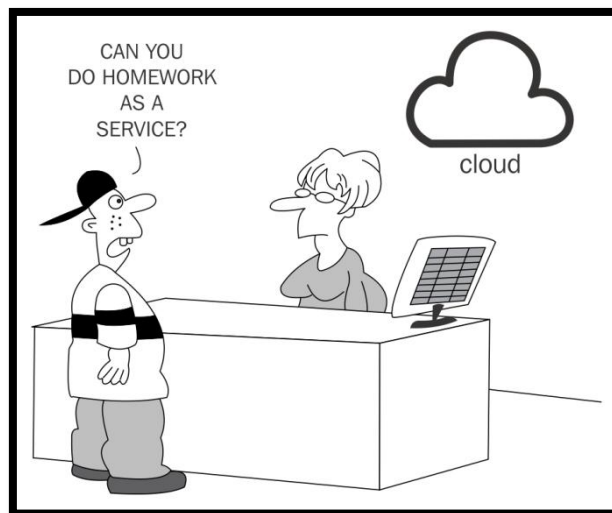
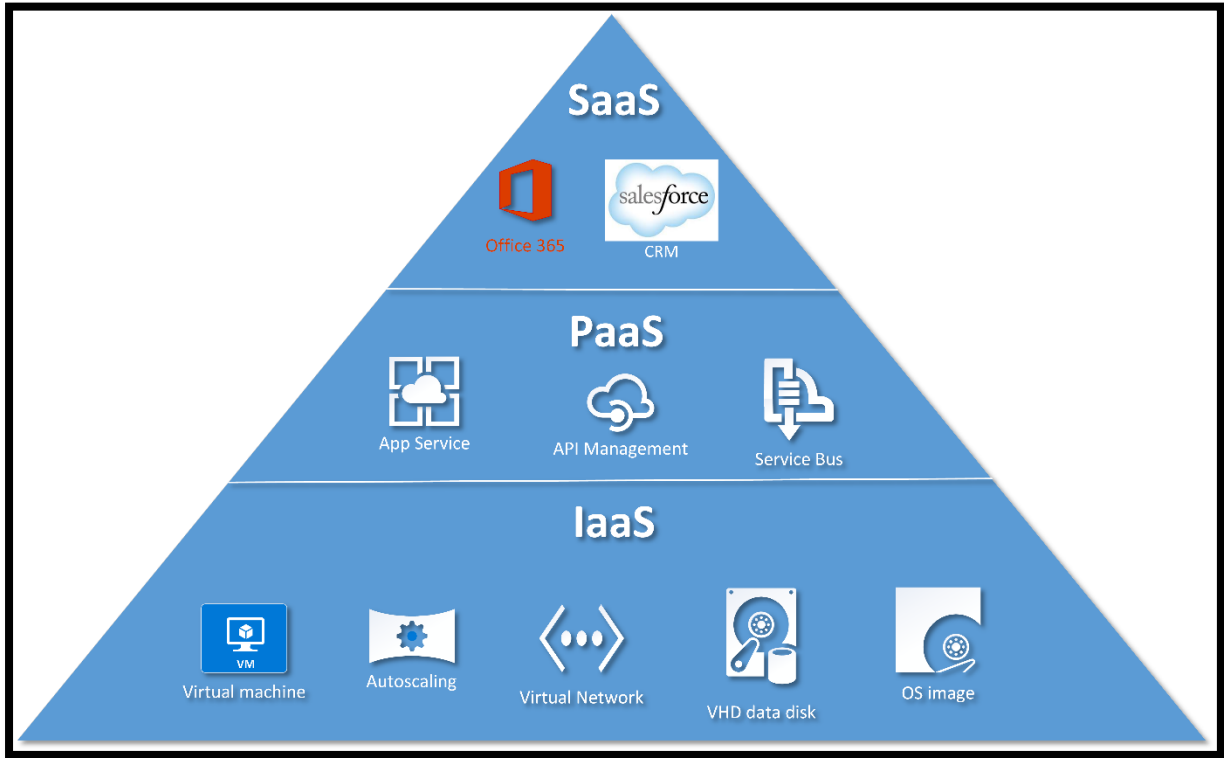
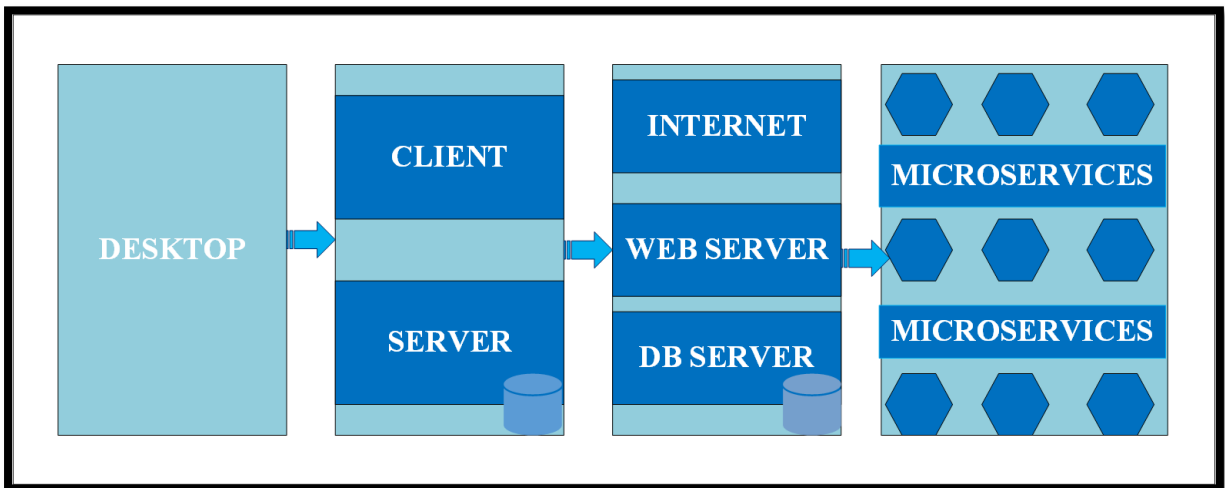
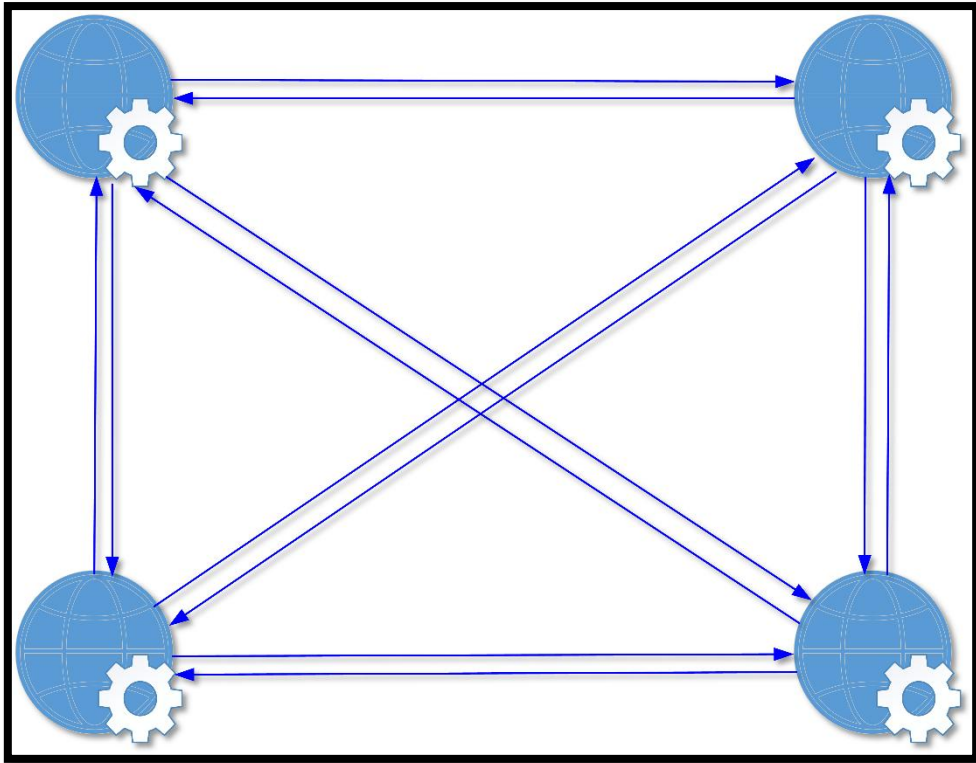
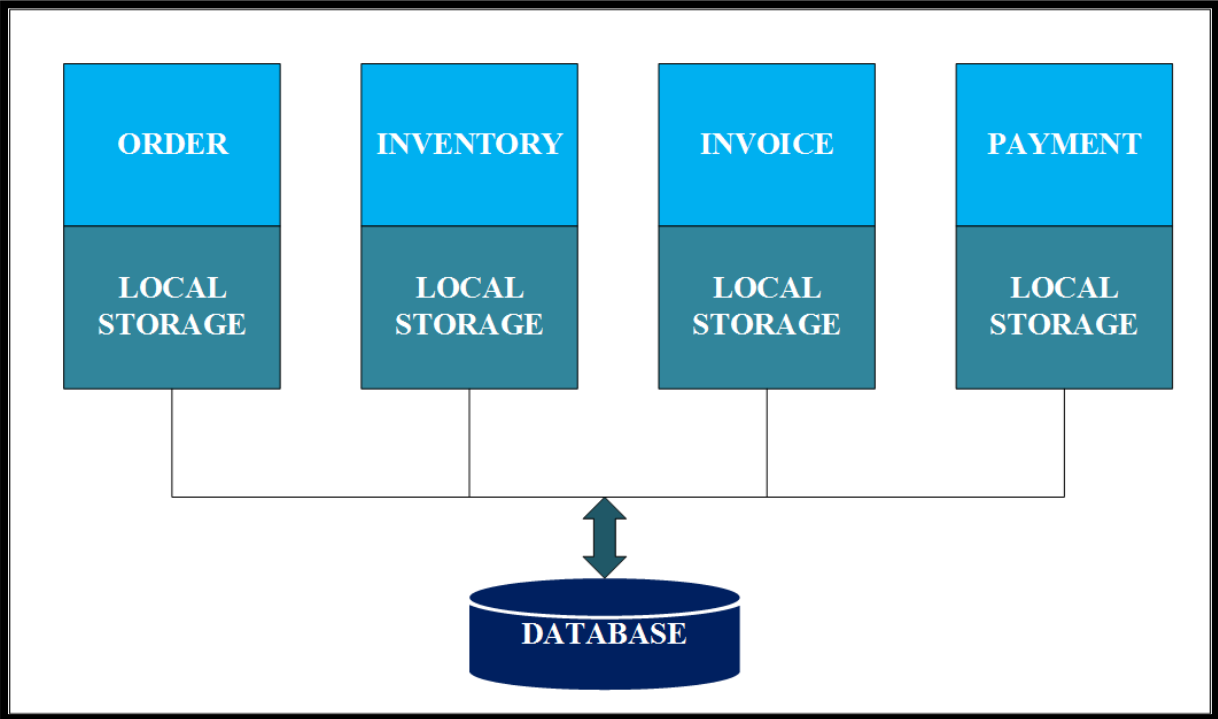
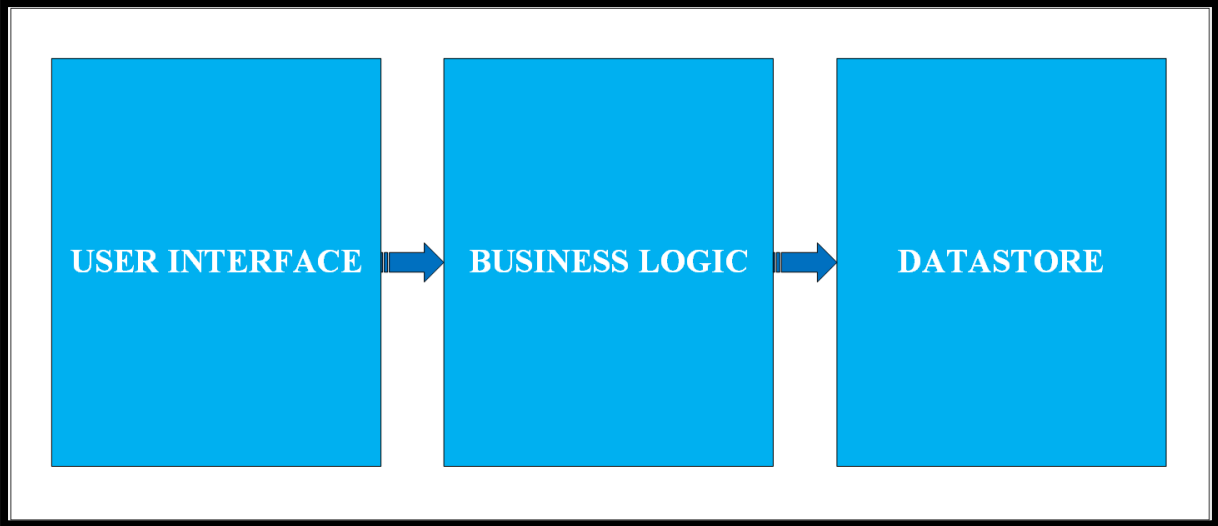
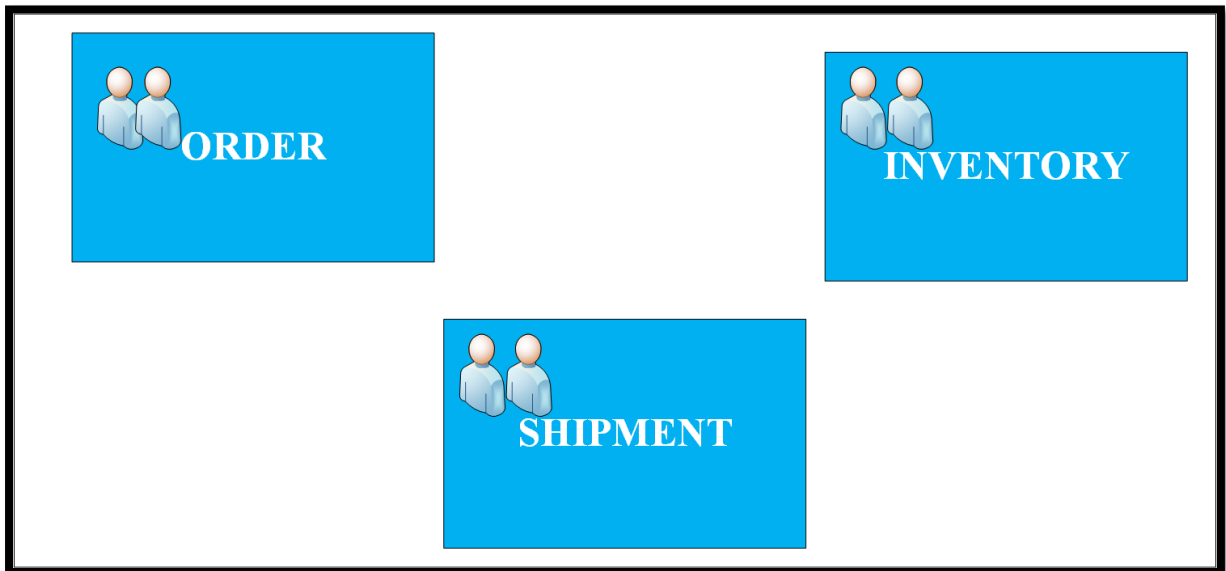
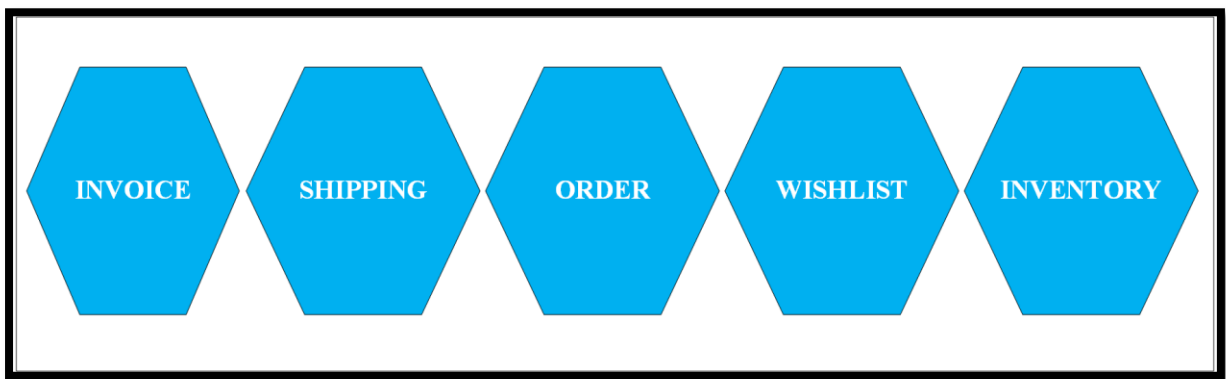
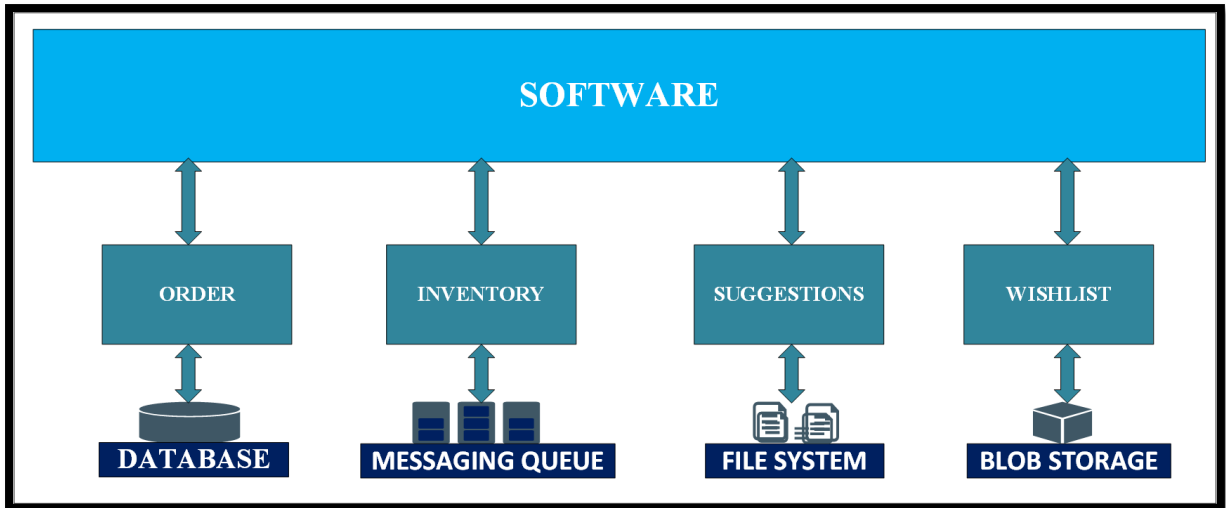


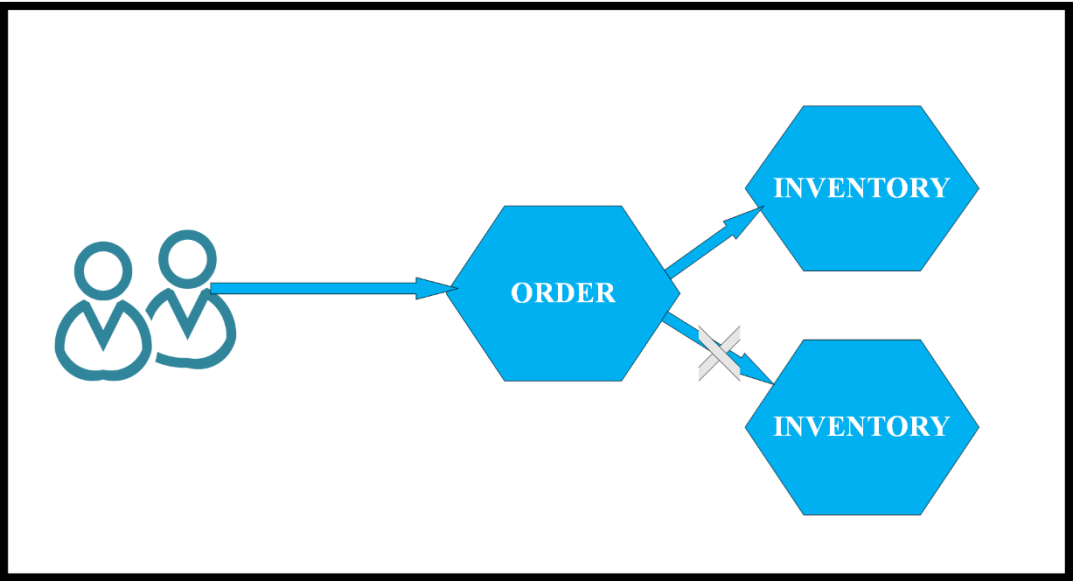
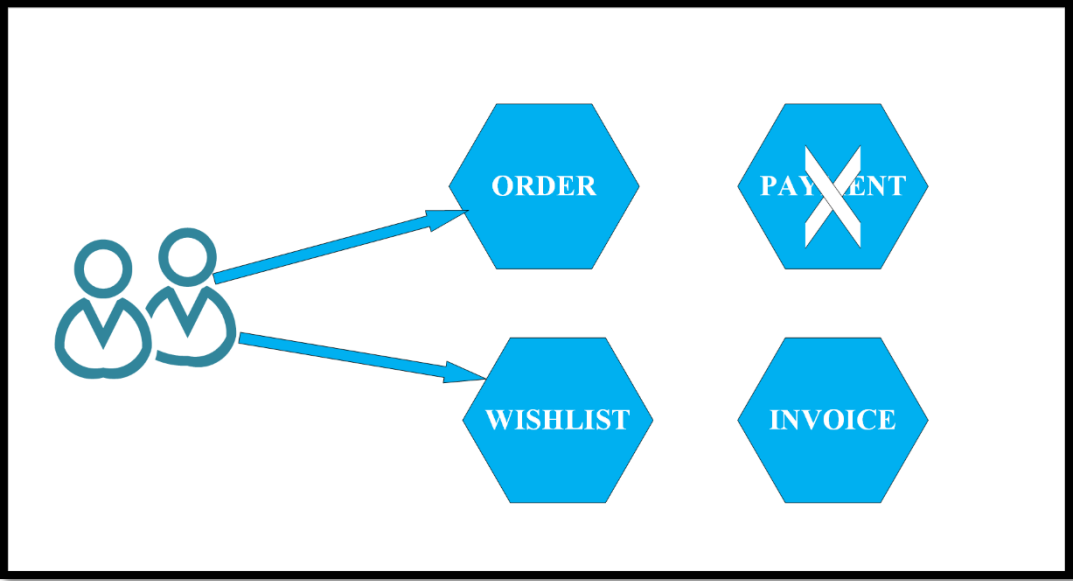
Chapter 1: An Introduction to Systems Integration in the Cloud

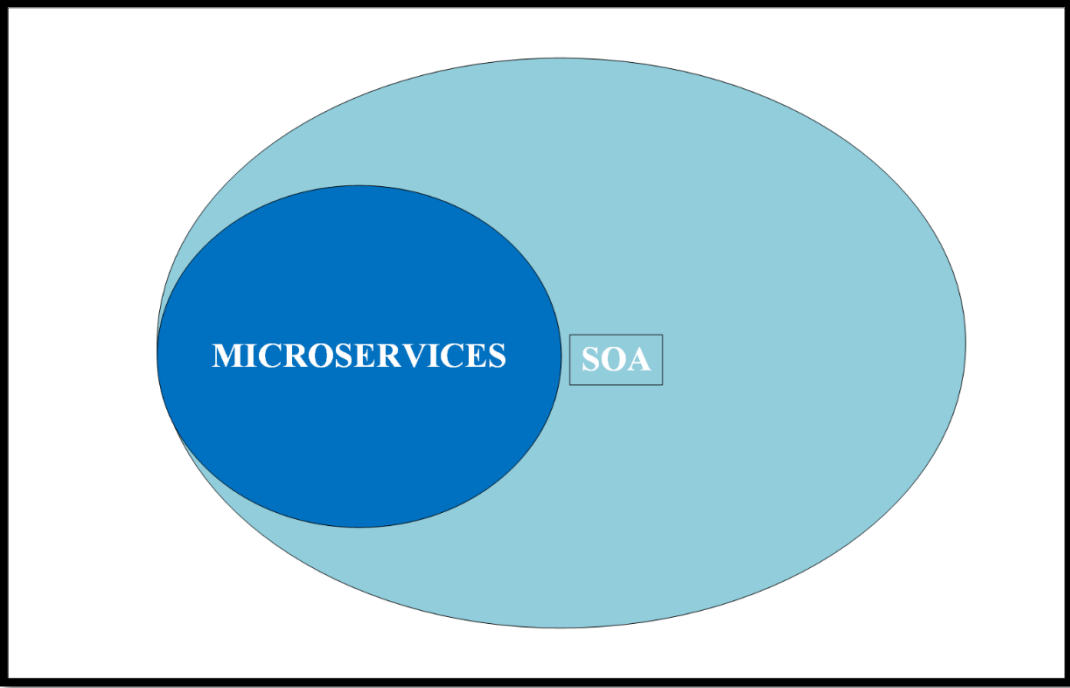




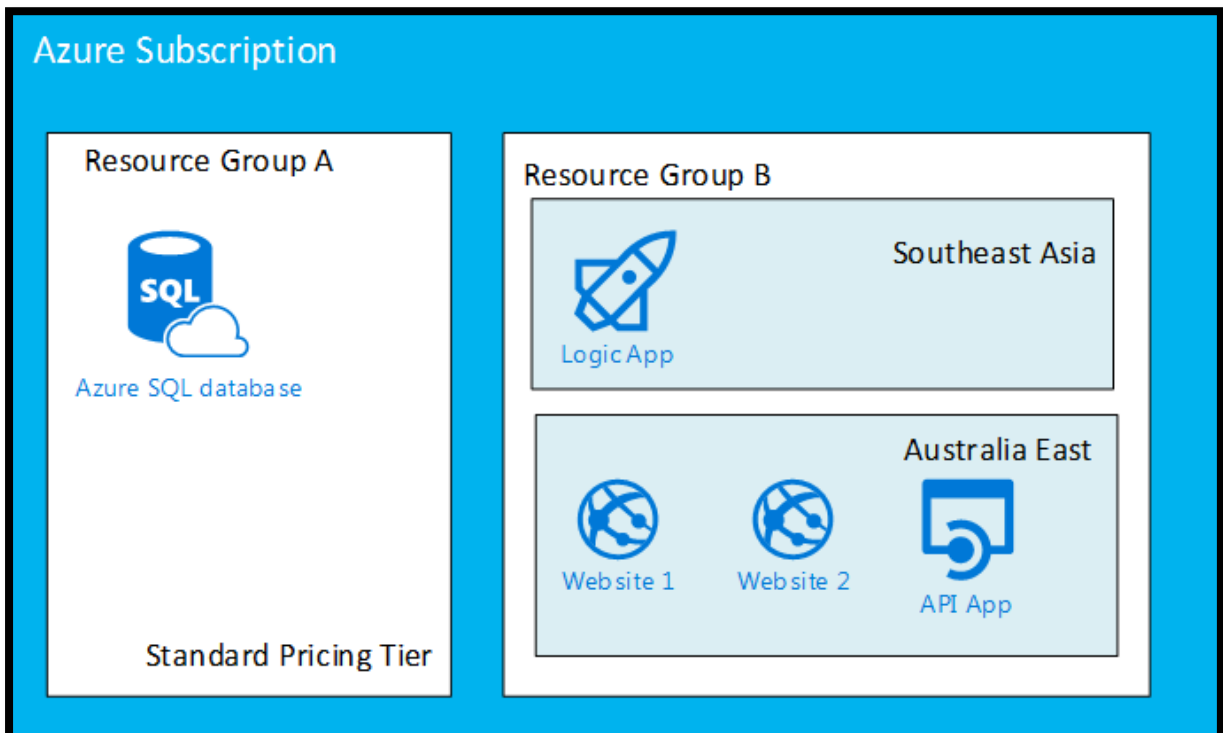
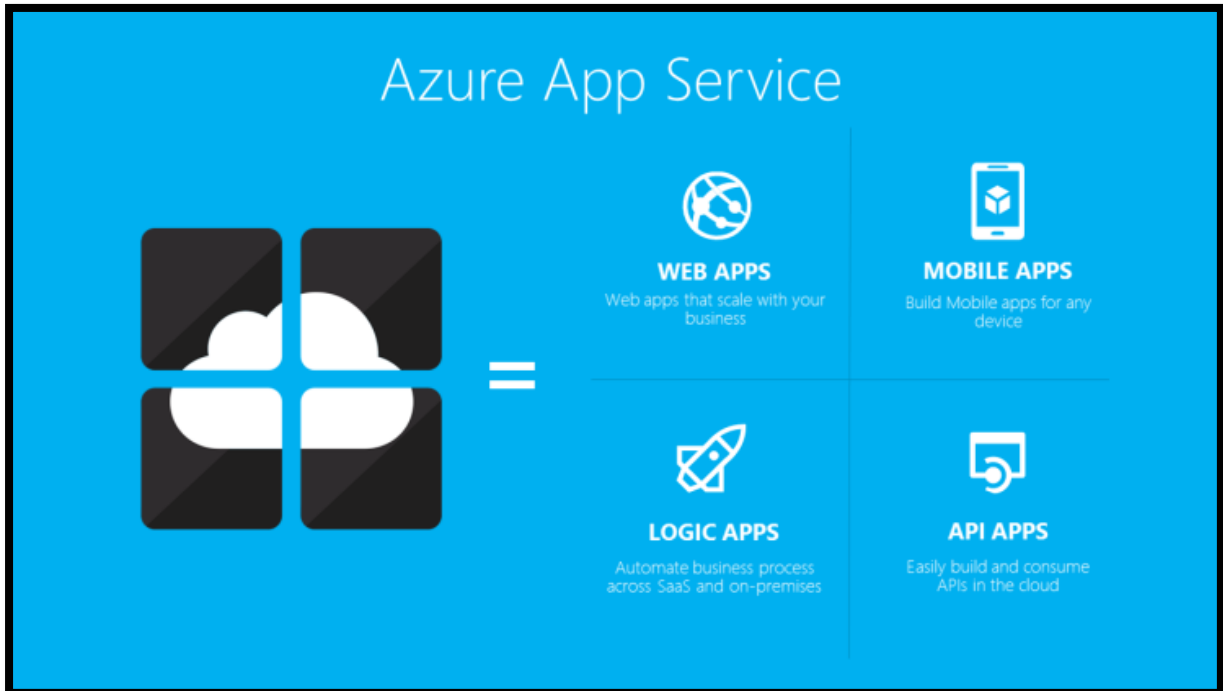








Chapter 2: What Is an Azure App Service?



Microsoft Azure Resource groups

Resource groups
cloud

Subscriptions: All 2 selected – Don't see a subscription? [Switch directories](#)

sunny All subscriptions

NAME	SUBSCRIPTION	LOCATION
SunnyElectricalAppServices	Visual Studio Premium with MSDN	Southeast Asia
SunnyElectricalDatabase	Visual Studio Premium with MSDN	Southeast Asia
SunnyElectricalIoT	Visual Studio Premium with MSDN	Southeast Asia

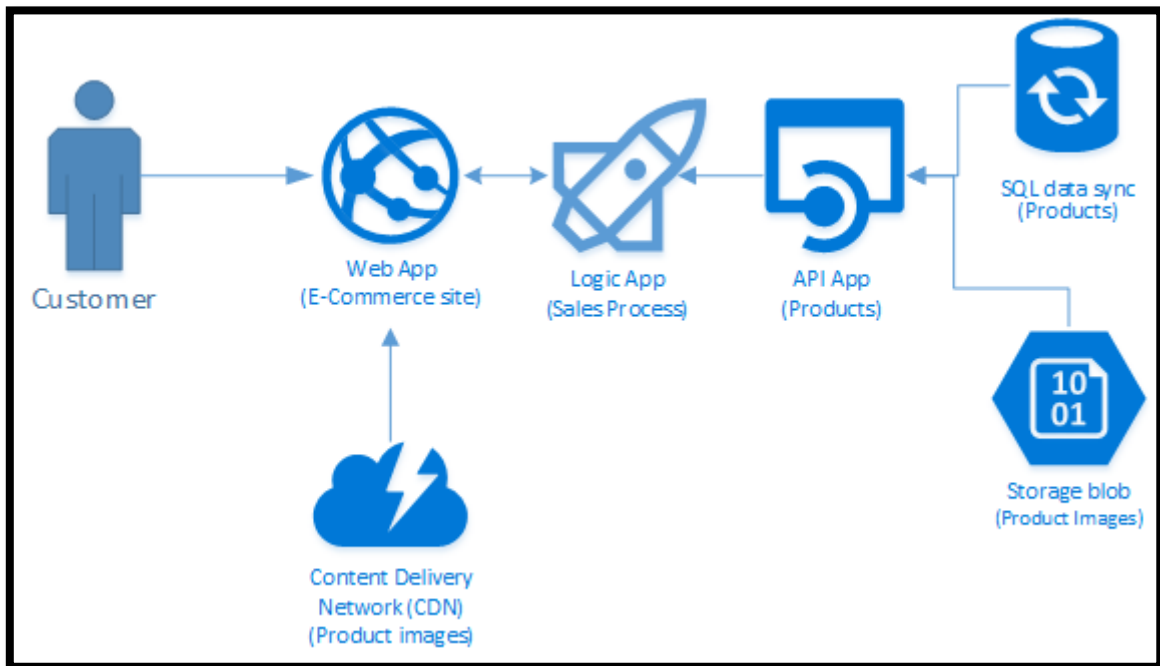
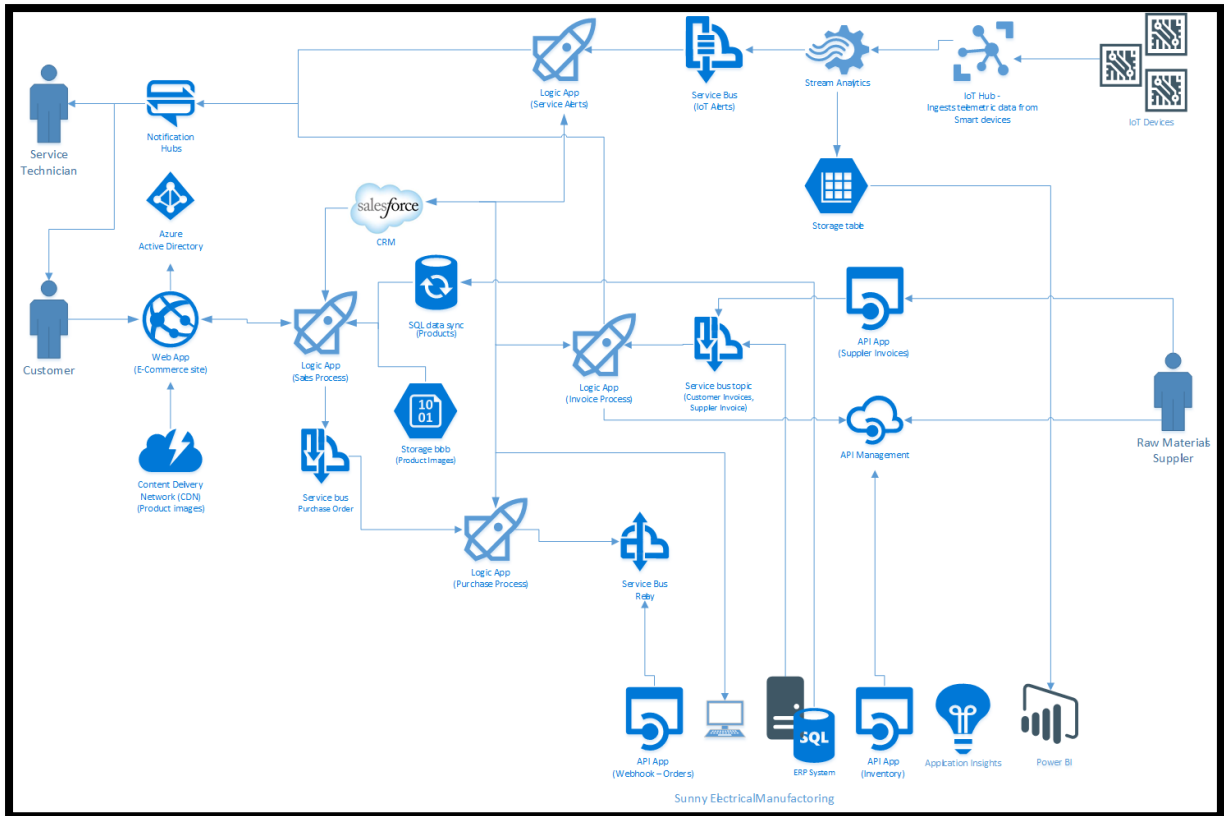
Management locks

