 73d08e6f-47dd-48a1-917a-e44c875b... |
| 1d998bc3-29e3-4345-8580-515f9aa7... |
| 68743e6b-2694-40da-afc8-aa41c87f1... |

```
1 {
2   "EmpId": "3",
3   "Name": "Vineesha",
4   "Email": "vineesha@vineesha.com",
5   "PhoneNumber": "3333333333",
6   "id": "385102f6-174e-44cd-895e-2cc01c063126",
7   "_rid": "fNQ8APABoUIDAAAAAAAAAA=",
8   "_self": "dbs/fNQ8AA=/colls/fNQ8APABoUI=/docs/fNQ8APABoUIDAAAAAAAAAA=/",
9   "_etag": "\"00004847-0000-0000-0000-5bdb1a440000\"",
10  "_attachments": "attachments/",
11  "_ts": 1541085764
12 }
```

Chapter 09: Implementing Best Practices for Azure Functions



Azure Queue Storage trigger ✕ delete

Message parameter name ⓘ

Queue name ⓘ

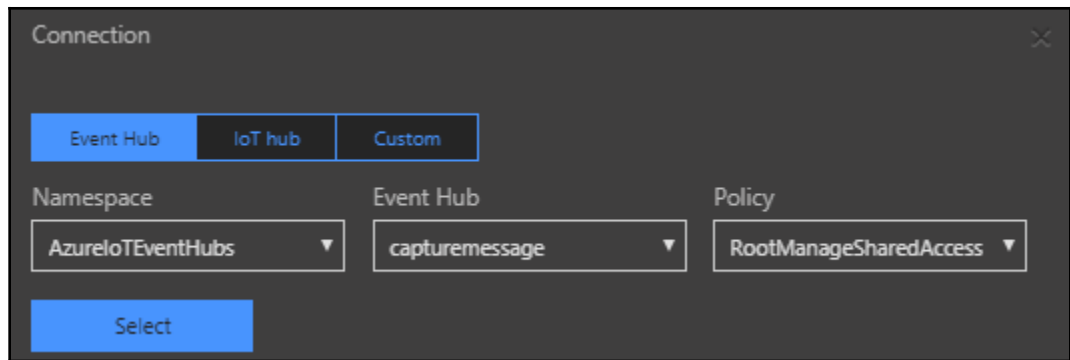
Storage account connection ⓘ show value

new

Navigation pane showing storage accounts and queues. The queue `myqueuemessages-poison` is highlighted with a red box.

| ID | Message Te |
|--------------------------------------|------------|
| edf51243-5857-4cf4-afd7-2f92b9be3f2d | 70 |
| 32946370-8667-401f-a01f-5d1c03b71472 | 52 |
| 04ada314-9e31-4bea-9e6c-0c8621cd743b | 53 |
| d7c46ef7-37aa-4172-ab2f-2c9672edd544 | 56 |
| e4aff6bb-cbb6-44f1-b22b-a3be302bb4f5 | 54 |
| 88c39a0f-37e1-46d8-bbaf-c704eb590bc1 | 55 |
| cecfe6ce-7964-470b-8a6e-3e6fcc8c8a41 | 57 |
| 51f89d3a-838a-42de-b691-133dc2ea04af | 58 |
| cf8b68d4-5a05-4643-93ee-4a0131358a6b | 60 |
| 58f3d7d4-f68b-4f6f-9243-0798d45dc75c | 59 |
| 75f941eb-9c76-4ff5-b921-610624af1275 | 61 |
| bc5e50a8-7547-4605-8dba-3322c83076d4 | 63 |
| 56632e73-f8a7-4d7f-a5a2-764016d475c8 | 62 |
| ee55a490-77ce-4632-9e62-d679080d94fb | 66 |
| e7bf0a18-5e08-4074-aa90-ca506dbb855b | 64 |
| -- | -- |

Showing 32 of 50 messages in queue



```
C:\WINDOWS\system32\cmd.exe
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
Press any key to continue . . .
```

Timer trigger

New Function

Name:

Timer trigger

Schedule ⓘ

https://azurefunction... x + No Environment

POST

https://azurefunctioncookbook.azurewebsites.net/api/HttpTrigger-Authorization?name=Praveen Sreeram&code=vbbwhyP4Ta3SNpWJl1XmH/VK0MC/Z08VLTxYNHKab1dFxyfayKJKg==

POST

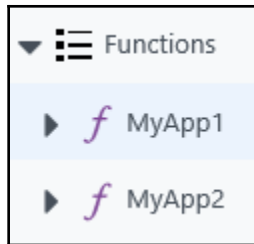
Authorization **Headers (2)** Body Pre-request Script Tests Code

| Key | Value | Bulk Edit | Presets |
|---|---|-----------|---------|
| <input checked="" type="checkbox"/> Content-Type | application/json | | |
| <input checked="" type="checkbox"/> x-functions-key | 1gg0UjIa3i9H3crOMWIAexR58saH691JBHraaK1AJjrQKjJM6WkaA== | | |
| <input type="checkbox"/> New key | value | | |

Body Cookies Headers (11) Tests Status: 200 OK Time: 1764 ms

Pretty Raw Preview JSON

```
1 "Hello Praveen Sreeram"
```



Function Keys

| NAME | VALUE |
|---------|--------------------------------|
| default | Q5KfqD7wRS1zJBsN0ZvmePNjsQZ... |

Add new function key

Host Keys (All functions)

| NAME | VALUE |
|---------|-----------------------------|
| _master | LMBAO482Zm61Ag0bXckG/KC... |
| default | aD6KDCDww9zWIYBVt7UXMuak... |

Add new host key

Function Keys

| NAME | VALUE | ACTIONS |
|---------|---------------|---------|
| default | Click to show | Copy |

Add new function key

Host Keys (All functions)

| NAME | VALUE | ACTIONS |
|---------|-----------------------------|---------|
| _master | LMBAO482Zm61Ag0bXckG/K0a... | Copy |
| default | aD6KDCDww9zWIYBVt7UXMuak... | Copy |

Add new host key

AzureFunctionCookBookV2
Registered app

Settings Manifest Delete

| | |
|--|---|
| Display name AzureFunctionCookBookV2 | Application ID 9fe93421-4680-4651-a202-39c5b3ce5ee5 |
| Application type Web app / API | Object ID 182d50fe-5a3e-4973-8cd4-4d9e7f5e52fc |
| Home page https://azurefunctioncookbookv2.azurewe... | Managed application in local directory AzureFunctionCookBookV2 |

- + Create a resource
- All services
- FAVORITES
- Azure Active Directory

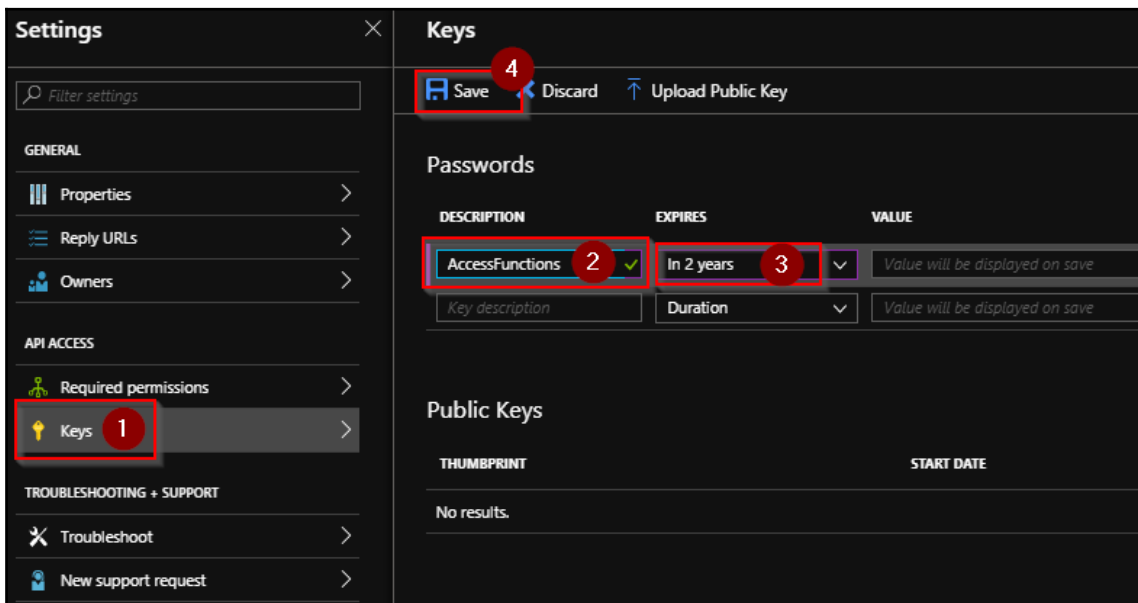
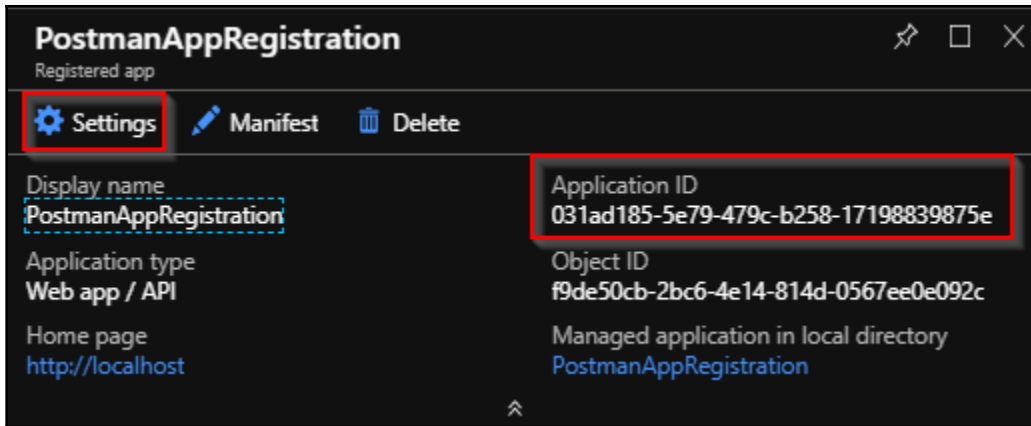
Create

* Name ⓘ
PostmanAppRegistration ✓

Application type ⓘ
Web app / API

* Sign-on URL ⓘ
<http://localhost> ✓

Create



POST Params

Authorization Headers (1) Body Pre-request Script Tests

| Key | Value | Description |
|---|--|-------------|
| <input checked="" type="checkbox"/> Authorization | bearer | |
| <input type="text" value="New key"/> | eyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI1NiIsIng1dCI6Imk2bEdrM0ZaenhSY1ViMkMzbkVRN3N5EpsWSlsmtpZCI6Imk2bEdrM0ZaenhSY1ViMkMzbkVRN3N5EpsWSj9.eyJhdWQiOiJ57mlU5MzQyMS00NiJwLjQ2NTEyYjIwMi0zOWM1YjNjZTVlZTUuIlCjpc3MiOiJodHRwczovLzN0cy53aW5kb3dzLm51dC84ZWY3YjYxZi04OGFhLTQ0NzgtOGVhYi1kOGVhYWQ1NzEwZTcvIiwiaWF0IjoxNTM5NTAyMDMwLCJ1YmYiOiJlMzk1MDIwMzAsImV4cCI6MTUzOTUwNTk1MCwiYWVlIjoiaWVjoiNjI1IGREtYSkZobE9rdDhkb05YUk8vTHN4YUFRQT0iLCJhcHBpZCI6IjAzMWFkMTg1LTVINzktNDc5Yy1iMjU4LTE3Mk40DM5ODc1ZSIsImFwcGlkYWN0IjoiaWVjoiMSIsImkkaCI6Imh0dHBzOi8vc3RzLndpbmRvd3MubmV0LzhZjdiNjFmLTg4YWEtNDQ3OC04ZWRLWQ4ZWZhZDU3MTRBNy8iLCJvaWQ | |

Body Cookies Headers (8) Test Results

1 Hello, Praveen Sreeram

TVIZTUuILCjpc3MiOiJodHRwczovLzN0cy53aW5kb3dzLm51dC84ZWY3YjYxZi04OGFhLTQ0NzgtOGVhYi1kOGVhYWQ1NzEwZTcvIiwiaWF0IjoxNTM5NTAyMDMwLCJ1YmYiOiJlMzk1MDIwMzAsImV4cCI6MTUzOTUwNTk1MCwiYWVlIjoiaWVjoiNjI1IGREtYSkZobE9rdDhkb05YUk8vTHN4YUFRQT0iLCJhcHBpZCI6IjAzMWFkMTg1LTVINzktNDc5Yy1iMjU4LTE3Mk40DM5ODc1ZSIsImFwcGlkYWN0IjoiaWVjoiMSIsImkkaCI6Imh0dHBzOi8vc3RzLndpbmRvd3MubmV0LzhZjdiNjFmLTg4YWEtNDQ3OC04ZWRLWQ4ZWZhZDU3MTRBNy8iLCJvaWQ

API Management service

* Name
Azurecookbook ✓
.azure-api.net

* Subscription
Visual Studio Enterprise – MPN

* Resource group
AzureFunctionCookBooks
[Create new](#)

* Location
West US 2

* Organization name ⓘ
Azurecookbook ✓

* Administrator email ⓘ
[Redacted]

Pricing tier [View full pricing details](#)
Developer (No SLA)

[Create](#) [Automation options](#)



API Management services

Showing 1 of 1 items (1 page)

 Add  Edit columns  Refresh |  Assign tags

Subscriptions: Visual Studio Enterprise – MPN – Don't see a subscription? [Open Directory](#) + [Subscription settings](#)

1 items

| <input type="checkbox"/> | NAME | STATUS | TIER | LOCATION |
|--------------------------|---|--|-----------|-----------|
| <input type="checkbox"/> |  Azurecookbook |  Online | Developer | West US 2 |

Import Azure Functions

API Management service

i Don't see an Azure Function? Azure API Management requires Azure Functions to use the HTTP trigger and Function or Anonymous authorization level setting.

* Function App ➤
AzureFunctionCookBookV2

Search to filter items...

| <input type="checkbox"/> | NAME | HTTP METHODS | URL TEMPLATE |
|-------------------------------------|------------------------------|--------------|------------------------------|
| <input type="checkbox"/> | BulkDeviceRegistrations | GET, POST | BulkDeviceRegistrations |
| | HttpTriggerCSharp1 | GET, POST | HttpTriggerCSharp1 |
| <input checked="" type="checkbox"/> | HttpTriggerTestUsingPost... | GET, POST | HttpTriggerTestUsingPost... |
| | MyApp1 | GET, POST | MyApp1 |
| | MyApp2 | GET, POST | MyApp2 |
| | RegisterUser | GET, POST | RegisterUser |
| | SaveJSONToSQLAzureData... | GET, POST | SaveJSONToSQLAzureData... |
| <input type="checkbox"/> | ValidateTwitterFollowerCo... | POST | ValidateTwitterFollowerCo... |

Select

Create from Function App

Basic | Full

* Function App

* Display name

* Name

API URL suffix

The screenshot displays the Azure API Management console for 'Azurecookbook - APIs'. The left sidebar shows navigation options like Overview, Activity log, and API Management. The main area is divided into several sections:

- All APIs:** A list of APIs with 'AzureFunctionCookBook...' highlighted and circled in red with a '1'.
- All operations:** A list of operations with 'GET HttpTriggerTestU...' highlighted and circled in red with a '2'.
- Design tab:** Shows the 'Frontend' configuration. The 'Inbound processing' section is expanded, showing a 'Policies' area with a 'base' policy and a red box containing '</>' circled with a '3'.

```
AzureFunctionCookBookV2 > HttpTriggerTestUsingPostman > Policies
1  <policies>
2  |   <inbound>
3  |   |   <base />
4  |   |   <rate-limit-by-key calls="1" renewal-period="60"
5  |   |   |   counter-key="@context.Request.IpAddress" />
6  |   |   </inbound>
7  |   <backend>
8  |   |   <base />
9  |   </backend>
10 |   <outbound>
11 |   |   <base />
12 |   </outbound>
13 |   <on-error>
14 |   |   <base />
15 |   </on-error>
16 </policies>
```

Save Discard

Publisher portal Developer portal

REVISION 1 UPDATED Oct 13, 2018, 7:28:33 PM

Design Settings Test Revisions Change log

web service URL

* URL scheme HTTP HTTPs Both

API URL suffix

Base URL

Tags PREVIEW

Products

Security

User authorization None OAuth 2.0 OpenID connect

Diagnostics Logs

Save Discard

Message Trace

HTTP/1.1 200 OK

date: Sat, 13 Oct 2018 14:06:16 GMT
content-encoding: gzip
x-powered-by: ASP.NET
vary: Accept-Encoding, Origin
ocp-apim-trace-location: https://apimgmtst
&sr=b&sig=bqn1GZTGhLE5nF6rqjwiHnar%2Bv8Erg
content-type: text/plain; charset=utf-8
content-length: 138

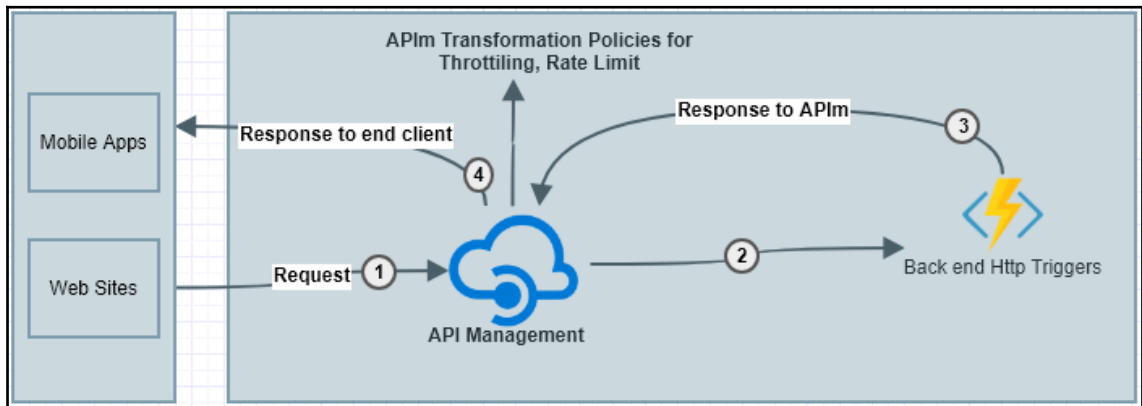
Hello, Praveen Sreeram

Send


```
Message Trace
HTTP/1.1 429 Too many requests

date: Sat, 13 Oct 2018 14:18:39 GMT
vary: Origin
ocp-apim-trace-location: https://apimgmtstdfazhln6s4bo5hx.blob.cor
&sr=b&sig=inKK2gAuB%2BXhhPP5131X%2B4IvHkQMYeKX8CHKs6GR1Go%3D&se=20
content-type: application/json
content-length: 84
retry-after: 58
{
  "statusCode": 429,
  "message": "Rate limit is exceeded. Try again in 58 seconds."
}
```

Send



Pick a publish target

 Azure Function App

 Folder

Azure App Service

Fully managed, and highly scalable cloud environment

Create New

Select Existing

Run from ZIP (recommended)

Import Profile...

Publish



Cancel

Create App Service

Host your web and mobile applications, REST APIs, and more in Azure

Microsoft account [gmsvindh@gmail.com](#)

App Name
AzureFunctionsWithMSI

Subscription
Visual Studio Enterprise – MPN

Resource Group
AzureServerlessCookbookv1 (centralus) [New...](#)

Hosting Plan
CentralUSPlan (Central US, Y1) [New...](#)

Storage Account
axastorage01 (centralus) [New...](#)

[Export...](#) [Create](#) [Cancel](#)

Explore additional Azure services

- [Create a SQL Database](#)
- [Create a storage account](#)

Clicking the Create button will create the following Azure resources

- App Service - AzureFunctionsWithMSI

Managed service identity

Your application can communicate with other Azure services as itself using a managed Azure Active Directory identity. [Learn more](#)

Register with Azure Active Directory

[Off](#) [On](#)

[Save](#) [Discard](#)

```
C:\Users\vmadmin>az login
Note, we have launched a browser for you to login. For old experience with device code, use "az login --use-device-code"
```

```
C:\Users\vmadmin>az resource show --name AzureFunctions-CookBook --resource-group AzureFunctions-CookBook --resource-type Microsoft.Web/sites --query identity
{
  "principalId": "6a1edb19-4284-4479-9482-622900000000",
  "tenantId": "8ef7b61f-88a8-4478-b40c-0b4460711e73",
  "type": "SystemAssigned",
  "userAssignedIdentities": null
}
```

POST https://azurefunctionswithmsi.azurewebsites.net/api/HttpTriggerWithMSI

Body: raw, JSON (application/json)

```
1 {
2   "firstname": "Praveen",
3   "lastname": "Kumar",
4   "email": "praveen@example.com",
5   "devicelist":
6     "[
7       {
8         'Type' : 'Mobile Phone',
9         'Company': 'Microsoft'
10      }
11     ]"
```

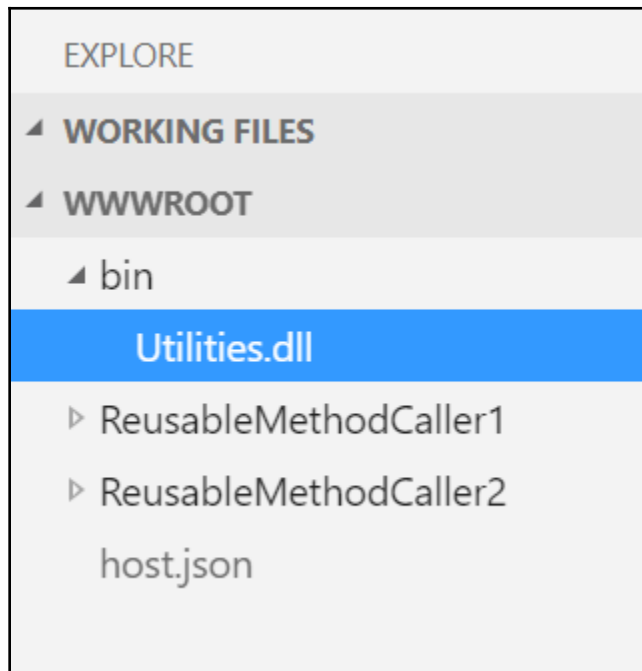
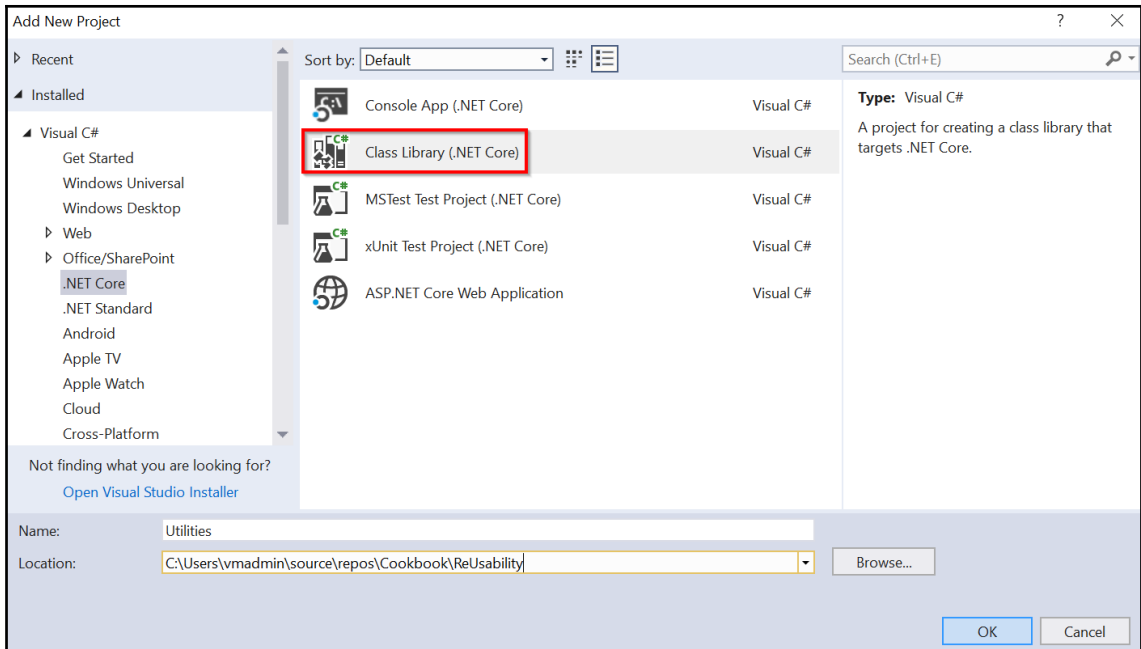
Status: 200 OK