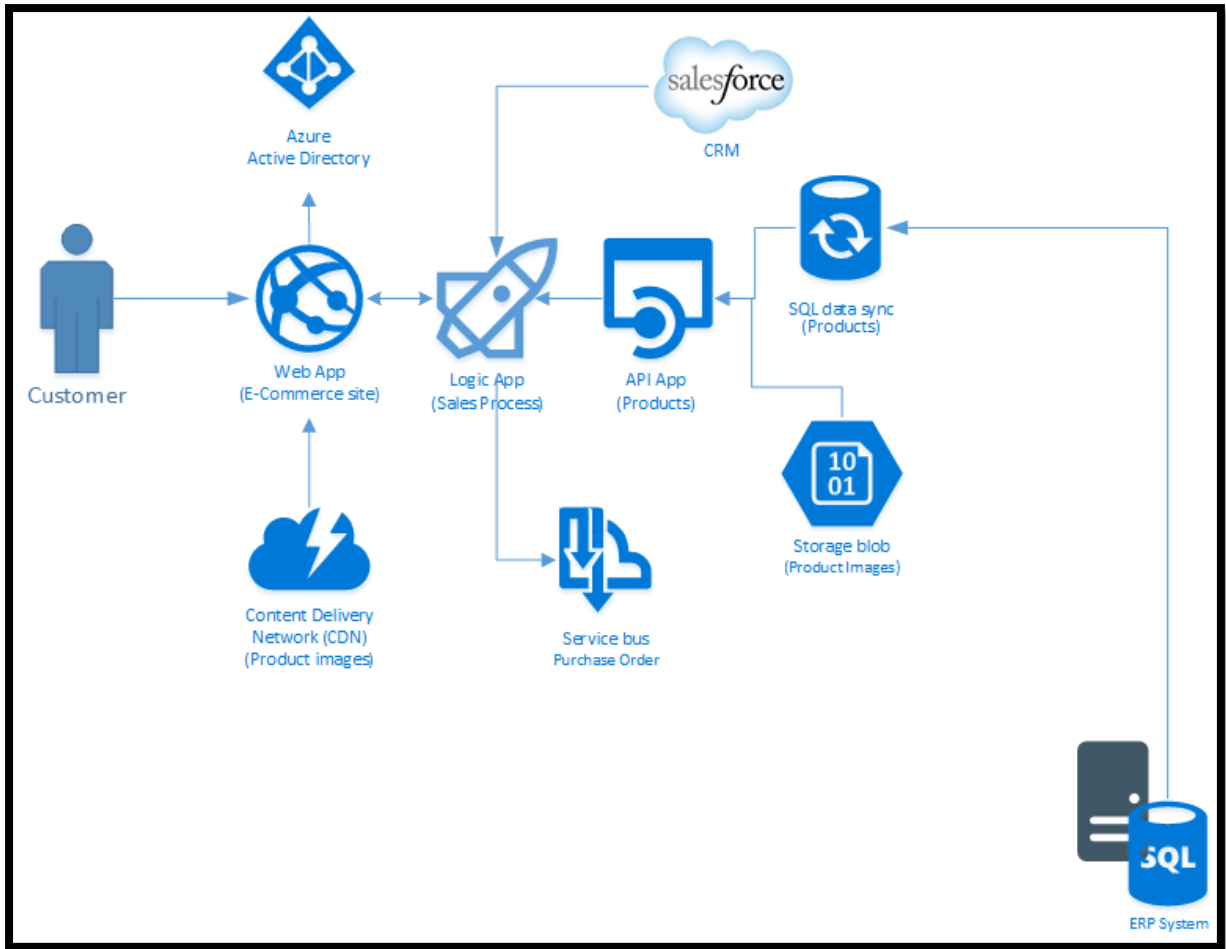
newgroup

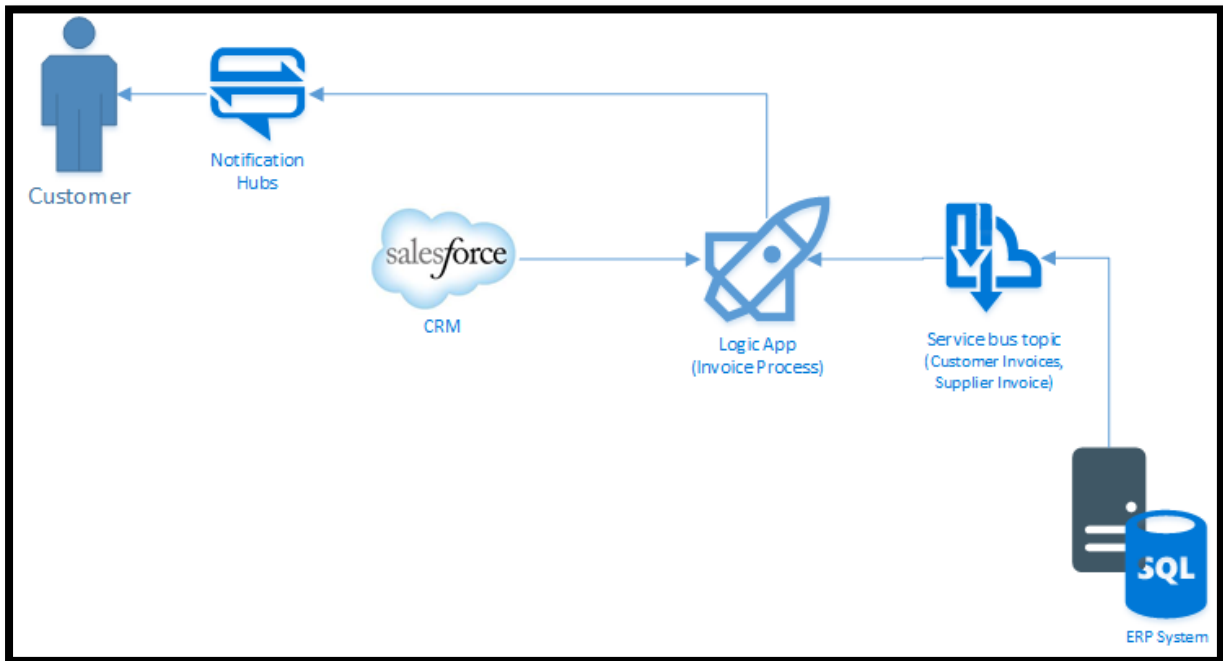
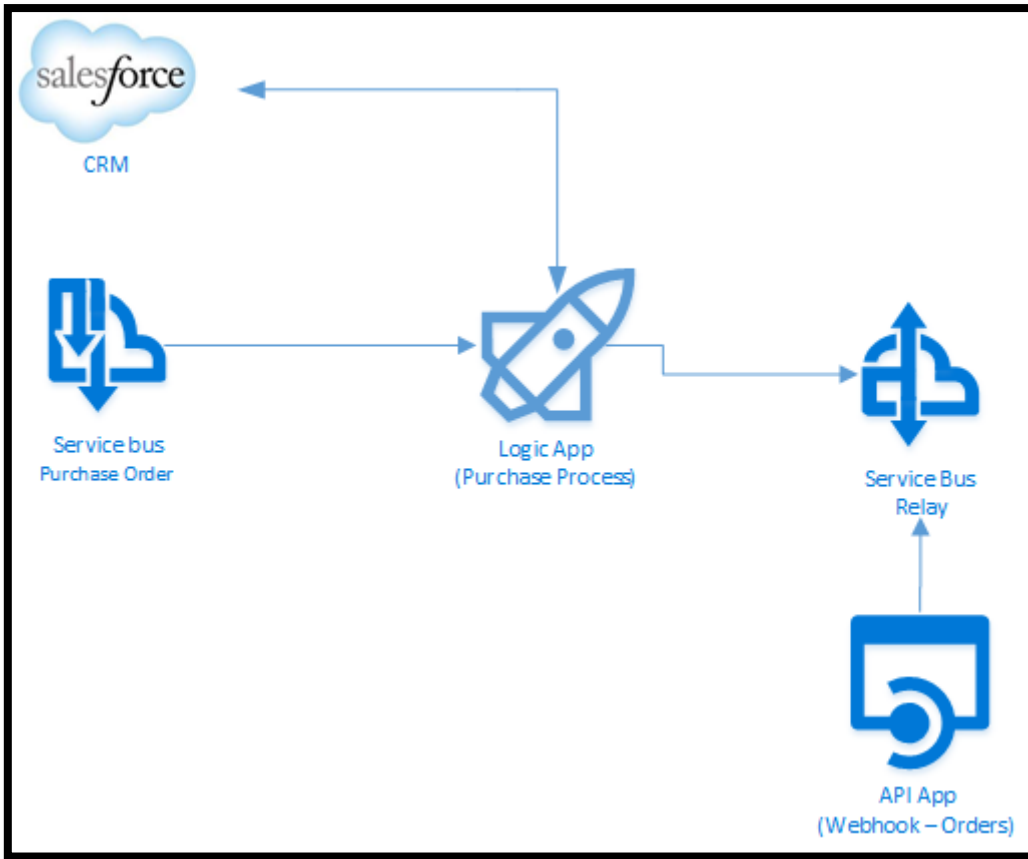
Add lock

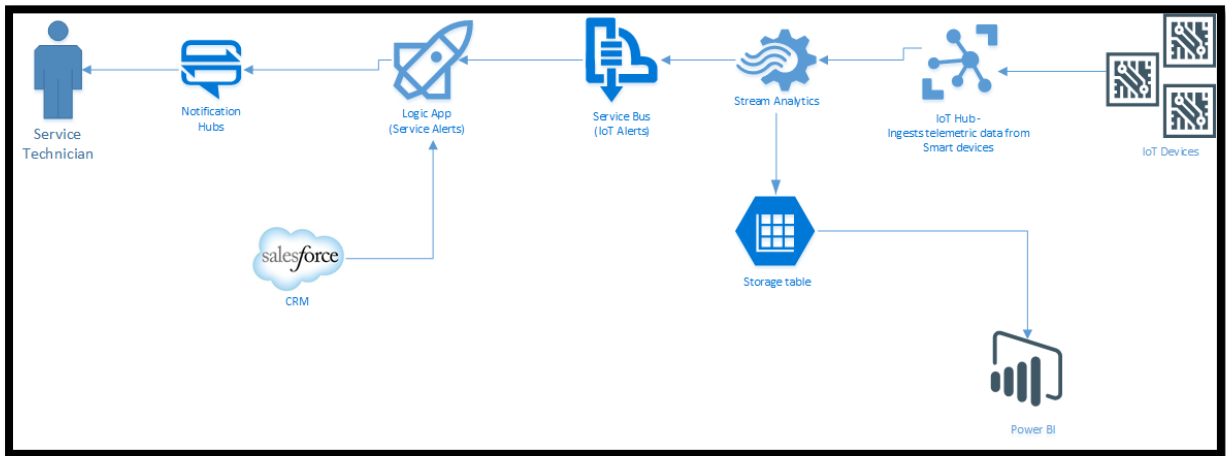
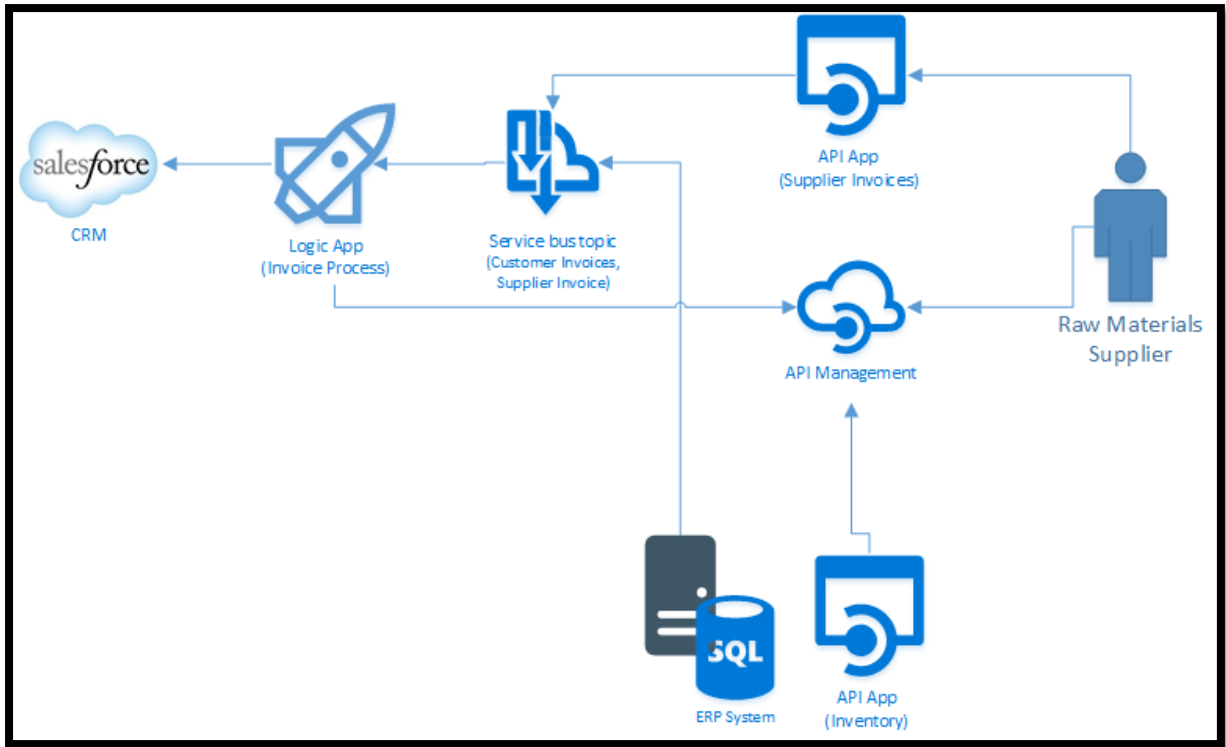
Lock name:
 Lock type:

Notes









Chapter 3: Getting Started with API Apps



Benefits of building and consuming your APIs using API apps

Build

- Bring your API as-is, in your language of choice.
- API discoverable using Swagger metadata
- CORS
- Simple access control
- Microservice Style
- Expose enterprise APIs

Consume

- Flexible authentication option, built-in to web and mobile SDKs
- Client SDK generation
- Logic Apps and API Management integration
- Marketplace gallery support

API Apps More




Office365
Connector
Microsoft




SharePoint Server
Connector
Microsoft



Salesforce
Connector
Microsoft



Azure Media
Services
Microsoft



Twitter Connector
Microsoft



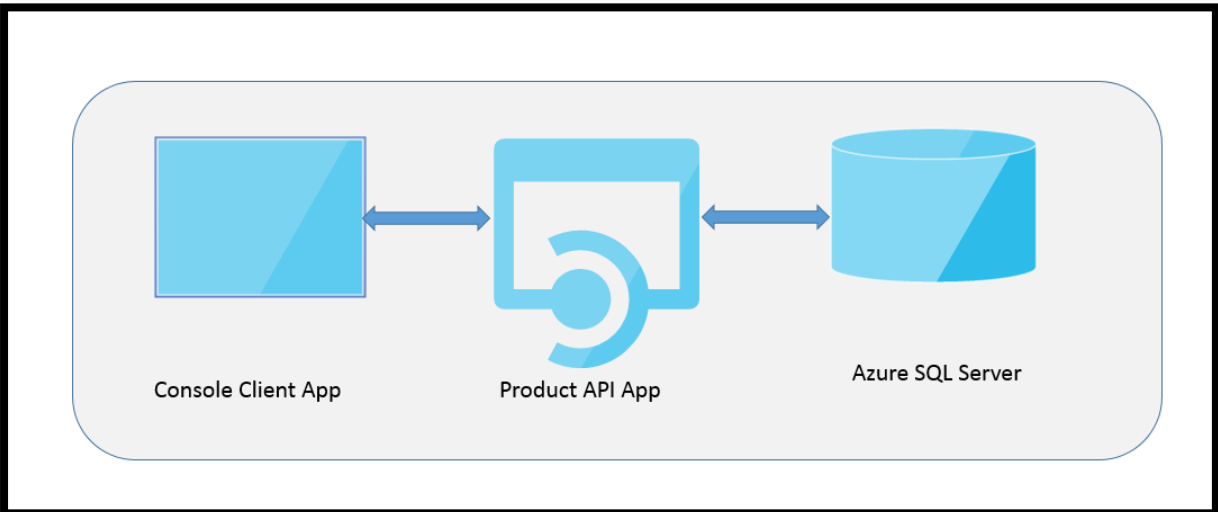
Dropbox
Connector
Microsoft

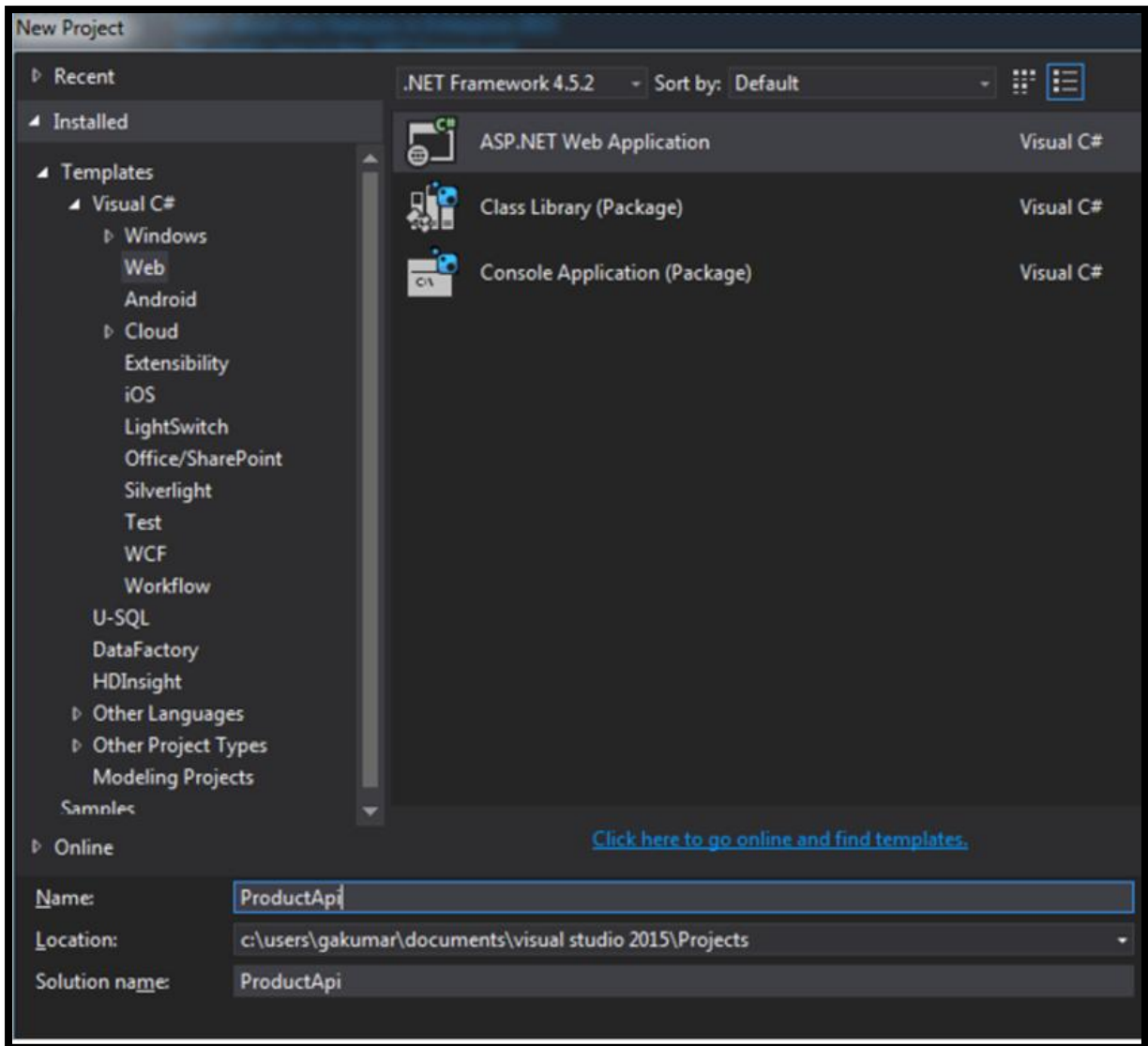
SunnyElectricalProductAPI

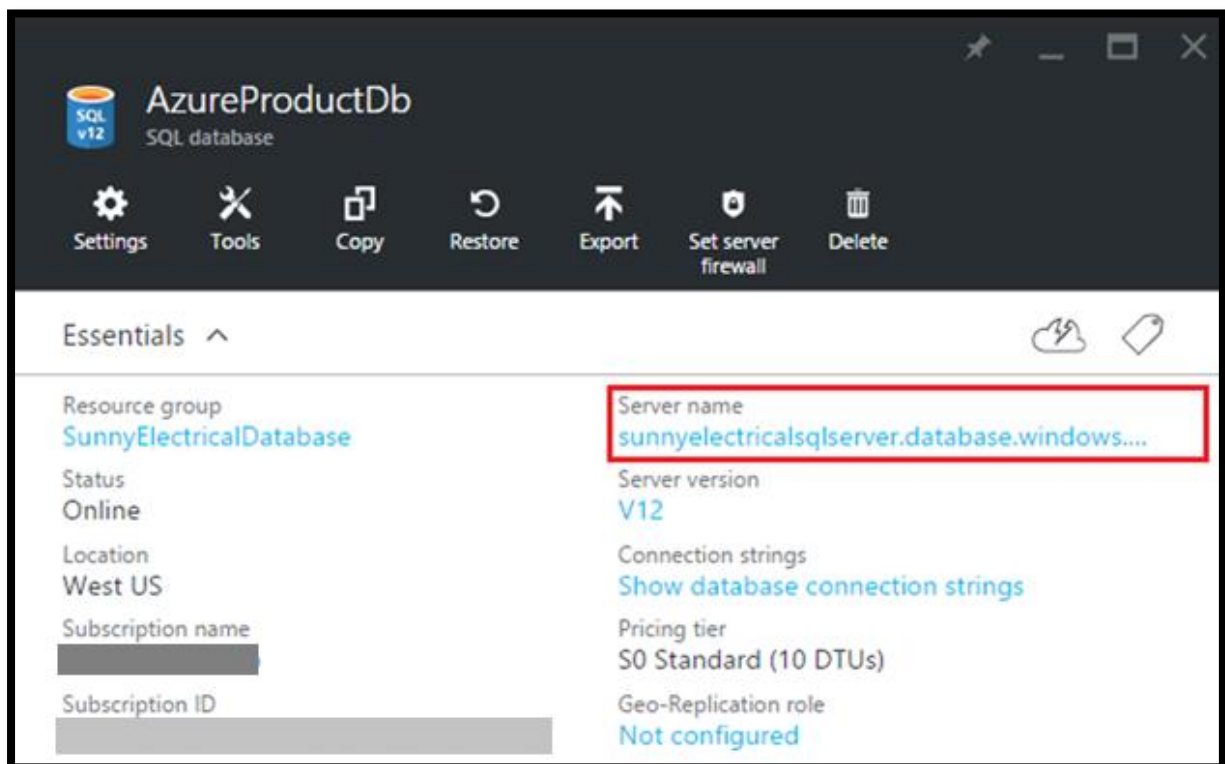
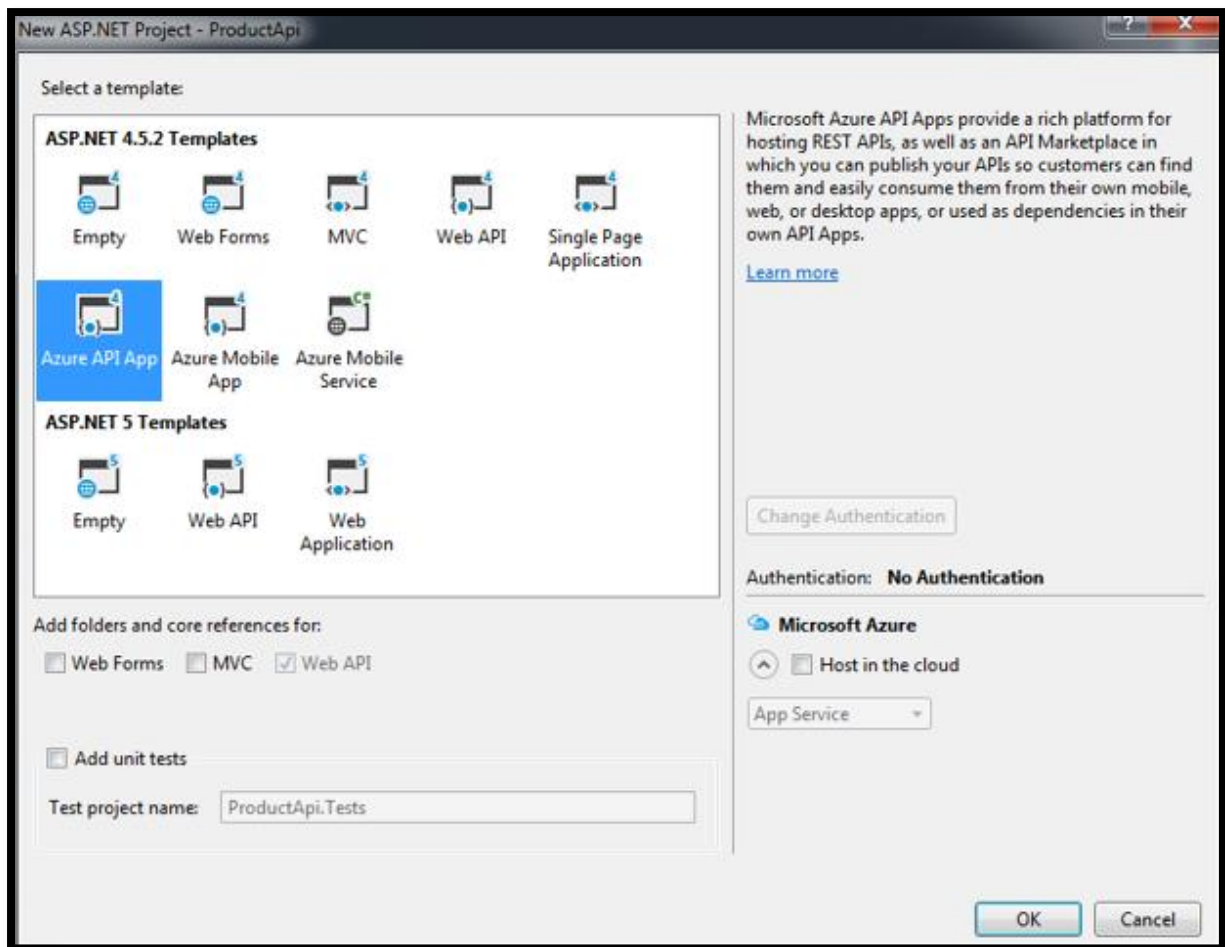
Product Show/Hide | List Operations | Expand Operations

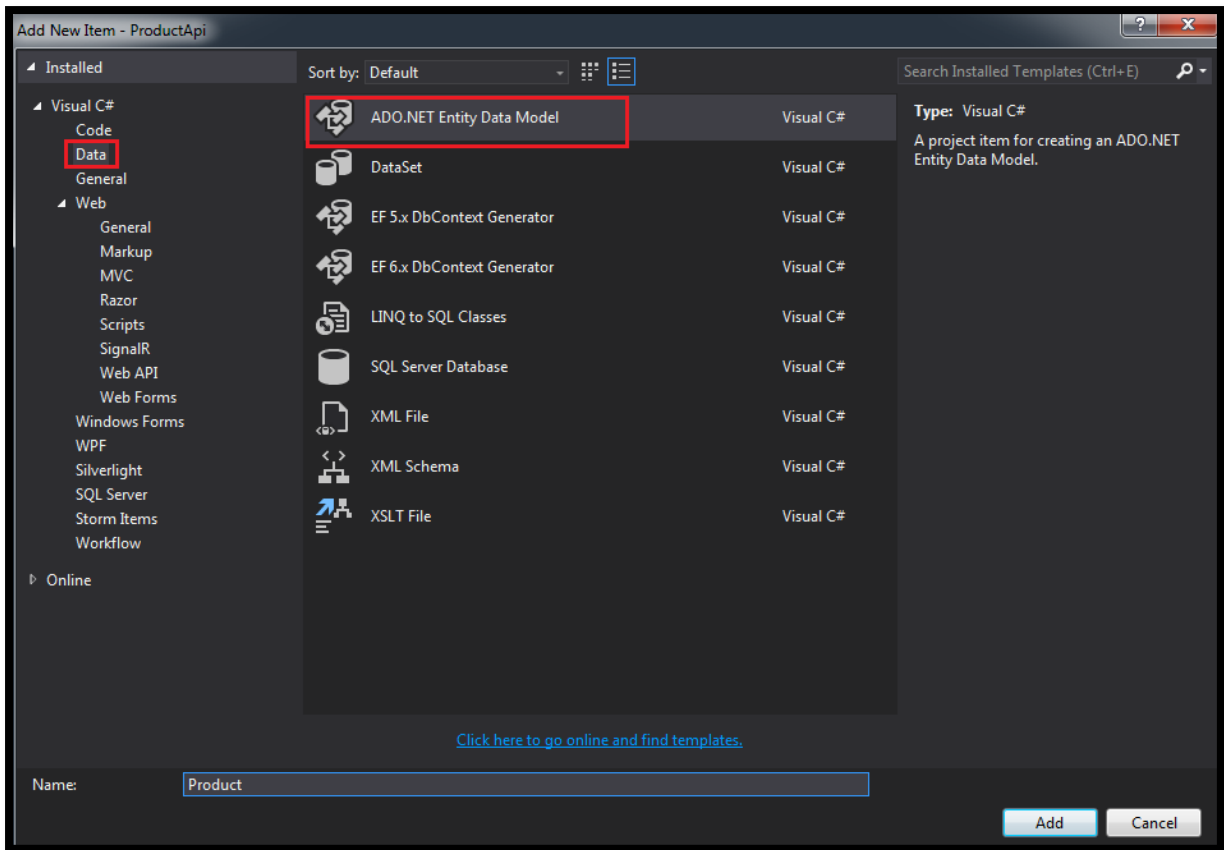
GET	/api/Product
POST	/api/Product
PUT	/api/Product
DELETE	/api/Product/{id}
GET	/api/Product/{id}

[BASE URL: , API VERSION: v1]















Choose Model Contents

What should the model contain?

-  EF Designer from database
-  Empty EF Designer model
-  Empty Code First model
-  Code First from database

Creates a model in the EF Designer based on an existing database. You can choose the database connection, settings for the model, and database objects to include in the model. The classes your application will interact with are generated from the model.

Connection Properties

Enter information to connect to the selected data source or click "Change" to choose a different data source and/or provider.

Data source:
Microsoft SQL Server (SqlClient) Change...

Server name:
sunnyelectricalsqlserver.database.windows.net Refresh

Log on to the server

Authentication: SQL Server Authentication

User name:

Password:

Save my password

Connect to a database

Select or enter a database name:
AzureProductDb

Attach a database file:
 Browse...

Logical name:

Advanced...

Test Connection OK Cancel



Choose Your Data Connection

Which data connection should your application use to connect to the database?

sunnyelectricalsqlserver.AzureProductDb.dbo

New Connection...

This connection string appears to contain sensitive data (for example, a password) that is required to connect to the database. Storing sensitive data in the connection string can be a security risk. Do you want to include this sensitive data in the connection string?

- No, exclude sensitive data from the connection string. I will set it in my application code.
- Yes, include the sensitive data in the connection string.

Connection string:

```
metadata=res://*/Product.csdl|res://*/Product.ssdl|
res://*/Product.msl;provider=System.Data.SqlClient;provider connection string="data
source=sunnyelectricalsqlserver.database.windows.net;initial catalog=AzureProductDb;user
id= password=*****;MultipleActiveResultSets=True;App=EntityFramework"
```

Save connection settings in Web.Config as:

AzureProductDbEntities

< Previous

Next >

Finish

Cancel



Choose Your Database Objects and Settings

Which database objects do you want to include in your model?

- Tables
 - dbo
 - Product
 - ProductImage
 - Views
 - Stored Procedures and Functions

- Pluralize or singularize generated object names
- Include foreign key columns in the model
- Import selected stored procedures and functions into the entity model

Model Namespace:

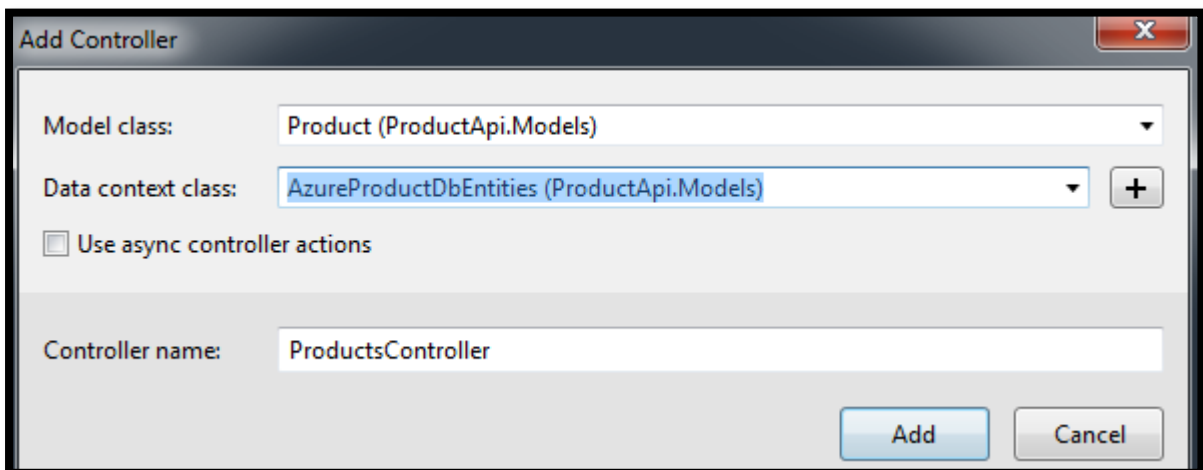
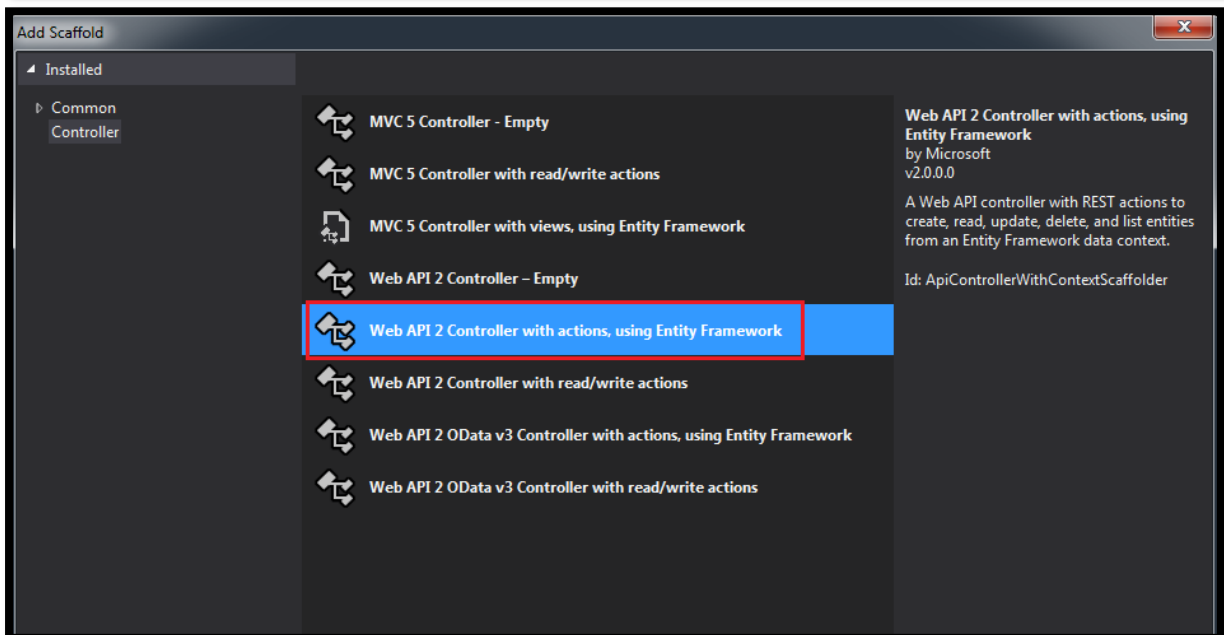
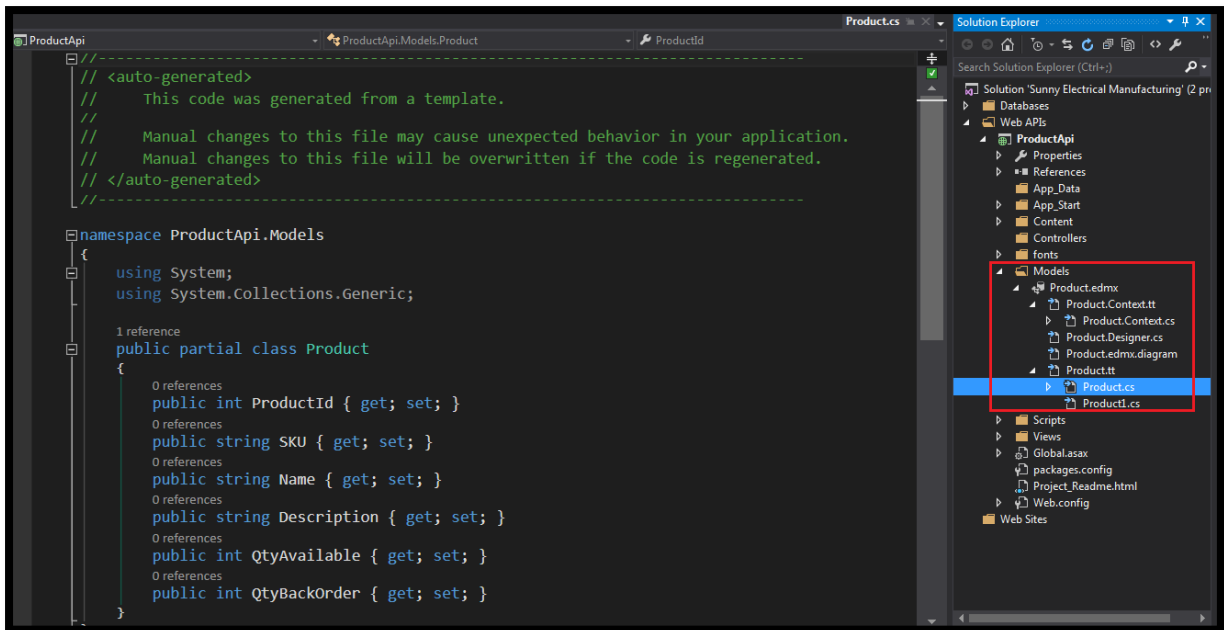
AzureProductDbModel

< Previous

Next >

Finish

Cancel



```
ProductApi | ProductApi.Controllers.ProductsController
using ...
namespace ProductApi.Controllers
{
    0 references
    public class ProductsController : ApiController
    {
        private AzureProductDbEntities db = new AzureProductDbEntities();

        // GET: api/Products
        0 references
        public IQueryable<Product> GetProducts()...

        // GET: api/Products/5
        [ResponseType(typeof(Product))]
        0 references
        public IHttpActionResult GetProduct(int id)...

        // PUT: api/Products/5
        [ResponseType(typeof(void))]
        0 references
        public IHttpActionResult PutProduct(int id, Product product)...

        // POST: api/Products
        [ResponseType(typeof(Product))]
        0 references
        public IHttpActionResult PostProduct(Product product)...

        // DELETE: api/Products/5
        [ResponseType(typeof(Product))]
        0 references
        public IHttpActionResult DeleteProduct(int id)...

        1 reference
        protected override void Dispose(bool disposing)...

        1 reference
        private bool ProductExists(int id)...
    }
}
```

HTTP Error 403.14 - Forbidden

The Web server is configured to not list the contents of this directory.

Most likely causes:

- A default document is not configured for the requested URL, and directory browsing is not enabled on the server.