Body: Pretty, Raw, Preview, JSON

```
1 "Hello, Successfully inserted the data"
```

```
1 | select * from Employeeinfo
```

| | PKEmployeeId | firstname | lastname | email | devicelist |
|---|--------------|-----------|----------|---------------------|--|
| 1 | 1 | Praveen | Kumar | praveen@example.com | [{ 'Type': 'Mobile Phone', 'Company': 'Microsoft' ... |



All subscriptions ▾

- ☰ Function Apps
- ▾ ⚡ cookbook-reusablelibra...
- ▾ ☰ Functions +
- ▶ *f* ReusableMethodCaller1
- ▶ *f* ReusableMethodCaller2
- ▶ ☰ Proxies
- ▶ ☰ Slots (preview)

f Functions

| NAME ▾ | STATUS ▾ | |
|-----------------------|---|----|
| ReusableMethodCaller1 | <input checked="" type="checkbox"/> Enabled | 🗑️ |
| ReusableMethodCaller2 | <input checked="" type="checkbox"/> Enabled | 🗑️ |

```

2018-11-20T03:24:36.696 [Information] Compilation succeeded.
2018-11-20T03:24:42.914 [Information] Executing 'Functions.ReusableMethodCaller1' (Reason='This function was programmatically called via the host APIs.', Id=556b0d73-07ed-4d34-bac3-4ad8252adb9)
2018-11-20T03:24:42.935 [Information] HTTP trigger function processed a request.
2018-11-20T03:24:42.935 [Information] This is an output from a Resuable Library across functions
2018-11-20T03:24:42.937 [Information] Executed 'Functions.ReusableMethodCaller1' (Succeeded, Id=556b0d73-07ed-4d34-bac3-4ad8252adb9)

```

```

2018-11-20T03:29:27 Welcome, you are now connected to log-streaming service.
2018-11-20T03:29:53.251 [Information] Script for function 'ReusableMethodCaller2' changed. Reloading.
2018-11-20T03:29:53.385 [Information] Compilation succeeded.
2018-11-20T03:29:59.994 [Information] Executing 'Functions.ReusableMethodCaller2' (Reason='Timer fired at 2018-11-20T03:29:59.9938806+00:00', Id=357d4c51-1920-47f0-91d7-87aad0611955)
2018-11-20T03:30:00.075 [Information] Timer trigger function executed at: 11/20/2018 9:59:00 AM
2018-11-20T03:30:00.075 [Information] This is an output from a Resuable Library across functions
2018-11-20T03:30:00.075 [Information] Executed 'Functions.ReusableMethodCaller2' (Succeeded, Id=357d4c51-1920-47f0-91d7-87aad0611955)

```




New Function

Name:

QueueTriggerStronglyTypesObjects

Azure Queue Storage trigger

Queue name 

registeruserqueue

Storage account connection



new

[show](#)

[value](#)

azurefunctioncookbooks_STORAGE



Create

Cancel

Microsoft Azure Storage Explorer - Add Message

Add Message

Message text

```
{
  "firstname": "Praveen",
  "lastname": "Sreeram",
  "email": "praveen@gmail.com",
  "ProfilePicUrl": "http://example.com/profilepic.jpg"
}
```

Expires in:

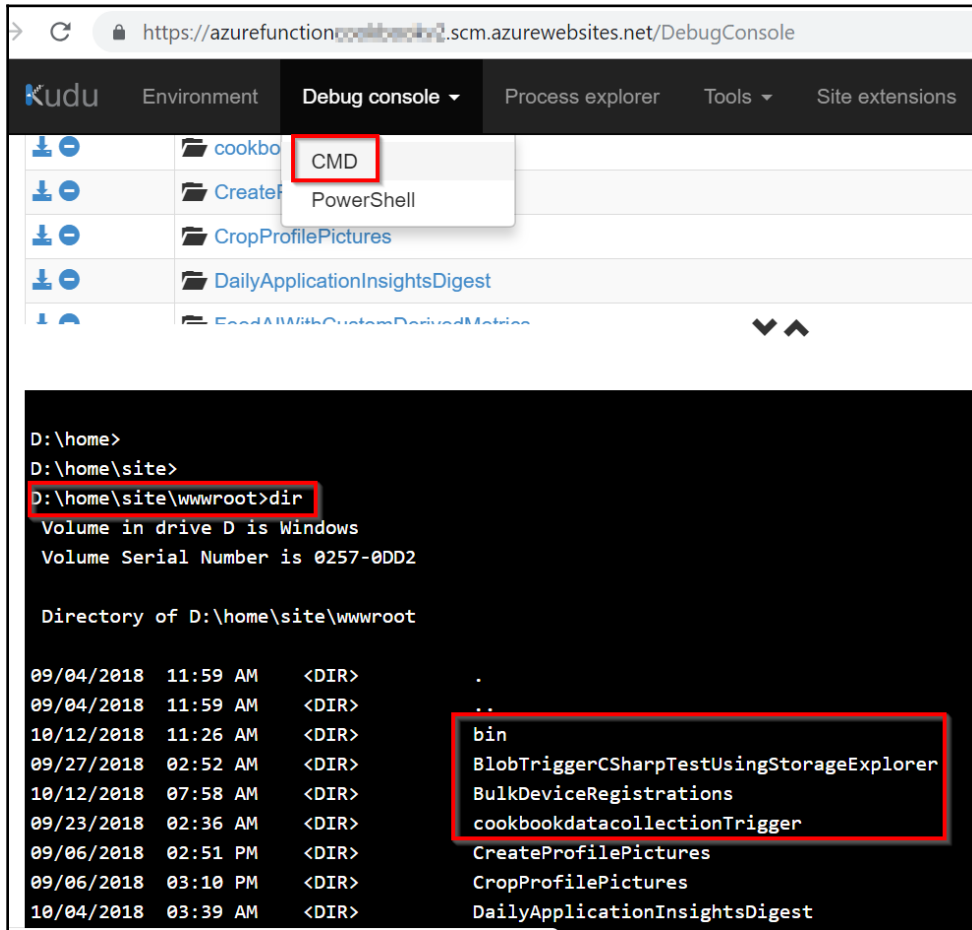
Days

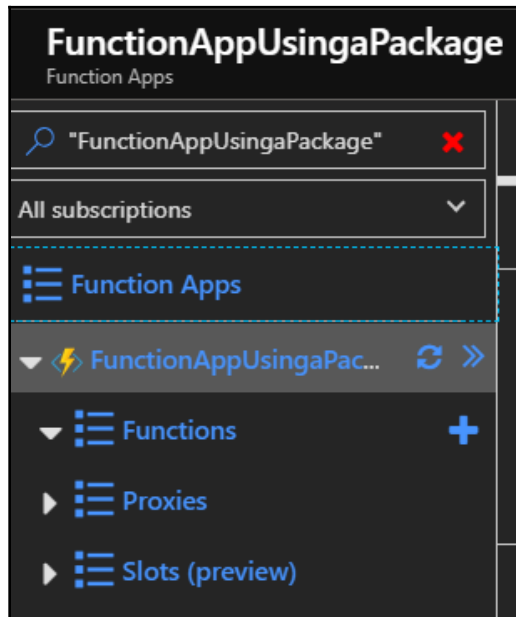
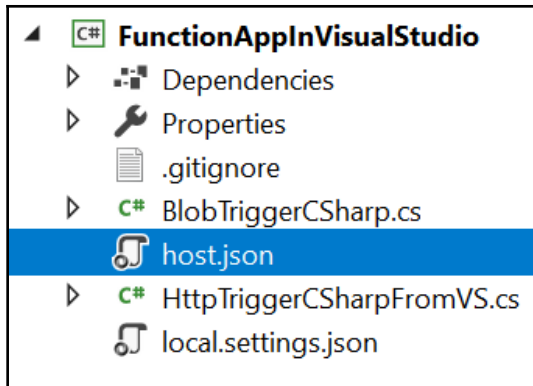
Encode message body in Base64

OK Cancel

```
2018-11-20T00:37:51.745 [Information] Executing 'Functions.QueueTriggerStronglyTypesObjects' (Reason='New queue message detected on
'registeruserqueue'.', Id=e043cc8e-dd49-42e7-8dd7-dd34db6021a6)
2018-11-20T00:37:51.747 [Information] A Message has been created for a new User
2018-11-20T00:37:51.747 [Information] First name: Praveen
2018-11-20T00:37:51.747 [Information] Last name: Sreeram
2018-11-20T00:37:51.747 [Information] email: praveen@gmail.com
2018-11-20T00:37:51.747 [Information] Profile url: http://example.com/profilepic.jpg
2018-11-20T00:37:51.748 [Information] Executed 'Functions.QueueTriggerStronglyTypesObjects' (Succeeded, Id=e043cc8e-dd49-42e7-8dd7-
dd34db6021a6)
```

Chapter 10:Configuring of Serverless Applications in the Production Environment








admin > source > repos > Chapter4 > FunctionAppInVisualStudio > FunctionAppInVisualStudio > bin > Release > netstandard2.0 >

| Name | Date modified | Type | Size |
|----------------------------------|--------------------|------------------------|----------|
| bin | 10/15/2018 3:35 PM | File folder | |
| BlobTriggerCSharp | 10/15/2018 3:35 PM | File folder | |
| HttpTriggerCSharpFromVS | 10/15/2018 3:35 PM | File folder | |
| FunctionAppInVisualStudio.deps | 10/15/2018 3:35 PM | JSON File | 96 KB |
| FunctionAppInVisualStudio | 10/15/2018 5:15 PM | Compressed (zipped)... | 5,327 KB |
| host | 9/23/2018 11:20 AM | JSON File | 1 KB |
| local.settings | 9/23/2018 12:34 PM | JSON File | 1 KB |

Blob SAS URL
<https://azurefunctionsco.blob.core.windows.net/functionapp-packages/FunctionAppInVisualStudio.zip?sp=r&st=2018-1>

WEBSITE_RUN_FROM_PACKAGE <https://azurefunctionsco.blob.core.windows.net/functionapp-packages/FunctionAppInVisualStudio.zip?sp=r&st=2018-1>

← → ↻ <https://functionappusingapackage.azurewebsites.net/api/HttpTriggerCSharpFromVS?name=Praveen%20Sreeram>
Hello, Praveen Sreeram








| | | | |
|--------------------------|---|------------------|------------|
| <input type="checkbox"/> |  azurefunctioncoba88 | Storage account | Central US |
| <input type="checkbox"/> |  azurefunctioncookbook-gateway | App Service | Central US |
| <input type="checkbox"/> |  CentralUSPlan | App Service plan | Central US |

New Project

Visual C#

- Get Started
- Windows Universal
- Windows Desktop
- Web
- Office/SharePoint
- .NET Core
- .NET Standard
- Android
- Apple TV
- Apple Watch
- Cloud
- Cross-Platform
- Extensibility

Sort by: Default

| Icon | Project Name | Language | Type |
|---|--|-----------|-----------|
|  | ASP.NET Core Web Application | Visual C# | Visual C# |
|  | Azure Functions | Visual C# | Visual C# |
|  | Service Fabric Application | Visual C# | Visual C# |
|  | ASP.NET Web Application (.NET Framework) | Visual C# | Visual C# |
|  | Azure WebJob (.NET Framework) | Visual C# | Visual C# |
|  | Azure Cloud Service | Visual C# | Visual C# |
|  | Azure Resource Group | Visual C# | Visual C# |

Search (Ctrl+E)

Type: Visual C#

This template creates an Azure Resource Group deployment project. The deployment project will contain artifacts needed to provision Azure resources using Azure Resource Manager that will create an environment for your application.

Not finding what you are looking for?
[Open Visual Studio Installer](#)

Name: ARMTemplateforFunctionApp

Location: C:\Users\vmadmin\source\repos\Chapter11\

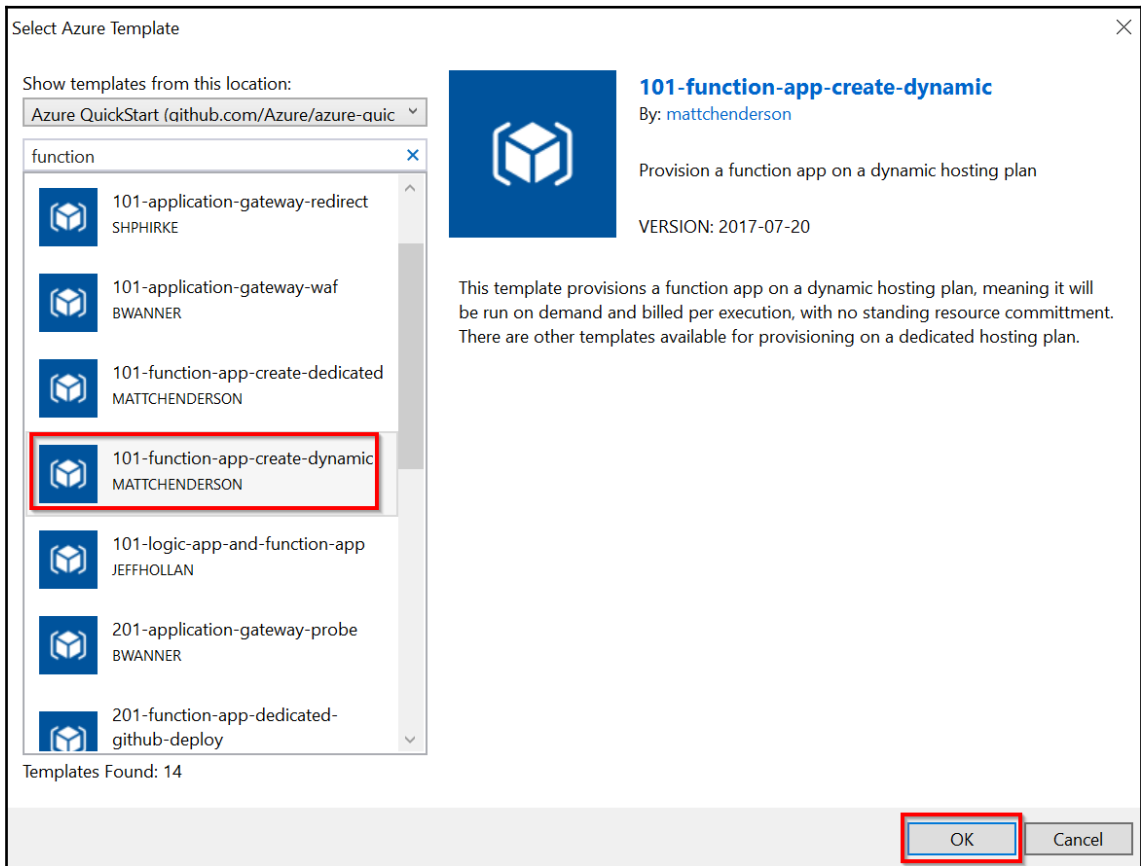
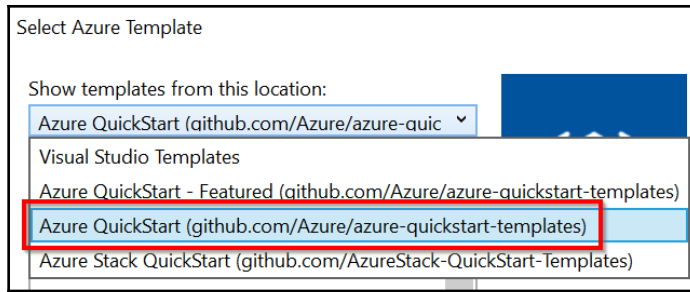
Solution name: ARMTemplateforFunctionApp

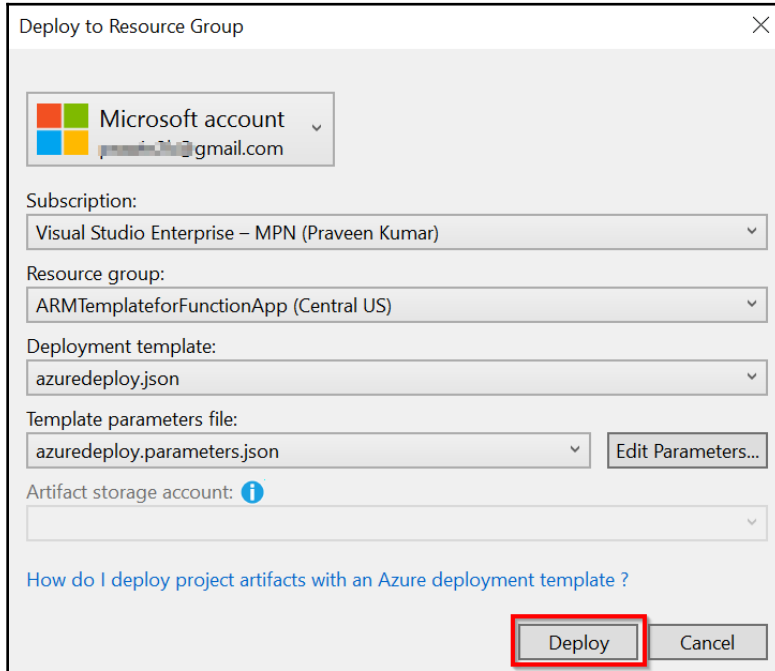
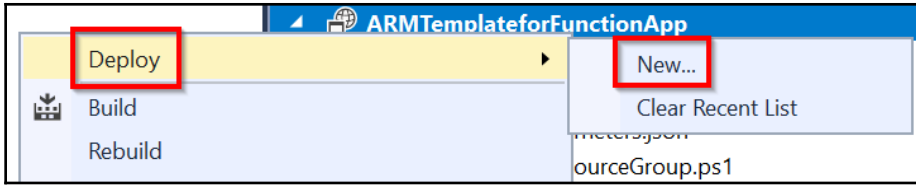
Framework: .NET Framework 4.7.1

Create directory for solution

Add to Source Control

OK Cancel





3 items Show hidden types ⓘ

| <input type="checkbox"/> | NAME ↕ | TYPE ↕ | LOCATION ↕ |
|--------------------------|--------------------------|------------------|------------|
| <input type="checkbox"/> | ARMTemplateFunctionApp | App Service plan | Central US |
| <input type="checkbox"/> | ARMTemplateFunctionApp | App Service | Central US |
| <input type="checkbox"/> | hoik6bwk4ubdyazfunctions | Storage account | Central US |

Custom Domains
AzureCookbookFunctionApp

Refresh ? FAQs

azurecookbookfunctionapp.azurewebsites....

App Service Domains

Purchase and manage domains for your Azure services with auto-renew and privacy protection. [Learn more](#)

+ Buy Domain

| DOMAINS | EXPIRES | STATUS |
|---------------|---------|--------|
| No data found | | |

Networking

- Networks
- IP addresses
- Custom domains**
- Virtual networks / Subnets
- Managed network identity
- Public IP addresses

App Service Domain ☐

* Contact information
Required 🔒

* Privacy protection
Required 🔒

Assign default hostnames

www

@ (Root domain)

* Legal Terms
Required >

OK

+ Add hostname

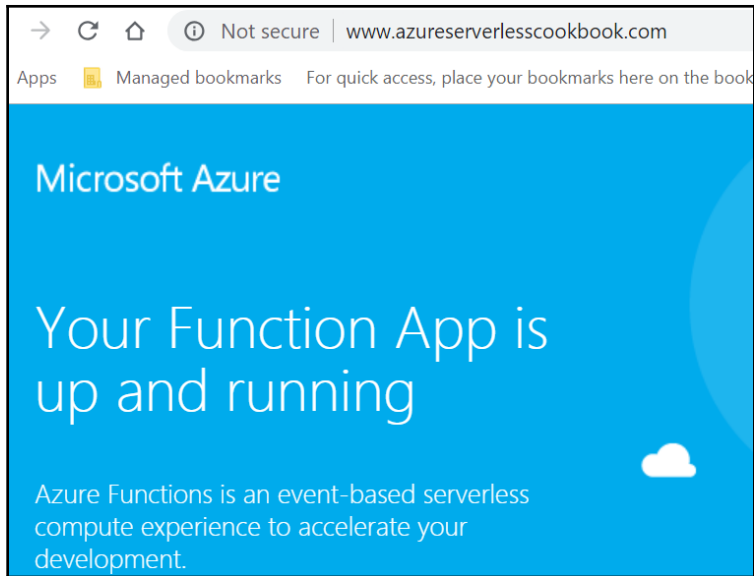
| HOSTNAMES ASSIGNED TO SITE | SSL BINDING |
|--|-----------------------------|
| azureserverlesscookbook.com | Add binding |
| www.azureserverlesscookbook.com | Add binding |
| azurecookbookfunctionapp.azurewebsites.... | |

Search record sets

| NAME | TYPE | TTL | VALUE |
|------|-------|---------|--|
| @ | A | 3600 | 40.113.232.243 |
| | NS | 3600000 | ns1-07.azure-dns.com ns2-07.azure-dns.net ns3-07.azure-dns.org ns4-07.azure-dns.info |
| | SOA | 3600 | Email: azure-dns-hostmaster@microsoft.com Host: ns1-07.azure-dns.com Refresh: 3600 Retry: 300 Expire: 300000 Minimum TTL: 300 Serial number: 1 |
| www | CNAME | 3600 | AzureCookbookFunctionApp.azurewebsites.net |

+ Add hostname

| HOSTNAMES ASSIGNED TO SITE | SSL BINDING |
|--|-----------------------------|
| azureserverlesscookbook.com | Add binding |
| www.azureserverlesscookbook.com | Add binding |
| azurecookbookfunctionapp.azurewebsites.... | |



```
local.settings.json  [X]
Schema: <No Schema Selected>
1  {
2    "IsEncrypted": false,
3    "FUNCTIONS_WORKER_RUNTIME": "dotnet",
4    "Values": {
5      "AzureWebJobsStorage":
6        "DefaultEndpointsProtocol=https;AccountName=azurefunctionscookb
7        d3zXdZE336X1EfiELvI0d5zCkBW==;EndpointSuffix=core.windows.net",
8        "AzureWebJobsDashboard": "UseDevelopmentStorage=true",
9        "MyAppSetting": "Hello! i'm a value from App Setting"
10   }
11   "ConnectionStrings": {
12     "sqldb_connection": "connection_string_here"
  }
```

| | |
|---|------------------------------|
| MyAppSetting | Hidden value. Click to edit. |
| WEBSITE_CONTENTAZUREFILECONNECTIONST... | Hidden value. Click to edit. |
| WEBSITE_CONTENTSHARE | Hidden value. Click to edit. |

+ Add new setting

Connection strings

i Connection strings should only be used with a function app if you are using

i Connection Strings are encrypted at rest and transmitted over an encrypted

Hide Values Show Values

| CONNECTION STRING NAME | VALUE |
|------------------------|------------------------------|
| sqldb_connection | Hidden value. Click to edit. |

```

2018-10-20T13:17:33 Welcome, you are now connected to log-streaming service.
2018-10-20T13:17:54.660 [Information] Executing 'HttpTriggerCSharpFromVS' (Reason='This function was
programmatically called via the host APIs.', Id=95e43756-962e-4210-bf16-0303be4117f9)
2018-10-20T13:17:54.847 [Information] GetConnectionStringOrSettingHello! i'm a value from App Setting
2018-10-20T13:17:54.847 [Information] ValueFromConfigurationIndexHello! i'm a value from App Setting
2018-10-20T13:17:54.847 [Information] ConnectionStrings:sqldb_connectionconnection_string_here
2018-10-20T13:17:54.858 [Information] Executed 'HttpTriggerCSharpFromVS' (Succeeded, Id=95e43756-962e-4210-bf16-
0303be4117f9)

```

```

public static IActionResult Run(
    [HttpTrigger(AuthorizationLevel.Anonymous, "get", "post",
    ILogger logger,
    [QueueTrigger("hardcodedqueuename")] string queue)
{

```

```

public static IActionResult Run(
    [HttpTrigger(AuthorizationLevel.Anonymous, "get", "post", Route = null)]HttpRequest req,
    ILogger logger,
    [QueueTrigger("%queuename%")] string queue)

```

WEBSITE_RUN_FROM_PACKAGE 1

API

- API definition
- CORS

Overview Platform features API definition

Function API definition (Swagger)