Things you can try:

- If you do not want to enable directory browsing, ensure that a default document is configured and that the file exists.
- Enable directory browsing.
 1. Go to the IIS Express install directory.
 2. Run `appcmd set config /section:system.webServer/directoryBrowse /enabled:true` to enable directory browsing at the server level.
 3. Run `appcmd set config ["SITE_NAME"] /section:system.webServer/directoryBrowse /enabled:true` to enable directory browsing at the site level.
- Verify that the configuration/system.webServer/directoryBrowse@enabled attribute is set to true in the site or application configuration file.

```

{"swagger":"2.0","info":{"version":"v1","title":"ProductApi","host":"localhost:21862","schemes":["http"],"paths":{"/api/Product":{"get":{"tags":["Product"],"operationId":"Product_Get","consumes":[],"produces":["application/json","text/json","application/xml","text/xml"],"responses":{"200":{"description":"Ok","schema":{"type":"array","items":{"$ref":"#/definitions/Product"}}},"deprecated":false},"put":{"tags":["Product"],"operationId":"Product_Put","consumes":["application/json","text/json","application/xml","text/xml","application/x-www-form-urlencoded"],"produces":[],"parameters":[{"name":"product","in":"body","required":true,"schema":{"$ref":"#/definitions/Product"}],"responses":{"204":{"description":"No Content"},"deprecated":false},"post":{"tags":["Product"],"operationId":"Product_Post","consumes":["application/json","text/json","application/xml","text/xml","application/x-www-form-urlencoded"],"produces":[],"parameters":[{"name":"product","in":"body","required":true,"schema":{"$ref":"#/definitions/Product"}],"responses":{"204":{"description":"No Content"},"deprecated":false},"/api/Product/{id":{"get":{"tags":["Product"],"operationId":"Product_GetById","consumes":[],"produces":["application/json","text/json","application/xml","text/xml"],"parameters":[{"name":"id","in":"path","required":true,"type":"integer","format":"int32"}],"responses":{"200":{"description":"OK","schema":{"$ref":"#/definitions/Product"}},"deprecated":false},"delete":{"tags":["Product"],"operationId":"Product_Delete","consumes":[],"produces":[],"parameters":[{"name":"id","in":"path","required":true,"type":"integer","format":"int32"}],"responses":{"204":{"description":"No Content"},"deprecated":false}}},"definitions":{"Product":{"type":"object","properties":{"id":{"format":"int32","type":"integer"},"Name":{"type":"string"},"Description":{"type":"string"},"Price":{"type":"string"}}}}}

```

```

// ***** Uncomment the following to enable the swagger UI *****
/*
  })
  .EnableSwaggerUi(c =>
  {
  */

```

swagger

Explore

ProductApi

Product Show/Hide | List Operations | Expand Operations

GET	/api/Product
POST	/api/Product
PUT	/api/Product
DELETE	/api/Product/{id}
GET	/api/Product/{id}

[BASE URL: , API VERSION: V1]

POST /api/Products

Response Class (Status 200)
OK

Model | Model Schema

```

{
  "ProductId": 0,
  "SKU": "string",
  "Name": "string",
  "Description": "string",
  "QtyAvailable": 0,
  "QtyBackOrder": 0
}

```

Response Content Type

Parameters

Parameter	Value	Description	Parameter Type	Data Type
product	<pre> { "ProductId": 0, "SKU": "SKU002", "Name": "Iron", "Description": "Light Weight Dry Iron", "QtyAvailable": 10, } </pre>		body	Model Model Schema

Parameter content type:

```

{
  "ProductId": 0,
  "SKU": "string",
  "Name": "string",
  "Description": "string",
  "QtyAvailable": 0,
  "QtyBackOrder": 0
}

```

[Click to set as parameter value](#)

[Try it out!](#)

Request URL

http://localhost:21862/api/Products

Response Body

```

{
  "ProductId": 2,
  "SKU": "SKU002",
  "Name": "Iron",
  "Description": "Light Weight Dry Iron",
  "QtyAvailable": 10,
  "QtyBackOrder": 10
}

```

Response Code

201

Request URL

http://localhost:21862/api/Products

Response Body

```
[
  {
    "ProductId": 1,
    "SKU": "SKU001",
    "Name": "Fan",
    "Description": "Exotica 3 Blade Ceiling Fan",
    "QtyAvailable": 10,
    "QtyBackOrder": 10
  },
  {
    "ProductId": 2,
    "SKU": "SKU002",
    "Name": "Iron",
    "Description": "Light Weight Dry Iron",
    "QtyAvailable": 10,
    "QtyBackOrder": 10
  }
]
```

Response Code


200





Publish Web

Profile

Select a publish target

 Microsoft Azure App Service

 Import

 Custom



App Service

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

Microsoft account
gyan.gautam@outlook.com

[Reenter your credentials](#)

Subscription

View

Resource Group

Search



Create App Service

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

Microsoft account
gyan.gautam@outlook.com

Hosting

Services

API App Name

ProductApi20160707080909

Subscription

Resource Group

SunnyElectricalAppServices

Change Type

- API App
- Web App
- Mobile App

New...

Azure Subscription

Datacenter Region

Resource Group

App Service Plan A



Web App A



API App A



Standard Tier

App Service Plan B



Web App B



API App B



Free Tier



Configure App Service Plan

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

App Service Plan

Location

Size



Create App Service

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

Microsoft account
gyan.gautam@outlook.com

Hosting

Services

API App Name

Change Type

ProductApi20160707080909

Subscription

Resource Group

SunnyElectricalAppServices

New...

App Service Plan

SunnyElectricalAppPlan*

New...

Clicking the Create button will create the following Azure resources

[Explore additional Azure services](#)

App Service - ProductApi20160707080909

App Service Plan - SunnyElectricalAppPlan

If you have removed your spending limit or you are using Pay as You Go, there may be monetary impact if you provision additional resources.
[Learn More](#)

Export...

Create

Cancel



Profile

Connection

Settings

Preview

ProductApi20160707080909 - Web Deploy *

Publish method: Web Deploy

Server: productapi20160707080909.scm.azurewebsites.net:443

Site name: ProductApi20160707080909

User name: \$ProductApi20160707080909

Password:

Save password

Destination URL: http://productapi20160707080909.azurewebsites.net

Validate Connection

< Prev

Next >

Publish

Close



Profile

Connection

Settings

Preview

ProductApi20160707080909 - Web Deploy *

Configuration: Release

File Publish Options

- Remove additional files at destination
- Precompile during publishing [Configure](#)
- Exclude files from the App_Data folder

Databases

AzureProductDbEntities

Data Source=sunnelectricalsqlserver.database.windows.net;Initial Catalc ...

- Use this connection string at runtime (update destination web.config)
- Execute Code First Migrations (runs on application start)

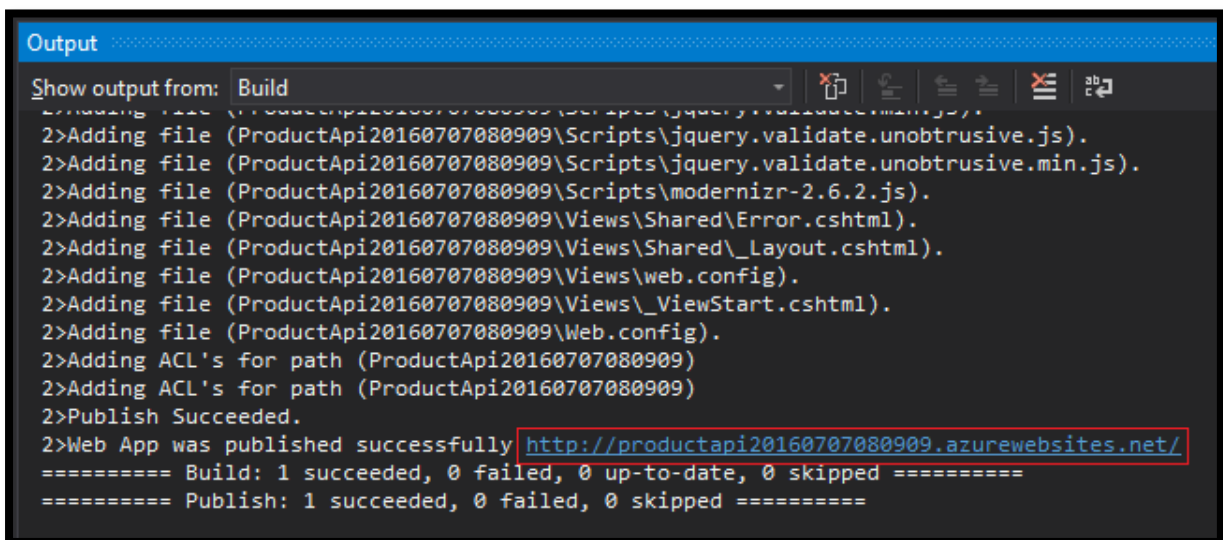
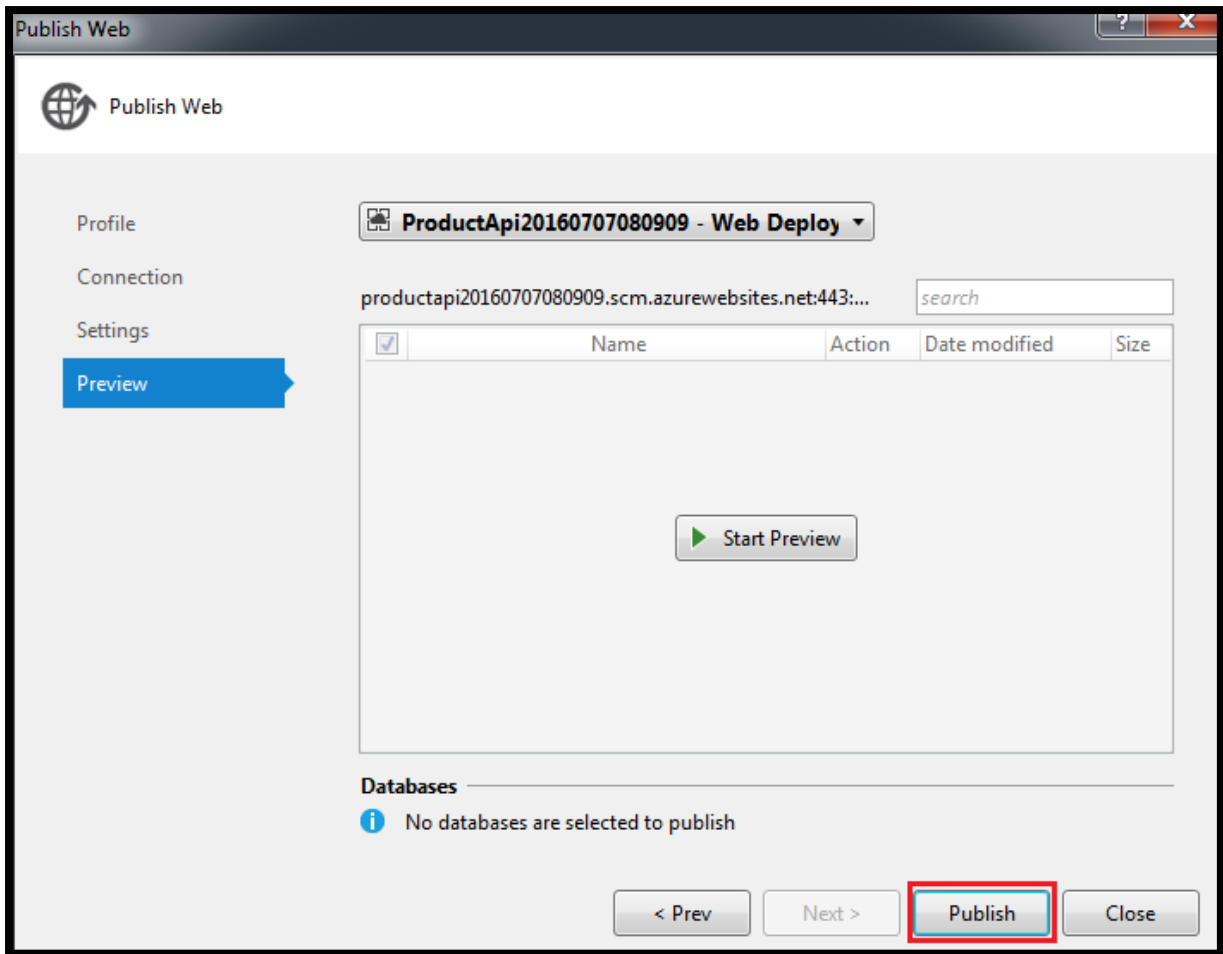
In order to publish a Code First model, Code First Migrations should be used

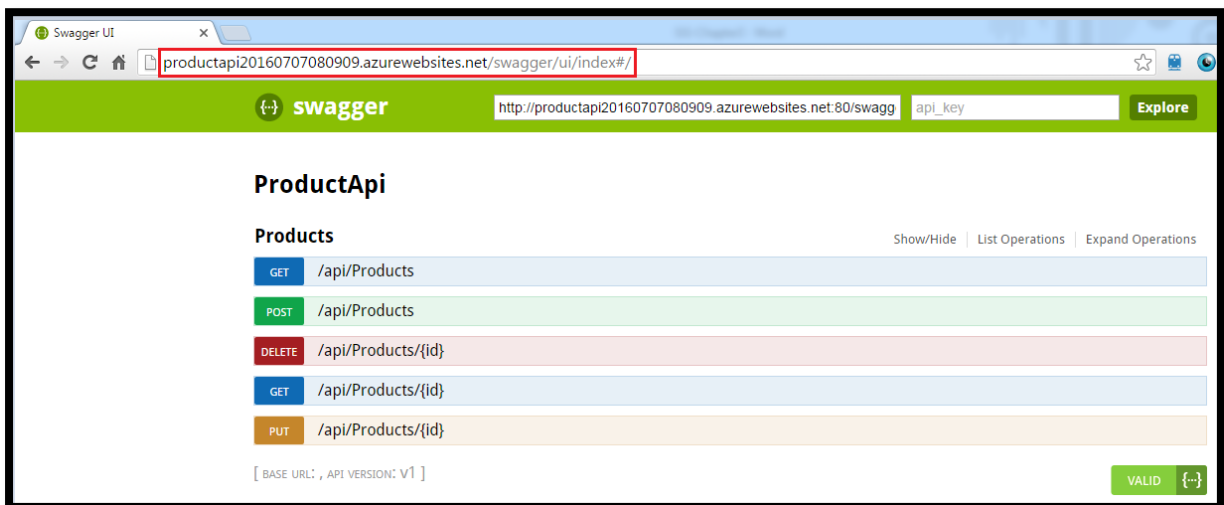
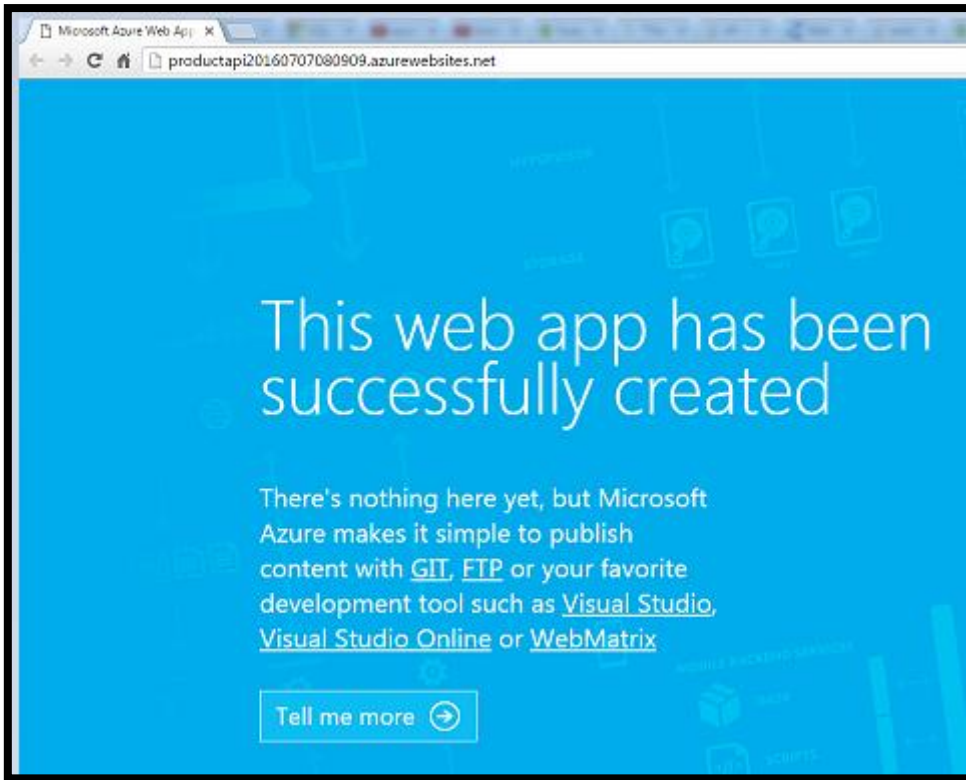
< Prev

Next >

Publish

Close





Microsoft Azure

- New
- Resource groups
- All resources
- Recent
- App Services
- Virtual machines (classic)
- Virtual machines
- SQL databases
- Cloud services (classic)
- Security Center
- Subscriptions
- Browse >

Shift+Space to toggle favorites

Filter


- Active Directory
- All resources
- API Management services
- App Service Certificates
- App Service Environments
- App Service plans
- App Services
- Application gateways
- Application Insights
- Aspera Server On Demand
- Audit Logs
- Automation Accounts
- Availability sets

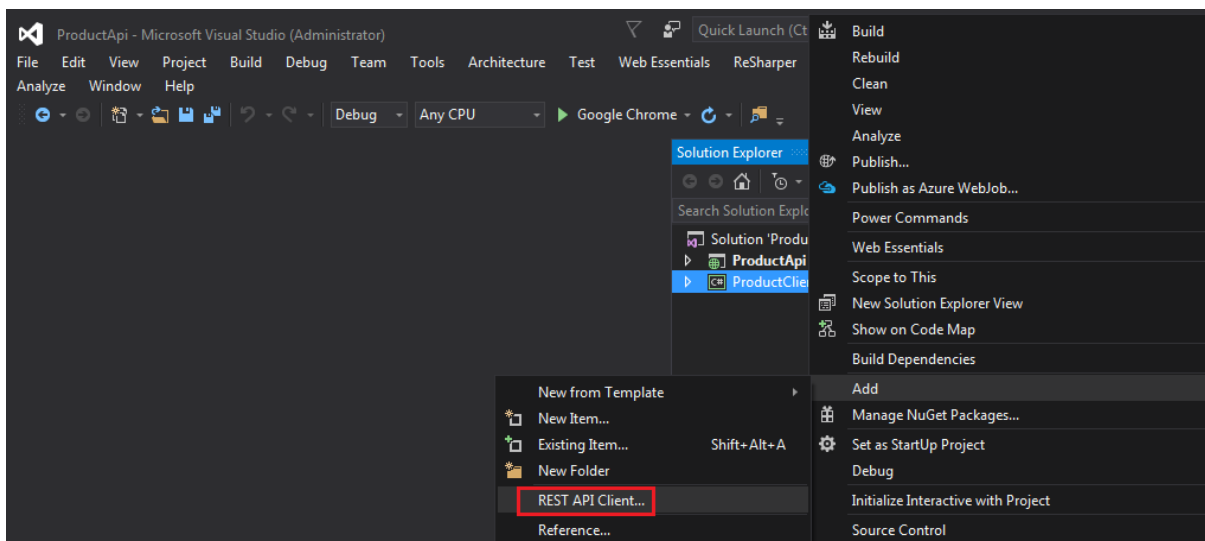
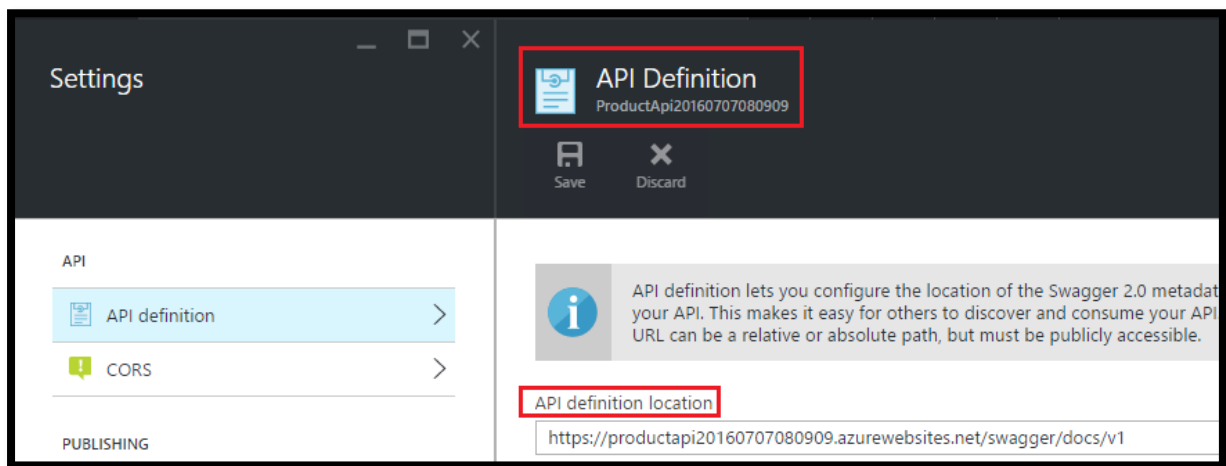
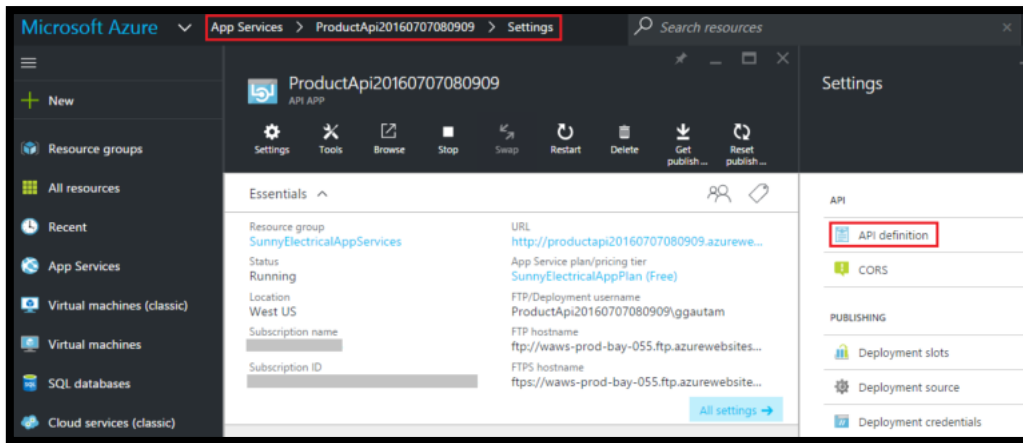
App Services

Default Directory


Add Columns Refresh

Subscriptions: – Don't see a subscription? [Switch directories](#)

NAME	STATUS	APP TYPE	APP SERVICE PLAN
 ProductApi201607080909	Running	Api app	SunnyElectricalAppPlan



Add REST API Client



Add REST API Client

Metadata File

Swagger Url Select an existing Swagger metadata file

Client Namespace

App Service

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

Microsoft account
gyan.gautam@outlook.com

Subscription

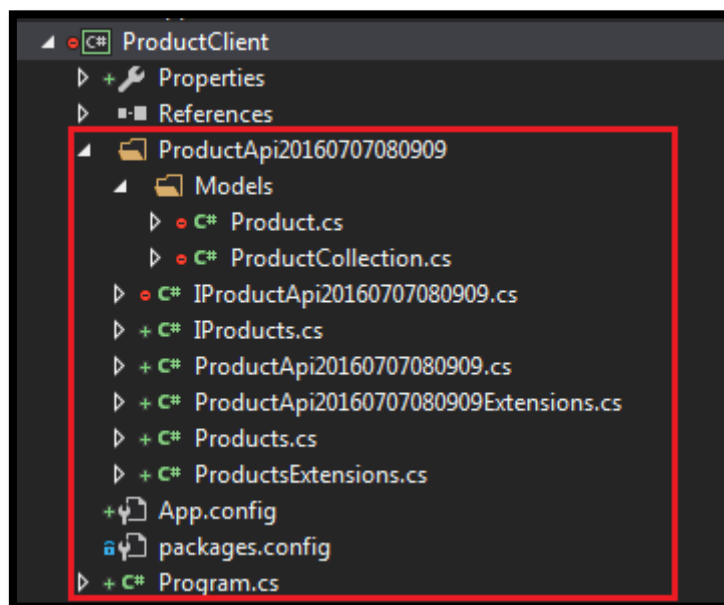
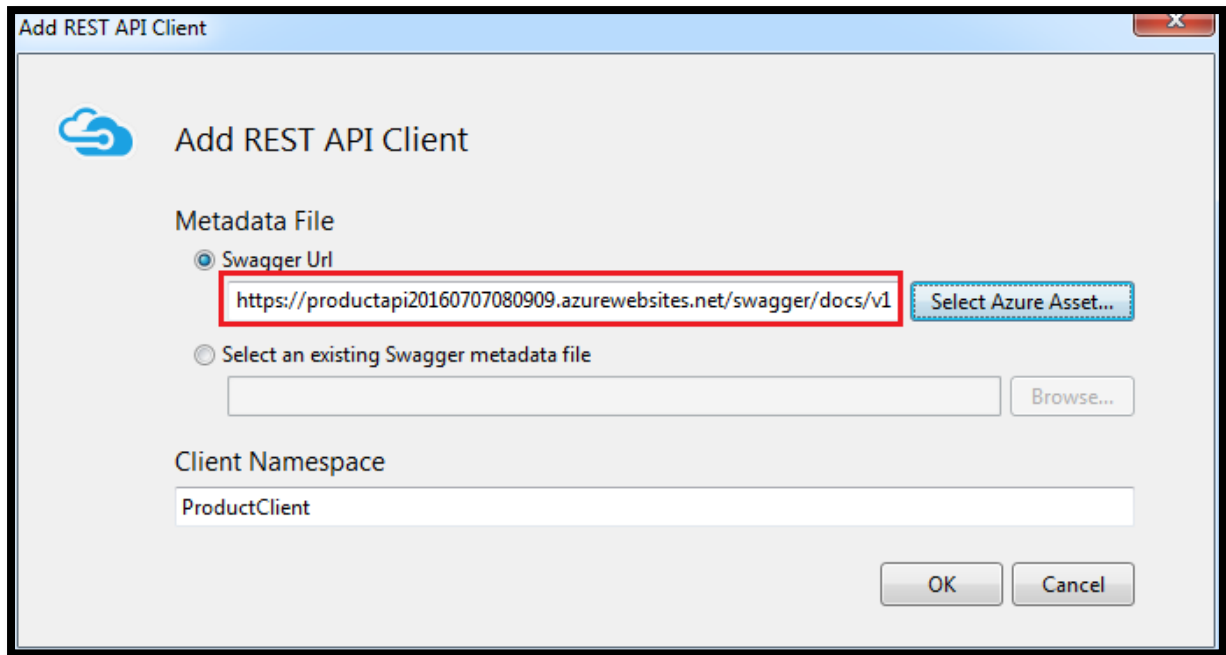
View

Resource Group

Search

Productapi20160707080909

- SunnyElectricalAppServices
 - ProductApi20160707080909



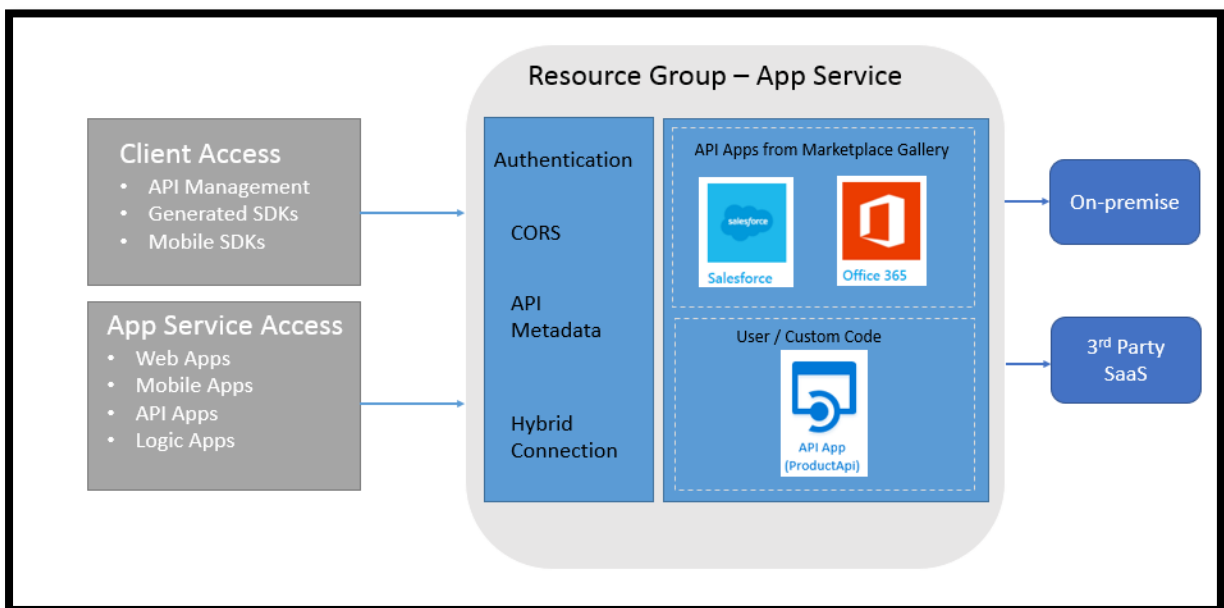
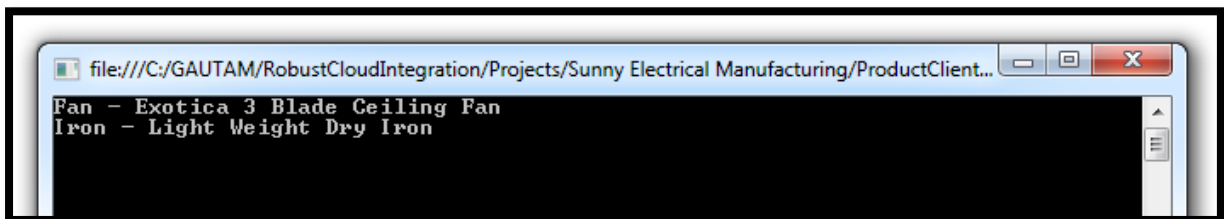
```

ProductClient
ProductClient.Program
Main(string[] args)

using System;

namespace ProductClient
{
    0 references | 0 changes | 0 authors, 0 changes
    class Program
    {
        0 references | 0 changes | 0 authors, 0 changes
        static void Main(string[] args)
        {
            var client = new ProductApi20160707080909();
            foreach (var product in client.Products.GetProducts())
            {
                Console.WriteLine(product.Name + " - " + product.Description );
            }
            Console.ReadLine();
        }
    }
}

```



```
function () {
  "use strict";

  var app = angular.module("productManagement",
    ["common.services"]);
}();

function () {
  "use strict";

  angular
    .module("common.services",
      ["ngResource"])
    .constant("appSettings",
      {
        serverPath: "http://productapi20160623.azurewebsites.net"
      });
}();

function () {
  "use strict";

  angular
    .module("common.services")
    .factory("productResource",
      ["$resource",
        "appSettings",
        productResource])

  function productResource($resource, appSettings) {
    return $resource(appSettings.serverPath + "/api/product/:id");
  }
}();
```


Sunny Electrical

Product List

Id	SKU	Product	Description

Elements Console Sources **Network** Timeline Profiles Resources Security Audits

View: [Icons] Preserve log Disable cache No throttling

Filter [Input] Regex Hide data URLs All XHR JS CSS Img Media Font Doc WS Manifest Other

Console top Preserve log

XMLHttpRequest cannot load http://productapi20160623.azurewebsites.net/api/product. No 'Access-Control-Allow-Origin' header is present on the requested resource. Origin 'http://localhost:35725' is therefore not allowed access.

Microsoft Azure App Services

- New
- Resource groups
- All resources
- Recent
- App Services**
- Virtual machines (classic)

App Services
Default Directory

+ Add ≡ Columns ↻ Refresh

Subscriptions: [Dropdown] – Don't see a subscription? [View all](#)

productapi201607

NAME	STATUS
ProductApi20160707080909	Running

ProductApi20160707080909
API APP

Settings Tools Browse Stop Swap Restart Delete Get publish ... Reset publish ...

Essentials ^

Resource group SunnyElectricalAppServices
Status Running
Location West US
Subscription name
Subscription ID

URL http://productapi20160707080909.azurewe...
App Service plan/pricing tier SunnyElectricalAppPlan (Free)
FTP/Deployment username ProductApi20160707080909\ggautam
FTP hostname ftp://waws-prod-bay-055.ftp.azurewebsites...
FTPS hostname ftps://waws-prod-bay-055.ftp.azurewebsite...

All settings →

Settings

API definition
CORS
PUBLISHING
Deployment slots
Deployment source
Deployment credentials

CORS
ProductApi20160707080909

Save Discard

i Cross-Origin Resource Sharing (CORS) allows JavaScript code running in a browser on an external host to interact with your backend. Specify the origins that should be allowed to make cross-origin calls (for example: `http://example.com:12345`). Use `*` to allow all. Slashes are not allowed as part of domain or after TLD.

ALLOWED ORIGINS

http://localhost:35725

localhost:35725

Sunny Electrical

Product List

Id	SKU	Product	Description
1	SKU001	Fan	Exotica 3 Blade Ceiling Fan
2	SKU002	Iron	Light Weight Dry Iron

server.js

```
1 //Dependencies
2 var express = require('express');
3 var mongoose = require('mongoose');
4 var bodyParser = require('body-parser');
5
6 //MongoDB
7 mongoose.connect('mongodb://test:██████████.mlab.com:██████████/product');
8 mongoose.connection.on('connected', function() {
9     console.log("Connection established successfully");
10 });
11
12 //Express
13 var app = express();
14 app.use(bodyParser.urlencoded({ extended: true }));
15 app.use(bodyParser.json());
16
17 //Routes
18 app.use('/api',require('./routes/api'))
19
20 //Start Server
21 app.listen(process.env.PORT || 3000);
22 console.log('Api is running on port 3000');
```

product.js models

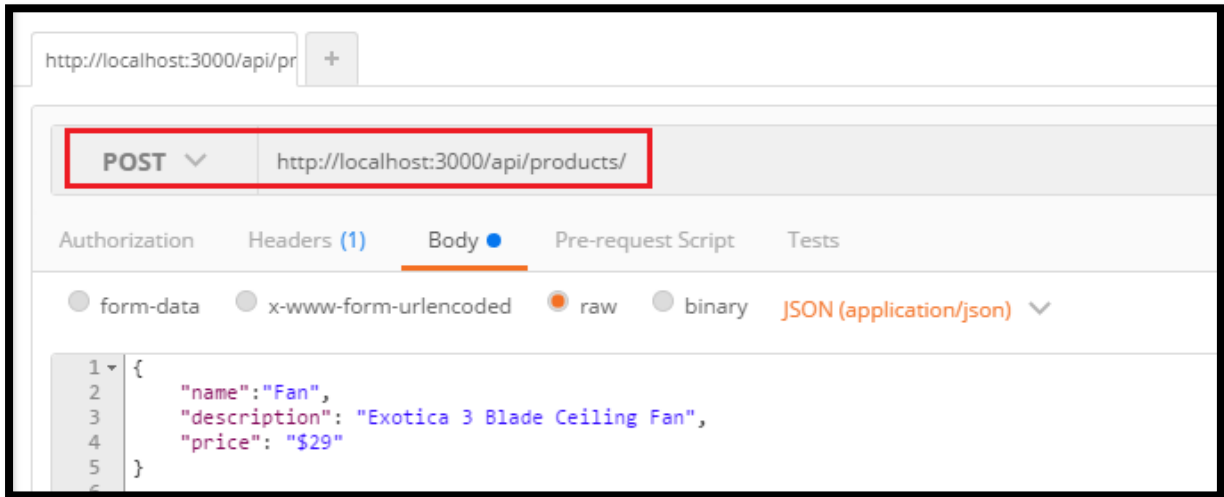
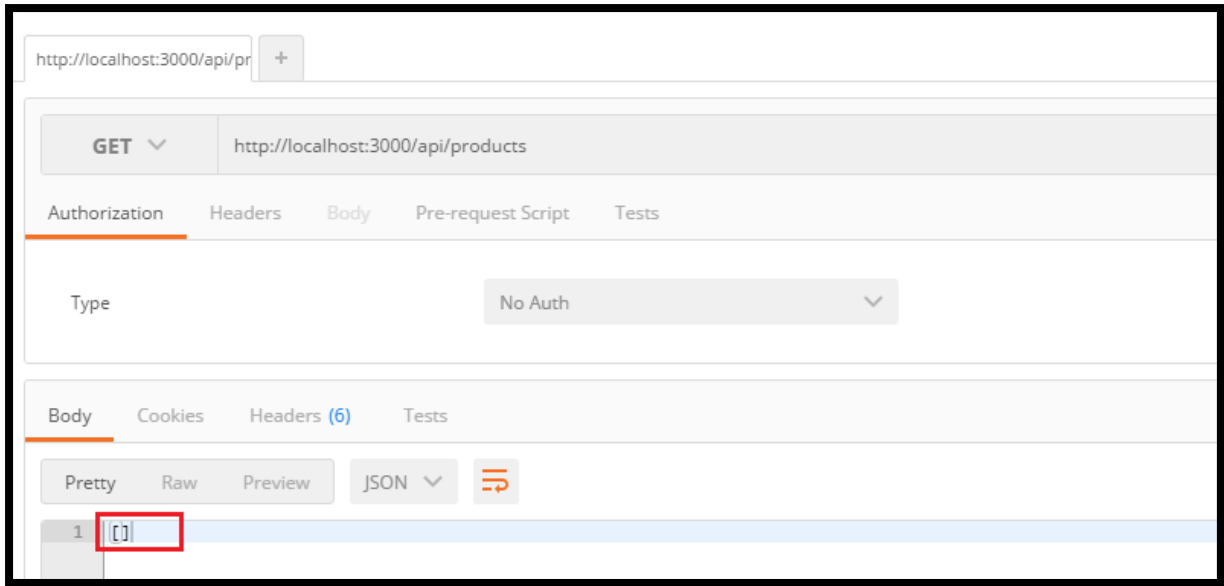
```
1 //Dependencies
2 var restful = require('node-restful');
3 var mongoose = restful.mongoose;
4
5 //Schema
6 var productSchema = new mongoose.Schema({
7     name:String,
8     description: String,
9     price: String
10 });
11
12 //Return Model
13 module.exports = restful.model('Products',productSchema);
```

api.js routes

```
1 //Dependencies
2 var express = require('express');
3 var router = express.Router();
4
5 //Models
6 var Product = require('../models/product')
7
8 //Routes
9 Product.methods(['get','put','post','delete'])
10 Product.register(router, '/products')
11
12
13 //Return router
14 module.exports = router;
```

The screenshot shows a REST client interface with the following elements:

- Top bar: "Builder" and "Team Library" tabs, "IN SYNC" status, and a user profile "Gyanendra..."
- Address bar: "http://localhost:3000/api/pr" with a "+" icon and "No environm" text.
- Request configuration: "GET" method selected, URL "http://localhost:3000/api/products" (highlighted with a red box), "Params" tab, and a "Send" button.
- Request details: "Headers", "Body", "Pre-request Script", and "Tests" tabs.
- Auth dropdown: "No Auth" with a dropdown arrow.
- Method list: A vertical list of HTTP methods (GET, POST, PUT, PATCH, DELETE, COPY, HEAD, OPTIONS, LINK, UNLINK, PURGE, LOCK, UNLOCK, PROPFIND, VIEW) with "GET" selected and highlighted by a red box.



http://localhost:3000/api/pr +

GET ▾

http://localhost:3000/api/products/

Authorization

Headers (1)

Body

Pre-request Script

Tests

Type

No Auth ▾

Body

Cookies

Headers (6)