Consume your HTTP triggered Functions in a variety of services using an OpenAPI 2.0 (Swagger) definition

API definition source

Function (preview) External URL

Set external definition URL

+ Documentation

Platform features API definition

Save Revert to last save Generate API definition template

```
1 '#Click "Generate API definition template"
2   to get started'
```

Error

✗ Unknown Error

obj must be an Array or an Object

Overview Platform features API definition

Save Revert to last save Generate API definition template

```

1 swagger: '2.0'
2 info:
3   title: azurecookbookfunctionapp.azurewebsites.net
4   version: 1.0.0
5 host: azurecookbookfunctionapp.azurewebsites.net
6 basePath: /
7 schemes:
8   - https
9   - http
10 paths:
11   /api/HttpTriggerWithSwagger:
12     get:
13       operationId: /api/HttpTriggerWithSwagger/get
14       produces: []
15       consumes: []
16       parameters: []
17       description: >-
18         Replace with Operation Object
19         #http://swagger.io/specification/#operationObject
20       responses:
21         '200':
22           description: Success operation
23       security:
24         - apiKeyQuery: []
25     post:

```

azurecookbookfunctionapp.azurewebsites.net

Version 1.0.0

Security

apiKeyQuery (API Key) Authenticate

| | |
|------|-------|
| Name | code |
| In | query |

GET /api/HttpTriggerWithSwagger

Description

Greets an end user

Parameters

| Name | Located in | Description | Required | Schema |
|------|------------|----------------------|----------|----------|
| Name | query | Name of the end user | Yes | ⇒ string |

Responses

| Code | Description | Schema |
|------|----------------------------|-------------------------|
| 200 | Response with the Greeting | ⇒ { message: ▶ string } |

Try this operation

Close

Request

Scheme
https ▼

Accept
application/json ▼

Parameters

Name

Name of the end user

GET <https://AzureCookbookFunctionApp.azurewebsites.net/api/HttpTriggerWithSwagger?Name=> HTTP/1.1

Host: AzureCookbookFunctionApp.azurewebsites.net
Accept: application/json
Accept-Encoding: gzip, deflate, sdch
Accept-Language: en-US, en; q=0.8, fa; q=0.6, sv; q=0.4
Cache-Control: no-cache
Connection: keep-alive
Origin: https://functions.azure.com
Referer: https://functions.azure.com/node_modules/swagger-editor/index.html
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/69.0.3497.100 Safari/537.36

⚠ This is a cross-origin call. Make sure the server at AzureCookbookFunctionApp.azurewebsites.net accepts GET requests from functions.azure.com . [Learn more](#)

Send Request

Response

SUCCESS

Rendered

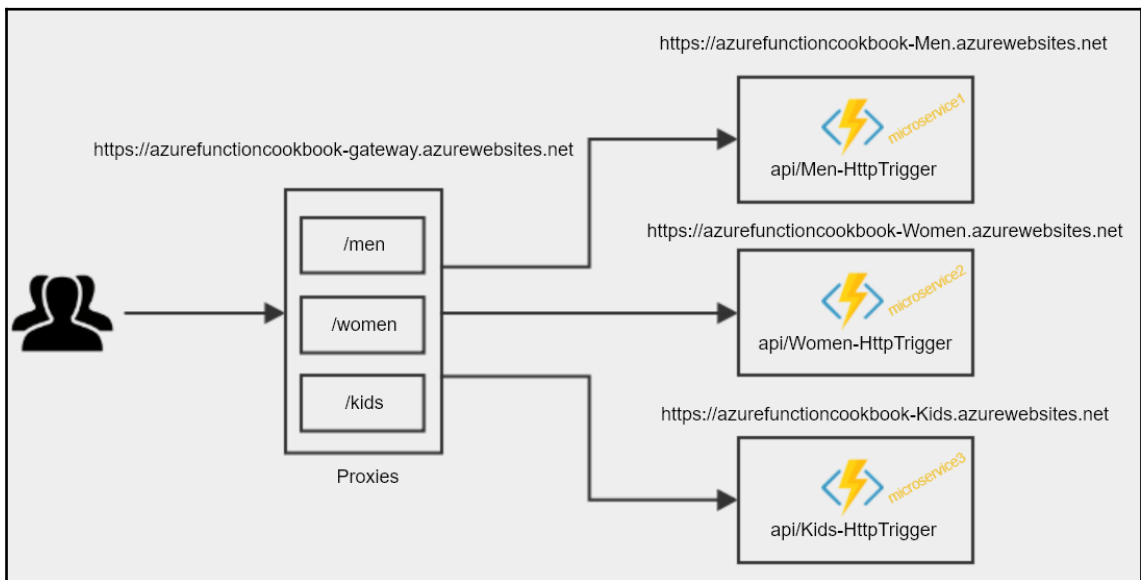
Pretty

Raw

HTTP/1.1

pragma: no-cache
content-type: application/json; charset=utf-8
cache-control: no-cache
expires: -1

"Hello Praveen Kumar"



| NAME ▾ | SUBSCRIPTION ID ▾ | RESOURCE GROUP ▾ |
|---|--------------------------------|-------------------------------|
| AzureCookbookFunctionApp | Visual Studio Enterprise – MPN | AzureCookbookFunctionApp |
| azurefunctioncookbook-gateway | Visual Studio Enterprise – MPN | azurefunctioncookbook-gateway |
| azurefunctioncookbook-Kids 3 | Visual Studio Enterprise – MPN | azurefunctioncookbook-Kids |
| azurefunctioncookbook-Men 1 | Visual Studio Enterprise – MPN | azurefunctioncookbook-Men |
| azurefunctioncookbook | Visual Studio Enterprise – MPN | azurefunctioncookbook |
| azurefunctioncookbook10 | Visual Studio Enterprise – MPN | azurefunctioncookbook |
| azurefunctioncookbook11 | Visual Studio Enterprise – MPN | azurefunctioncookbook |
| azurefunctioncookbook-Women 2 | Visual Studio Enterprise – MPN | azurefunctioncookbook-Women |

New proxy

Name

Route template

Allowed HTTP methods

Backend URL

[+ Request override](#)

[+ Response override](#)

Create

azurefunctioncookbook-gatew... Save Discard Delete proxy Advanced editor

All subscriptions

Function Apps

azurefunctioncookbook...

Functions

Proxies

Kids

Men

Women

Kids

Proxy URL

Route template

Allowed HTTP methods

Backend URL

Proxies

| NAME | BACKEND URL |
|-------|---|
| Men | https://azurefunctioncookbook-men.azurewebsites.net/api/Men-HttpTrigger |
| Women | https://azurefunctioncookbook-women.azurewebsites.net/api/Women-HttpTrigger |
| Kids | https://azurefunctioncookbook-kids.azurewebsites.net/api/Kids-HttpTrigger |

← → ↻ 🏠 <https://azurefunctioncookbook-gateway.azurewebsites.net/Men?name=Praveen%20Sreeram>

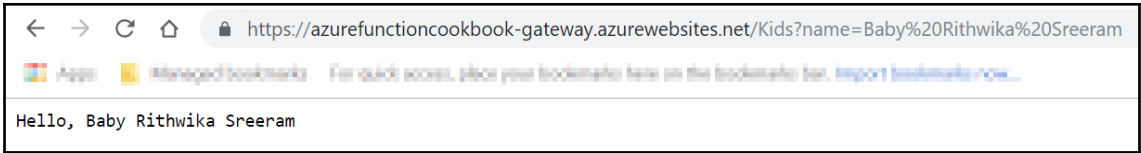
Apps Managed bookmarks For quick access, place your bookmarks here on the bookmarks bar. [Import bookmarks now...](#)

Hello, Praveen Sreeram

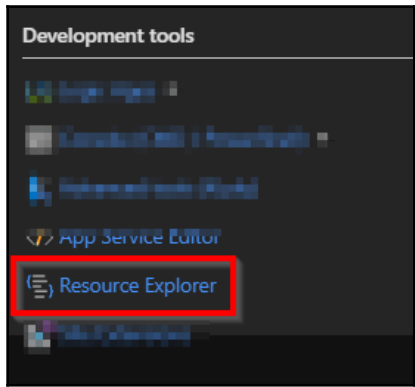
← → ↻ 🏠 <https://azurefunctioncookbook-gateway.azurewebsites.net/Women?name=Haritha%20Sreeram>

Apps Managed bookmarks For quick access, place your bookmarks here on the bookmarks bar. [Import bookmarks now...](#)

Hello, Haritha Sreeram



| APP SETTING NAME | VALUE |
|------------------|------------------------------|
| AppSetting0 | Hidden value. Click to edit. |
| AppSetting1 | Hidden value. Click to edit. |
| AppSetting2 | Hidden value. Click to edit. |
| AppSetting3 | Hidden value. Click to edit. |
| AppSetting4 | Hidden value. Click to edit. |
| AppSetting5 | Hidden value. Click to edit. |
| AppSetting6 | Hidden value. Click to edit. |
| AppSetting7 | Hidden value. Click to edit. |
| AppSetting8 | Hidden value. Click to edit. |
| AppSetting9 | Hidden value. Click to edit. |



MyApp-Dev

analyzeCustomHostname

config

- containerlogs
- continuouswebjobs
- deployments
- diagnostics
- domainOwnershipIdentifiers
- extensions
- functions
- hostNameBindings
- hybridConnectionNamespaces
- hybridConnectionRelays
- hybridconnection
- instances
- metricdefinitions

Data (GET, PUT) Actions (POST, DELETE)

GET Edit <https://management.azure.com/>

```
1 {
2   "id": "/subscriptions/366c4797-e7c
3   /providers/Microsoft.Web/sites/MyApp
4   "name": "MyApp-Dev",
5   "type": "Microsoft.Web/sites",
6   "kind": "functionapp",
7   "location": "Central US",
8   "properties": {
9     "name": "MyApp-Dev",
10    "state": "Running",
11    "hostNames": [
12      "myapp-dev.azurewebsites.net"
```

MyApp-Dev

analyzeCustomHostname

config

appsettings

- authsettings
- connectionstrings
- logs
- metadata
- publishingcredentials
- pushsettings
- slotConfigNames
- virtualNetwork
- web
- containerlogs
- continuouswebjobs

Data (GET, PUT) Actions (POST, DELETE)

POST Edit <https://management.azure.com/>

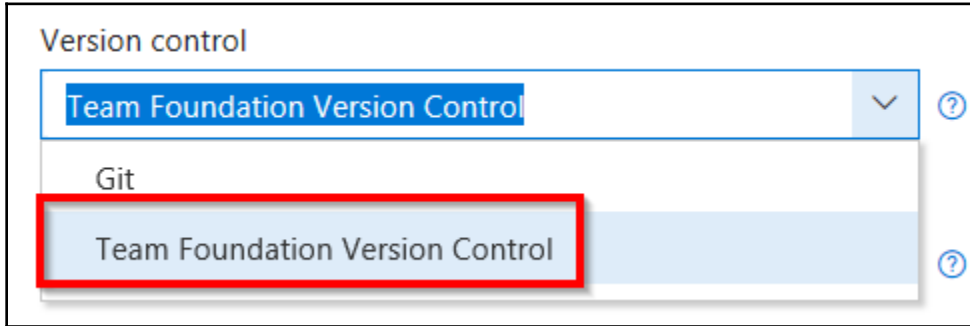
```
1 {
2   "Id": "/subscriptions/366c47
3   /providers/Microsoft.Web/sites
4   "Name": "appsettings",
5   "Type": "Microsoft.Web/sites
6   "Location": "Central US",
7   "Properties": {
8     "AppSetting0": "value0",
9     "AppSetting1": "Value1",
10    "AppSetting2": "Value2",
11    "AppSetting3": "Value3",
12    "AppSetting4": "Value4",
13    "AppSetting5": "Value5",
14    "AppSetting6": "Value6",
15    "AppSetting7": "Value7",
16    "AppSetting8": "Value8",
17    "AppSetting9": "Value9",
```

The screenshot displays the Azure portal interface for managing a resource. On the left, a navigation pane shows the hierarchy: Microsoft.Web > sites > MyApp-Prod > config > appsettings. The 'appsettings' resource is selected. On the right, a PUT operation is being performed, with a 'PUT' button highlighted in red. The URL bar shows 'https://management.'. The JSON payload for the PUT operation is displayed, with the 'AppSetting' array highlighted in red:

```
1 {
2   "id": "/subscriptions/366c479
3   -Prod/config/appsettings",
4   "name": "appsettings",
5   "type": "Microsoft.Web/sites/
6   "location": "Central US",
7   "properties": {
8     "FUNCTIONS_WORKER_RUNTIME":
9     "AzureWebJobsStorage": "Def
10    w81apCnPLU6jvkY2f+2W53pF1JV03wy
11    "FUNCTIONS_EXTENSION_VERSIO
12    "WEBSITE_CONTENTAZUREFILECO
13    A+dAHVYXyhXjqqu463cU0W81apCnPLU
14    "WEBSITE_CONTENTSHARE": "my
15    "WEBSITE_NODE_DEFAULT_VERSI
16    "AppSetting0": "value0",
17    "AppSetting1": "value1",
18    "AppSetting2": "value2",
19    "AppSetting3": "value3",
20    "AppSetting4": "value4",
21    "AppSetting5": "value5",
22    "AppSetting6": "value6",
23    "AppSetting7": "value7",
24    "AppSetting8": "value8",
25    "AppSetting9": "value9"
26  }
```

| APP SETTING NAME | VALUE |
|------------------|-------------------------------------|
| AppSetting0 | <i>Hidden value. Click to edit.</i> |
| AppSetting1 | <i>Hidden value. Click to edit.</i> |
| AppSetting2 | <i>Hidden value. Click to edit.</i> |
| AppSetting3 | <i>Hidden value. Click to edit.</i> |
| AppSetting4 | <i>Hidden value. Click to edit.</i> |
| AppSetting5 | <i>Hidden value. Click to edit.</i> |
| AppSetting6 | <i>Hidden value. Click to edit.</i> |
| AppSetting7 | <i>Hidden value. Click to edit.</i> |
| AppSetting8 | <i>Hidden value. Click to edit.</i> |
| AppSetting9 | <i>Hidden value. Click to edit.</i> |

Chapter 11: Implementing and Deploying Continuous Integration Using Azure DevOps



Create new project



Project name *

AzureServerlessCookBook



Description

Visibility



Public

Anyone on the internet can view the project. Certain features like TFVC are not supported.



Private

Only people you give access to will be able to view this project.



^ Advanced

Version control ?

Team Foundation Version Control



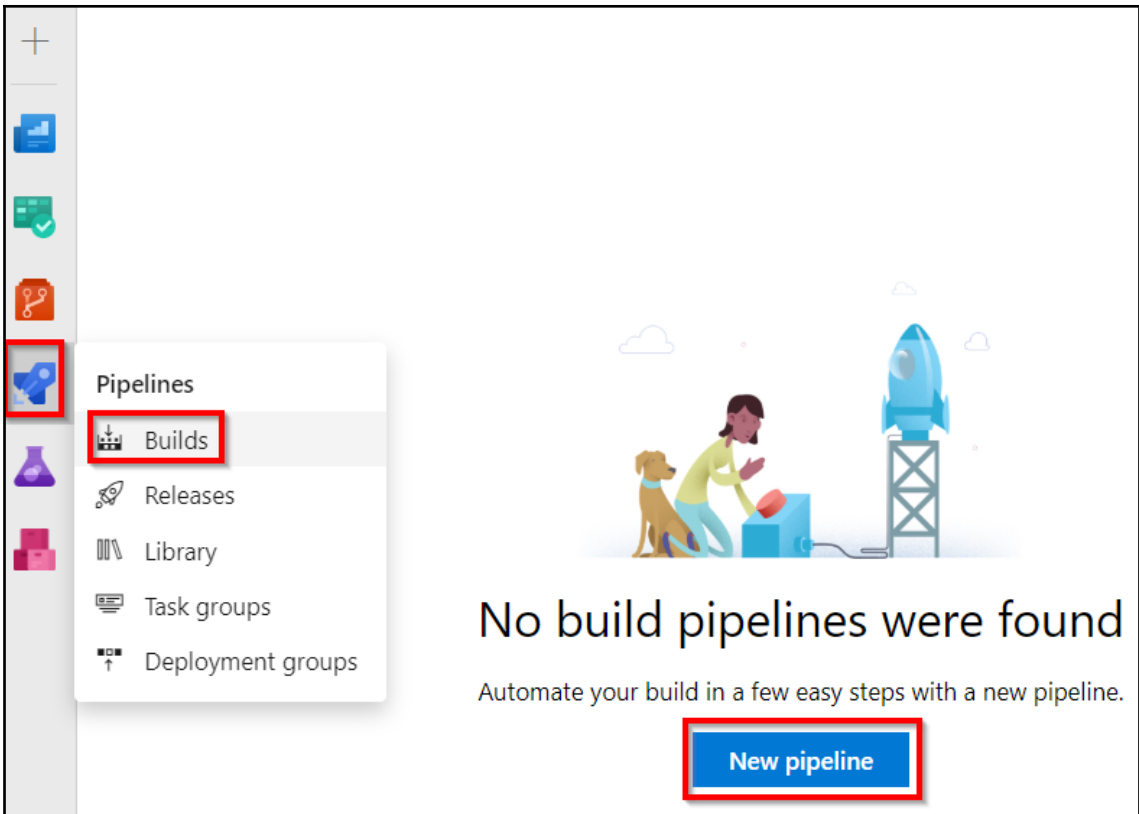
Work item process ?

Agile

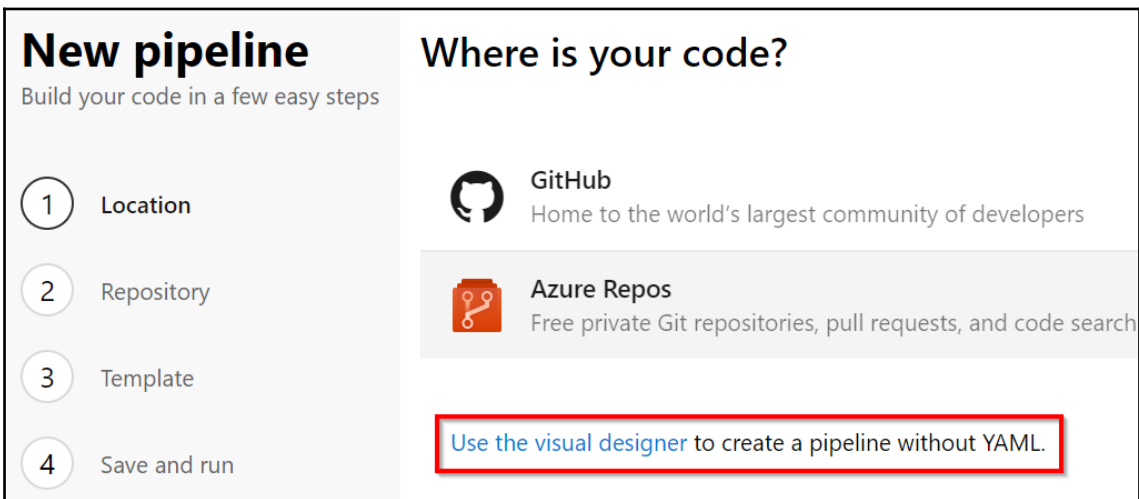


Create

Cancel



The screenshot shows the Azure DevOps interface. On the left, a sidebar contains several icons. The 'Pipelines' icon is highlighted with a red box. A dropdown menu is open, showing options: 'Builds' (highlighted with a red box), 'Releases', 'Library', 'Task groups', and 'Deployment groups'. To the right, there is an illustration of a person and a dog working on a rocket launch. Below the illustration, the text reads: 'No build pipelines were found' and 'Automate your build in a few easy steps with a new pipeline.' A blue button labeled 'New pipeline' is highlighted with a red box.



The screenshot shows the 'New pipeline' wizard. The first step, 'Location', is selected. The second step, 'Where is your code?', is active. It shows two options: 'GitHub' (Home to the world's largest community of developers) and 'Azure Repos' (Free private Git repositories, pull requests, and code search). A blue button labeled 'Use the visual designer to create a pipeline without YAML.' is highlighted with a red box.

Select your repository

Tell us where your sources are.
You can customize how to get these sources from the repository later.

Select a source

- TFVC
- GitHub
- GitHub Enterprise
- Subversion
- Bitbucket Cloud
- External Git

Workspace mappings

| Type | Server path | Local path under \$(build.sourcesDirectory) |
|------|----------------------------|---|
| Map | \$/AzureServerlessCookBook | |

+ Add

Continue

Select a template

Or start with an Empty job

function

Others

- C# Function**
Build and test a C# (.NET class library) based Azure Function.

Apply

Tasks Variables Triggers Options Retention History Save & queue Discard Summary Queue

Pipeline Build pipeline View YAML

Get sources AzureServerlessCookBook \$/AzureServerlessCookBook

Agent job 1 Run on agent

- Use NuGet 4.4.1 NuGet Tool Installer
- NuGet restore NuGet
- Build solution Visual Studio Build
- Archive Files Archive Files
- Test Assemblies Visual Studio Test
- Publish symbols path Index Sources & Publish Symbols
- Publish Artifact Publish Build Artifacts

Name * AzureServerlessCookBook-C# Function-CI

Agent pool * Hosted VS2017 Pool information Manage

Parameters Unlink all

Path to solution or packages.config * ***.sln

Artifact Name * drop

Tasks Variables Triggers Options Retention History Save & queue Discard Summary Queue

Pipeline Build pipeline

Get sources AzureServerlessCookBook \$/AzureServerlessCookBook

Agent job 1 Run on agent

- Use NuGet 4.4.1 NuGet Tool Installer
- NuGet restore NuGet

Select a source

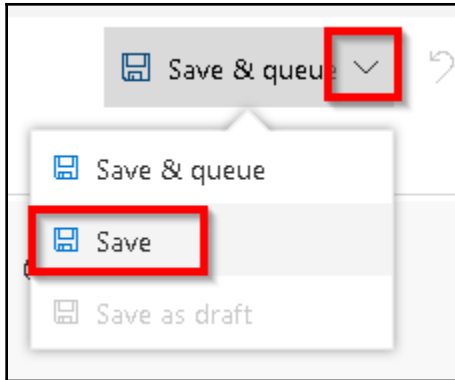
- TFVC
- GitHub
- GitHub Enterprise

Workspace mappings

Type Map

Server path \$/AzureServerlessCookBook

+ Add



Tasks **Variables** Triggers Options Retention History | Save & queue ▾ Discard Summary Queue ...

| Pipeline variables | | Settable at queue time |
|---------------------|--------------------------------------|-------------------------------------|
| Name ↑ | Value | |
| BuildConfiguration | release | <input checked="" type="checkbox"/> |
| BuildPlatform | any cpu | <input checked="" type="checkbox"/> |
| system.collectionId | a00560d2-16b5-48e7-9eb3-601c04d7e9bd | |
| system.debug | false | <input checked="" type="checkbox"/> |
| system.definitionId | 7 | |
| system.teamProject | AzureServerlessCookBook | |

Variable groups
Predefined variables

Tasks Variables Triggers Options Retention History | Save & queue ▾ Discard Summary Queue ...

Pipeline
Build pipeline

Get sources
AzureServerlessCookBook \$/AzureServerlessCookBook

Agent job 1
Run on agent **+**

Use NuGet 4.4.1
NuGet Tool Installer

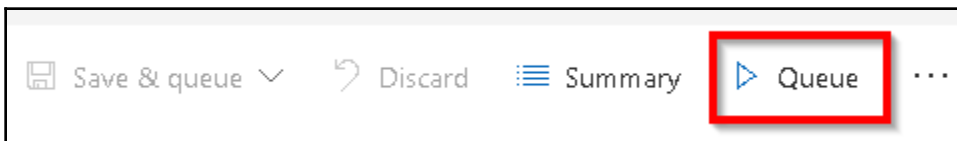
NuGet restore
NuGet

Build solution
Visual Studio Build

Add tasks | Refresh

All Build Utility Test Package Deploy Tool **Marketplace**

- .NET Core**
Build, test, package, or publish a dotnet application, or run a custom dotnet command. For package commands, supports NuGet.org and authenticated feeds like Package Management and MyGet.
- .NET Core Tool Installer**
Acquires a specific version of .NET Core from internet or the tools cache and adds it to the PATH. Use this task to change the version of .NET Core used in subsequent tasks.