Tests

Pretty

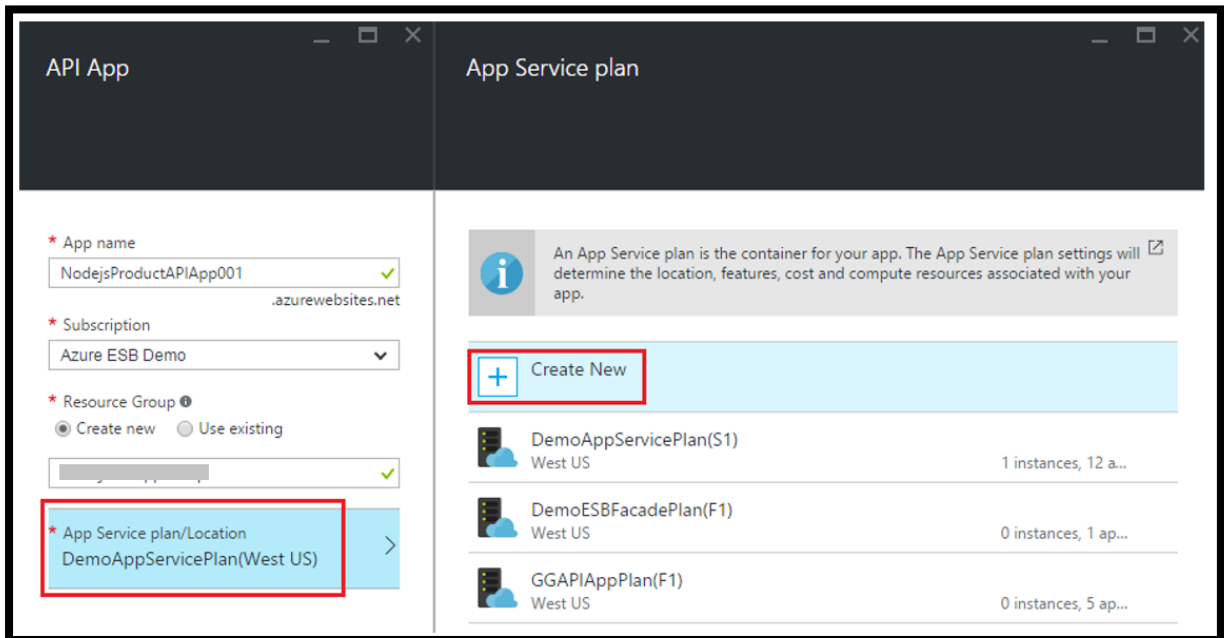
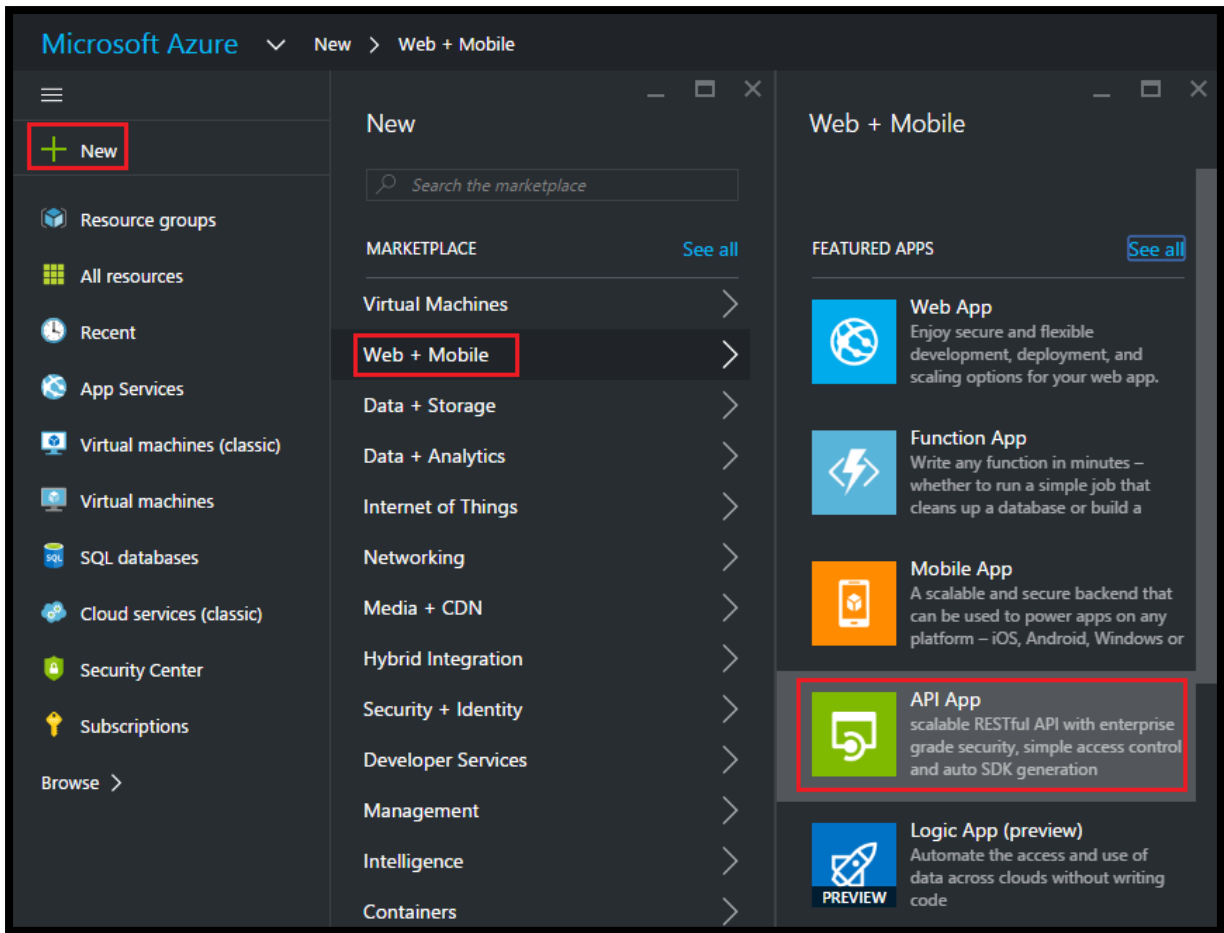
Raw

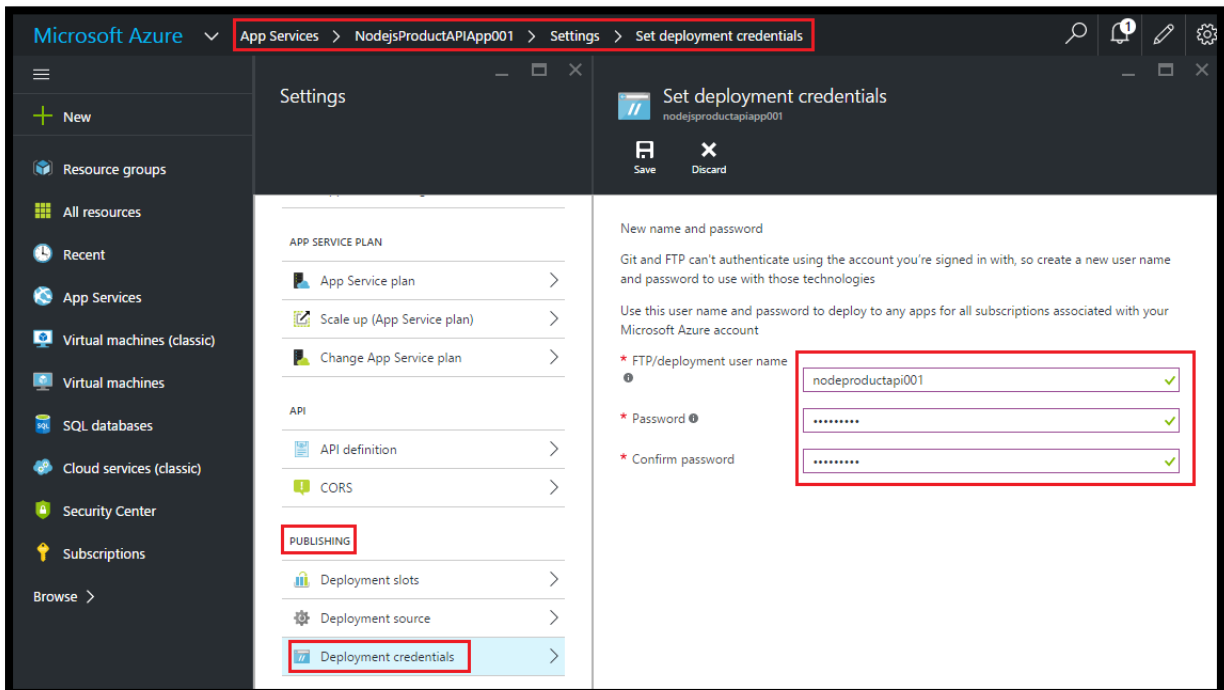
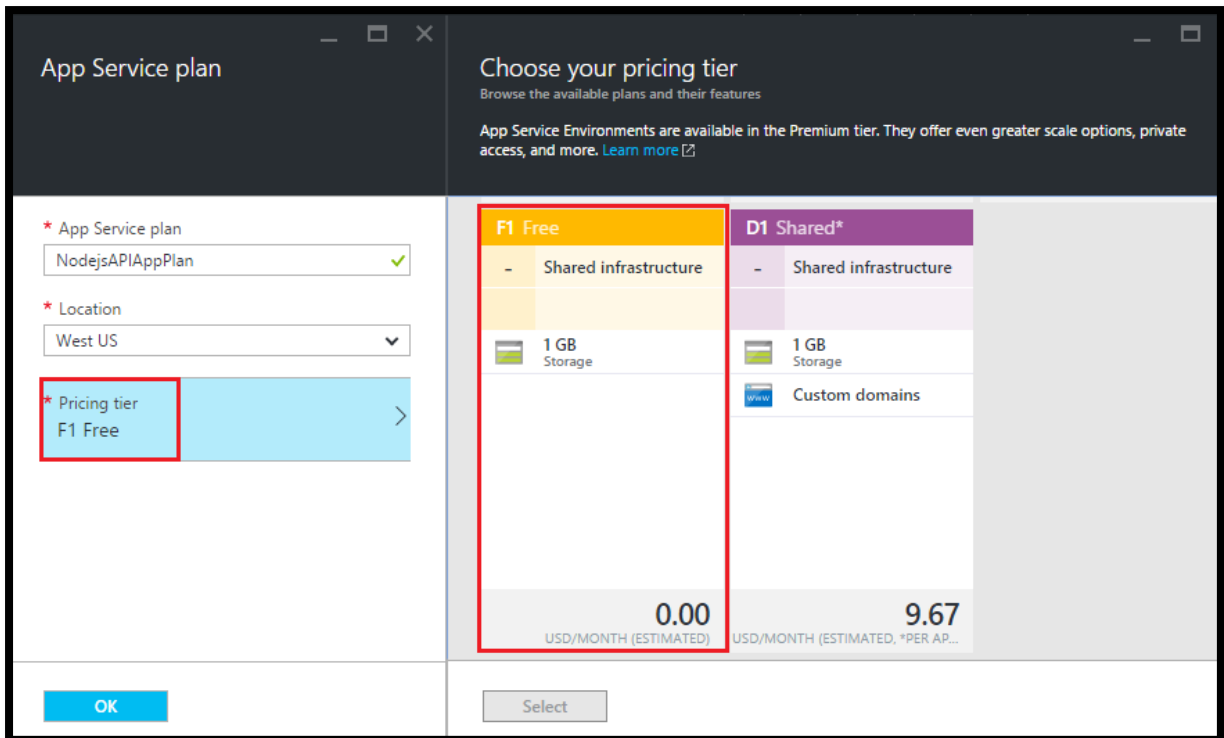
Preview

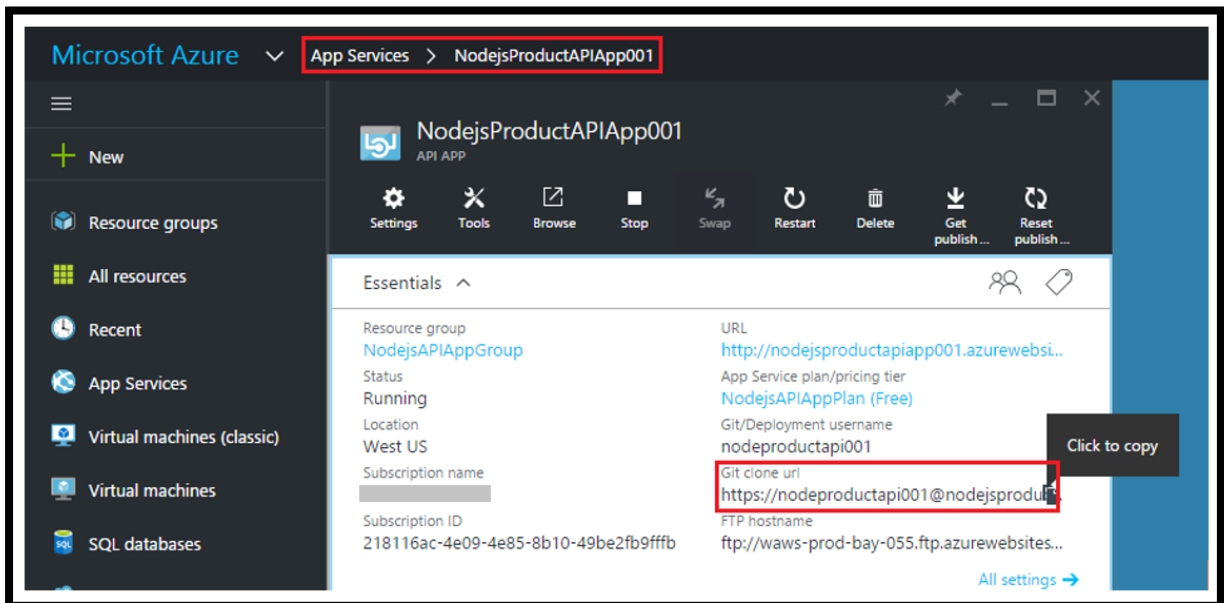
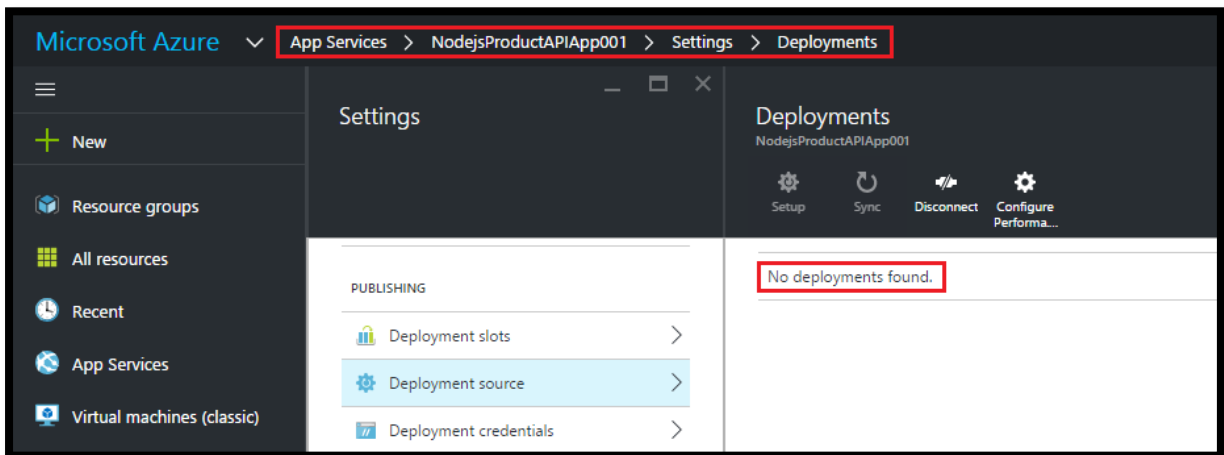
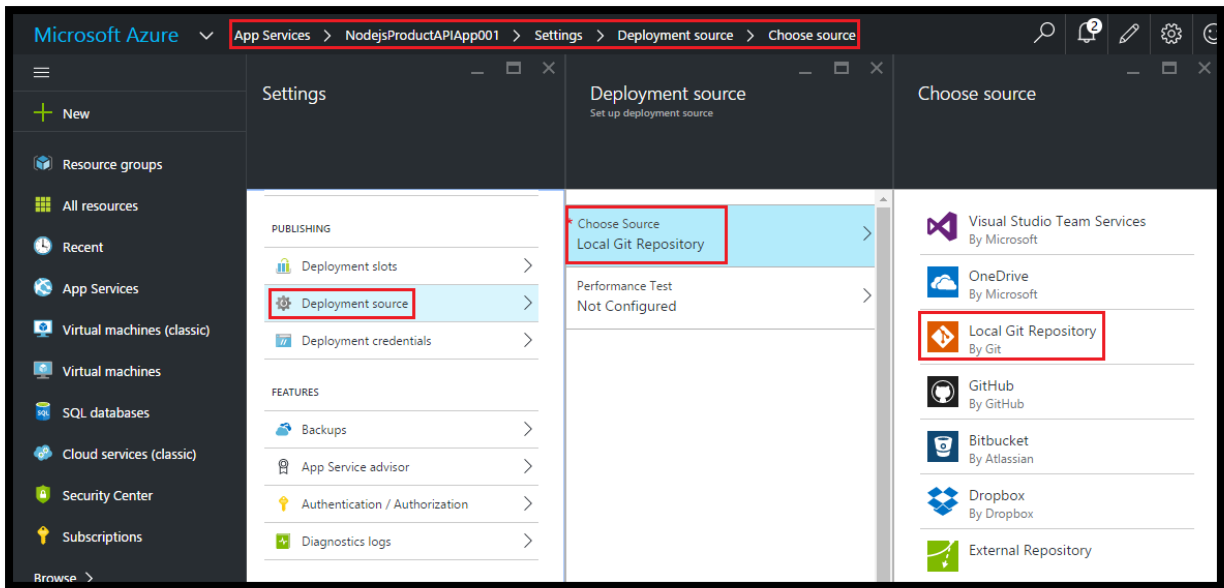
JSON ▾

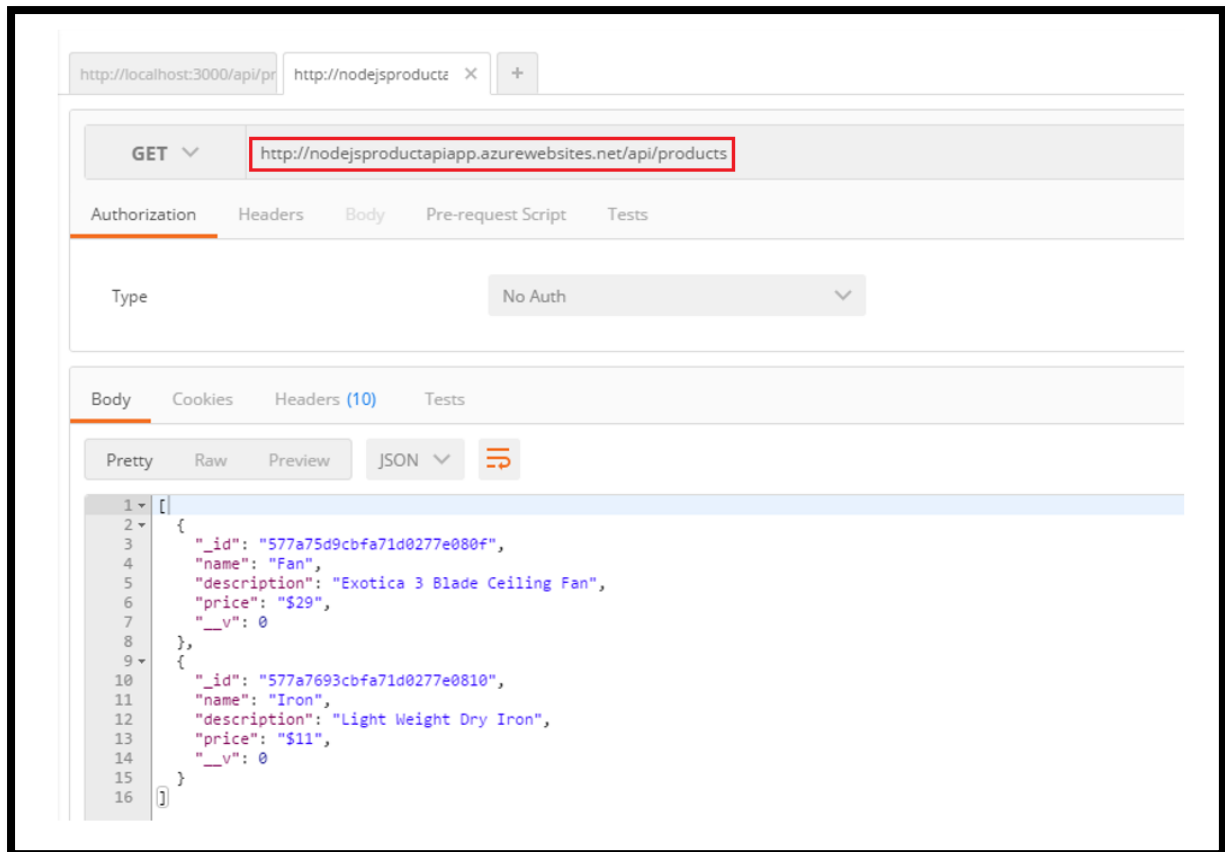


```
1  [
2  {
3    "_id": "577a75d9cbfa71d0277e080f",
4    "name": "Fan",
5    "description": "Exotica 3 Blade Ceiling Fan",
6    "price": "$29",
7    "__v": 0
8  },
9  {
10   "_id": "577a7693cbfa71d0277e0810",
11   "name": "Iron",
12   "description": "Light Weight Dry Iron",
13   "price": "$11",
14   "__v": 0
15 }
16 ]
```









Action to take when request is not authenticated
Allow Anonymous requests (no action)
Allow Anonymous requests (no action)
Log in with Azure Active Directory
Log in with Facebook
Log in with Google
Log in with Microsoft Account
Log in with Twitter




Add directory

NAME ?

DOMAIN NAME ?

  .onmicrosoft.com

COUNTRY OR REGION ?

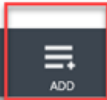
This is a B2C directory. ? **PREVIEW**



Show Applications my company uses Search Application name or Client ID



NAME	PUBLISHER	TYPE	APP URL
Office 365 Management APIs	Microsoft Corporation	Web application	



Tell us about your application

NAME

 x

Type

- WEB APPLICATION AND/OR WEB API ?
- NATIVE CLIENT APPLICATION ?



App properties

SIGN-ON URL ?

 ✓

APP ID URI ?

 ✓

REPLY URL

Settings

Authentication / Authorization

Save Discard

Authentication / Authorization

Authentication / Authorization is a turn key solution that lets you control access to your application.

App Service Authentication

Off **On**

Action to take when request is not authenticated

Log in with Azure Active Directory

Authentication Providers

- Azure Active Directory**
Not Configured
- Facebook
Not Configured
- Google
Not Configured
- Twitter
Not Configured
- Microsoft Account

Deployment slots >

Deployment source >

Deployment credentials >

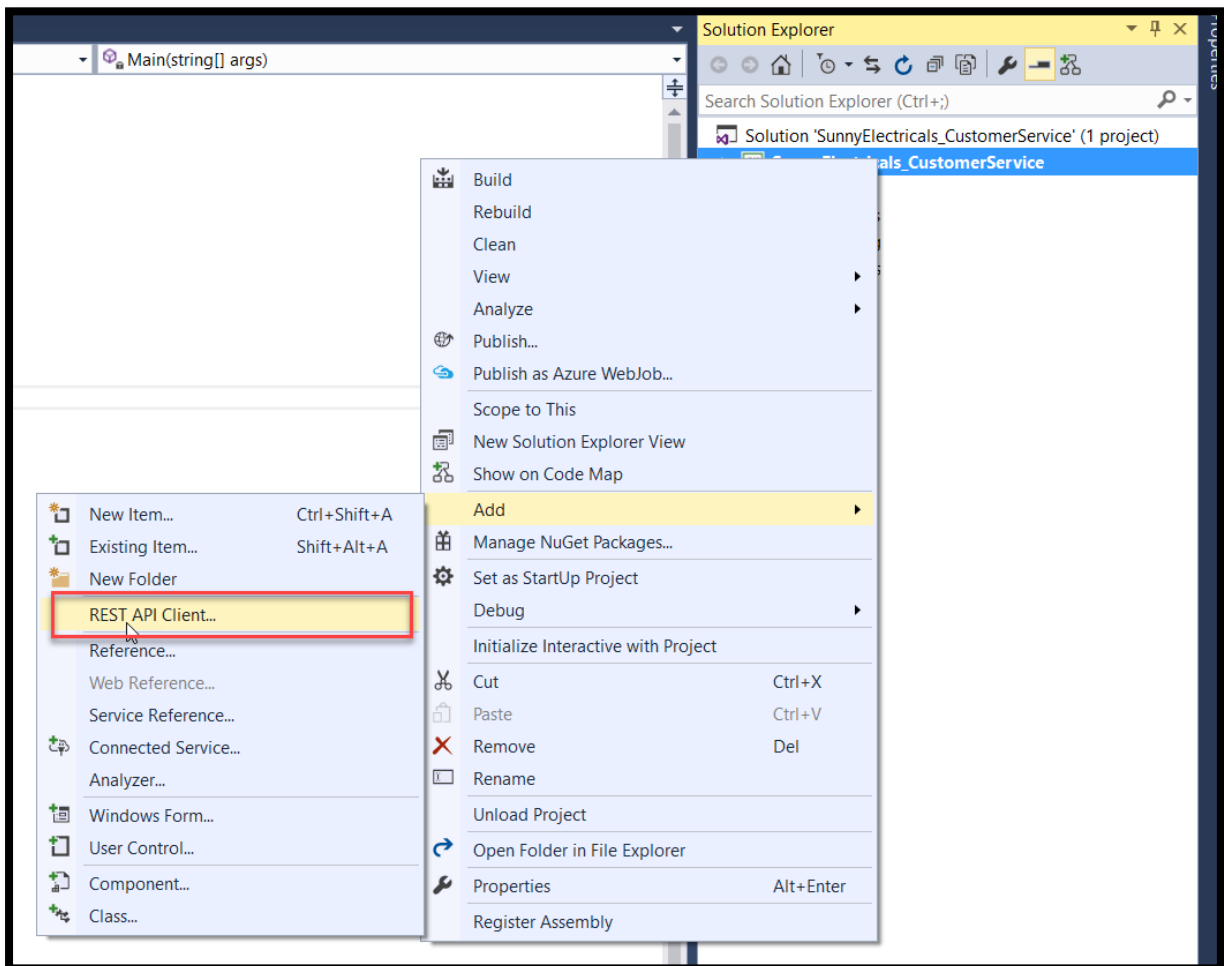
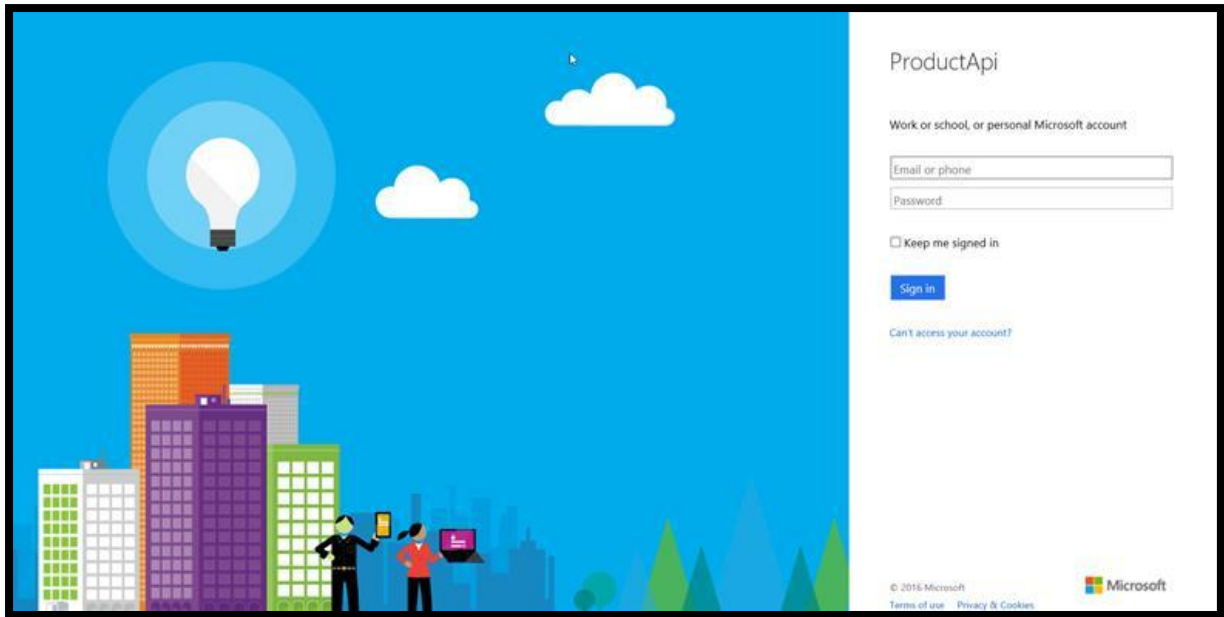
FEATURES

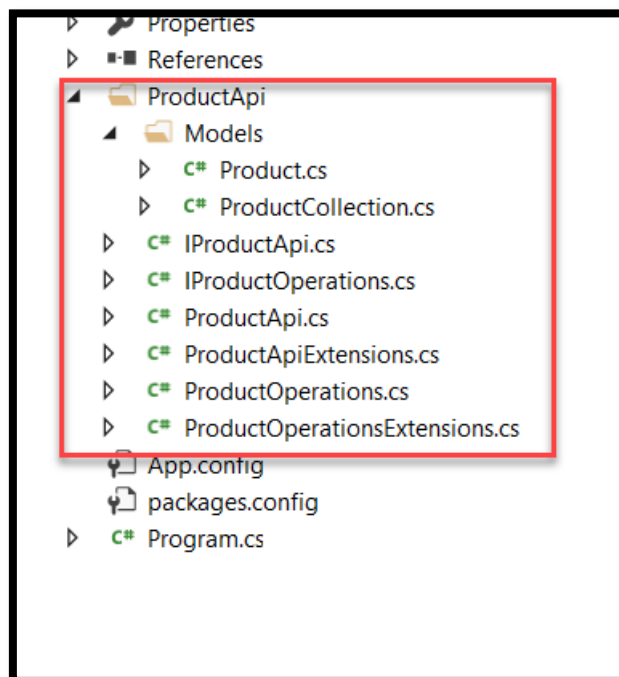
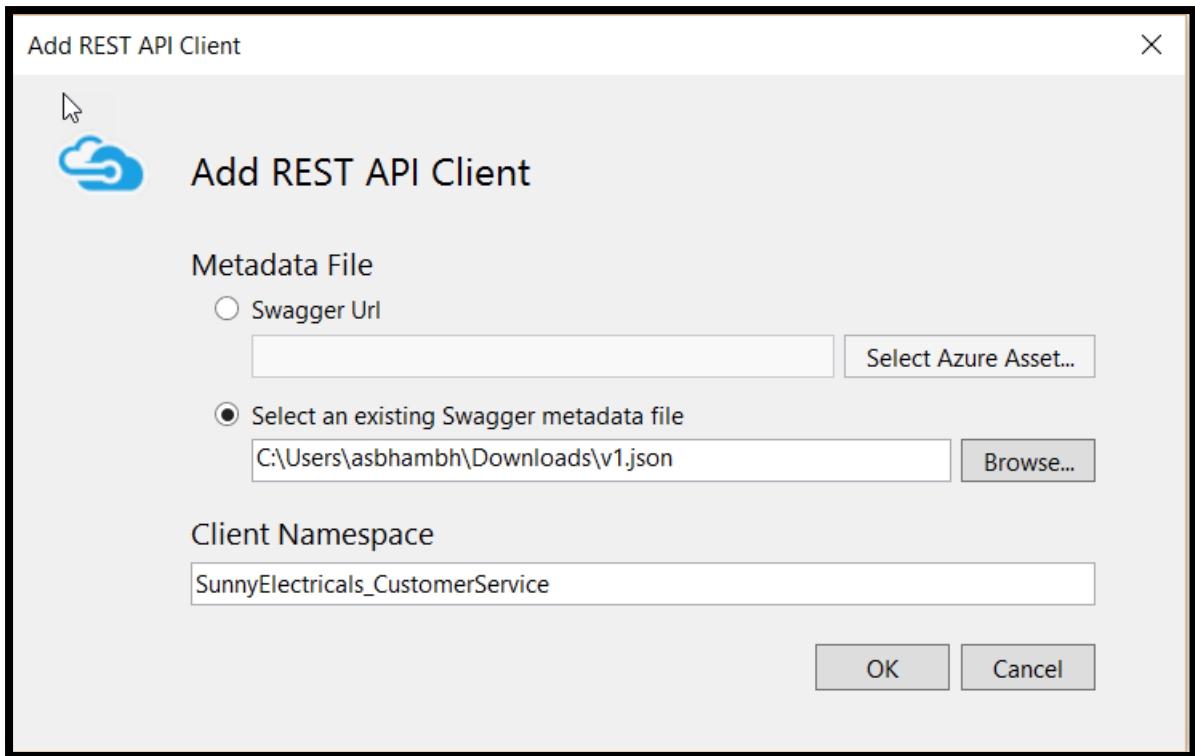
- Backups >
- App Service advisor >
- Authentication / Authorization >**
- Diagnostics logs >

MOBILE

- Easy tables >
- Easy APIs >
- Push >
- Data connections >

ROUTING





ADD APPLICATION



Tell us about your application

NAME

Type

- WEB APPLICATION AND/OR WEB API ?
- NATIVE CLIENT APPLICATION ?



2

ADD APPLICATION



Application information

REDIRECT URI ?

1






App Endpoints

If you are developing an app that integrates with Microsoft Azure AD, update your code to use these endpoints for single sign-on and directory access.

FEDERATION METADATA DOCUMENT

<https://login.microsoftonline.com/...> 


WS-FEDERATION SIGN-ON ENDPOINT

<https://login.microsoftonline.com/...> 


SAML-P SIGN-ON ENDPOINT

<https://login.microsoftonline.com/...> 

SAML-P SIGN-OUT ENDPOINT

<https://login.microsoftonline.com/...> 

MICROSOFT AZURE AD GRAPH API ENDPOINT

<https://graph.windows.net/...> 

OAuth 2.0 TOKEN ENDPOINT


<https://login.microsoftonline.com/...> 

OAuth 2.0 AUTHORIZATION ENDPOINT

<https://login.microsoftonline.com/...> 



NuGet Package Manager: SunnyElectricals_CustomerService

Package source: 

Microsoft.IdentityModel.Clients.ActiveDirectory

Version:

Options

Description

This package contains the binaries of the Active Directory Authentication Library (ADAL). ADAL provides a Portable Class Library with easy to use authentication functionality for your .NET client on various platforms including Windows desktop, Windows Store, Xamarin iOS and Xamarin Android by taking advantage of Windows Server Active Directory and Azure Active Directory.

Version: 3.12.0

Author(s): Microsoft Corporation

License: <http://go.microsoft.com/fwlink/?LinkId=317295>

Date published: Monday, July 11, 2016 (7/11/2016)

Project URL: <http://go.microsoft.com/fwlink/?LinkId=258232>

Report Abuse: <https://www.nuget.org/packages/Microsoft.IdentityModel.Clients.ActiveDirectory/3.12.0/ReportAbuse>

Tags: Active, Directory, Authentication, Library, ADAL, Azure, AD, AAD, Identity, .NET, Windows, Store, Xamarin, Android, iOS

Dependencies

.NETStandard,Version=v1.4

System.Runtime (>= 4.1.0)

System.Collections (>= 4.0.11)

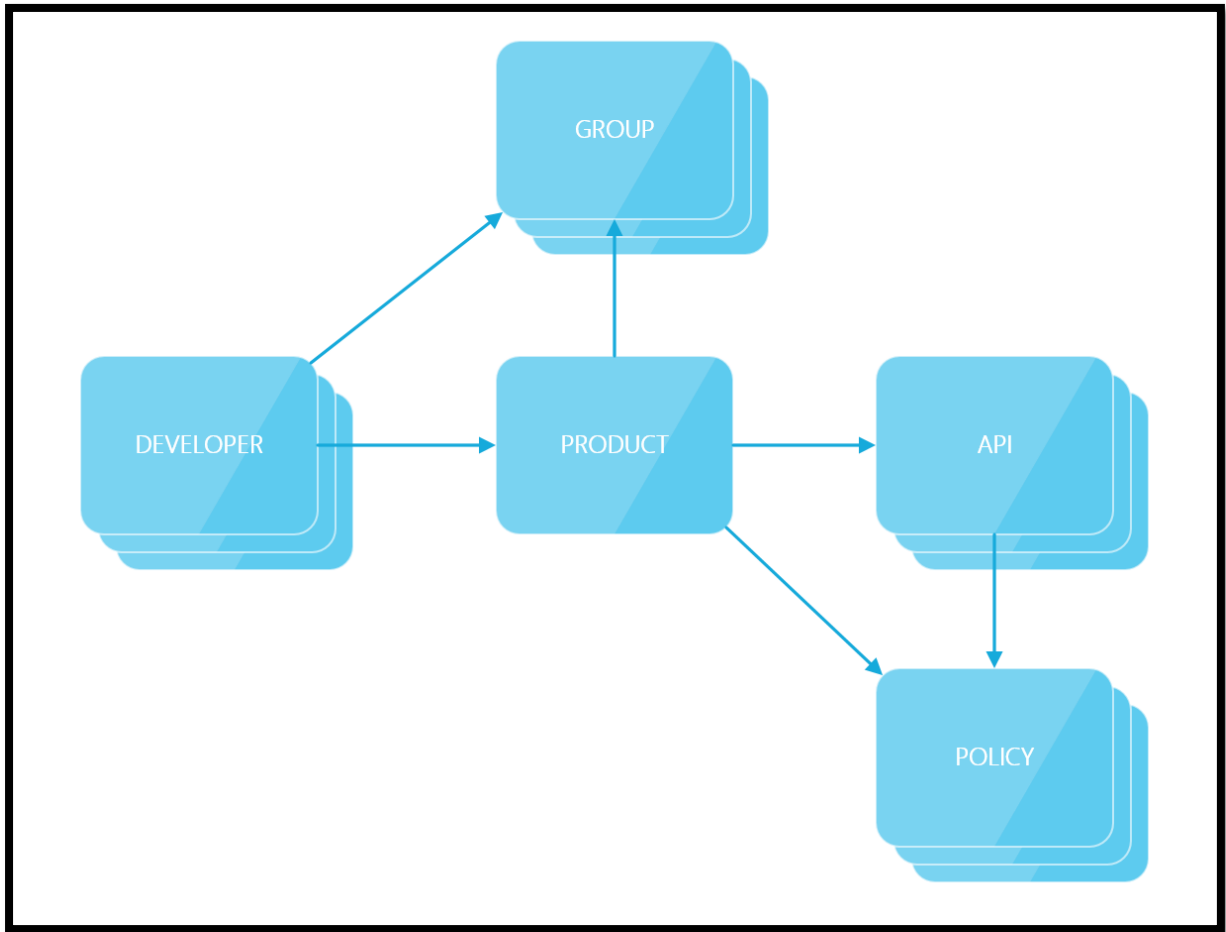
System.Threading.Tasks (>= 4.0.11)

```
string authority = "https://login.microsoftonline.com/8.../oauth2/authorize";
string resource = "https://ProductAPI.azurewebsites.net";
string clientId = "...";
var clientcred = new ClientCredential(clientId, "...");

AuthenticationContext context = new AuthenticationContext(authority, false);
AuthenticationResult authenticationResult =
    context.AcquireTokenAsync(resource, clientId,
        new Uri("http://sunyelectricalscustomerservice/client"), new PlatformParameters(PromptBehavior.Auto)).Result;
var client = new ProductApi();
client.HttpClient.DefaultRequestHeaders.Authorization = new
    System.Net.Http.Headers.AuthenticationHeaderValue("Bearer", authenticationResult.AccessToken);
```

Fan - Exotica 3 Blade Ceiling Fan - \$29
Iron - Light Weight Dry Iron - \$11

Chapter 4: What is Azure API Management?