Queue build for AzureServerlessCookBook-C# Function-CI

Agent pool
Hosted VS2017

Source version ⓘ

Shelveset name

Variables Demands

| | |
|--------------------|---------|
| BuildConfiguration | release |
| BuildPlatform | any cpu |
| system.debug | false |

+ Add

Queue Cancel

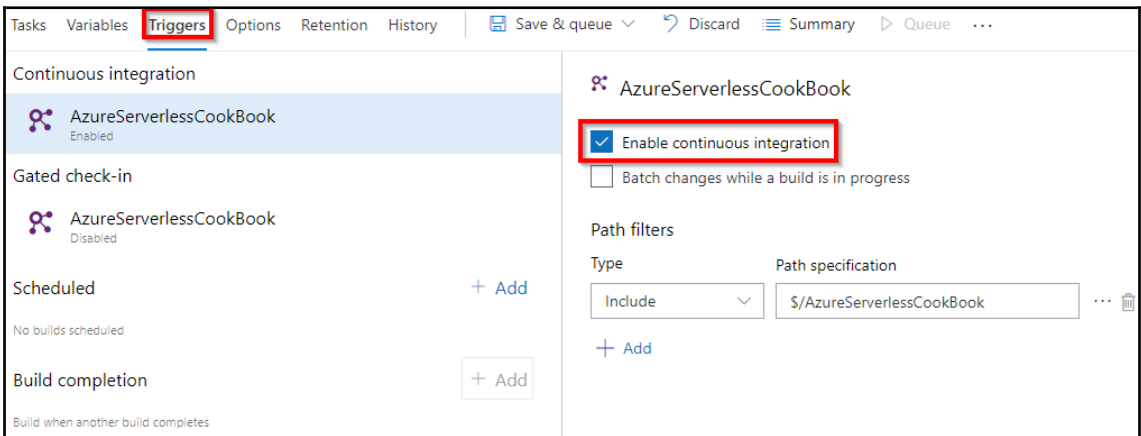
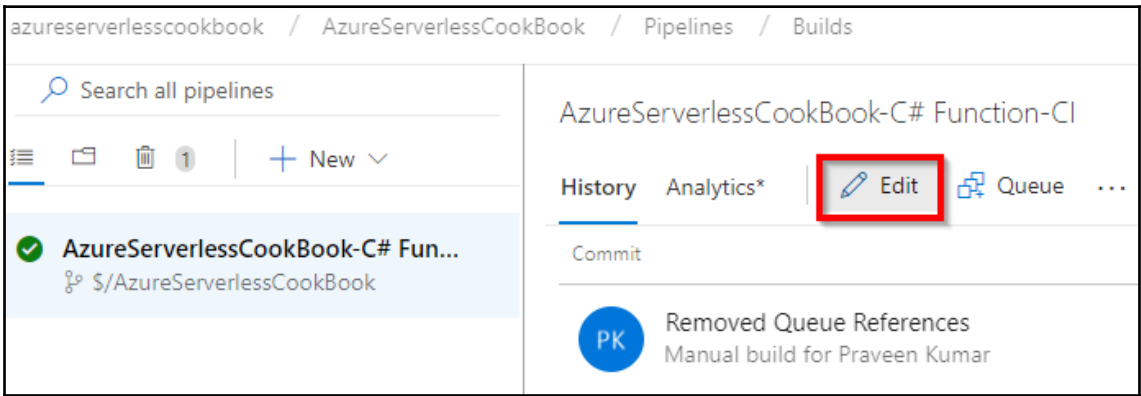
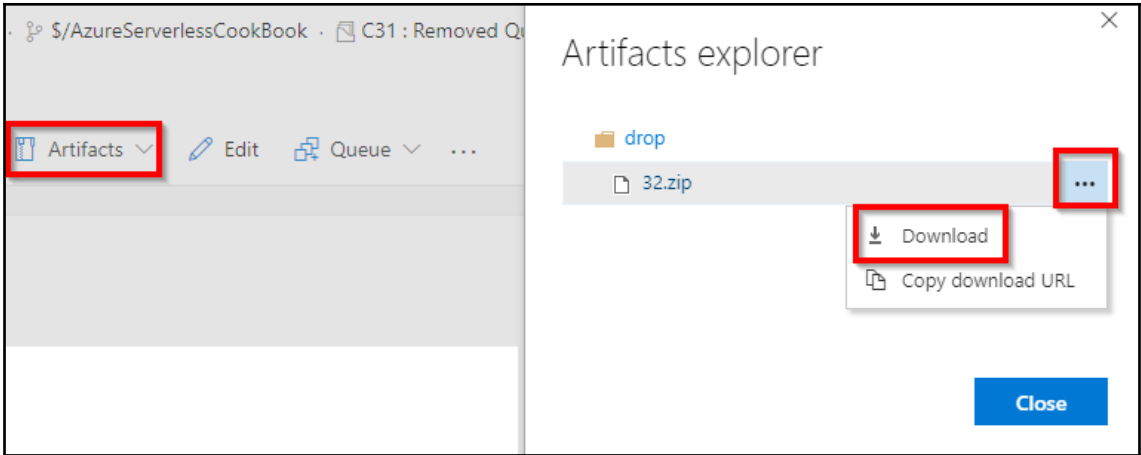
✔ Build #20181025.1 has been queued.

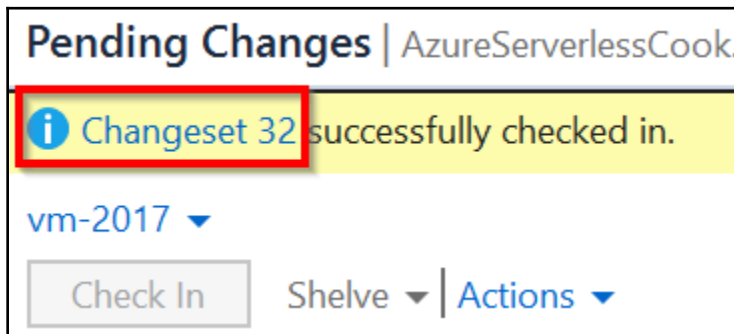
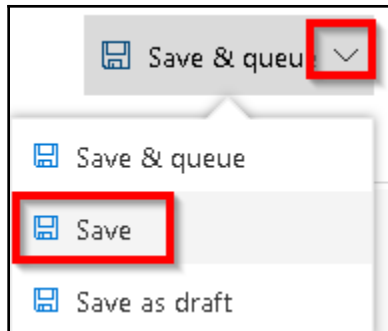
Agent job 1 Job

Pool: [Hosted VS2017](#) · Agent: Hosted Agent

- ✓ Prepare job · succeeded
- ✓ [Initialize Agent](#) · succeeded
- ✓ Initialize job · succeeded
- ✓ Checkout · succeeded
- ✓ Use NuGet 4.4.1 · succeeded
- ✓ NuGet restore · succeeded
- ✓ Build solution · succeeded
- ✓ Archive Files · succeeded
- ✓ Test Assemblies · succeeded **1 warning**
- ✓ Publish symbols path · succeeded
- ✓ Publish Artifact · succeeded
- ✓ Post-job: Checkout · succeeded





View





AzureServerlessCookBook-C# Function-CI

History Analytics* | Edit Queue ...

| Commit | Build # | Branch | Queued ↓ |
|--|--|--|--------------------|
|  Modified the Welcome Messages to demo CI CI build for Praveen Kumar |  20181025.2 |  \$/AzureServerlessC... | 2018-10-25 · 10:15 |
|  Removed Queue References Manual build for Praveen Kumar |  20181025.1 |  \$/AzureServerlessC... | 2018-10-25 · 08:36 |

Tasks Variables **Triggers** Options Retention History | Save & queue Discard Summary Queue ...

Continuous integration

AzureServerlessCookBook
Enabled

Gated check-in

AzureServerlessCookBook
Enabled

Scheduled + Add
No builds scheduled

Build completion + Add
Build when another build completes


AzureServerlessCookBook

Enable gated check-in

Run continuous integration triggers for committed changes

Use workspace mapping for filters

Gated Check-in ? X

 You need to build your changes for validation before they can be committed to the Team Foundation Server

Your changes have been shelved and will be built as follows:

Shelveset: Gated_2018-10-25_05.30.08.0807
Build definition: AzureServerlessCookBook-C# Function-CI (AzureServerlessCookBook)

Show options **Build Changes** Cancel

If your changes build successfully, they will be checked in automatically on your behalf.

PK Modified the code to test Gated Check-in
CI build for Praveen Kumar

20181025.4 \$/AzureServerlessC... 2018-10-25 · 10:59 2018-10-25 · 11:02

Tasks Variables Triggers Options Retention History | Save & queue | Discard | Summary | Queue | ...

Pipeline
Build pipeline

Get sources
AzureServerlessCookBook \$/AzureServerlessCookBook

Agent job 1
Run on agent

- Use NuGet 4.4.1
NuGet Tool Installer
- NuGet restore
NuGet
- Build solution**
Visual Studio Build
- Archive Files
Archive Files
- Test Assemblies**
Visual Studio Test
- Publish symbols path
Index Sources & Publish Symbols
- Publish Artifact
Publish Build Artifacts

Name *
AzureServerlessCookBook-C# Function-CI

Agent pool * | Pool information | Manage
Hosted VS2017

Parameters | Unlink all
Path to solution or packages.config *
***.sln

Artifact Name *
drop

View YAML

Tasks **Variables** Triggers Options Retention History | Save & queue | Discard | Summary | Queue | ...

Pipeline variables

Variable groups

Predefined variables

| Name ↑ | Value |
|---------------------------|--------------------------------------|
| BuildConfiguration | release |
| BuildPlatform | any cpu |
| system.collectionId | a00560d2-16b5-48e7-9eb3-601c04d7e9bd |
| system.debug | false |
| system.definitionId | 9 |
| system.teamProject | AzureServerlessCookBook |



Agent job 1 Job

Pool: [Hosted VS2017](#) · Agent: Hosted Agent

- ✓ Prepare job · succeeded
- ✓ Initialize job · succeeded
- ✓ Initialize Agent · succeeded
- ✓ Checkout · succeeded
- ✓ Use NuGet 4.4.1 · succeeded
- ✓ NuGet restore · succeeded
- ✓ Build solution · succeeded
- ✓ Archive Files · succeeded
- ✓ Test Assemblies · succeeded
- ✓ Publish symbols path · succeeded
- ✓ Publish Artifact · succeeded
- ✓ Post-job: Checkout · succeeded



View detailed logs

Logs Summary **Tests** | Release Artifacts Edit Queue ...

Summary ^

1 Run(s) Completed (1 Passed, 0 Failed, 0 Not impacted, 0 Others)

| | | | | |
|-------------------------|--|-------------------------------------|--------------------------------|--|
| 1 Total tests | | 1 Passed 0 Failed 0 Others | 100% Pass percentage | 8s 940ms Run duration ↓ 556ms |
|-------------------------|--|-------------------------------------|--------------------------------|--|

PK

Praveen Kumar
prawin2k@gmail.com

- My profile
- Security
- Usage
- Notification settings
- Preview features**
- Help >

Sign out

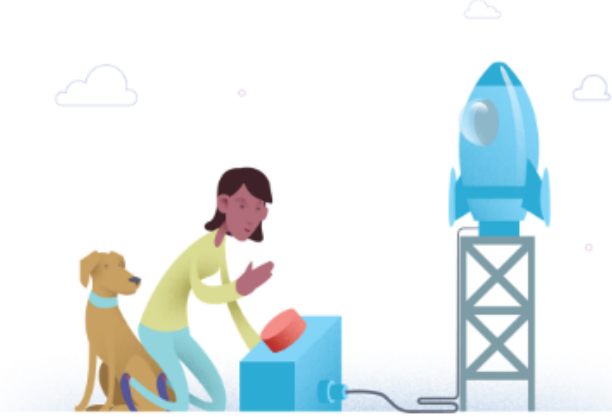
New Releases Hub On

Turns on the experience to create folders and manage release pipelines.

Azure DevOps azureserverlesscookbook / AzureServerlessCookBook / Pipelines / Releases

AzureServerlessCookB... +

- Overview
- Boards
- Repos
- Pipelines
- Builds
- Releases**
- Library
- Task groups
- Deployment groups
- Test Plans
- Artifacts




No release pipelines found

Automate your release process in a few easy steps with a new pipeline

New pipeline

Select a template

Or start with an  **Empty job**

Featured




Azure App Service deployment

Deploy your application to Azure App Service. Choose from Web App on Windows, Linux, containers, Function Apps, or WebJobs.