	CDN 0
	AUTOMATION 0
	SCHEDULER 0
	API MANAGEMENT 0
	MACHINE LEARNING 2
	STREAM ANALYTICS 5

NEW API MANAGEMENT SERVICE x

Create an API Management Service

URL

✓

.azure-api.net

SUBSCRIPTION

▼

REGION

▼

Activation of a new API management service instance may take up to 30 minutes.

→ 2

NEW API MANAGEMENT SERVICE x

Create an API Management Service

ORGANIZATION NAME

?

ADMINISTRATOR E-MAIL

?

ADVANCED SETTINGS ?

1 ← → 3

NEW API MANAGEMENT SERVICE x

Create an API Management Service

Developer tier is ideal for learning and testing API Management and includes all features available in Standard. Standard is best for production services and handling larger volumes of API calls. [Pricing](#).

PRICING TIER

Standard ?

1 2 ← ✓

APIs

Products

Import API

From clipboard

From file

From URL

Specification document text

Specification format

WADL

Swagger

New API Existing API

Web API URL suffix

Last part of the API's public URL. This URL will be used by API consumers for sending requests to the web service.

Web API URL scheme

HTTP HTTPS

This is what the URL is going to look like:

https://martinabbott.azure-api.net

Products (optional)

Add this API to one or more existing products.

Save

Cancel

APIs - ProductApi

Summary

Settings

Operations

Security

Issues

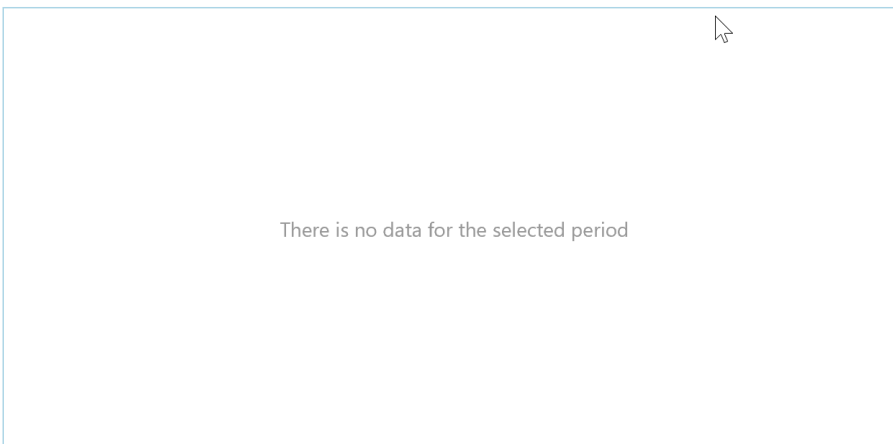
Products

ProductApi

https://sunnelectricals.azure-api.net/product

[EXPORT API](#)

[Today](#) [Yesterday](#) **[Last 7 Days](#)** [Last 30 Days](#) [Last 90 Days](#)



Issues

New	0
Open	0
Closed	0

[VIEW ALL](#)



Name

Administrators

Administrators is a built-in group. Its membership is managed by the system. Microsoft Office 365 users are added into this group.

Sign up

Already a member? [Sign in now](#)

Create a new API Management account

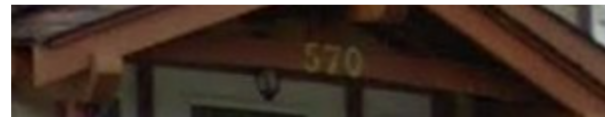
Email

Password

Confirm password

First name

Last name



Captcha text

Unlimited

Subscribers have completely unlimited access to the API. Administrator approval is required.

This product contains 2 APIs:

- Echo API
- ProductApi

[Subscribe](#)

Product - Unlimited

[Summary](#) [Settings](#) [Visibility](#) [Subscribers](#) [Subscription requests](#)

Subscription requests

Search requests

SELECT ALL

APPROVE DECLINE

Martin Abbott
Requested: 7/23/2016

APPROVE DECLINE

Profile

[Change password](#) [Change account information](#)

Email
First name Martin
Last name Abbott

Your subscriptions

[Analytics reports](#)

Subscription details	Product	State	Action
Subscription name: Unlimited Started on: 07/23/2016 Primary key: xx Secondary key: xx	Unlimited	Active	Rename Show Regenerate Show Regenerate

Your applications

[+ Register application](#)

Name	Category	State
No results found.		


Looking to close your account?

[Close account](#)

Media Library


Import Edit Folder Create Folder Show Any (show all) Ordered by recently created

Recent Logos



sunny_logo

PROPERTIES



Last modified: 16 seconds ago |
By unknown
Title: sunny_logo
Filename: sunny_logo.png
Mime Type: image/png
Status: Published
Dimensions: 180 x 126

Widgets

Current Layer:

Regular page Show Edit Add a new layer...

The widgets in this layer are displayed on all pages

Header Add

Header REMOVE

Logo Add

All Layers:

- Regular page
- Home page

Header
Navigation
BeforeMain

Body (HTML)

```
1 <h1>  
2 
```

Navigation

Current Menu:

Main

Home (Custom Link)	Edit Delete
APIs (Custom Link)	Edit Delete
Products (Custom Link)	Edit Delete
Applications (Custom Link)	Edit Delete
Issues (Custom Link)	Edit Delete

Content Menu Item

Adds a Content Item to the menu.

Custom Link

Represents a simple custom link with a text and an url.

Html Menu Item

Renders some custom HTML in the menu.

Create Menu Item

Menu text

The text that should appear in the menu.

Url

A valid url, i.e. ~/my-page, http://orchardproject.net, /content/file.pdf, ...

Navigation



Current Menu:

Blog ▾

Show

Edit

[Add a new menu...](#)

API Blog (Custom Link)

[Edit](#) | [Delete](#)

Application Blog (Custom Link)

[Edit](#) | [Delete](#)

Navigation

[Add](#)

▾ **Main**

[REMOVE](#)

▾ **Blogs**

[REMOVE](#)



Sunny Electricals API Catalog

[HOME](#)

[APIS](#)

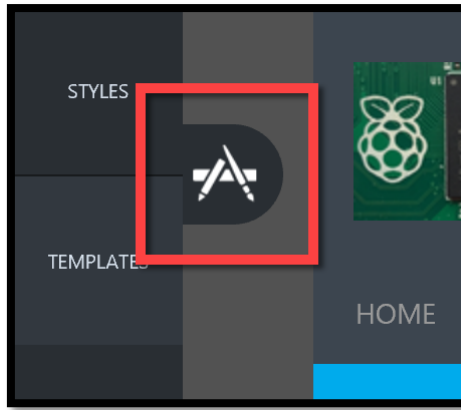
[PRODUCTS](#)

[APPLICATIONS](#)

[ISSUES](#)

[API BLOG](#)

[APPLICATION BLOG](#)



DISQUS Sunny Electricals API 1 total Start Community Settings Learn

Is there a foolproof way to earn money online? [Learn more](#) ✕




SITE

- Installation >
- General >
- Community >
- Advanced >

✕ Switch to organization

You have successfully created a community on Disqus. Now install our code on your pages to start using Disqus Comments. [Go here to learn more about Reveal by Disqus](#), the all-in-one revenue solution for publishers.

Choose your platform

-  Universal Code
-  Wordpress
-  Blogger

Sunny Electricals API Catalog

HOME APIS PRODUCTS APPLICATIONS ISSUES API BLOG APPLICATION BLOG ADMINISTRATOR

POST Create resource

PUT Modify Resource

DELETE Remove resource

HEAD Retrieve header only

GET Retrieve resource

GET Retrieve resource (cached)

Echo API

API definition

Modify Resource

A demonstration of a PUT call handled by the same "echo" backend as above. You can now specify a request body in addition to headers and it will be returned as well.

[Try it](#)

Request URL

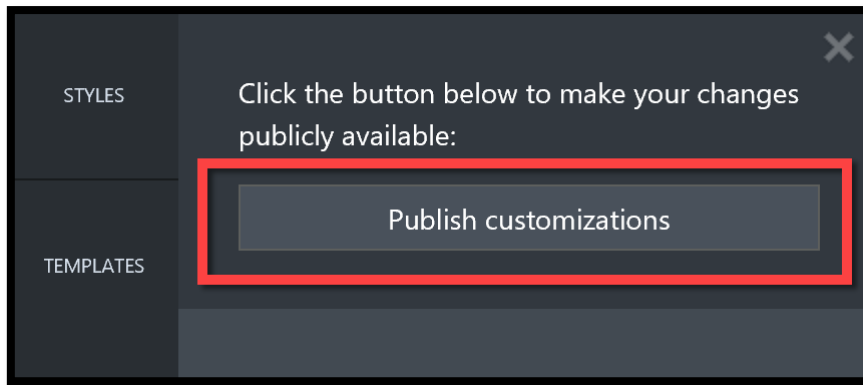
`https://sunnyelectricals.azure-api.net/echo/resource`

Request headers

Ocp-Apim-Subscription-Key string Subscription key which provides access to this API. Found in your [Profile](#).

```
Documentation: Operation details template
1 <div class="dropdown" style="float:right">
2 <button class="btn btn-default dropdown-toggle" type="button" id="apiMenu" data-toggle="dropdown">
3 <span class="glyphicon glyphicon-download-alt"></span>
4 <span class="glyphicon glyphicon-text">API definition</span>
5 </button>
6 <ul class="dropdown-menu" role="menu" aria-labelledby="apiMenu">
7 <li role="presentation">
8 <a role="menuitem" tabindex="-1" href="/docs/services/{{apiId}}/export?DocumentFormat=Swagger&
9 <span class="glyphicon glyphicon-swagger"></span>
10 <span class="glyphicon glyphicon-text">Swagger</span>
11 </li>
12 </ul>
13 </div>
14 <li role="presentation">
15 <a role="menuitem" tabindex="-1" href="/docs/services/{{apiId}}/export?DocumentFormat=Mad1&apiId=
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```

```
Template data
1 {
2   "apiId": "5793009dd94650049040001",
3   "apiName": "Echo API",
4   "apiDescription": null,
5   "api": {
6     "id": "5793009dd94650049040001",
7     "name": "Echo API",
8     "description": null
9   },
10  "operation": {
11    "id": "5793009dd946500490000003",
12    "name": "Modify Resource",
13    "description": "A demonstration of a PUT call handled by the same \"echo\" backend as
14    "scheme": "https",
15  }
16 }
```



Code samples

Curl C# Java JavaScript ObjC PHP Python Ruby

```
@ECHO OFF
curl -v -X DELETE "https://sunnyelectricals.azure-api.net/product/api/Products/{id}"
-H "Ocp-Apim-Subscription-Key: {subscription key}"
--data-ascii "{body}"
```

1 Comment Sunny Electricals API Martin Abbott

Recommend Share Sort by Best

Join the discussion...

Martin Abbott **Mod** · a few seconds ago
I love this API, it's the quickest and easiest way to get the list of Products that Sunny Electricals has to offer.
^ | v · Edit · Reply · Share

sunnyapimangement Developer portal Help Sign out

API MANAGEMENT

- Dashboard
- APIs
- Products
- Policies**
- Analytics
- Users
- Groups
- Notifications
- Security
- Properties

DEVELOPER PORTAL

- Applications
- Content

Policies

Policy scope

All products: All APIs:

All operations:

You are looking at the topmost policy that has a global scope.

Policy definition FULL SCREEN CONFIGURE POLICY

```

1 <!--
2   IMPORTANT:
3   - Policy elements can appear only within the <inbound>, <outbound>, <back
4   - Only the <forward-request> policy element can appear within the <backe
5   - To apply a policy to the incoming request (before it is forwarded to t
6   - To apply a policy to the outgoing response (before it is sent back to t
7   - To add a policy position the cursor at the desired insertion point and
8   - To remove a policy, delete the corresponding policy statement from the
9   - Policies are applied in the order of their appearance, from the top dow
10 -->
11 <policies>
12   <inbound />
13   <backend>
14     <forward-request />
15   </backend>
16   <outbound />
17 </policies>

```

Policy statements

- Allow cross domain calls
- Authenticate with Basic
- Authenticate with client certificate
- Check HTTP header
- Control flow
- Convert JSON to XML
- Convert XML to JSON
- CORS

sunnyapimangement Developer portal Help Sign out

API MANAGEMENT

- Dashboard
- APIs
- Products
- Policies**
- Analytics
- Users
- Groups
- Notifications
- Security
- Properties

DEVELOPER PORTAL

- Applications
- Content

Policies

Policy scope

Product: API of ProductAPI:

Operation of ProductAPI:

Product: ProductAPI → API: ProductApi → Operation: **Products_GetProducts**

Policy definition FULL SCREEN CONFIGURE POLICY

```

1 <!--
2   IMPORTANT:
3   - Policy elements can appear only within the <inbound>, <outbound>, <bi
4   - Only the <forward-request> policy element can appear within the <back
5   - To apply a policy to the incoming request (before it is forwarded to
6   - To apply a policy to the outgoing response (before it is sent back to
7   - To add a policy position the cursor at the desired insertion point a
8   - To remove a policy, delete the corresponding policy statement from th
9   - Position the <base> element within a section element to inherit all p
10  - Remove the <base> element to prevent inheriting policies from the co
11  - Policies are applied in the order of their appearance, from the top o
12 -->
13 <policies>
14   <inbound>
15     <base />
16     <cache-lookup vary-by-developer="false" vary-by-developer-groups="
17     <vary-by-header>Accept</vary-by-header>
18     <!-- should be present in most cases -->

```

Policy statements

- Allow cross domain calls
- Authenticate with Basic
- Authenticate with client certificate
- Check HTTP header
- Control flow
- Convert JSON to XML
- Convert XML to JSON
- CORS

API MANAGEMENT

Dashboard

APIs

Products

Policies

Analytics

Users

Groups

Notifications

Security

Properties

DEVELOPER PORTAL

Applications

Content

Blogs

Policies

Policy scope

Product
ProductAPI

API of ProductAPI
ProductApi

Operation of ProductApi
Products_DeleteProduct

Product: ProductAPI → API: ProductApi → Operation: **Products_DeleteProduct**

Policy definition FULL SCREEN

There is no policy for this scope yet

+ ADD POLICY

Policy statements

- ← Allow cross domain calls
- ← Authenticate with Basic
- ← Authenticate with client certificate
- ← Check HTTP header
- ← Control flow
- ← Convert JSON to XML
- ← Convert XML to JSON
- ← CORS
- ← Find and replace string in body

Product: ProductAPI → API: ProductApi → Operation: **Products_DeleteProduct**

EXIT FULL SCREEN

Policy definition

```

1 <!--
2
3 - Policy elements can appear only within the <inbound>, <outbound>, <backend> section elements.
4 - Only the <forward-request> policy element can appear within the <backend> section element.
5 - To apply a policy to the incoming request (before it is forwarded to the backend service), place a corresponding policy element within the <in
6 - To apply a policy to the outgoing response (before it is sent back to the caller), place a corresponding policy element within the <outbound>
7 - To add a policy position the cursor at the desired insertion point and click on the round button associated with the policy.
8 - To remove a policy, delete the corresponding policy statement from the policy document.
9 - Position the <base> element within a section element to inherit all policies from the corresponding section element in the enclosing scope.
10 - Remove the <base> element to prevent inheriting policies from the corresponding section element in the enclosing scope.
11 - Policies are applied in the order of their appearance, from the top down.
12 -->
13 <policies>
14 <inbound>
15
16 <base />
17 </inbound>
18 <backend>
19
20 <base />
21 </backend>
22 <outbound>
23
24 <base />
25 </outbound>
26 </policies>
27
28
29 </policies>

```

Policy statements

- ← Allow cross domain calls
- ← Authenticate with Basic
- ← Authenticate with client certificate
- ← Check HTTP header
- ← Control flow
- ← Convert JSON to XML
- ← Convert XML to JSON
- ← CORS
- ← Find and replace string in body
- ← Forward request to backend service
- ← Get from cache
- ← Get value from cache
- ← JSONP
- ← Limit call rate per key
- ← Limit call rate per subscription

View effective policy for selected scope

Save

Cancel

Policy definition

```
1 |<!--
2 |   IMPORTANT:
3 |   - Policy elements can appear only within the <inbound>, <outbound>, <backend> section elements.
4 |   - Only the <forward-request> policy element can appear within the <backend> section element.
5 |   - To apply a policy to the incoming request (before it is forwarded to the backend service), place a corresponding policy element within the <in
6 |   - To apply a policy to the outgoing response (before it is sent back to the caller), place a corresponding policy element within the <outbound>
7 |   - To add a policy position the cursor at the desired insertion point and click on the round button associated with the policy.
8 |   - To remove a policy, delete the corresponding policy statement from the policy document.
9 |   - Position the <base> element within a section element to inherit all policies from the corresponding section element in the enclosing scope.
10 |  - Remove the <base> element to prevent inheriting policies from the corresponding section element in the enclosing scope.
11 |  - Policies are applied in the order of their appearance, from the top down.
12 | -->
13 | <policies>
14 |   <inbound>
15 |     <base />
16 |     <cache-lookup vary-by-developer="false" vary-by-developer-groups="false" downstream-caching-type="public" must-revalidate="false">
17 |       <vary-by-header>Accept</vary-by-header>
18 |       <!-- should be present in most cases -->
19 |       <vary-by-header>Accept-Charset</vary-by-header>
20 |       <!-- should be present in most cases -->
21 |     </cache-lookup>
22 |   </inbound>
23 |   <backend>
24 |     <base />
25 |   </backend>
26 |   <outbound>
27 |     <base />
28 |     <cache-store duration="3600" />
29 |   </outbound>
30 | </policies>
```

Response content

```
Vary: Accept,Accept-Charset
Ocp-Apim-Trace-Location: https://apimgmtst6nrzrafdt7mapib8.blob.core.windows.net/apiinspectorcontainer/6o9bzSVLSzsvwB1H9kj6gA2-21?sv=2014-02-14&sr=b&sig=K7nLQeOyLsWqUxGHZrQsx5VQhCRo%28GoBZ3dCD4iQ2hQ%3D&se=2016-07-25T09%3A22%3A30Z&sp=r&traceId=b097292dd18c4bc3b5ba08fdc46829a2
Cache-Control: public, max-age=3597
Date: Sun, 24 Jul 2016 09:22:30 GMT
Set-Cookie: ARRAffinity=0d8c79d0cc614d8bfd536834da0cafd3a608ce2b18fb182b506672dfe9fcb820;Path=/;Domain=productapi20160717.azurewebsites.net
X-AspNet-Version: 4.0.30319
X-Powered-By: ASP.NET
Content-Length: 125
Content-Type: application/json; charset=utf-8
Expires: Sun, 24 Jul 2016 10:22:27 GMT
Last-Modified: Sun, 24 Jul 2016 09:22:27 GMT
```

```
[
  {
    "ProductId": 1,
    "SKU": "SKU023",
    "Name": "Microwave",
    "Description": "Super 1200W Microwave",
    "QtyAvailable": 100,
    "QtyBackOrder": 0
  }
]
```

Policy definition

```
1 |!--
2 |   IMPORTANT:
3 |   - Policy elements can appear only within the <inbound>, <outbound>, <backend> section elements.
4 |   - Only the <forward-request> policy element can appear within the <backend> section element.
5 |   - To apply a policy to the incoming request (before it is forwarded to the backend service), place a corresponding policy element within the <inbound> section element.
6 |   - To apply a policy to the outgoing response (before it is sent back to the caller), place a corresponding policy element within the <outbound> section element.
7 |   - To add a policy position the cursor at the desired insertion point and click on the round button associated with the policy.
8 |   - To remove a policy, delete the corresponding policy statement from the policy document.
9 |   - Position the <base> element within a section element to inherit all policies from the corresponding section element in the enclosing scope.
10 |  - Remove the <base> element to prevent inheriting policies from the corresponding section element in the enclosing scope.
11 |  - Policies are applied in the order of their appearance, from the top down.
12 |  -->
13 |  <policies>
14 |  <inbound>
15 |  <base />
16 |  <cache-lookup vary-by-developer="false" vary-by-developer-groups="false" downstream-caching-type="none" />
17 |  <vary-by-header>Accept</vary-by-header>
18 |  <!-- should be present in most cases -->
19 |  <vary-by-header>Accept-Charset</vary-by-header>
20 |  <!-- should be present in most cases -->
21 |  </cache-lookup>
22 | </inbound>
23 | <backend>
24 | <base />
25 | </backend>
26 | <outbound>
27 | <base />
28 | <cache-store duration="3600" />
29 | </outbound>
30 | </policies>
```

Response content

```
Pragma: no-cache
Vary: Accept,Accept-Charset
Ocp-Apim-Trace-Location: https://apimgmtst6rзраfdt7mapib8.blob.core.windows.net/apiinspectorcontainer/609bzSVLSzsvwB1H9kj6gA2-22?sv=2014-02-14&sr=b&sig=wpeHPMIapw50CzdnfAlTNw1U0qVr2rrIwf4Nx3spNRc%3D&se=2016-07-25T09%3A40%3A05Z&sp=r&traceId=0aac0f52647044aaa0a09d76f5098dd0
Cache-Control: no-store, must-revalidate, no-cache
Date: Sun, 24 Jul 2016 09:40:07 GMT
Set-Cookie: ARRAffinity=0d8c79d0cc614d8bfd536834da0cafd3a608ce2b18fb182b506672dfe9fcb820;Path=/;Domain=productapi20160717.azurewebsites.net
X-AspNet-Version: 4.0.30319
X-Powered-By: ASP.NET
Content-Length: 125
Content-Type: application/json; charset=utf-8
Expires: Sun, 24 Jul 2016 09:40:07 GMT
Last-Modified: Sun, 24 Jul 2016 09:40:07 GMT

[
  {
    "ProductId": 1,
    "SKU": "SKU023",
    "Name": "Microwave",
    "Description": "Super 1200W Microwave",
    "QtyAvailable": 100,
    "QtyBackOrder": 0
  }
]
```

Policy in effect

```
<inbound>
  <cache-lookup vary-by-developer="false" vary-by-developer-groups="false" downstream-caching-type="public" must-revalida
  <vary-by-header>Accept</vary-by-header>
  <!-- should be present in most cases -->
  <vary-by-header>Accept-Charset</vary-by-header>
  <!-- should be present in most cases -->
</cache-lookup>
  <cache-lookup vary-by-developer="false" vary-by-developer-groups="false" downstream-caching-type="none">
  <vary-by-header>Accept</vary-by-header>
  <!-- should be present in most cases -->
  <vary-by-header>Accept-Charset</vary-by-header>
  <!-- should be present in most cases -->
</cache-lookup>
</inbound>
<backend>
  <forward-request />
</backend>
<outbound>
  <cache-store duration="3600" />
  <cache-store duration="3600" />
</outbound>
```

OK

Product: ProductAPI → API: **ProductApi** → Operation

Policy definition

EXIT FULL SCREEN X DELETE POLICY

```
1 <!--
2 IMPORTANT:
3 - Policy elements can appear only within the <inbound>, <outbound>, <backend> section elements.
4 - Only the <forward-request> policy element can appear within the <backend> section element.
5 - To apply a policy to the incoming request (before it is forwarded to the backend service), place a corresponding policy element within the <in
6 - To apply a policy to the outgoing response (before it is sent back to the caller), place a corresponding policy element within the <outbound>
7 - To add a policy position the cursor at the desired insertion point and click on the round button associated with the policy.
8 - To remove a policy, delete the corresponding policy statement from the policy document.
9 - Position the <base> element within a section element to inherit all policies from the corresponding section element in the enclosing scope.
10 - Remove the <base> element to prevent inheriting policies from the corresponding section element in the enclosing scope.
11 - Policies are applied in the order of their appearance, from the top down.
12 -->
13 <policies>
14 <inbound>
15 <base />
16 <rate-limit-by-key callis="10" renewal-period="60" counter-key="@context.Subscription.Id" />
17 <cache-lookup vary-by-developer="false" vary-by-developer-groups="false" downstream-caching-type="public" must-revalidate="false">
18 <vary-by-header>Accept</vary-by-header>
19 <!-- should be present in most cases -->
20 <vary-by-header>Accept-Charset</vary-by-header>
21 <!-- should be present in most cases -->
22 </cache-lookup>
23 </inbound>
24 <backend>
25 <base />
26 </backend>
27 <outbound>
28 <base />
29 <cache-store duration="3600" />
30 </outbound>
31 </policies>
```

View effective policy for selected scope

Save

Cancel

Response status

429 Too Many Requests

Response latency

10 ms

Response content

```
Retry-After: 46
Ocp-Apim-Trace-Location: https://apimgmtst6rzrafdt7mapib8.blob.core.windows.net/apiinspectorcontainer/6o9bzSVLSzsvwB1H9kj6gA2-69?sv=2014-02-14&sr=b&sig=nIeobl9yJ6w%2BuTdf0J5FMld5y68v5nYnqciHCtq9lrQ%3D&se=2016-07-25T11%3A02%3A17Z&sp=r&traceId=a9c0ae8636094347b6010a85905630d3
Date: Sun, 24 Jul 2016 11:02:17 GMT
Content-Length: 84
Content-Type: application/json

{
  "statusCode": 429,
  "message": "Rate limit is exceeded. Try again in 46 seconds."
}
```

Product: ProductAPI → API: ProductApi → Operation: **Products GetProduct**

EXIT FULL SCREEN X DELETE POLICY

Policy definition

```
1 <!--
2 IMPORTANT:
3 - Policy elements can appear only within the <inbound>, <outbound>, <backend> section elements.
4 - Only the <forward-request> policy element can appear within the <backend> section element.
5 - To apply a policy to the incoming request (before it is forwarded to the backend service), place a corresponding policy element within the <inbound> section element.
6 - To apply a policy to the outgoing response (before it is sent back to the caller), place a corresponding policy element within the <outbound> section element.
7 - To add a policy position the cursor at the desired insertion point and click on the round button associated with the policy.
8 - To remove a policy, delete the corresponding policy statement from the policy document.
9 - Position the <base> element within a section element to inherit all policies from the corresponding section element in the enclosing scope.
10 - Remove the <base> element to prevent inheriting policies from the corresponding section element in the enclosing scope.
11 - Policies are applied in the order of their appearance, from the top down.
12 -->
13 <policies>
14   <inbound>
15     <base />
16     <rewrite-uri template="//api/v2/Products/1" />
17   </inbound>
18   <backend>
19     <base />
20   </backend>
21   <outbound>
22     <base />
23   </outbound>
24 </policies>
```

View effective policy for selected scope

Save

Cancel

Policy definition EXIT FULL SCREEN X DELETE POLICY

```

13 <policies>
14   <inbound>
15     <base />
16     <rate-limit-by-key calls="10" renewal-period="60" counter-key="@context.Subscription.Id" />
17     <choose>
18       <when condition="@context.Request.Headers.GetValueOrDefault("X-MessageType", "")
19         .Equals("heartbeat", StringComparison.InvariantCultureIgnoreCase)">
20         <!-- Skip cache lookup -->
21       </when>
22       <otherwise>
23         <cache-lookup vary-by-developer="false" vary-by-developer-groups="false" downstream-caching-type="public" must-revalidate="false"
24           <vary-by-header>Accept</vary-by-header>
25           <!-- should be present in most cases -->
26           <vary-by-header>Accept-Charset</vary-by-header>
27           <!-- should be present in most cases -->
28         </cache-lookup>
29       </otherwise>
30     </choose>
31   </inbound>
32   <backend>
33     <base />
34   </backend>
35   <outbound>
36     <base />
37     <choose>
38       <when condition="@context.Request.Headers.GetValueOrDefault("X-MessageType", "")
39         .Equals("heartbeat", StringComparison.InvariantCultureIgnoreCase)">
40         <set-status code="200" reason="Heartbeat message completed" />
41       </when>
42       <otherwise>
43         <cache-store duration="3600" />
44       </otherwise>
45     </choose>
46   </outbound>
47 </policies>

```

View effective policy for selected scope Save Cancel

Headers

Ocp-Apim-Trace [X Remove header](#)

Ocp-Apim-Subscription-Key [X Remove header](#)

X-MessageType [X Remove header](#)

[+ Add header](#)

Authorization

Subscription key [X](#) [v](#)

Request URL

HTTP request

```

GET https://sunnyapimanagement.azure-api.net/ProductAPI/api/Products HTTP/1.1
Host: sunnyapimanagement.azure-api.net
Ocp-Apim-Trace: true
Ocp-Apim-Subscription-Key: .....
X-MessageType: heartbeat

```

Response status

200 Heartbeat message completed

Response latency

109 ms

Response content

```
Pragma: no-cache
Ocp-Apim-Trace-Location: https://apimgmtst6rzafdt7mapib8.blob.core.windows.net/apiinspectorcontainer/609bzSVLSzsvwB1H9kj6gA2-94?sv=2014-02-14&sr=b&sig=QZUPncaU16jQ0YU%2B6D0nyTxqIC4uwHIIpJ%2FvaYkTXNo%3D&se=2016-07-26T08%3A28%3A00Z&sp=r&traceId=1635c9f3cff744e881a1505018014cf3
Cache-Control: no-cache
Date: Mon, 25 Jul 2016 08:28:00 GMT
Set-Cookie: ARRAffinity=0d8c79d0cc614d8bfd536834da0cafd3a608ce2b18fb182b506672dfe9fcb820;Path=/;Domain=productapi20160717.azurewebsites.net
X-AspNet-Version: 4.0.30319
X-Powered-By: ASP.NET
Content-Length: 125
Content-Type: application/json; charset=utf-8
Expires: -1

[
  {
    "ProductId": 1,
    "SKU": "SKU023",
    "Name": "Microwave",
    "Description": "Super 1200W Microwave",
    "QtyAvailable": 100,
    "QtyBackOrder": 0
  }
]
```

The screenshot shows the Fiddler interface with the JSON view selected. The response is a JSON array with one object containing product details. A red box highlights a message in the 'data' field: "Cache lookup resulted in a hit! Cached response will be used." The interface also shows the request details at the top, including the URL and headers.

At a glance

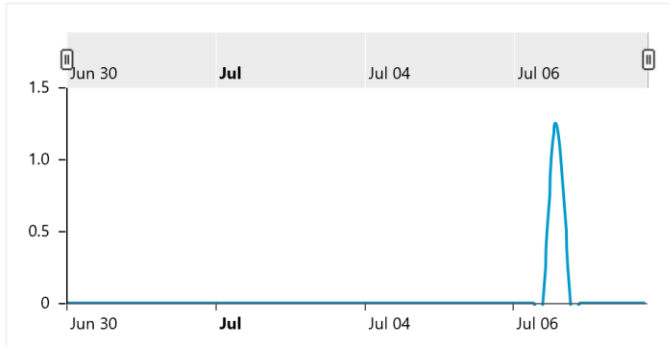
At a glance

Usage

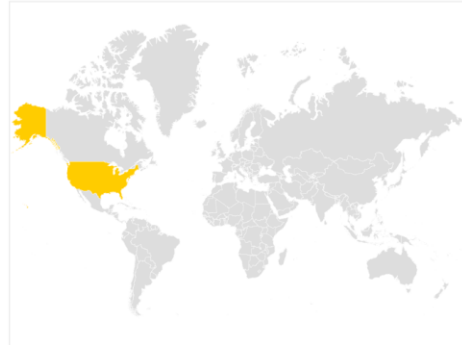
Health

Activity

Calls

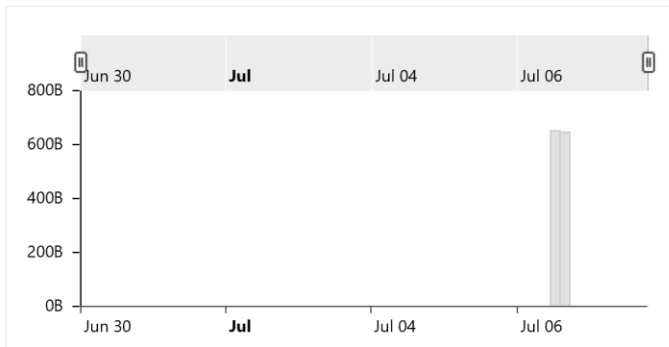


World

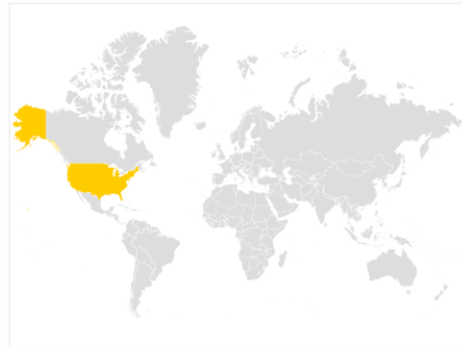


2

Bandwidth

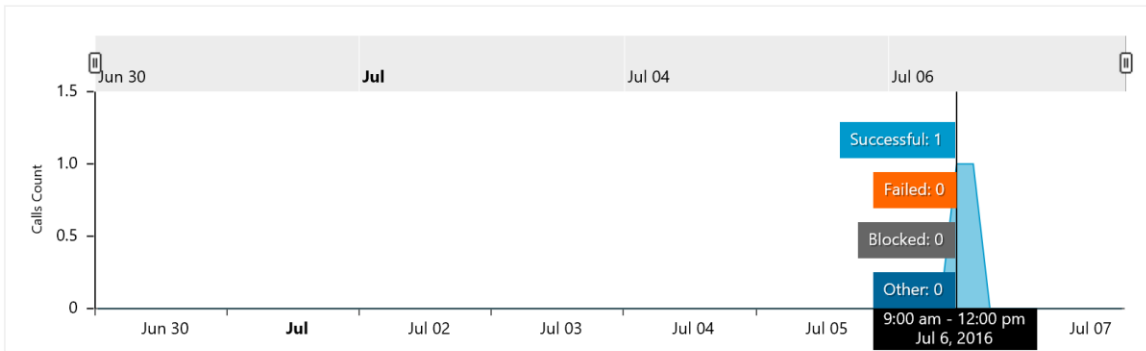


World

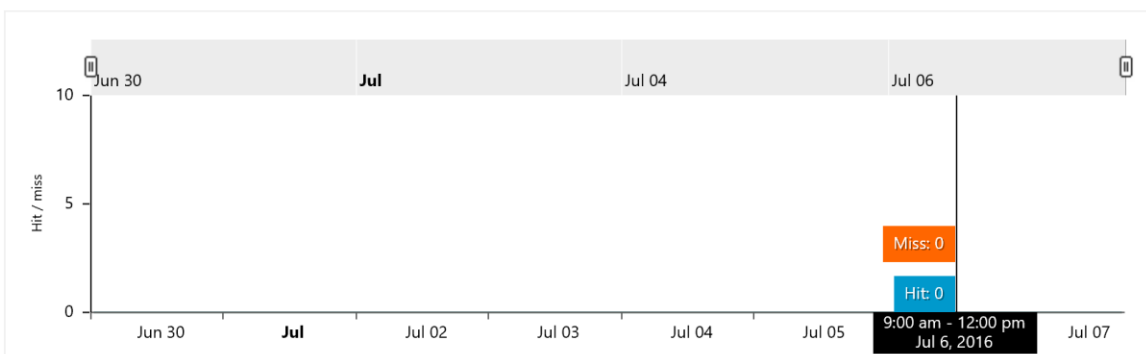


1.3 KB

Status codes



Cache



Security

- API
- Configuration repository
- Identities
- Client certificates
- Delegation
- OAuth 2.0
- OpenID Connect

The [API Management REST API](#) allows you to programmatically perform any operation you can manually perform on the developer and publisher portals (e.g. configure your APIs, access analytics data, etc.).

Enable API Management REST API

Access Token

Review [documentation](#) to learn how to use the credentials to create an API access token programmatically or press the button below to generate it manually.

Management API URL

`https://sunneylectricals.management.azure-api.net/`

Expiry

`07/24/2016 5:14 PM`

Secret Key

Primary Key

Generate Token

Provide this token in its entirety in the request Authorization header.

`SharedAccessSignature uid=5793009ddd94650049030003&ex=2016-07-24T09:14:00.000000Z&sn=9yYRCcg7gmQhLeGyv1q+1533c`

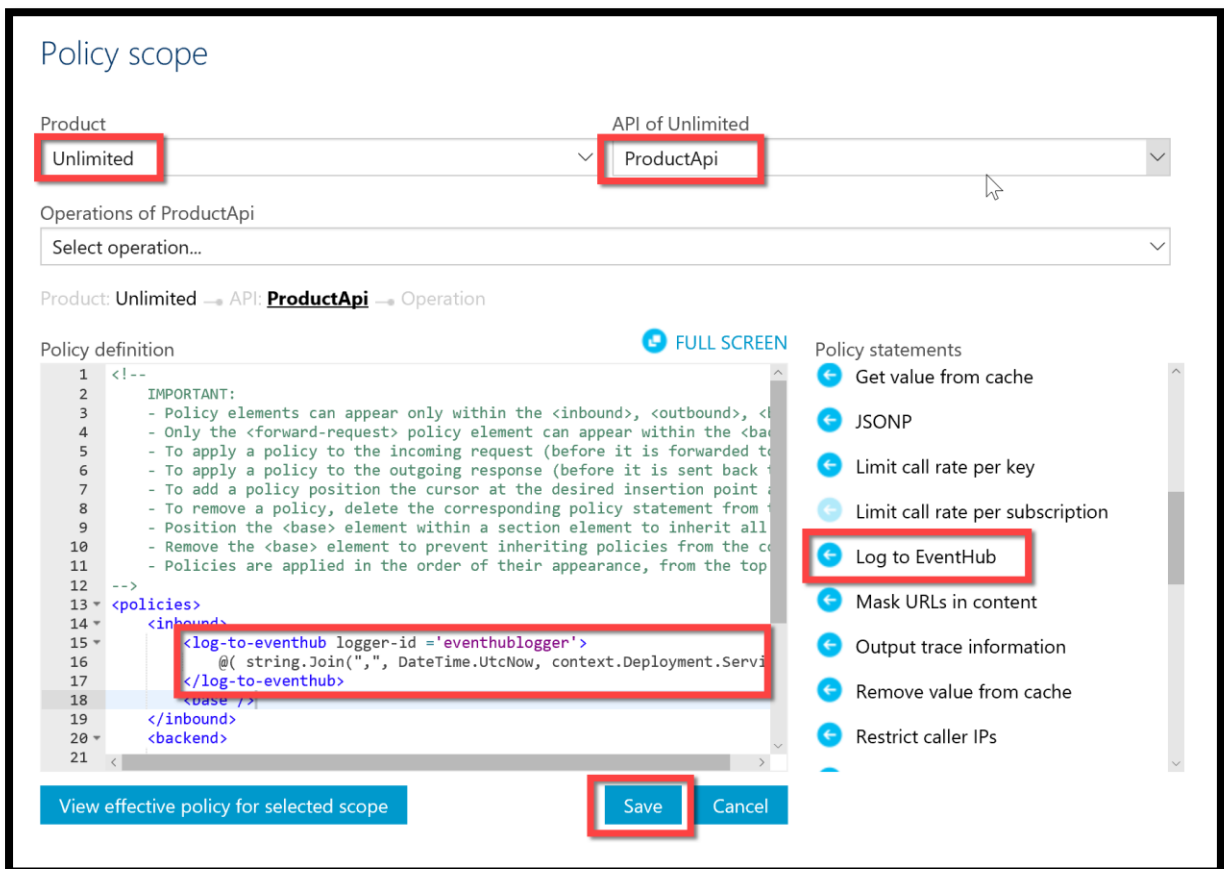
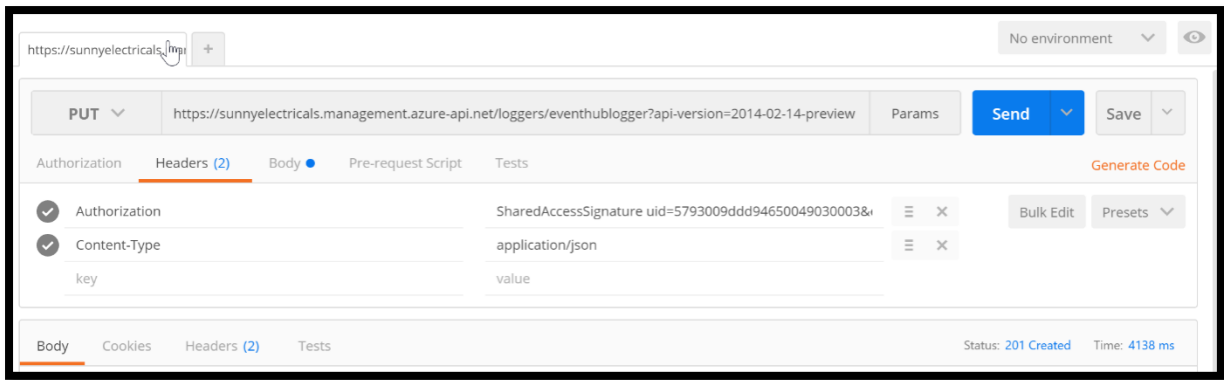
The screenshot shows a REST client interface with the following details:

- Method: PUT
- URL: `https://sunneylectricals.management.azure-api.net/loggers/eventhublogger?api-version=2014-02-14-preview`
- Headers tab is active, showing:
 - Authorization: `SharedAccessSignature uid=5793009ddd94650049030003&ex=2016-07-24T09:14:00.000000Z&sn=9yYRCcg7gmQhLeGyv1q+1533c`
 - Content-Type: `application/json`
- Buttons: Send, Save, Generate Code, Bulk Edit, Presets.

The screenshot shows a REST client interface with the following details:

- Method: PUT
- URL: `https://sunneylectricals.management.azure-api.net/loggers/eventhublogger?api-version=2014-02-14-preview`
- Body tab is active, showing a JSON body:

```
1 {
2   "type": "AzureEventHub",
3   "description": "Log inbound information",
4   "credentials": {
5     "name": "apimlog",
6     "connectionString": "Endpoint=sb://sunneylectricals.servicebus.windows.net;/SharedAccessKeyName=Send;SharedAccessKey
7     =M9FMEDGanoPXXA1VR1e2DmemmvjFQdT657vwIaEDr8;EntityPath=apimlog;"
8   }
9 }
```
- Buttons: Send, Save, Generate Code.



+ New Function

LogAPIMCalls

Code (run.csx)

Save

```
1 using System;
2
3 public static void Run(string myEventHubMessage, TraceWriter log)
4 {
5     log.Info($"C# Event Hub trigger function processed a message: {myEventHubMessage}");
6 }
```

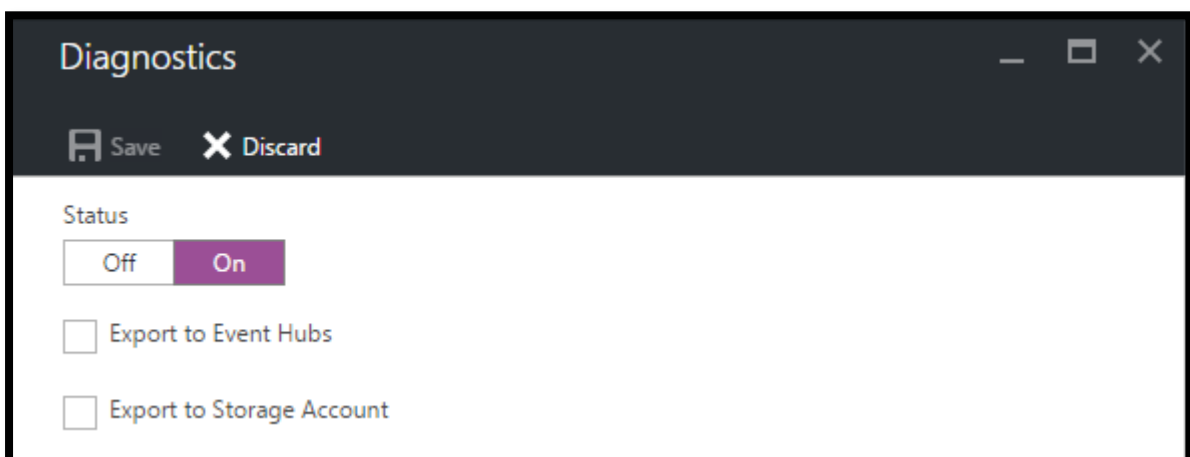
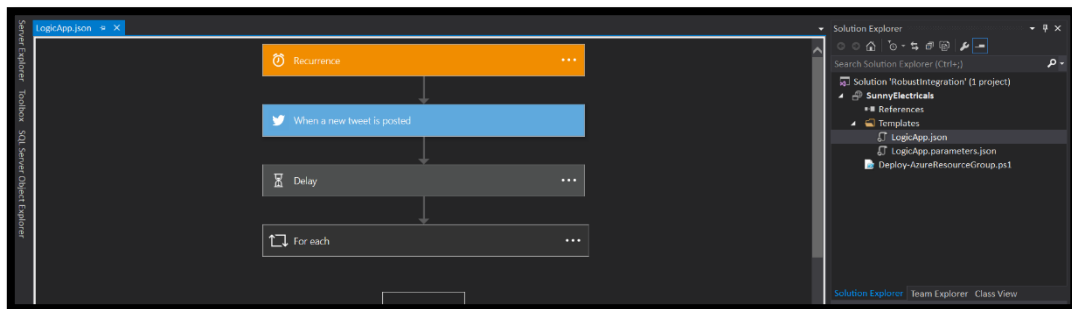
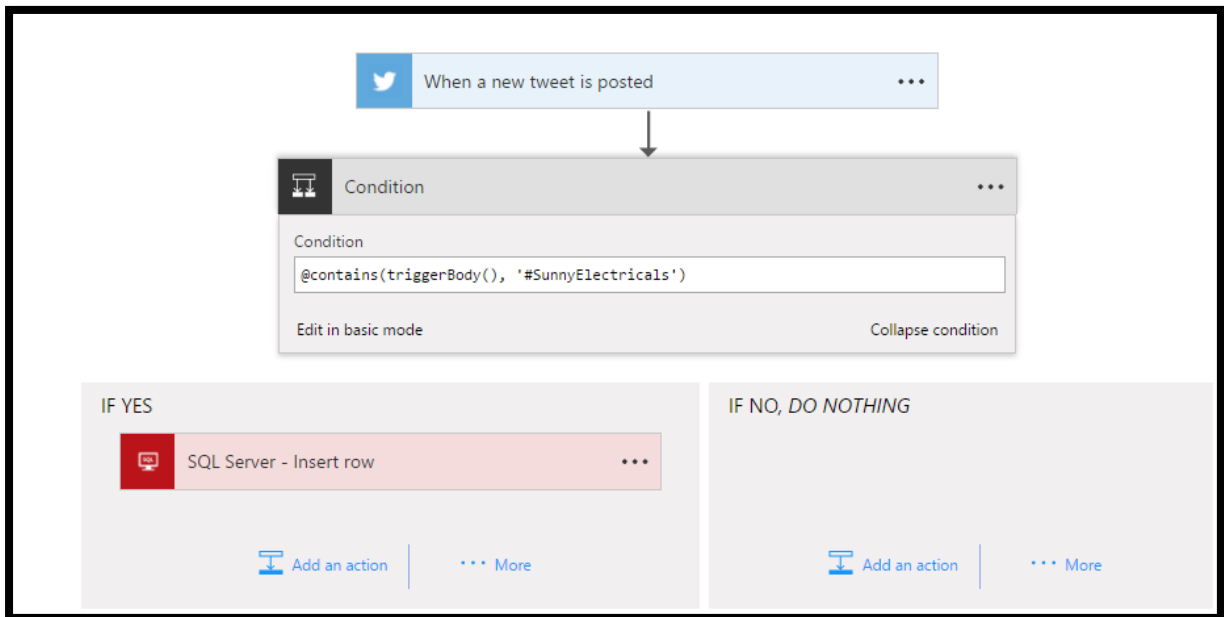
View files

Logs

Pause Clear Copy Logs

```
2016-07-23T09:10:24 Welcome, you are now connected to log-streaming service.
2016-07-23T09:10:55.019 Function started (Id=abfe6c35-dc92-4c2a-81ed-4a2f36afe1b7)
2016-07-23T09:10:55.019 C# Event Hub trigger function processed a message: 7/23/2016 9:10:37 AM,sunnyelectricals.azure-api.net, fec00577-9b17-4390-a85a-4
2016-07-23T09:10:55.019 Function completed (Success, Id=abfe6c35-dc92-4c2a-81ed-4a2f36afe1b7)
```

Chapter 5: Trigger Your First Logic App in Azure



Logic app action > Inputs

Logic app action

Send_message.

STATUS
Succeeded

TRACKING ID
08587342599310316500

INPUTS LINK
<https://prod-07.southeastasia.logic.azure...>

SIZE
388 bytes

OUTPUTS LINK
<https://prod-07.southeastasia.logic.azure...>

Microsoft Azure SQL databases

SQL databases

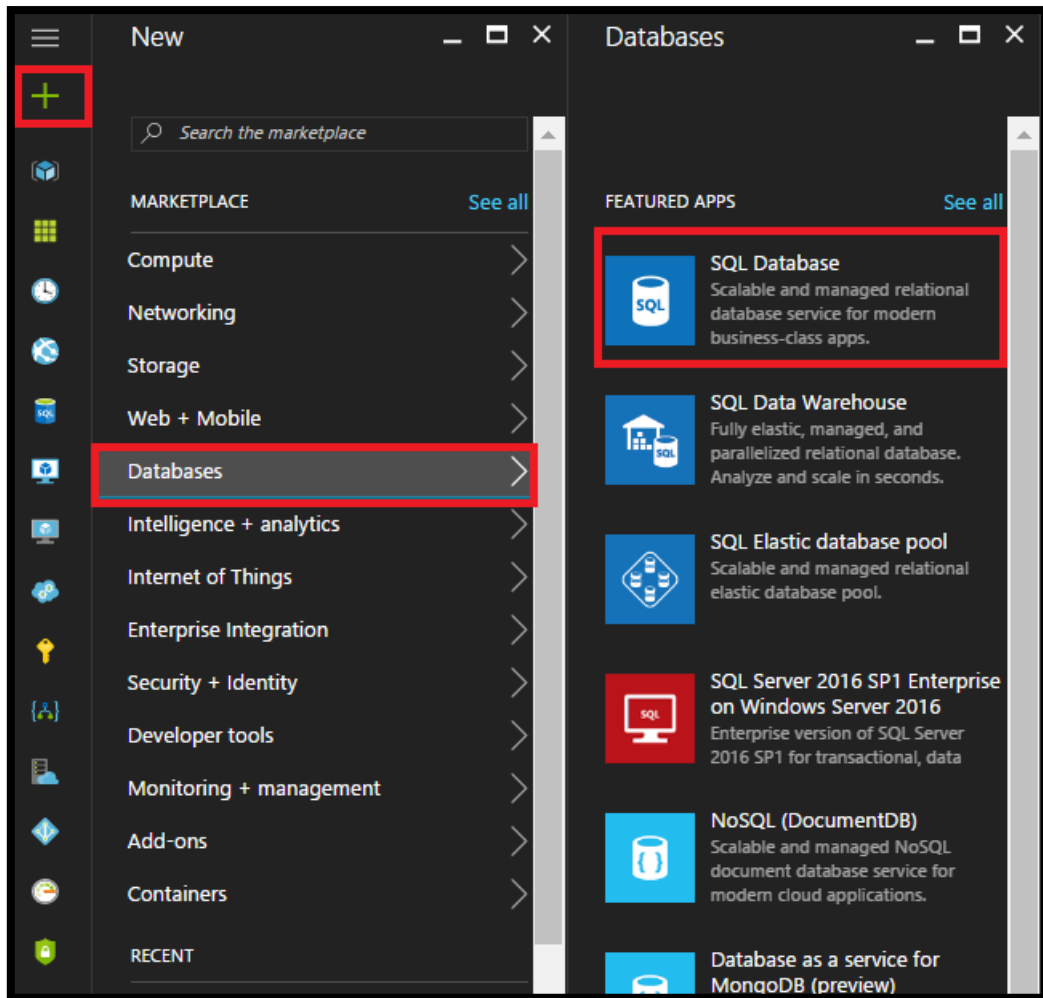
abhishekcskumarhotmail (Default Directory)

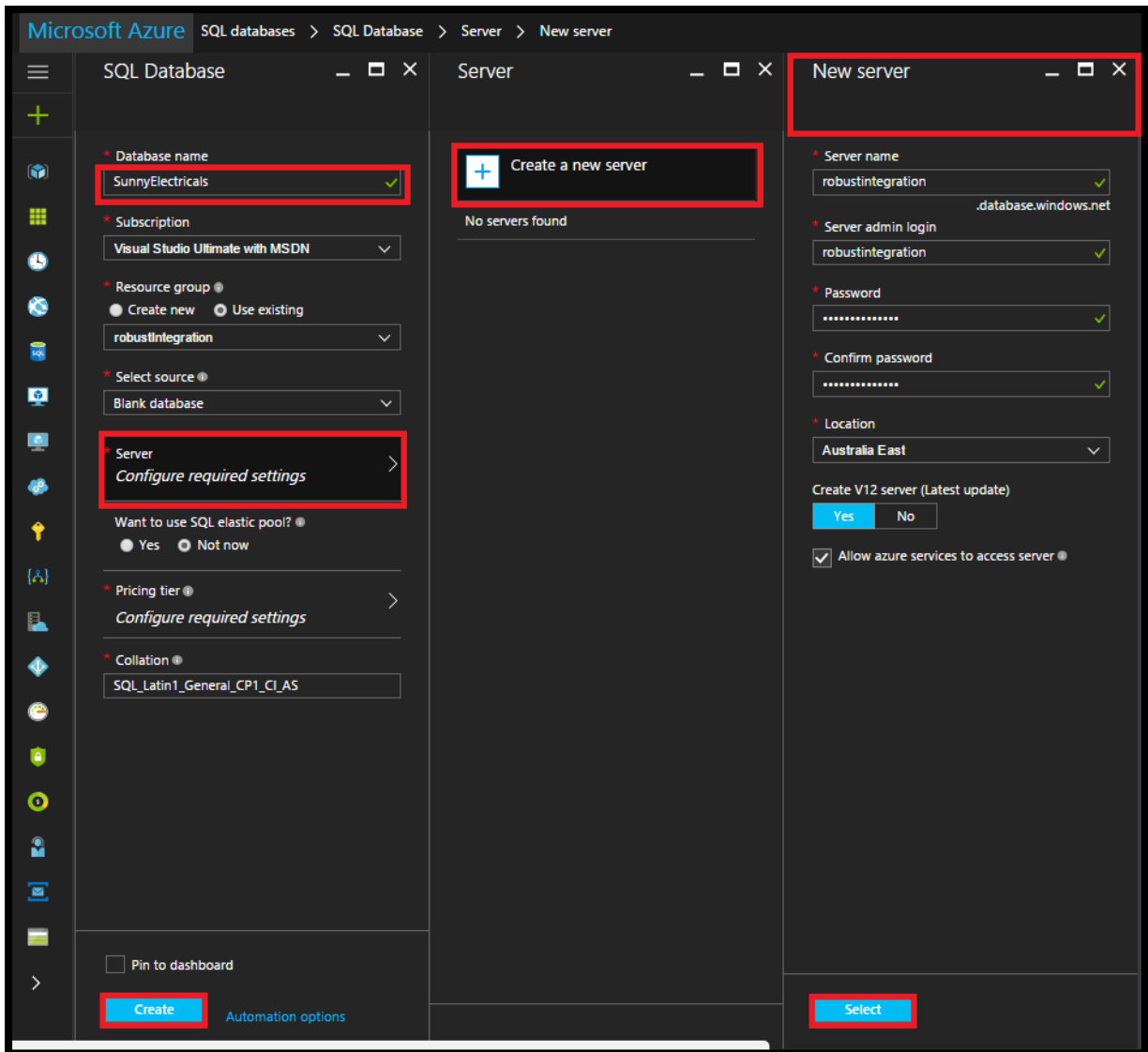
+ Add Columns Refresh

Subscriptions: Visual Studio Ultimate with MSDN

NAME	STATUS	REPLICATION ROLE
No sql databases to display		

Resource groups
All resources
Recent
App Services
SQL databases
Virtual machines (classic)





- ☰
- + New
- Resource groups
- All resources
- Recent
- App Services
- SQL databases
- Virtual machines (classic)
- Virtual machines
- Cloud services (classic)
- Subscriptions
- Logic Apps**
- App Service plans
- Azure Active Directory
- Monitor

Logic Apps

abhishekckumarhotmail (Default Directory)

+ Add Columns Refresh

Subscriptions: Visual Studio Ultimate with MSDN

Filter by name...

0 items

NAME ▾

No Logic Apps to display



New



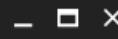
Search the marketplace

MARKETPLACE

See all







- Compute >
- Networking >
- Storage >
- Web + Mobile >**
- Databases >
- Intelligence + analytics >
- Internet of Things >
- Enterprise Integration >
- Security + Identity >
- Developer tools >
- Monitoring + management >
- Add-ons >
- Containers >
- RECENT

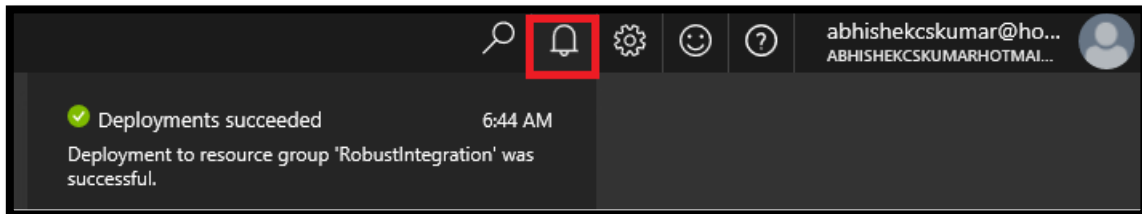
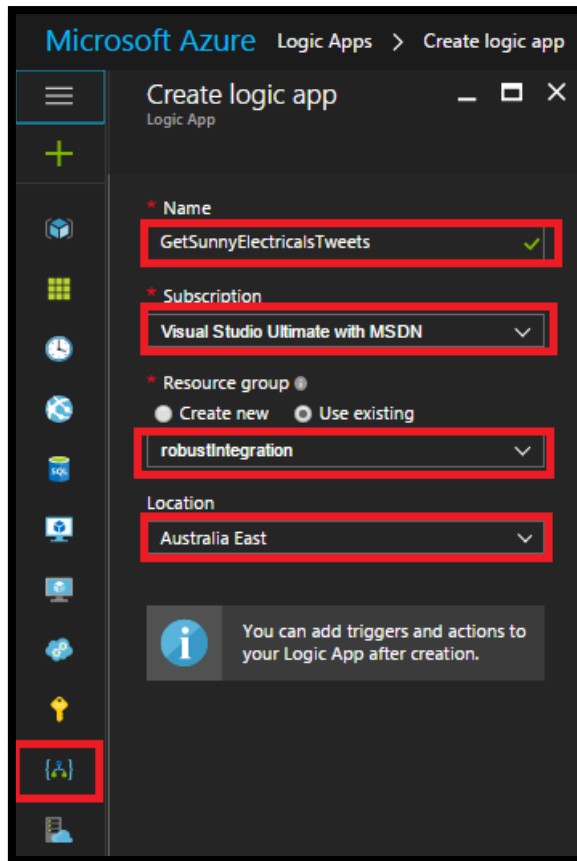
Web + Mobile



FEATURED APPS

See all

-  **Web App**
Enjoy secure and flexible development, deployment, and scaling options for your web app.
-  **Mobile App**
A scalable and secure backend that can be used to power apps on any platform – iOS, Android, Windows or
-  **Logic App**
Automate the access and use of data across clouds without writing code
-  **Web App On Linux (preview)**
Enjoy your web app natively hosted on Linux.
PREVIEW
-  **CDN**
Enjoy scalable, global distributed edge servers for fast and reliable content delivery
-  **Media Services**



Logic Apps
abhishekcskumar@hotmail (Default Directory)

+ Add Columns Refresh

Subscriptions: Visual Studio Ultimate with MSDN









Filter by name...

4 items

NAME	STATUS	RESOURCE GROUP
GetAccountDetails	✓	robustIntegration
GetSunnyElectricalsTweets	✓	robustIntegration

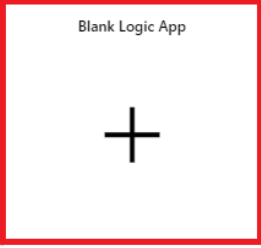



Start with a common trigger

Pick from one of the most commonly used triggers, then orchestrate any number of actions using the rich collection of connectors

 When a message is received in a Service Bus queue	 When an HTTP request is received	 When a new tweet is posted	 Make HTTP request recurrently
 Recurrence	 When a new email is received in Outlook.com	 When a new file is created on OneDrive	 When a file is added to FTP server








Templates


Choose a template below to create your Logic App. Category: All Sort by: Most recent

 Blank Logic App	 Peek-lock receive a Service Bus message and complete it	 Peek-lock receive a Service Bus message with exception handling	 Copy new Salesforce Accounts to Common Data Model customer organizations
---	---	---	--

Show Microsoft managed APIs

Search for more triggers

-  Trello - When a new card is added to a list (Preview)
-  Twitter - When a new tweet is posted
-  Visual Studio Team Services - When a build completes (Preview)
-  Visual Studio Team Services - When a work item is assigned (Preview)
-  Visual Studio Team Services - When a work item is created (Preview)
-  Visual Studio Team Services - When a work item is updated (Preview)
-  Visual Studio Team Services - When code is checked in (TFVC) (Preview)

 Twitter - When a new tweet is posted

Sign in to create a connection to Twitter.

Cancel Sign in

When a new tweet is posted

SEARCH TEXT*

#SunnyElectricals

FREQUENCY*

Minute

INTERVAL*

15

Show advanced options

Connected to abhishekckumar. [Change connection.](#)

+ New step

Add an action

Add a condition

More

Show Microsoft managed APIs

insert

- DB2 - Insert row (Preview)
- Google Sheets - Insert row (Preview)
- Informix - Insert row (Preview)
- SQL Server - Insert row

Cancel

SQL Server - Insert row

GATEWAYS

Connect via on-premise data gateway ⓘ

*CONNECTION NAME

AzureSqlConnection

*SQL SERVER NAME

robustintegration.database.windows.net

*SQL DATABASE NAME

SunnyElectricals

*USERNAME

robustintegration

*PASSWORD

.....

Create

Insert row

TABLE NAME*

TweeterTble

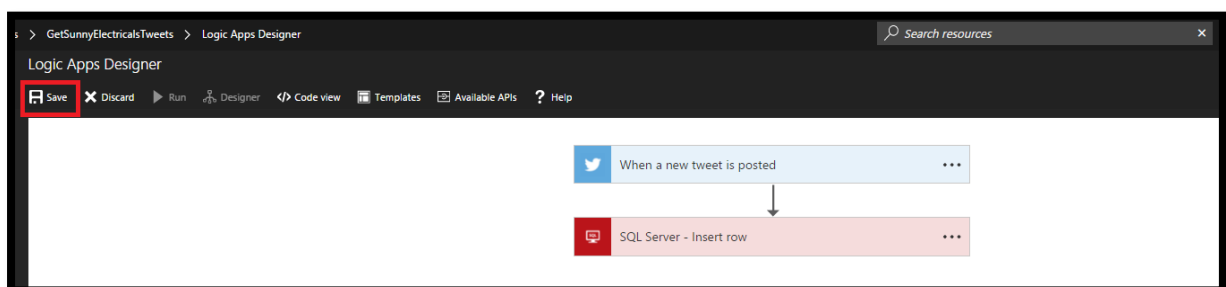
TWEETBY

Tweeted by

TWEETTEXT

Tweet text

Connected to TwitterConnection. [Change connection.](#)



Run Trigger Refresh Edit Delete **Enable** Update Schema Clone

Essentials ▾

Runs history

All ▾ Specify the run ident... →

STATUS	START TIME	IDENTIFIER	DURATION
✓ Succee..	3/5/2017, 5:3...	08587128717...	2.8 Seconds
✓ Succee..	3/5/2017, 5:3...	08587128717...	2.8 Seconds
✓ Succee..	3/5/2017, 5:3...	08587128717...	847 Milliseco...
✓ Succee..	3/5/2017, 5:3...	08587128717...	852 Milliseco...
✓ Succee..	3/5/2017, 5:3...	08587128717...	2.8 Seconds
✓ Succee..	3/5/2017, 5:3...	08587128717...	853 Milliseco...
✓ Succee..	3/5/2017, 5:3...	08587128717...	848 Milliseco...
✓ Succee..	3/5/2017, 5:3...	08587128717...	2.81 Seconds
✓ Succee..	3/5/2017, 5:3...	08587128718...	3.44 Seconds
✓ Succee..	3/5/2017, 5:2...	08587128719...	2.13 Seconds

Trigger History

When_a_new_tweet_is_... ▾ Succeeded ▾

STATUS	START TIME	FIRED
✓ Succee..	3/5/2017, 5:31 PM	Fired
✓ Succee..	3/5/2017, 5:31 PM	Fired
✓ Succee..	3/5/2017, 5:31 PM	Fired
✓ Succee..	3/5/2017, 5:31 PM	Fired
✓ Succee..	3/5/2017, 5:31 PM	Fired
✓ Succee..	3/5/2017, 5:31 PM	Fired
✓ Succee..	3/5/2017, 5:31 PM	Fired
✓ Succee..	3/5/2017, 5:31 PM	Fired
✓ Succee..	3/5/2017, 5:31 PM	Fired
✓ Succee..	3/5/2017, 5:30 PM	Fired

Logic app run
08587128717996319326934907230

Run Details Resubmit Cancel Run

```

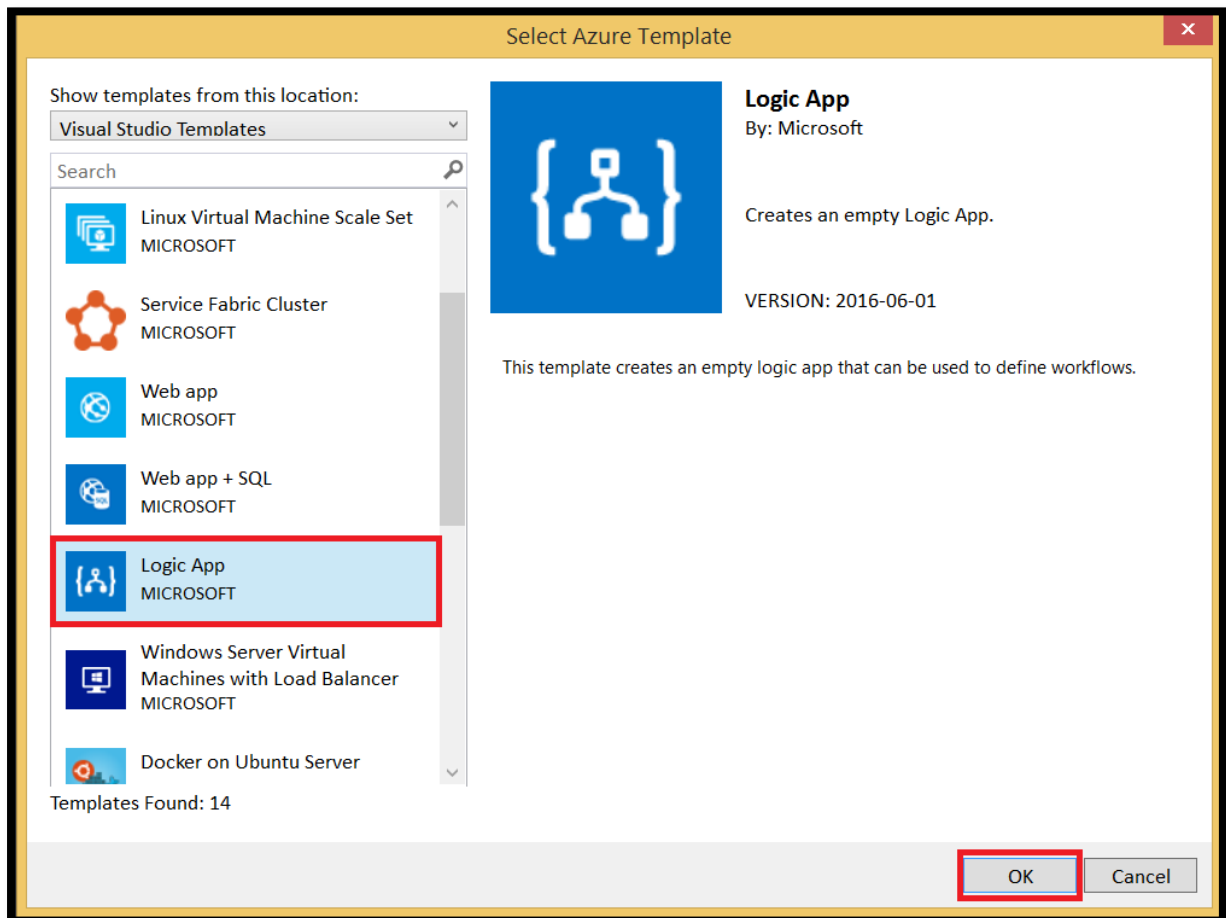
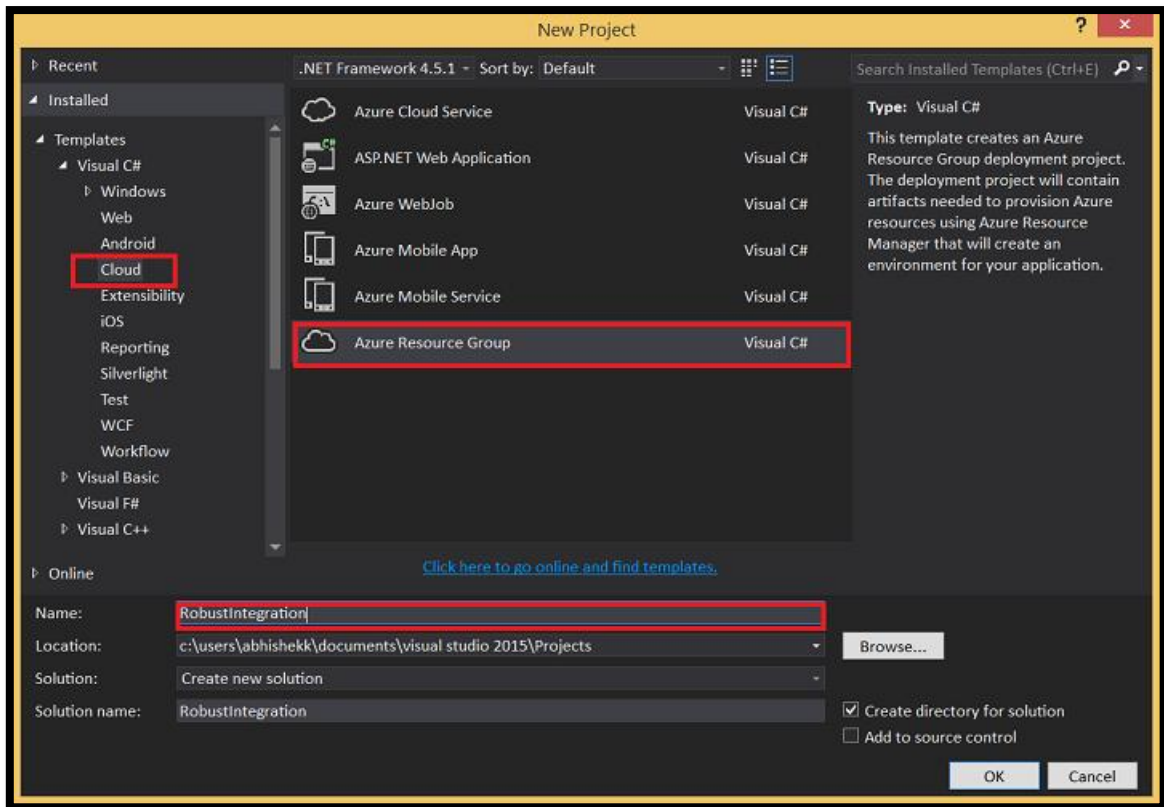
graph TD
    A[When a new tweet is posted 1s] --> B[SQL Server - Insert row]
  
```

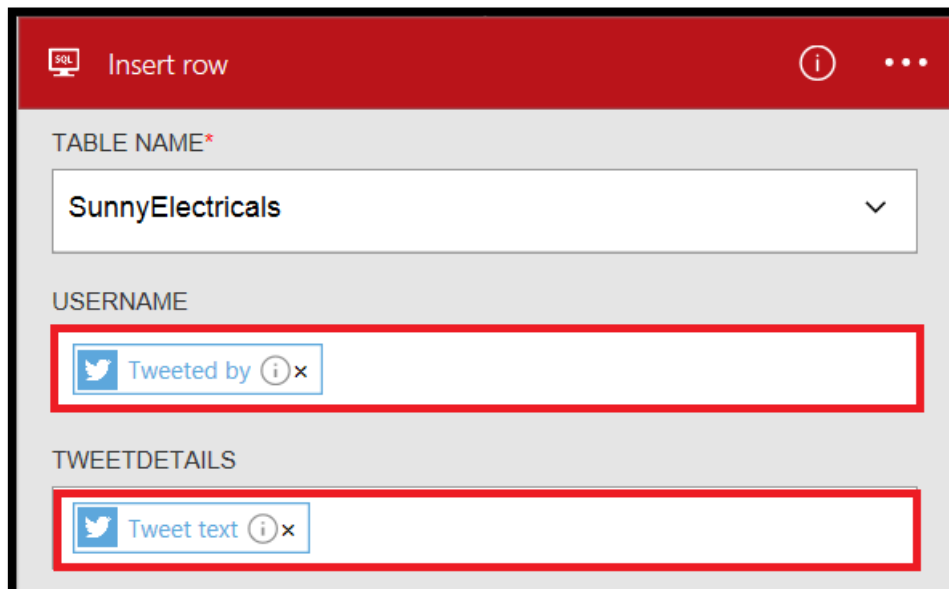
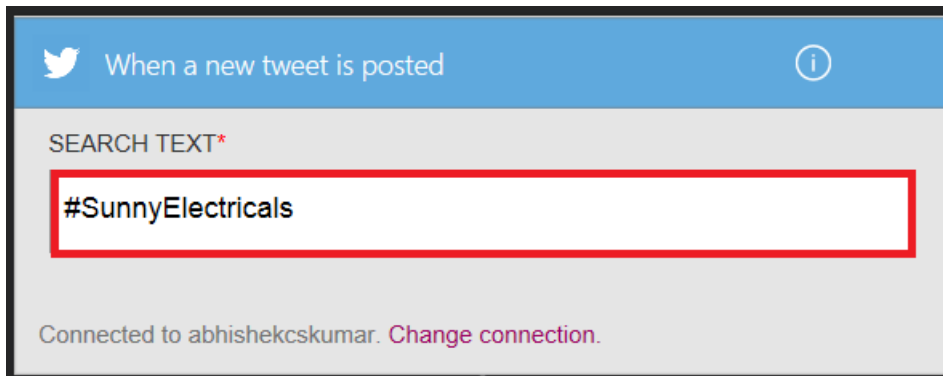
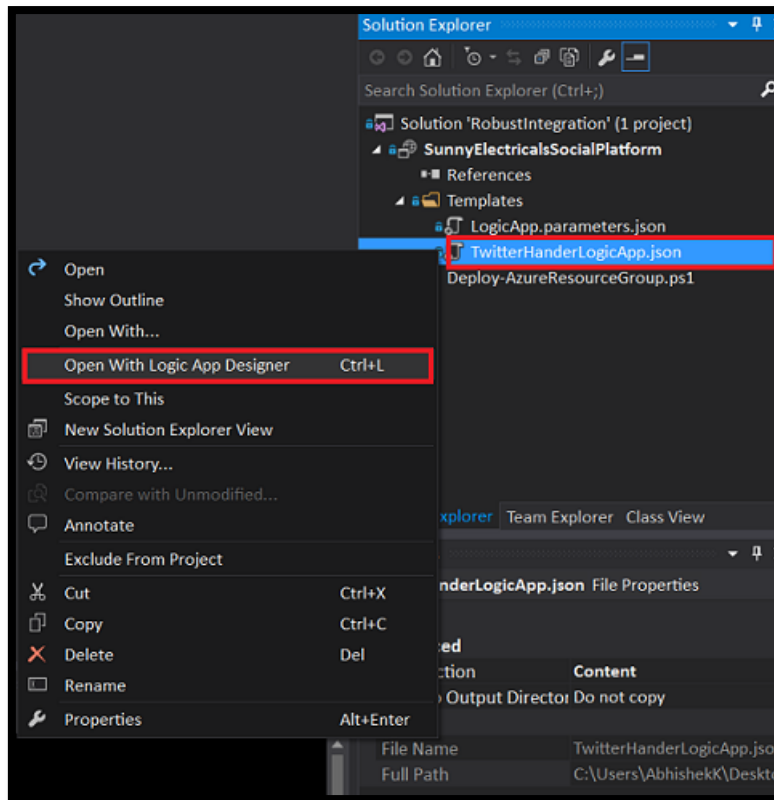
Logic app run
08587128717996319326934907230

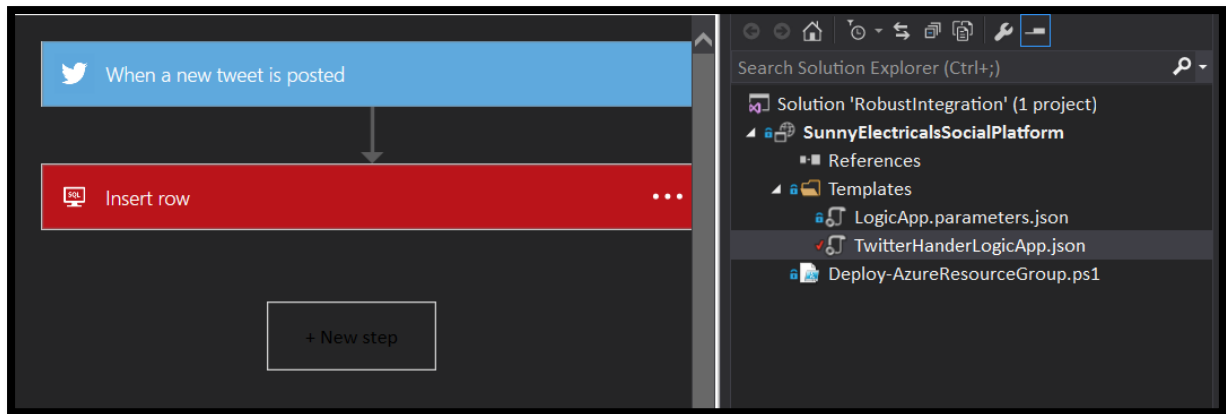
Cancel

05:31:24 05:31:25 05:31:26 05:31:27 05:31:28 05:31:29

1 SUCCEEDED - FAILED - RUNNING - SKIPPED - ABORTED







```
"triggers": {
  "When_a_new_tweet_is_posted": {
    "type": "ApiConnection",
    "inputs": {
      "host": {
        "api": {
          "runtimeUrl": "https://logic-apis-centralus.azure-apim.net/apim/twitter"
        },
        "connection": {
          "name": "@parameters('$connections')['twitter']['connectionId']"
        }
      },
      "method": "get",
      "queries": {
        "searchQuery": "#SunnyElectricals"
      },
      "path": "/onnewtweet"
    },
    "recurrence": {
      "interval": 15,
      "frequency": "Minute"
    },
    "splitOn": "@triggerBody()?.value"
  }
}
```

```
actions: {
  "Insert row": {
    "type": "ApiConnection",
    "inputs": {
      "host": {
        "api": {
          "runtimeUrl": "https://logic-apis-centralus.azure-apim.net/apim/sql"
        },
        "connection": {
          "name": "@parameters('$connections')['sql_2']['connectionId']"
        }
      },
      "method": "post",
      "path": "/datasets/default/tables/{encodeURIComponent(encodeURIComponent('[dbo].[TweeterTble]'))}/items",
      "body": {
        "tweetBy": "@{triggerBody()['TweetedBy']}",
        "tweetText": "@{triggerBody()['TweetText']}"
      }
    },
    "runAfter": {}
  }
}
```

Logic App Properties

Microsoft account
abhishekckumar@hotmail.com

Subscription:
Visual Studio Ultimate with MSDN (abhishekckumar@hotmail.com)

Resource Group:
RobustIntegration (Central US)

Location:
Same as Resource Group

[Information on the Azure Logic Apps Tools for Visual Studio](#)

OK Cancel

SunnyElectricalsGetTweets - Activity log

Columns Export

Search (Ctrl+/)

Overview

Activity log

Access control (IAM)

Tags

SETTINGS

Locks

Automation script

Insights (Last 24 hours): 0 failed deployments | 0 role assignments | 0 errors | 0 alerts fired | 0 outage notifications

Subscription: Visual Studio Ultimat... Resource group: RobustIntegration Resource: SunnyElectricalsGetT... Resource type: All resource types Operation: All operations

Timespan: Last 1 hour Event category: All categories Event severity: 4 selected Event initiated by: All Search:

Apply Reset

Query returned 2 items. Click here to download all the items as csv.

OPERATION NAME	STATUS	TIME	TIME STAMP	SUBSCRIPTION	EVENT INITIATED BY
Write WORKFLOWS	Succeeded	37 min ago	Mon Aug 22...	CCE221DE-2EF7-4396-98CC-CE...	abhishekckumar@hotmail.c...
Write WORKFLOWS	Succeeded	45 min ago	Mon Aug 22...	CCE221DE-2EF7-4396-98CC-CE...	abhishekckumar@hotmail.c...

[Diagnostic sett...](#)

Search (Ctrl+F)

Logic App Designer

Logic App Code View

API Connections

Quick Start Guides

SETTINGS

Integration Account

Access control configuration

Access keys

Properties

Locks

Automation script

MONITORING

Metrics

Alert rules

Diagnostics logs

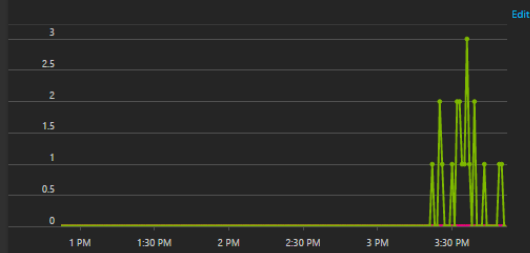
Log search

Diagnostics

SUPPORT + TROUBLESHOOTING

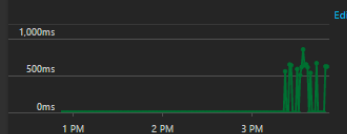
Monitoring

Runs succeeded, failed in the past 3 hours



RUN THROTTLED EVENTS: 0
RUNS FAILED: 0
RUNS SUCCEEDED: 20

Runs success latency in the past 3 hours



Alerts

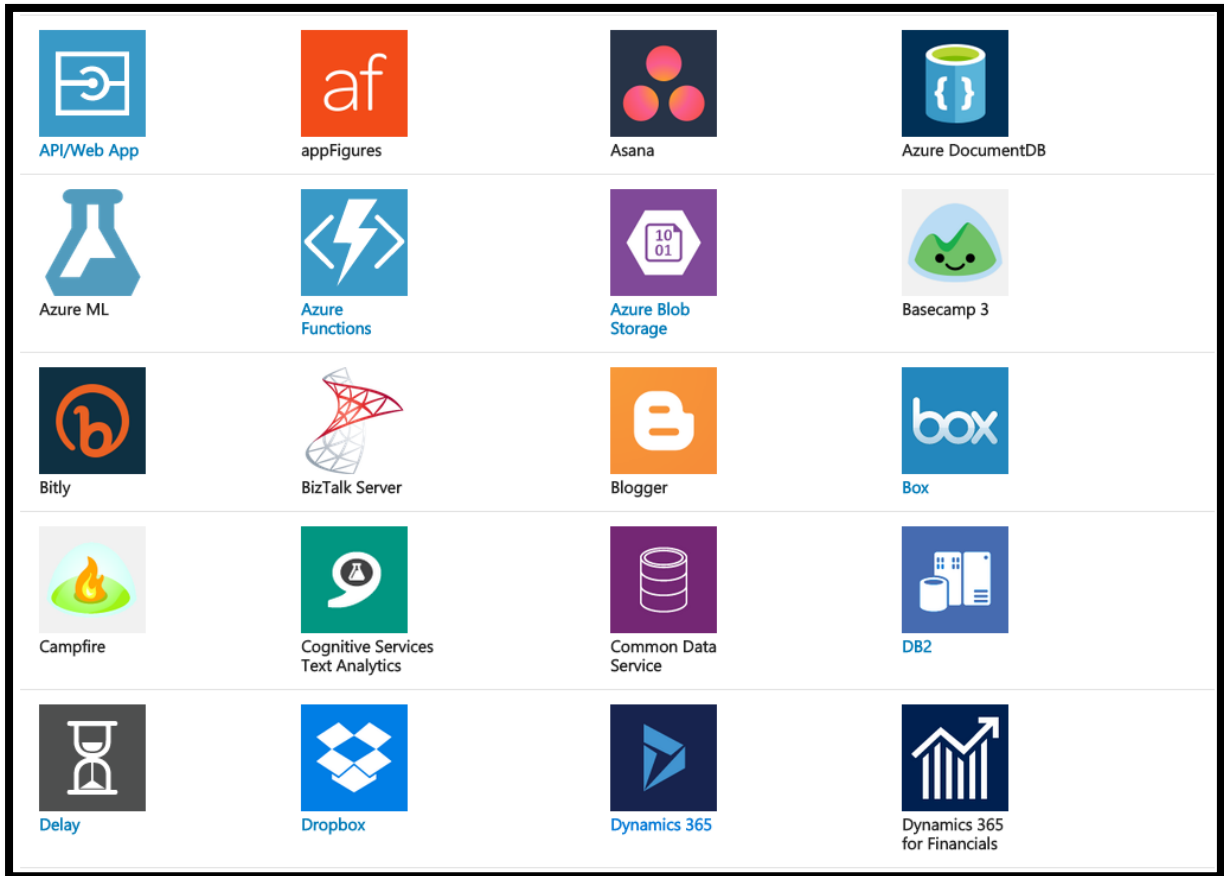
Alert rules

0

Active now: 0

Enabled: 0

Chapter 6: Working with Connectors in Logic Apps





Dynamics 365 for Operations



Easy Redmine



Facebook



File System



FTP



GitHub



Google Calendar



Google Drive



Google Sheets



Google Tasks



HideKey



HipChat



HTTP



HTTP Swagger



HTTP Request



HTTP Response



Informix



Insightly



Instagram



Instapaper



JIRA



MailChimp



Mandrill



Microsoft Translator

```

{
  "actions": {
    "Send_Email": {
      "type": "ApiConnection",
      "inputs": {
        "host": {
          "api": {
            "runtimeUrl": "https://msmanaged-na.azure-apim.net/apim/office365"
          },
          "connection": {
            "name": "@parameters('$connections')['shared_office365']['connectionId']"
          }
        },
        "method": "post",
        "body": {
          "Subject": "Reminder",
          "Body": "Don't forget!",
          "To": "hi.gyan@outlook.com"
        },
        "path": "/Mail"
      }
    }
  }
}

```

```

{
  "properties": {
    "api": {
      "id": "/subscriptions/{subid}/providers/Microsoft.Web/managedApis/azureblob"
    },
    "parameterValues": {
      "accountName": "{The name of the storage account -- the set of parameters is different for each API}"
    }
  },
  "location": "{Logic app's location}"
}

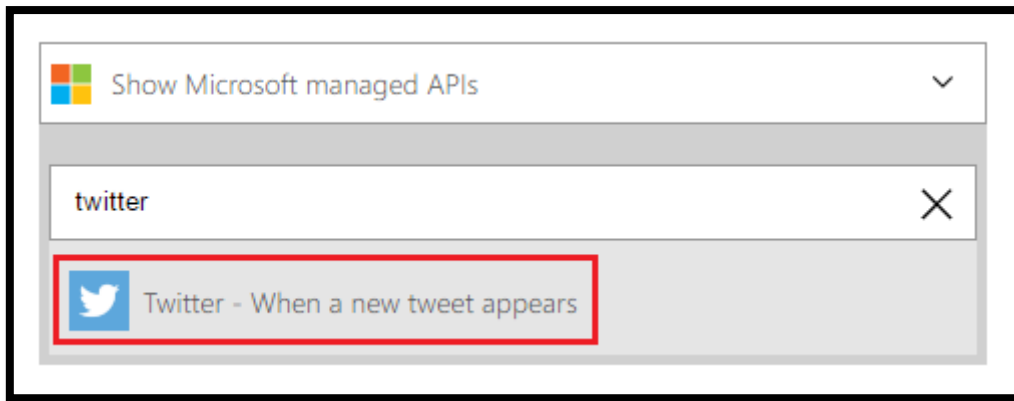
```

enterprise
connectors



MQ

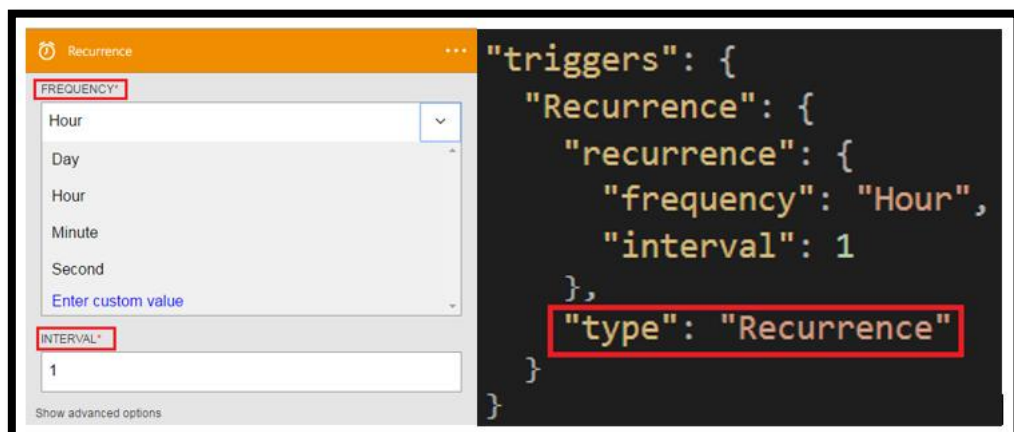


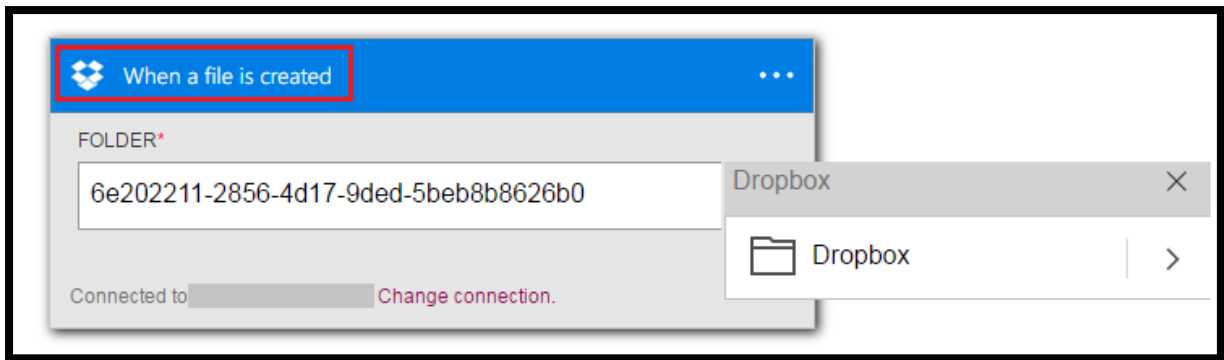


```

{
  "triggers": {
    "When_a_new_tweet_appears": {
      "type": "ApiConnection",
      "inputs": {
        "host": {
          "api": {
            "runtimeUrl": "https://logic-apis-westus.azure-apim.net/apim/twitter"
          },
          "connection": {
            "name": "@parameters('$connections')['twitter']['connectionId']"
          }
        },
        "method": "get",
        "path": "/onnewtweet",
        "queries": {
          "searchQuery": "#LogicApps"
        }
      },
      "recurrence": {
        "frequency": "Hour",
        "interval": 1
      },
      "splitOn": "@triggerBody()?.value"
    }
  }
}

```





```
"triggers": {
  "When a file is created": {
    "type": "ApiConnection",
    "inputs": {
      "host": {
        "api": {
          "runtimeUrl": "https://logic-apis-westus.azure-apim.net/apim/dropbox"
        },
        "connection": {
          "name": "@parameters('$connections')['dropbox']['connectionId']"
        }
      },
      "method": "get",
      "path": "/datasets/default/triggers/onnewfile",
      "queries": {
        "folderId": "6e202211-2856-4d17-9ded-5beb8b8626b0"
      }
    },
    "recurrence": {
      "frequency": "Hour",
      "interval": 1
    }
  }
}
```

Request

HTTP POST to this URL

<https://prod-13.australiaeast.logic.azure.com:443/workflows/8e4f...>

Request Body JSON Schema

```
Example:
{
  "type": "object",
  "properties": {
    "address": {
      "type": "string"
    }
  },
  "required": ["address"]
}
```

Use sample payload to generate schema

Method

Relative path

Hide advanced options ^

```

"triggers": {
  "manual": {
    "type": "Manual",
    "inputs": {
      "schema": {
        "$schema": "http://json-schema.org/draft-04/schema#",
        "properties": {
          "address": {
            "properties": {
              "street": {
                "type": "string"
              },
              "zip": {
                "type": "string"
              }
            },
            "required": [
              "street",
              "zip"
            ],
            "type": "object"
          },
          "name": {
            "type": "string"
          },
          "phone": {
            "type": "string"
          }
        },
        "required": [
          "name",
          "phone",
          "address"
        ],
        "type": "object"
      }
    }
  }
}

```

The screenshot shows the Azure Logic App Designer interface. The left sidebar contains navigation options: Overview, Activity log, Access control (IAM), Tags, and DEVELOPMENT TOOLS (Logic App Designer, Logic App Code View, API Connections, Quick Start Guides). The main workspace displays the Logic App configuration for 'SetMessageWithTableConnector'.

Essentials:

- Resource group: servicetest
- Location: Australia East
- Subscription: Visual Studio Ultimate with MSDN
- Subscription ID: [redacted]
- Definition: 1 trigger, 0 actions
- Status: Enabled
- Runs last 24 hours: 0 successful, 0 failed
- Integration Account: -- --
- Plan: Consumption

Runs history:

Filter: All | Specify the run identifier to open monitor view... [icon]

STATUS	START TIME	IDENTIFIER	DURATION
No runs			

Trigger History:

Filter: manual | All

Callback URL (POST): <https://prod-13.australiaeast.logic.azure.com/443/workflows/8e4f50a40a2540928585f70d8c47e45/triggers>

STATUS	START TIME	FIRE
There are no trigger history entries.		

Http Webhook

SUBSCRIBE METHOD*
POST

SUBSCRIBE URI*
http://requestb.in/yzrzyoyz

SUBSCRIBE BODY
@listCallbackUrl()

UNSUBSCRIBE METHOD*
POST

UNSUBSCRIBE URI*
http://requestb.in/yzrzyoyz?unsubscribe=true

UNSUBSCRIBE BODY
@listCallbackUrl().value

Show advanced options

```
"triggers": {
  "Http Webhook": {
    "type": "HttpWebhook",
    "inputs": {
      "subscribe": {
        "body": "@listCallbackUrl()",
        "method": "POST",
        "uri": "http://requestb.in/yzrzyoyz"
      },
      "unsubscribe": {
        "body": "@listCallbackUrl().value",
        "method": "POST",
        "uri": "http://requestb.in/yzrzyoyz?unsubscribe=true"
      }
    }
  }
}
```

Http

METHOD*
GET

URI*
http://requestb.in/1g6mjpd1

HEADERS
Enter JSON object of request headers

BODY
Enter request content

Show advanced options

```
"actions": {
  "Http": {
    "inputs": {
      "method": "GET",
      "uri": "http://requestb.in/1g6mjpd1"
    },
    "runAfter": { },
    "type": "Http"
  }
}
```

Create file

FOLDER PATH*
/logicapps

FILE NAME*
TestFile

FILE CONTENT*
This is a test text.

```

"actions": {
  "Create_file": {
    "inputs": {
      "body": "This is a test text.",
      "host": {
        "api": {
          "runtimeUrl": "https://logic-apis-westus.azure-apim.net/apim/dropbox"
        },
        "connection": {
          "name": "@parameters('$connections')['dropbox']['connectionId']"
        }
      },
      "method": "post",
      "path": "/datasets/default/files",
      "queries": {
        "folderPath": "/logicapps",
        "name": "TestFile"
      }
    },
    "runAfter": {
      "Http": [
        "Succeeded"
      ]
    },
    "type": "ApiConnection"
  }
}

```

Response

STATUS CODE*

HEADERS

BODY

```

"actions": {
  "Response": {
    "conditions": [ ],
    "inputs": {
      "body": "Thanks!",
      "statusCode": 200
    },
    "type": "Response"
  }
}

```

The image shows the configuration interface for a 'Delay' action in a Logic App. On the left, the 'COUNT' field is set to '15' and the 'UNIT' is set to 'Minute'. On the right, the JSON representation of the action is shown, with the 'type' field set to 'Wait'.

```
"actions": {  
  "Delay": {  
    "inputs": {  
      "interval": {  
        "count": 15,  
        "unit": "Minute"  
      }  
    },  
    "type": "Wait"  
  }  
}
```

The image shows a list of options for displaying Logic Apps in the same region. The option 'Show Logic Apps in the same region' is highlighted with a red box.

- Show Microsoft managed APIs
- Show Microsoft managed APIs
- Show APIs for App Services in the same region
- Show Logic Apps in the same region
- Show Azure Functions in the same region

The image shows the configuration menu for a Logic App step. The menu includes options for adding an action, a condition, or more options. The 'More' option is expanded, showing sub-options for adding a for each, a do until, or a scope.

- + New step
- Add an action
- Add a condition
- More
 - Add a for each
 - Add a do until
 - Add a scope

PartitionKey	RowKey	AuthorName	Twitter	ChapterTitle
author	1	Gyanendra Gautam	@ggauta	
author	2	Ashish Bhambhani	@ashbham	
author	3	Abhishek Kumar	@abhishekckumar	
author	4	Mahindra Morar	@mmoramz	
author	5	James Corbould	@jamescorbould	
author	6	Martin Abbott	@martinabbott	
chapter	1			Chapter1: Introduction to Systems Integration in the Cloud
chapter	10			Chapter 10: Advanced Integration with Powerful, Scalable, Service Bus in the Cloud
chapter	11			Chapter 11: Connecting to Event Hubs and an Introduction IoT Hubs
chapter	12			Chapter 12: EAI/B2B Integration using Logic Apps
chapter	13			Chapter 13: Hybrid Integration using BizTalk Server 2016 and Logic Apps
chapter	15			Chapter 15: What's next?
chapter	2			Chapter2: What is an Azure App Service.
chapter	3			Chapter 3: Getting Started with API Apps
chapter	4			Chapter 4: Azure API Management
chapter	5			Chapter 5: Trigger your first Logic App in Azure
chapter	6			Chapter 6: Working with Connectors in Logic App
chapter	7			Chapter 7: Azure Functions in Logic Apps
chapter	8			Chapter 8: Deep Dive into Logic Apps
chapter	9			Chapter 9: Powerful Integration with SaaS using Logic Apps

```

namespace AzureStorageTableConnector.Models
{
    /// <summary> Book Entity
    14 references
    public class BookEntity: TableEntity
    {
        /// <summary>
        /// Initializes a new instance of the <see cref="BookEntity"/> class.
        /// </summary>
        0 references
        public BookEntity()...

        /// <summary> Initializes a new instance of the BookEntity class. Defines the PK and RK.
        1 reference
        public BookEntity(string authorOrChapter, string sequenceNumber)
        {
            PartitionKey = authorOrChapter;
            RowKey = sequenceNumber;
        }

        /// <summary> Author Name
        2 references
        public string AuthorName { get; set; }

        /// <summary> Twitter handle
        2 references
        public string Twitter { get; set; }

        /// <summary> Chapter Title
        2 references
        public string ChapterTitle { get; set; }
    }
}

```

```

namespace AzureStorageTableConnector.Controllers
{
    /// <summary> Controller to handle Book Entities
    1 reference
    public class BookController : ApiController
    {
        private CloudTableClient tableClient;
        private CloudTable table;
        internal const string TableName = "BookEntity";
        /// <summary> Constructor

    0 references
    public BookController()
    {
        // Retrieve storage account information from connection string.
        string connectionString = System.Configuration.ConfigurationManager.AppSettings["StorageConnectionString"];
        CloudStorageAccount storageAccount = CloudStorageAccount.Parse(connectionString);

        // Create a table client for interacting with the table service
        this.tableClient = storageAccount.CreateCloudTableClient();

        // Retrieve a reference to the table.
        this.table = tableClient.GetTableReference(TableName);

        // Create the table if it doesn't exist.
        table.CreateIfNotExists();
    }

    #region Actions
    /// <summary> Get Book Entity
    0 references
    public BookEntity GetBookEntity(string authorOrChapter, string sequenceNumber)
    {
        // Create a retrieve operation that takes a BookEntity entity.
        TableOperation retrieveOperation = TableOperation.Retrieve<BookEntity>(authorOrChapter, sequenceNumber);

        // Execute the retrieve operation.
        TableResult retrievedResult = table.Execute(retrieveOperation);

        //Return BookEntity entity
        return (BookEntity)retrievedResult.Result;
    }
    #endregion
}

```

AzureStorageTableConnector

Book

Show/Hide | List Operations | Expand Operations

GET /api/Book

[BASE URL: , API VERSION: V1]

Book

Show/Hide | List Operations | Expand Operations

GET /api/Book

Response Class (Status 200)

OK

Model | Model Schema

```
{
  "AuthorName": "string",
  "Twitter": "string",
  "ChapterTitle": "string",
  "PartitionKey": "string",
  "RowKey": "string",
  "Timestamp": "2016-08-17T23:13:41.403Z",
  "ETag": "string"
}
```

Response Content Type

Parameters

Parameter	Value	Description	Parameter Type	Data Type
authorOrChapter	<input type="text" value="author"/>		query	string
sequenceNumber	<input type="text" value="1"/>		query	string

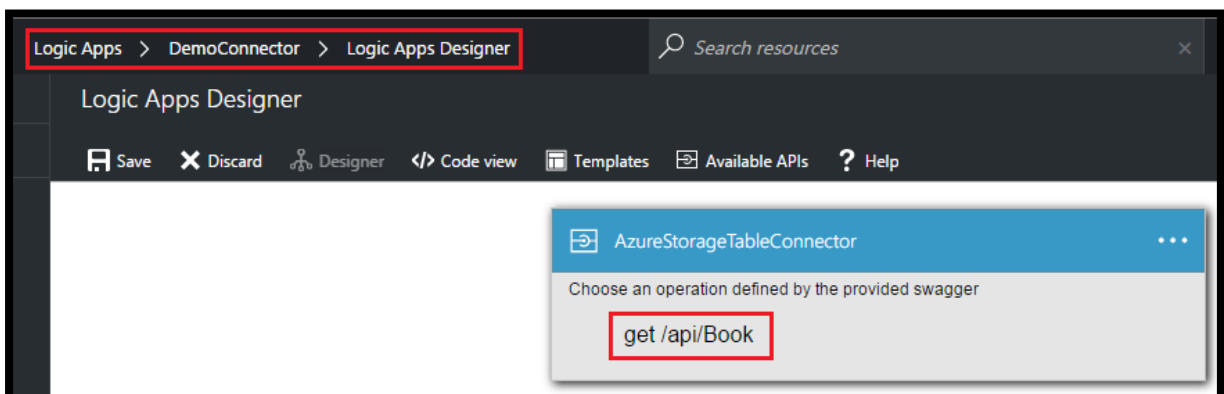
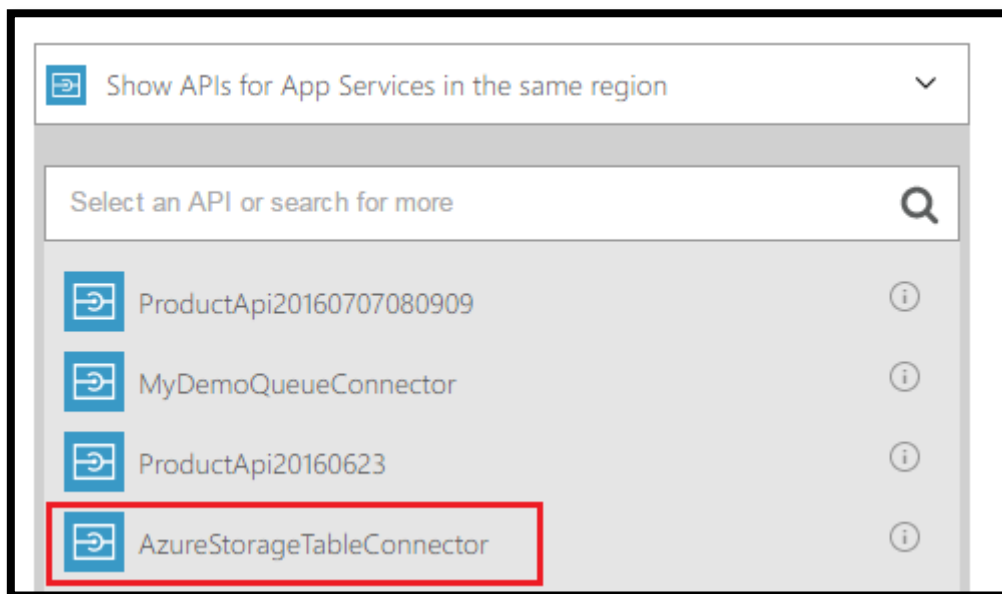
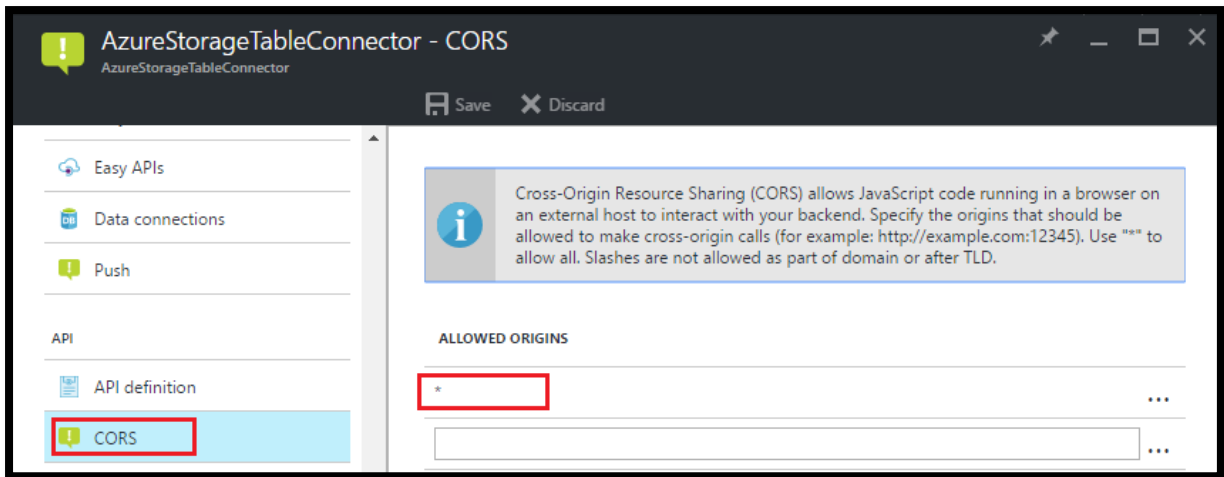
[Try it out!](#) [Hide Response](#)

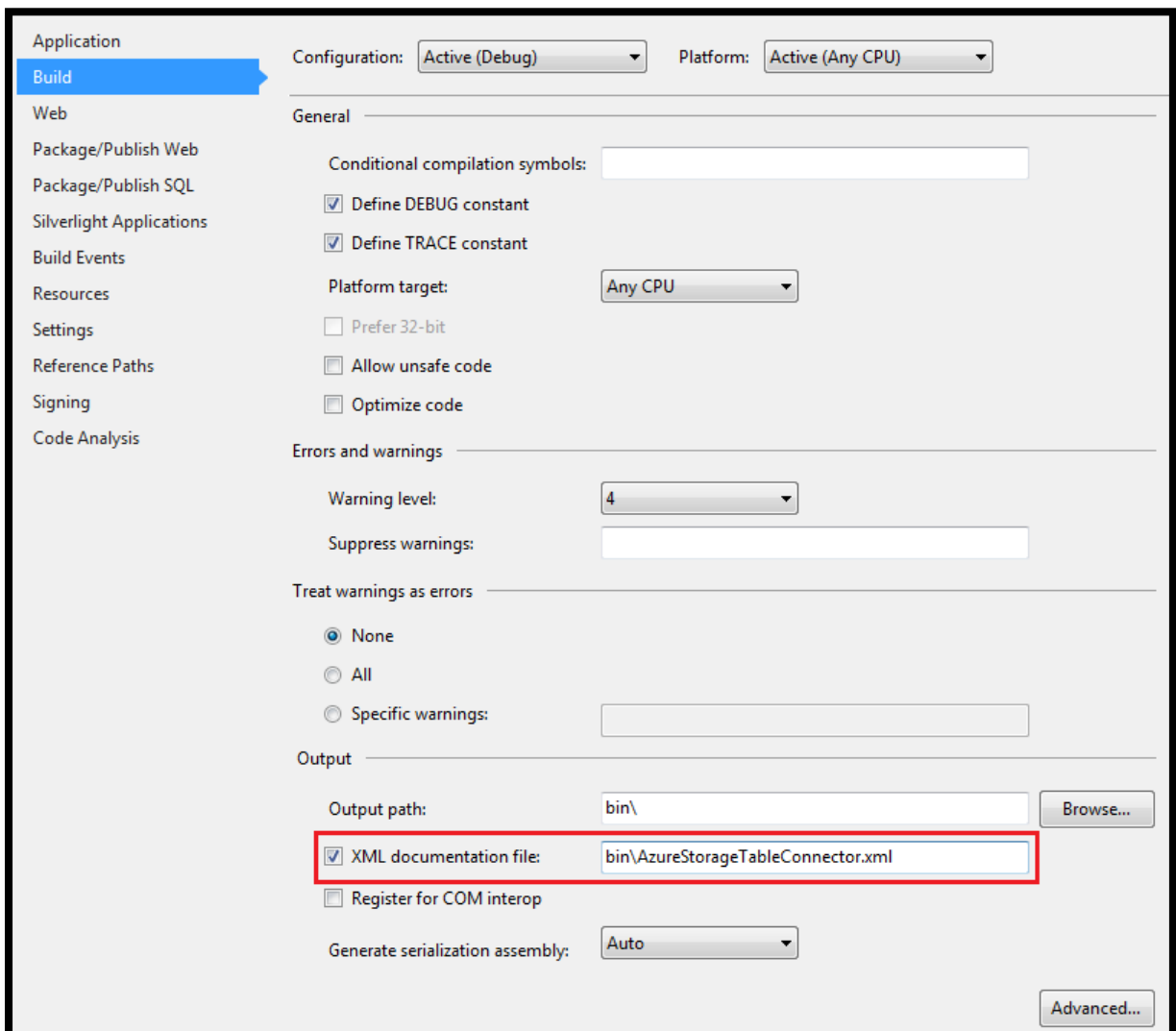
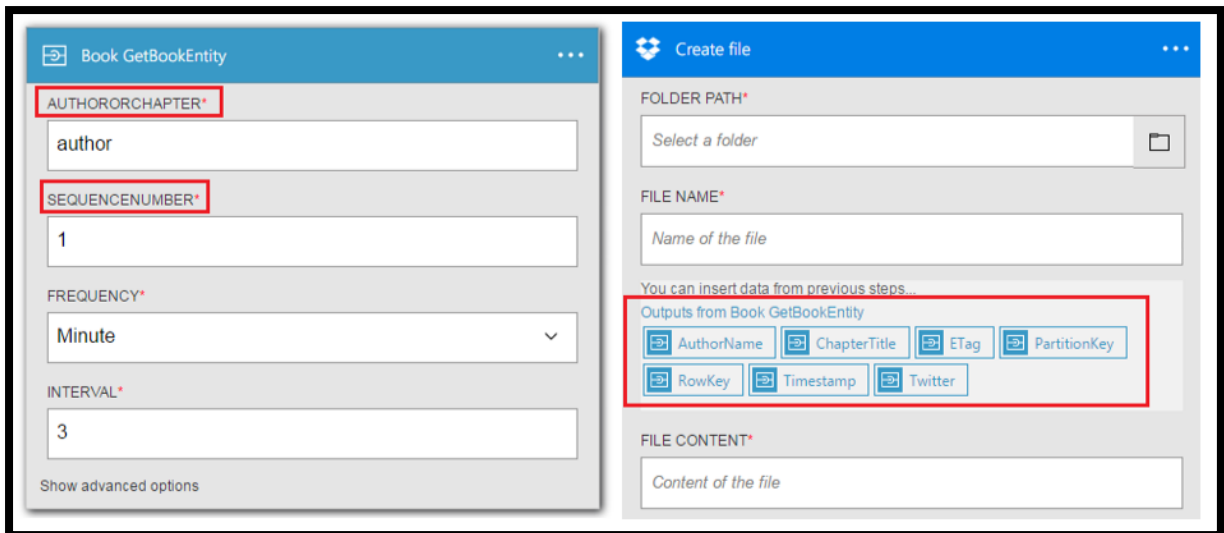
Response Body

```
{
  "AuthorName": "Gyanendra Gautam",
  "Twitter": "@ggauta",
  "ChapterTitle": "",
  "PartitionKey": "author",
  "RowKey": "1",
  "Timestamp": "2016-08-17T17:33:40.7940523+00:00",
  "ETag": "W/\"datetime'2016-08-17T17%3A33%3A40.7940523Z\""
```

Response Code

200





```
//c.IncludeXmlComments(GetXmlCommentsPath());
```

```

0 references
private static string GetXmlCommentsPath()
{
    return System.String.Format(CultureInfo.InvariantCulture,
        @"{0}\bin\AzureStorageTableConnector.xml",
        System.AppDomain.CurrentDomain.BaseDirectory);
}

```

Book Show/Hide List Operations Expand Operations

GET /api/Book Get Book Entity

Response Class (Status 200)
OK

Model | Model Schema

```

{
  "AuthorName": "string",
  "Twitter": "string",
  "ChapterTitle": "string",
  "PartitionKey": "string",
  "RowKey": "string",
  "Timestamp": "2016-08-18T22:26:21.334Z",
  "ETag": "string"
}

```

Response Content Type

Parameters

Parameter	Value	Description	Parameter Type	Data Type
authorOrChapter	<input type="text" value="(required)"/>	Autour or Chapter is the Partion Key	query	string
sequenceNumber	<input type="text" value="(required)"/>	SequenceNumber is the Row Key. Book Entity contains 6 authors and 15 chapters.	query	string

```
c.OperationFilter<DiscoverPartitionKeyFilter>();
```

```

public class DiscoverPartitionKeyFilter : IOperationFilter
{
    /// <summary> Add a dynamic enumeration of the Queues
    2 references
    public void Apply(Operation operation, SchemaRegistry schemaRegistry,
        System.Web.Http.Description.ApiDescription apiDescription)
    {
        // Add a dynamic enumeration of the Queues
        var param = operation.parameters.FirstOrDefault(x => x.name.Equals("authorOrChapter"));
        if (param != null)
        {
            if (param.@enum == null)
            {
                param.@enum = new System.Collections.Generic.List<object>();
            }

            foreach (string authorOrChapter in this.GetPartionKeys())
            {
                param.@enum.Add(authorOrChapter);
            }
        }
    }
}

```

```

private System.Collections.Generic.IEnumerable<string> GetPartionKeys()
{
    List<string> partionKeyList = new List<string>();
    partionKeyList.Add("author");
    partionKeyList.Add("chapter");

    foreach (string partionKey in partionKeyList)
    {
        yield return partionKey;
    }
}

```

Parameters

Parameter	Value	Description	Parameter Type	Data Type
authorOrChapter	<input type="text" value="author"/> <ul style="list-style-type: none"> author author chapter 	Autour or Chapter is the Partion Key	query	string
sequenceNumber	<input type="text" value="(required)"/>	SequenceNumber is the Row Key. Book Entity contains 6 authors and 15 chapters.	query	string



Book GetBookEntity

AUTHORORCHAPTER*

Autour or Chapter is the Partion Key

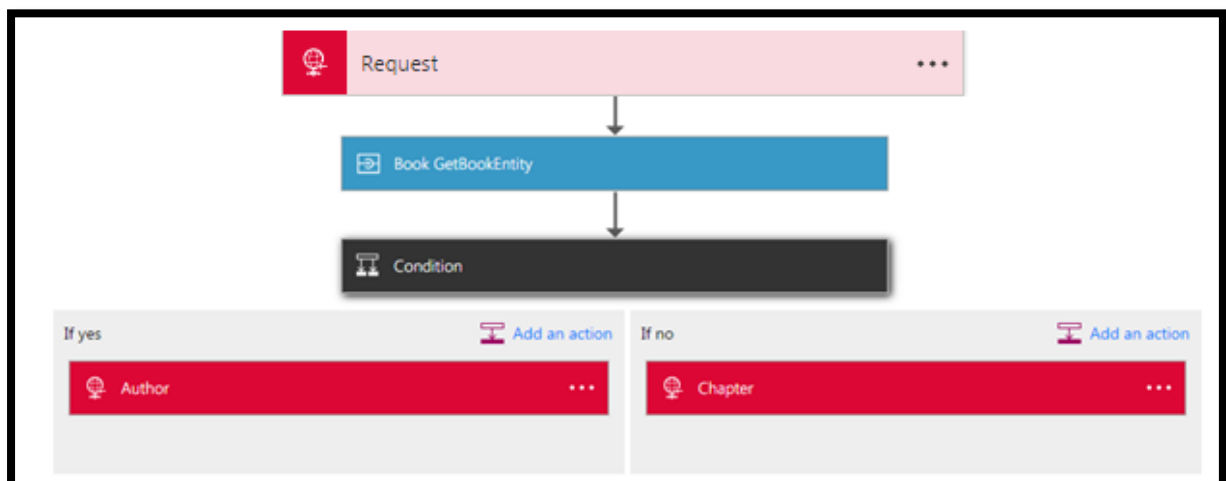
author

chapter

Enter custom value

SEQUENCENUMBER*

SequenceNumber is the Row Key. Book Entity contains 6 authors and...