Apply

All pipelines > New release pipeline

Pipeline

 Tasks ▾

Variables

Retention

Options

History

Artifacts | **+ Add**

+ Add an artifact




Schedule not set

Stages | + Add ▾



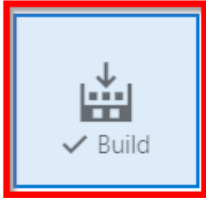
Stage 1

 1 job, 1 task



Add an artifact

Source type



4 more artifact types ∨

Project * ⓘ

AzureServerlessCookBook ∨

Source (build pipeline) * ⓘ

AzureServerlessCookBook-C# Function-CI ∨

Default version * ⓘ

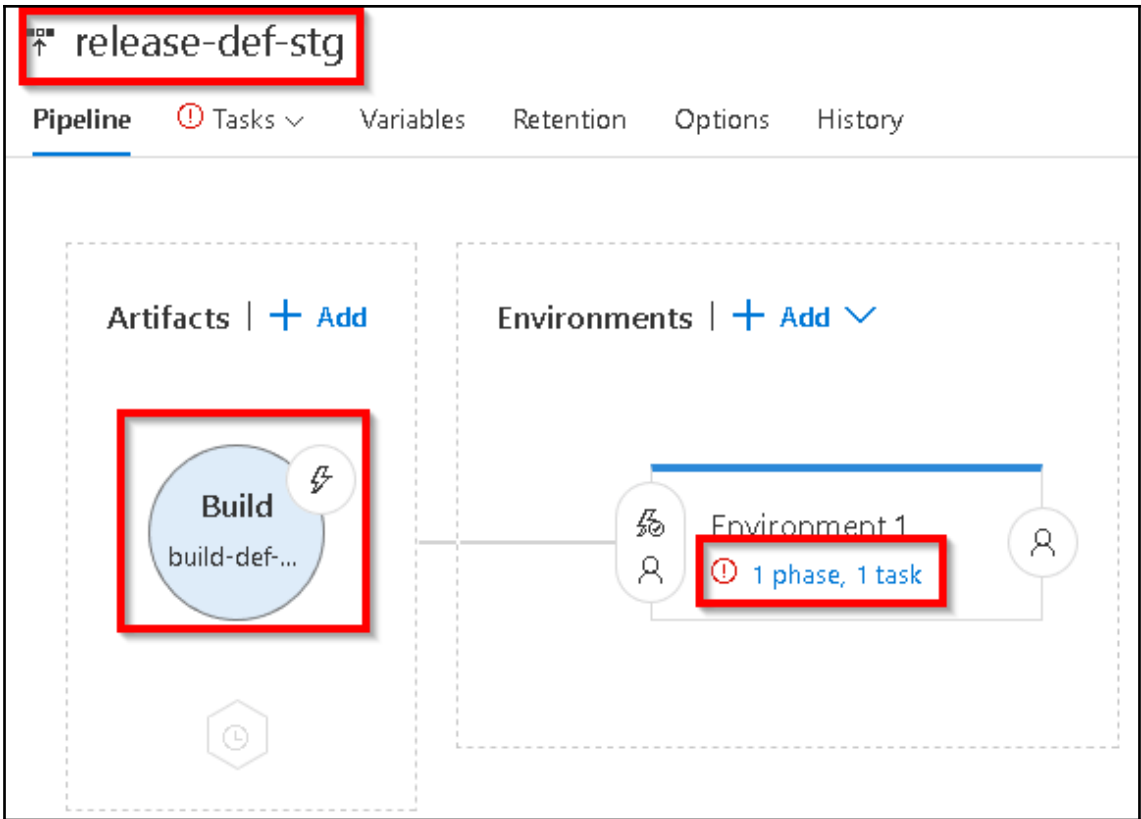
Latest ∨

Source alias * ⓘ

_AzureServerlessCookBook-C# Function-CI

ⓘ The artifacts published by each version will be available for deployment in release pipelines. The latest successful build of **AzureServerlessCookBook-C# Function-CI** published the following artifacts: **drop**.

Add



Pipeline Tasks Variables Retention Options History

Staging Environment
Some settings need attention

Run on agent
Run on agent

Deploy Azure App Service
Some settings need attention

Stage name
Staging Environment

Parameters | Unlink all

Connection Type *
Azure Resource Manager

Azure subscription * | Manage
Visual Studio Enterprise - MPN (366c4797-e7c1-4808-9908-d17808a30000) Authorize

Click Authorize to configure an Azure service connection
This field is linked to 1 setting in 'Deploy Azure App Service'

App type
Function App

App Service name *
This setting is required.

All pipelines > New release pipeline

Save + Release View releases

Pipeline Tasks Variables Retention Options History

Staging Environment
Deployment process

Run on agent
Run on agent

Deploy Azure App Service
Azure App Service Deploy

Stage name
Staging Environment

Parameters | Unlink all

Azure subscription * | Manage
Visual Studio Enterprise – MPN (366c4797-e7c7-4050-9b87-d2f9641c0268)

App type
Function App

App service name *
FunctionAppInVisualStudioV2

Save + Release

+ Create release

+ Create draft release

Create a new release

New release pipeline

⚡ Pipeline ^

Click on a stage to change its trigger from automated to manual.

⚡ Staging Envirc

Stages for a trigger change from automated to manual. ⓘ

✓ Staging Environment

📦 Artifacts ^

Select the version for the artifact sources for this release

Source alias

Version

_AzureServerlessCookBook-C# F...

20181025.5

Release description

Create

Cancel

New release pipeline > Release-1


Pipeline Variables History + Deploy Cancel Refresh Edit release

Deploy stage
Deploy multiple

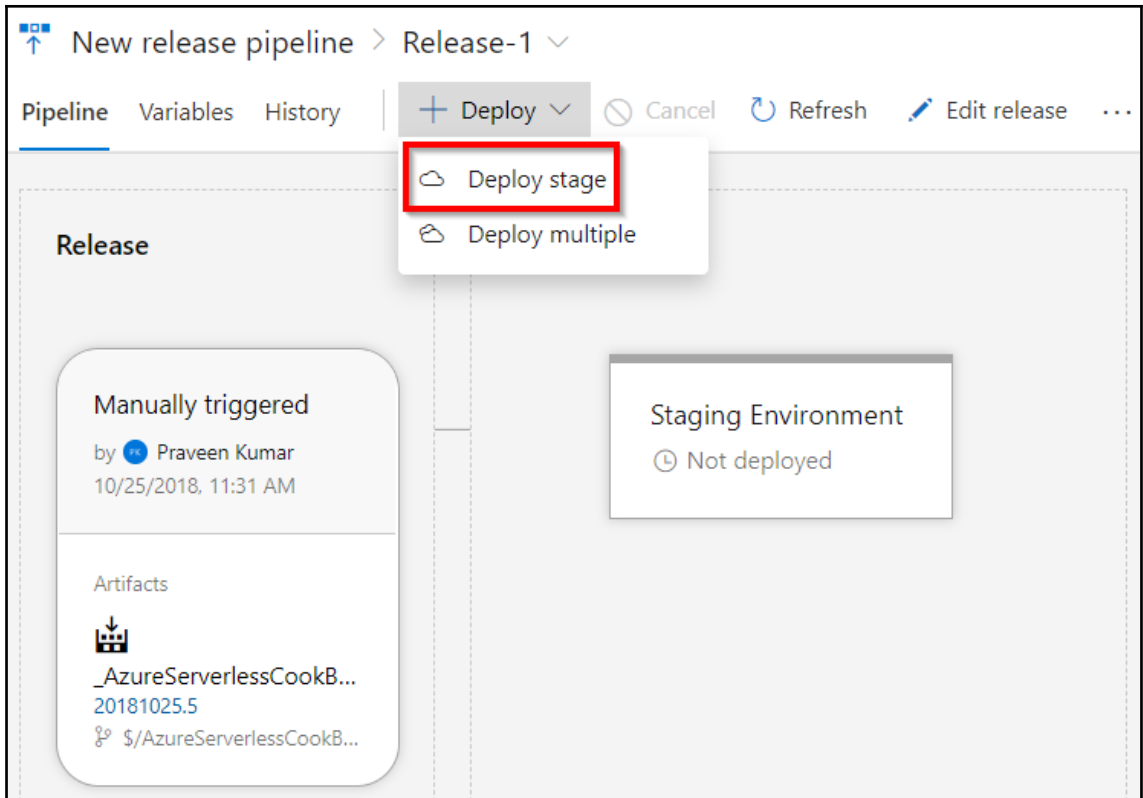
Release

Manually triggered
by Praveen Kumar
10/25/2018, 11:31 AM

Artifacts

 [_AzureServerlessCookB...
20181025.5](#)
\$/AzureServerlessCookB...

Staging Environment
Not deployed



Staging Environment

Deploy release

Overview Commits Work Items

To be deployed (Deploying for the first time)
Release-1

Artifacts



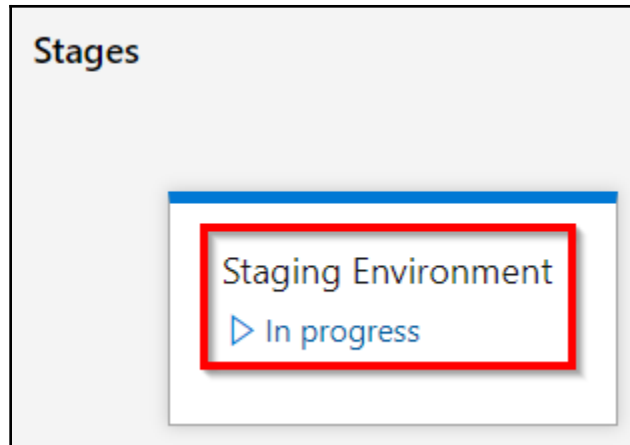
[_AzureServerlessCookBook-C# Function-CI / 20181025.5](#)

[\\$ /AzureServerlessCookBook](#)

Comment

Deploy

Cancel



New release pipeline > Release-1 > Staging Environment ✓ Succeeded

← Pipeline Tasks Variables **Logs** Tests | ☁ Deploy ⏸ Cancel ↻ Refresh ↓ Download all logs ✎ Edit release

Deployment process
Succeeded

- ✓ Run on agent
Succeeded

Run on agent
Pool: Hosted VS2017 · Agent: Hosted Agent


- ✓ Initialize Agent · succeeded
- ✓ Initialize job · succeeded
- ✓ Download artifact - _AzureServerlessCookBook-C# Function-CI - drop · succeeded
- ✓ Deploy Azure App Service · succeeded


All pipelines > **Azure Serverless Cookbook Release**


Pipeline Tasks ▾ Variables Retention Options History

Artifacts | + Add


Stages | + Add ▾

 _AzureServerlessCookBook-C#

 Staging Environme...
1 job, 1 task


 Schedule not set

Select a template

Or start with an  Empty job

function

Others

 Deploy a function app to Azure Functions
Deploy your serverless application to Azure Function App.



Apply


All pipelines > Azure Serverless Cookbook Release


Pipeline Tasks Variables Retention Options History

Artifacts | + Add

Stages | + Add

  _AzureServerlessCookBook-C#

 Staging Environme...
1 job, 1 task

 Schedule not set

Continuous deployment trigger

Build: _AzureServerlessCookBook-C# Function-CI

Enabled

Creates a release every time a new build is available.



Build branch filters ⓘ

No filters added.

+ Add | ▾




AzureServerlessCookBook-C# Function-CI

History Analytics* | Edit Queue ...

| Commit | Build # |
|--|--|
|  Continuous Deployment CI build for Praveen Kumar |  20181025.9 |

Azure Serverless Cookbook Release

Releases Analytics | Edit pipeline Create a release ...

| Releases | Created | Stages |
|--|------------------|---|
|  Release-3 20181025... \$/AzureServerlessCookBook | 2018-10-25 12:27 | <input type="radio"/> Staging E... |
|  Release-2 20181025... \$/AzureServerlessCookBook | 2018-10-25 12:20 | <input checked="" type="radio"/> Staging E... |
|  Release-1 20181025... \$/AzureServerlessCookBook | 2018-10-25 12:04 | <input checked="" type="radio"/> Staging E... |

Body Cookies Headers (11) Tests

Pretty Raw Preview JSON 

```
1 "Automated Build Trigger & Release Trigger test by Praveen Sreeram"
```