```
{  
  "partionKey": "author",  
  "rowKey": "1"  
}
```

Request
ⓘ ...

HTTP POST to this URL

<https://prod-01.australiaeast.logic.azure.com:443/workflows/fe9a...>

Request Body JSON Schema

Example:

```

{
  "type": "object",
  "properties": {
    "address": {
      "type": "string"
    }
  },
  "required": ["address"]
}

```

Use sample payload to generate schema

Method

POST

Relative path

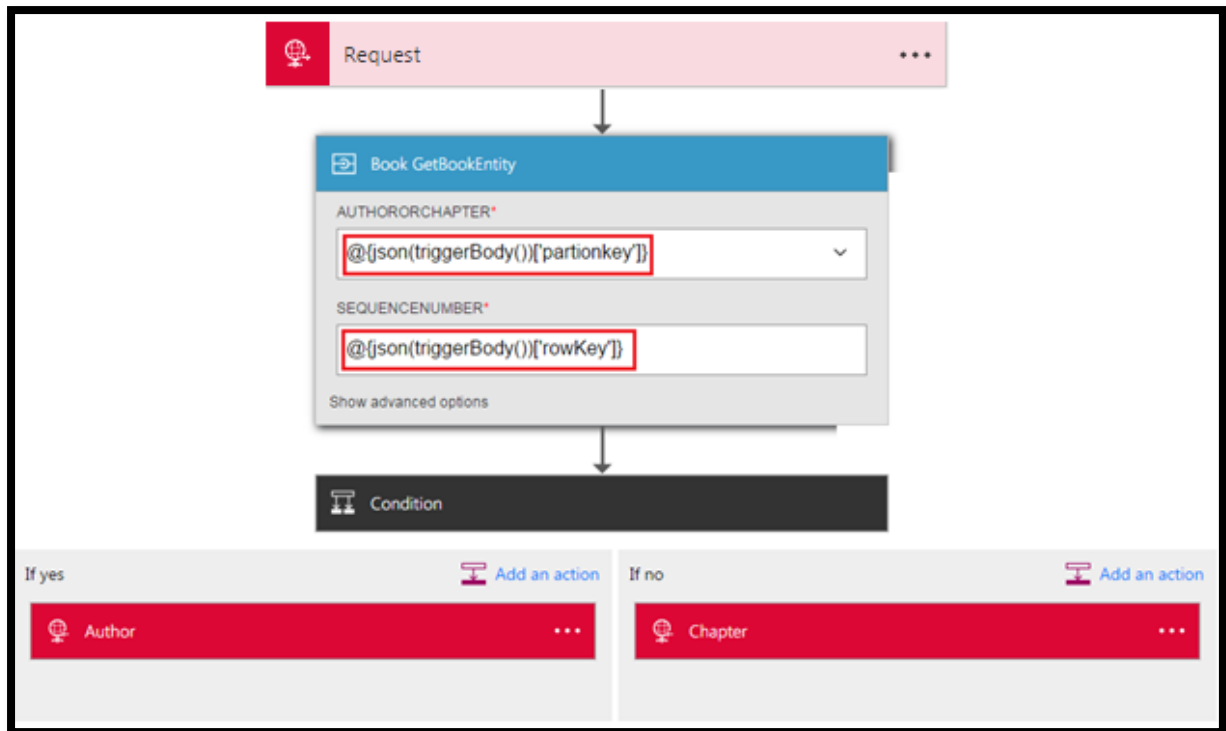
[Hide advanced options ^](#)

```

"triggers": {
  "manual": {
    "inputs": {
      "schema": {


"$schema": "http://json-schema.org/draft-04/schema#",
        "properties": {
          "partitionKey": {
            "type": "string"
          },
          "rowKey": {
            "type": "string"
          }
        }
      },
      "required": [
        "partitionKey",
        "rowKey"
      ],
      "type": "object"
    }
  },
  "type": "Manual"
}


```



Condition

OBJECT NAME

PartitionKey x

RELATIONSHIP

is equal to

VALUE

author

Edit in advanced mode

Condition

If yes Add an action

Author

STATUS CODE*

200

HEADERS

Enter JSON object of response headers

BODY

Hi there,
 You can say hello to author
 using his twitter handle .
 Thanks!

If no Add an action

Chapter

STATUS CODE*

200

HEADERS

Enter JSON object of response headers

BODY

POST https://prod-01.westus.logic.azure.com:443/workflows/a2c9255b98564

Authorization Headers **Body** Pre-request Script Tests

form-data x-www-form-urlencoded **raw** binary Text

```

1 {
2   "partitionKey": "author",
3   "rowKey": "1"
4 }
5
6

```

Body Cookies Headers (22) Tests

Pretty Raw Preview HTML

```

i 1 Hi there,
2 You can say hello to Gyanendra Gautam using his twitter handle @ggauta.
3 Thanks!

```

POST https://prod-01.westus.logic.azure.com:443

Authorization Headers **Body** Pre-request Script Tests

form-data x-www-form-urlencoded **raw** bi

```

1 {
2   "partitionKey": "chapter",
3   "rowKey": "6"
4 }
5
6

```

Body Cookies Headers (22) Tests

Pretty Raw Preview HTML

```

i 1 Chapter 6: Working with Connectors in Logic App

```

Chapter 7: Azure Functions in Logic Apps

Function App

* App name
sunnyfunctions ✓
.azurewebsites.net

* Subscription
MVP

* Resource Group ⓘ
 Create new Use existing
sunneylectricals

* Hosting Plan ⓘ
Consumption Plan

* Location
West US

* Storage Account
function48c7f6e08fb5 >

[🔧 Function app settings](#)

[⚡ Quickstart](#)

[🔄 Refresh](#)

Develop

App Service Editor

In portal editor with an integrated console and streaming logs

[Go to App Service Editor](#)

Application settings

Manage environment variables and connection strings for your function app

[Configure app settings](#)

Dev Console

In-portal console for accessing your function app's file system

[Open dev console](#)

Deploy

Continuous Integration

Deploy your function code from GitHub, Visual Studio Team Services, and more

[Configure continuous integration](#)

Kudu

Access advanced functionality of App Service like uploading zips, killing processes, and more

[Go to Kudu](#)

Manage

App Service Settings

Advanced Features. Access all the underlying features of Azure App Service

[Go to App Service Settings](#)

CORS

Allow your HTTP-triggered functions to be called from within a web browser

[Configure CORS](#)

Authentication/Authorization

For functions that use the HTTP trigger, you can require calls to be authenticated

[Configure authentication](#)

API definition

Allow clients to more easily consume your HTTP-triggered functions

[Configure API metadata](#)

Daily Usage Quota (GB-Sec)

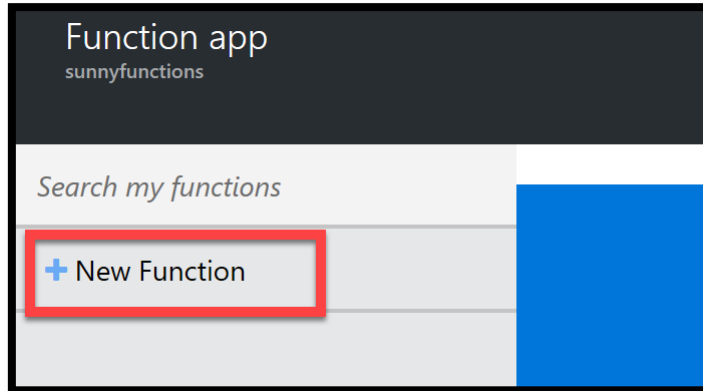
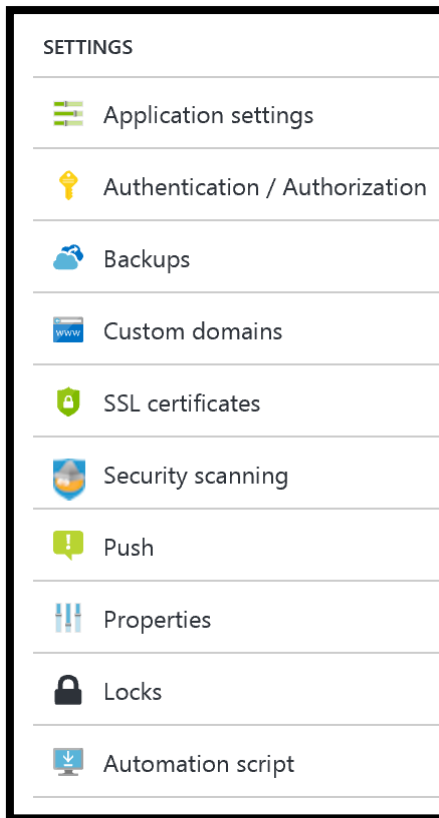
[Set quota](#)

Manage

App Service Settings

Advanced Features. Access all the underlying features of Azure App Service

[Go to App Service Settings](#)



Choose a template

Language: C# Scenario: Data Processing

BlobTrigger - C# A C# function that will be run whenever a blob is added to a specified container	EventHubTrigger - C# A C# function that will be run whenever an event hub receives a new event	QueueTrigger - C# A C# function that will be run whenever a message is added to a specified Azure Storage queue	ServiceBusQueueTrigger - C# A C# function that will be run whenever a message is added to a specified Service Bus queue	ServiceBusTopicTrigger - C# A C# function that will be run whenever a message is added to the specified Service Bus topic	TimerTrigger - C# A C# function that will be run on a specified schedule
---	--	---	---	---	--

Name your function

Configure

Timer trigger (myTimer)

Schedule

Search my functions

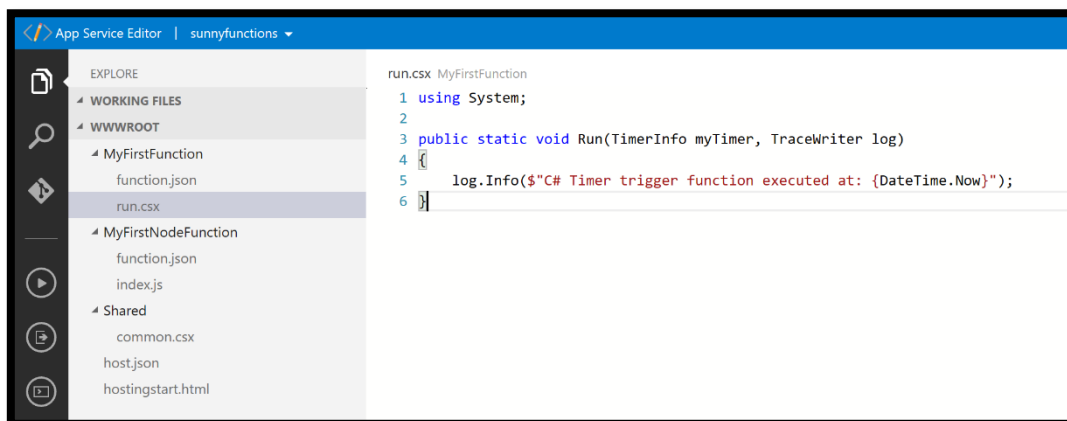
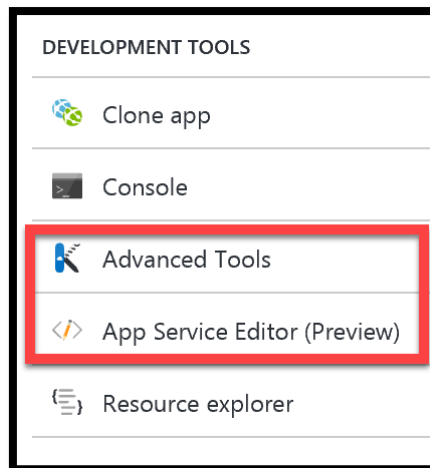
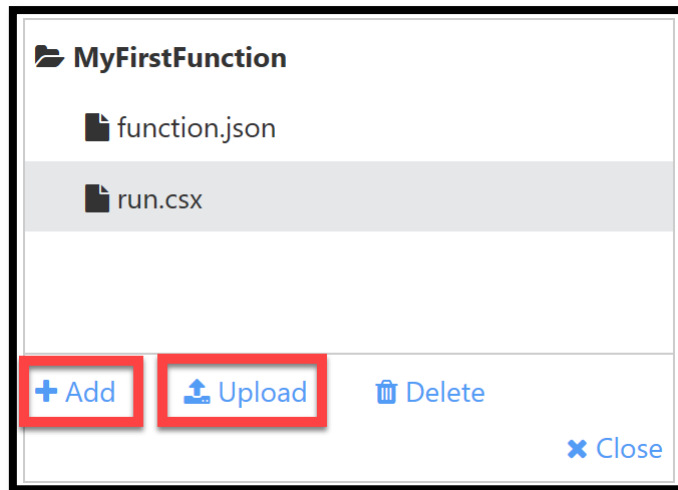
- + New Function
- MyFirstFunction
 - <> Develop
 - Integrate
 - Manage
 - Monitor

Code (run.csx)

```
1 using System;
2
3 public static void Run(TimerInfo myTimer, TraceWriter log)
4 {
5     log.Info($"C# Timer trigger function executed at: {DateTime.Now}");
6 }
```

Logs

```
2017-01-28T04:33:10.008 Function started (Id=230e53ae-dc68-4bb2-bd4b-9736b6873b88)
2017-01-28T04:33:10.008 C# Timer trigger function executed at: 1/28/2017 4:33:10 AM
2017-01-28T04:33:10.008 Function completed (Success, Id=230e53ae-dc68-4bb2-bd4b-9736b6873b88)
```



Search my functions

- + New Function
- ⚡ MyFirstFunction
 - </> Develop
 - ⚡ Integrate**
 - ⚙ Manage
 - 🔍 Monitor

Code (run.csx)

Save Run

```
1 using System;
2
3 public static void Run(TimerInfo myTimer, TraceWrite
4 {
5     log.Info($"C# Timer trigger function executed at
6 }
```

Triggers ⓘ Inputs ⓘ Outputs ⓘ [Advanced editor](#)

Timer (myTimer) + New Input **+ New Output**

Timer trigger (myTimer) [delete](#)

Timestamp parameter name ⓘ Schedule ⓘ

[Cancel](#)

- Azure Event Hub
- Azure Storage Queue**
- Azure Storage Blob
- SaaS File
- SaaS Table
- HTTP
- Azure Service Bus
- Azure Storage Table
- Azure DocumentDB Document
- Azure Mobile Table Record
- Azure Notification Hub
- SendGrid


Select Cancel


Azure Storage Queue output (outputQueueItem) [delete](#)


Message parameter name ⓘ


Queue name ⓘ

Storage account connection ⓘ [select](#)

 Storage Accounts are filtered to th... same region as your app


 Create New

 function1f982b298769
West US Stand...

 function4e3f4e2c827d
West US Stand...

Storage account connection ⓘ

[select](#)

Logs || Pause 

```
2016-08-14T11:53:05 Welcome, you are now connected to log-streaming service.
2016-08-14T11:53:10.016 Function started (Id=e259aaf4-0c12-4aa4-9e27-77d95d8a4b0d)
2016-08-14T11:53:10.016 C# Timer trigger function executed at: 8/14/2016 11:53:10 AM
2016-08-14T11:53:10.016 Function completed (Success, Id=e259aaf4-0c12-4aa4-9e27-77d95d8a4b0d)
2016-08-14T11:53:10.269 Script for function 'MyFirstFunction' changed. Reloading.
2016-08-14T11:53:10.269 Compiling function script.
2016-08-14T11:53:10.331 Compilation succeeded.
```


Microsoft Azure Storage Explorer

Edit Help

Microsoft Azure

Search for resources

- (Local and Attached)
 - Storage Accounts
 - (Development)
 - (SAS-Attached Service)
 - function1f982b298769 (External)
 - Blob Containers
 - File Shares
 - Queues
 - outqueue
 - Tables

View message Add Dequeue Select all Clear queue Refresh

ID	Message Text	Insertion
65a931a8-79bc-4f7f-99c5-d7e50dcd9dae	{"msg":"From trigger","msgtime":"2016-08-14T11:56:30.0115328Z"}	Sun, 14 Au
d0c929f0-7b9a-472b-b9a4-34022ab44ab1	{"msg":"From trigger","msgtime":"2016-08-14T11:56:40.0079825Z"}	Sun, 14 Au
aa619f36-0748-411f-9ca9-8b220fdc8318	{"msg":"From trigger","msgtime":"2016-08-14T11:56:50.0087802Z"}	Sun, 14 Au

Showing 3 of 3 messages in queue

Actions Properties

URL https://function1f982b298769.queue.core.wii
Type Queue

Activity Log

What do you like about this tool?
What don't you like or feel is missing?

Name your function

MyQueueFunction

Configure

Azure Storage Queue trigger (myQueueItem)

Queue name

Storage account connection [select](#)




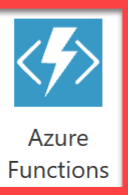

Logs Pause Clear

```
2016-08-14T12:08:21 Welcome, you are now connected to log-streaming service.
2016-08-14T12:08:30.029 Function started (Id=9df2a82e-c8c5-4124-a077-39dc9ed5ca97)
2016-08-14T12:08:30.029 C# Queue trigger function processed: {"msg":"From trigger","msgtime":"2016-08-14T12:08:30.0118695Z"}
2016-08-14T12:08:30.029 Function completed (Success, Id=9df2a82e-c8c5-4124-a077-39dc9ed5ca97)
2016-08-14T12:08:40.023 Function started (Id=45f95cbf-a976-4fe0-83af-602a0a4a685e)
2016-08-14T12:08:40.023 C# Queue trigger function processed: {"msg":"From trigger","msgtime":"2016-08-14T12:08:40.0082797Z"}
2016-08-14T12:08:40.023 Function completed (Success, Id=45f95cbf-a976-4fe0-83af-602a0a4a685e)
```

Choose an action

Search all services and actions


SERVICES SEE MORE

 HTTP	 Service Bus	 SQL Server	 Azure Functions	 Twitter
---	--	---	---	--


Azure Functions

Search all actions


ACTIONS (1)

 Azure Functions - sunnyfunctions i

TELL US WHAT YOU NEED





 Information on creating Azure Function Apps can be found [here](#)

Cancel


 Azure Functions

← Search all actions



ACTIONS (2)

-  Azure Functions - MyFirstWebhook 
-  Azure Functions - Create New Function 



TELL US WHAT YOU NEED


 Information on creating Azure Function Apps can be found [here](#)


Cancel

 Configure Function Inputs 

Input Payload Object

 Body 

Add dynamic content 



⚡ Function Authoring

* Function name

* Code

```
module.exports = function (context, data) {  
  var input = data;  
  
  // Response of the function to be used later.  
  context.res = {  
  
    body: {  
  
      greeting: 'Hello ' + input + '!'  
    }  
  }  
}
```

Create

- Search my functions
- + New Function
 - ⚡ MyFirstFunction
 - ⚡ MyFirstNodeFunction
 - ⚡ MyFirstWebhook
 - ⚡ MyNodeJsWebhook
 - ⚡ MyQueueFunction

Choose a template

Language

C#

Scenario

API & Webhooks

Generic Webhook - C#

A C# function that will be run whenever it receives a webhook request

GitHub WebHook - C#

A C# function that will be run whenever it receives a GitHub webhook request

HttpTrigger - C#

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

Name your function

CheckInvoiceTotal

Create

The screenshot shows the Azure Functions Code editor interface. At the top, there are buttons for 'Save' and 'Run'. The 'Code' pane displays the following C# code:

```
1 #r "Newtonsoft.Json"
2
3 using System.Net;
4 using Newtonsoft.Json;
5
6 public static async Task<HttpResponseMessage> Run(HttpRequestMessage req, TraceWriter log)
7 {
8     log.Info($"C# HTTP trigger function processed a request. RequestUri={req.RequestUri}");
9
10    // Get request body.
11    dynamic data = await req.Content.ReadAsAsync<object>();
12
13    // Validate the invoice.
14    RootObject r = JsonConvert.DeserializeObject<RootObject>(data.ToString());
15    decimal totalCost = 0M;
16    decimal itemTotal = 0M;
17    decimal runningTotal = 0M;
18
19    log.Info(data.ToString());
20 }
```

The 'Logs' pane at the bottom left shows the following log entries:

```
{
  "TotalCost": "1498.00"
}
2017-01-28T06:40:00.257 Total cost = 1498.00
2017-01-28T06:40:00.257 Running total = 1398.00
2017-01-28T06:40:00.257 Function completed (Success, Id=03491fe9-4c2e-4ee6-bc8c-4d19c126b544)
```

The 'Output' pane at the bottom right shows the following output:

```
Status: 400 Bad Request
"Invoice total cost = $1498.00. calculate d total cost = $1398.00"
```

⚡ Azure Functions

← Search all actions

ACTIONS (4)

- ⚡ Azure Functions - CheckInvoiceTotal ⓘ
- ⚡ Azure Functions - MyFirstWebhook ⓘ
- ⚡ Azure Functions - MyNodeJsWebhook ⓘ
- + Azure Functions - Create New Function ⓘ

TELL US WHAT YOU NEED

😊 Information on creating Azure Function Apps can be found [here](#)

Cancel

⚡ CheckInvoiceTotal ⋮


Input Payload Object

🌐 Body ×


[Add dynamic content](#) +|

Show advanced options ∨

+ New step

 Response
⋮


*** Status Code**

 Status code ×

Headers

Enter JSON object of response headers

Body


 Body ×

Add dynamic content +


```

"Response": {
  "inputs": {
    "body": "@body('CheckInvoiceTotal')",
    "statusCode": "@outputs('CheckInvoiceTotal')['statusCode']"
  },
  "runAfter": {
    "CheckInvoiceTotal": [
      "Succeeded",
      "Failed"
    ]
  },
  "type": "Response"
}

```

 Request
(i) ⋮

HTTP POST to this URL

<https://prod-28.westus.logic.azure.com:443/workflows/1e84dfb6...>


https://prod-28.westus.logic.azure.com:443/workflows/1e84dfb629a5480fb913ac6e2b50e... Params Send Save

POST

Body








```
{
  "Item": [
    {
      "ProductCode": "SCW01",
      "ProductDescription": "50mm Screws",
      "Quantity": "100",
      "Price": "5.99",
      "Total": "599.00"
    },
    {
      "ProductCode": "SCW02",
      "ProductDescription": "75mm Screws",
      "Quantity": "100",
      "Price": "7.99",
      "Total": "799.00"
    }
  ],
  "TotalCost": "1398.00"
}
```

Status: 200 OK Time: 2059 ms Size: 1017 B

Invoice total cost = \$1398.00. Calculated total cost = \$1398.00

APP DEPLOYMENT

- Quickstart
- Deployment credentials
- Deployment options

	Visual Studio Team Services By Microsoft
	OneDrive By Microsoft
	Local Git Repository By Git
	GitHub By GitHub
	Bitbucket By Atlassian
	Dropbox By Dropbox
	External Repository

* Choose Source	>
GitHub	
* Authorization	>
[Redacted]	
* Choose your organization	>
[Redacted]	
* Choose project	>
sunyelectricals	
* Choose branch	>
master	
Performance Test	>
Not Configured	

Function app

sunnyfunctions

Search my functions

+ New Function

⚡ CheckInvoiceTotal

</> Develop

⚡ Integrate

⚙ Manage

🔍 Monitor

Recent success count

4

Invocation log [Refresh](#)

Function	Status
CheckInvoiceTotal (Method: POST, Uri: ...)	✓
CheckInvoiceTotal (Method: POST, Uri: ...)	✓

Recent success count

4

Recent errors count

0

Invocation log [Refresh](#)

live event stream

Function	Status	Details: Last ran	(duration)
CheckInvoiceTotal (Method: POST, Uri: ...)	✓	9 minutes ago	(0 ms)
CheckInvoiceTotal (Method: POST, Uri: ...)	✓	13 minutes ago	(0 ms)
CheckInvoiceTotal (Method: POST, Uri: ...)	✓	32 minutes ago	(0 ms)
CheckInvoiceTotal (Method: POST, Uri: ...)	✓	32 minutes ago	(113 ms)

Invocation details

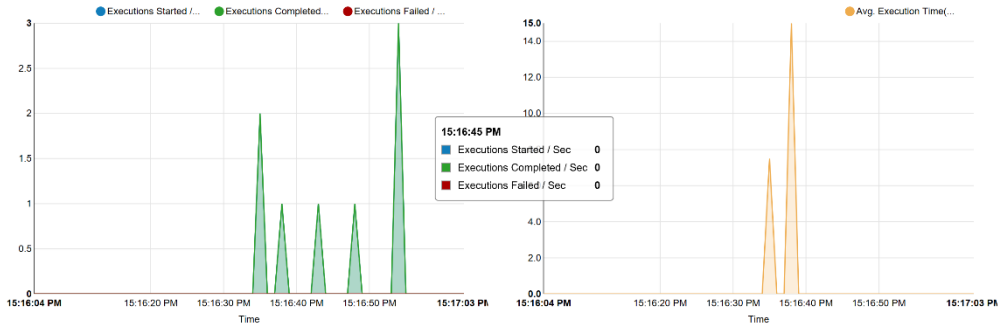
Parameter	
req	Method: POST, Uri: https://sunnyfunctions.azurewebsites.net/api/CheckInvoiceTotal?
log	
_context	b351e298-77fb-4f6f-9000-82e78951e5e8

Logs

```
C# HTTP trigger function processed a request.
RequestUri=https://sunnyfunctions.azurewebsites.net/api/CheckInvoiceTotal?
code=b5EkmMgE2wAhoITqElfkKa0YrfOCauOJnOBZ25eelKB
AWCpO5vVw==
{
  "Invoice": {
    "Number": "123",
    "CustomerID": "10",
    "CustomerName": "John Smith".
```

CheckInvoiceTotal

Function Execution Metrics



Executions Started / Sec: 0

Executions Completed / Sec: 0

Executions Failed / Sec: 0

Avg. Execution Time (ms): 0

Function app

summaryfunctions

Search my functions

+ New Function

CheckInvoiceTotal

<> Develop

Integrate

Manage

Monitor

MyFirstFunction

MyFirstNodeFunction

MyFirstWebhook

MyNodeJsWebhook

Function app settings

Quickstart

Function State

Enabled Disabled

Delete

Function Keys

Key Name	Key Value	
default	Click to show	Renew Revoke

Add new function key

Admin Keys (All functions)

Key Name	Key Value	
_master	Click to show	Renew
default	Click to show	Renew Revoke

Add new admin key

Chapter 8: A Deep Dive into Logic Apps

```
"parameters": {  
  "useremail": {  
    "type": "string",  
    "defaultValue": "info@sunnyelectricals.com"  
  }  
},
```

```
"actions": {  
  "Send_an_email": {  
    "inputs": {  
      "body": {  
        "Body": "Invoce Message",  
        "Subject": "New Invoicie Created",  
        "To": "@parameters('useremail')"  
      },  
      "host": {  
        "api": {  
          "runtimeUrl": "https://logic-apis-centralus.azure-apim.net/apim/outlook"  
        },  
        "connection": {  
          "name": "@parameters('$connections')['outlook']['connectionId']"  
        }  
      },  
      "method": "post",  
      "path": "/Mail"  
    },  
    "runAfter": {},  
    "type": "ApiConnection"  
  }  
},
```

```
"actions": {  
  "HTTP": {  
    "inputs": {  
      "body": "@string(triggerBody())",  
      "method": "POST",  
      "uri": "http://requestb.in/15iusss1"  
    },  
    "runAfter": {},  
    "type": "Http"  
  }  
},
```



```

"actions": {
  "Compose": {
    "inputs": {
      "Customer": {
        "AccountNo": "004SE221",
        "Address": "@{triggerBody()['_Invocie']['Address']}",
        "Amount": "@{triggerBody()['_Invocie']['Amount']}",
        "Comments": "@{triggerBody()['_Invocie']['Comments']}",
        "Date": "@{triggerBody()['_Invocie']['Date']}",
        "InvoiceId": "@{triggerBody()['_Invocie']['InvoiceId']}",
        "Status": "@{triggerBody()['_Invocie']['Status']}",
        "UserEmail": "@{triggerBody()['_Invocie']['UserEmail']}",
        "UserName": "@{triggerBody()['_Invocie']['UserName']}"
      }
    },
    "runAfter": {},
    "type": "Compose"
  },
}

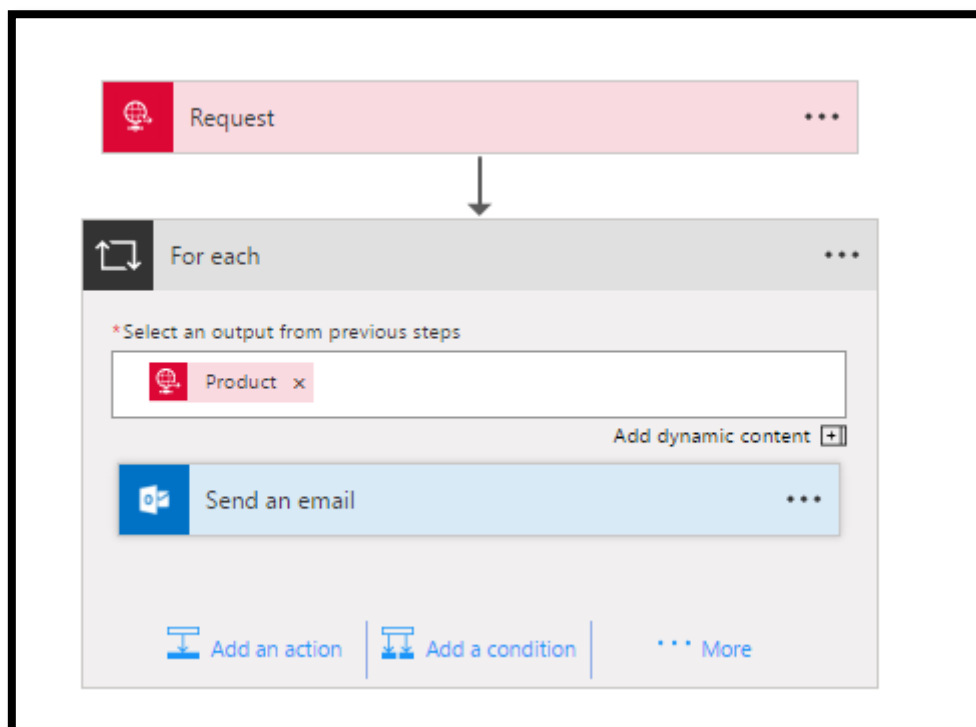
```

```

"actions": {
  "Response": {
    "inputs": {
      "body": "@json(triggerBody())",
      "statusCode": 200
    },
    "runAfter": {},
    "type": "Response"
  },
}

```

```
"actions": {
  "Response": {
    "inputs": {
      "body": "@xml(triggerBody())",
      "statusCode": 200
    },
    "runAfter": {},
    "type": "Response"
  }
},
```



```

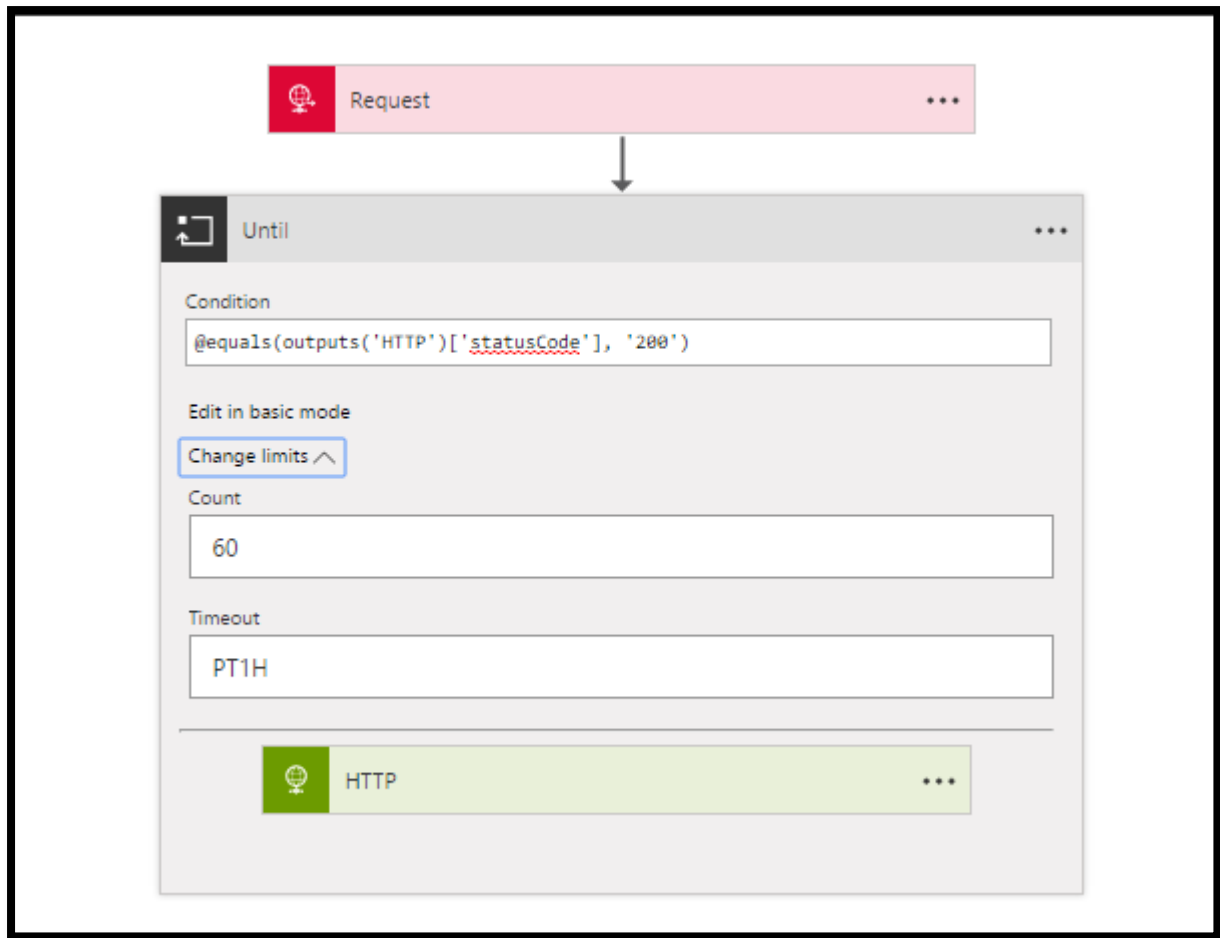
    "For_each": {
      "actions": {
        "Send_an_email": {
          "inputs": {
            "body": {
              "Body": "Item Name in Inventory is @{item()}['name']",
              "Subject": "New Item arrived with SerialNumber @{item()}['serialNo']",
              "To": ██████████@hotmail.com"
            },
            "host": {
              "api": {
                "runtimeUrl": "https://logic-apis-australiaeast.azure-apim.net/apim/outlook"
              },
              "connection": {
                "name": "@parameters('$connections')['outlook']['connectionId']"
              }
            },
            "method": "post",
            "path": "/Mail"
          },
          "runAfter": {},
          "type": "ApiConnection"
        }
      },
      "foreach": "@triggerBody()?['Products']['Product']",
      "runAfter": {},
      "type": "Foreach"
    }
  },
}

```

```

    "For_each": {
      "actions": {
        "HTTP": {
          "inputs": {
            "body": "@item()",
            "method": "POST",
            "uri": "http://requestb.in/1480a0f1"
          },
          "runAfter": {},
          "type": "Http"
        }
      },
      "foreach": "@triggerBody()?['Products']['Product']",
      "operationOptions": "Sequential",
      "runAfter": {},
      "type": "Foreach"
    }
  }
}

```



```
    "Until": {  
      "actions": {  
        "HTTP": {  
          "inputs": {  
            "headers": "@triggerBody()",  
            "method": "POST",  
            "uri": "http://requestb.in/p9914dp9"  
          },  
          "runAfter": {},  
          "type": "Http"  
        },  
        "expression": "@equals(outputs('HTTP')['statusCode'], '200')",  
        "limit": {  
          "count": 60,  
          "timeout": "PT1H"  
        },  
        "runAfter": {},  
        "type": "Until"  
      },  
    },  
  },  
},
```



```

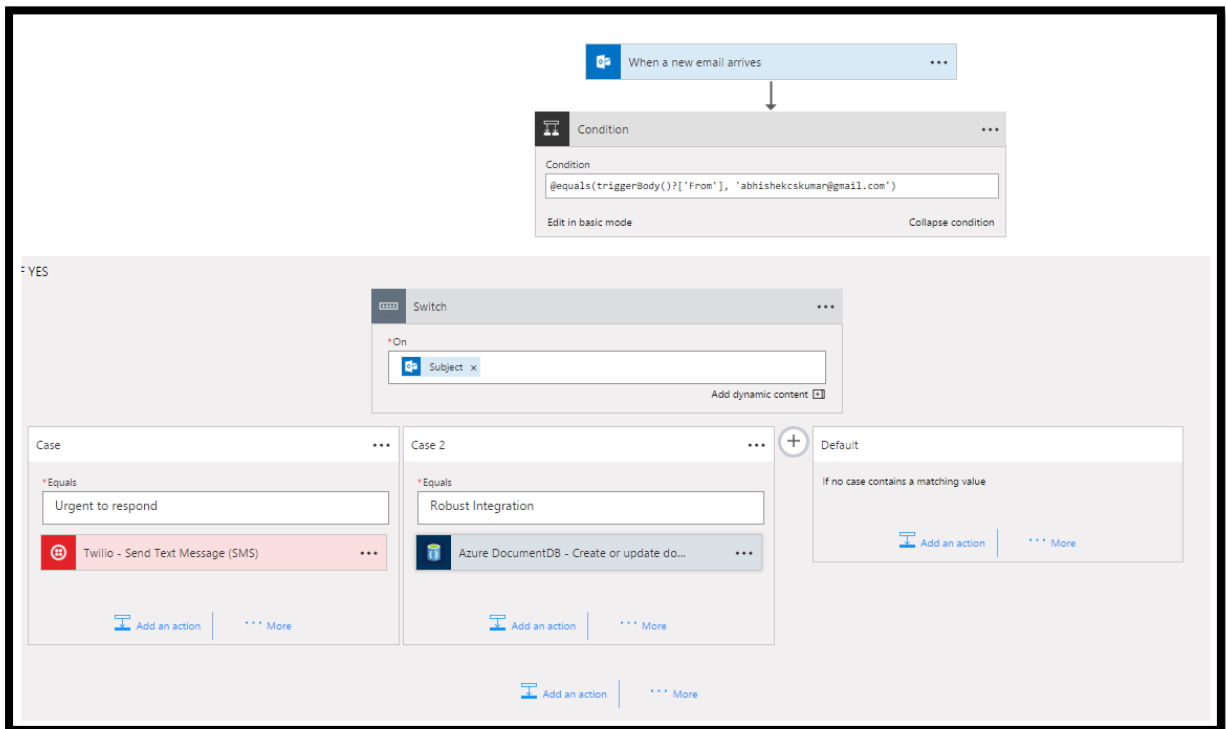
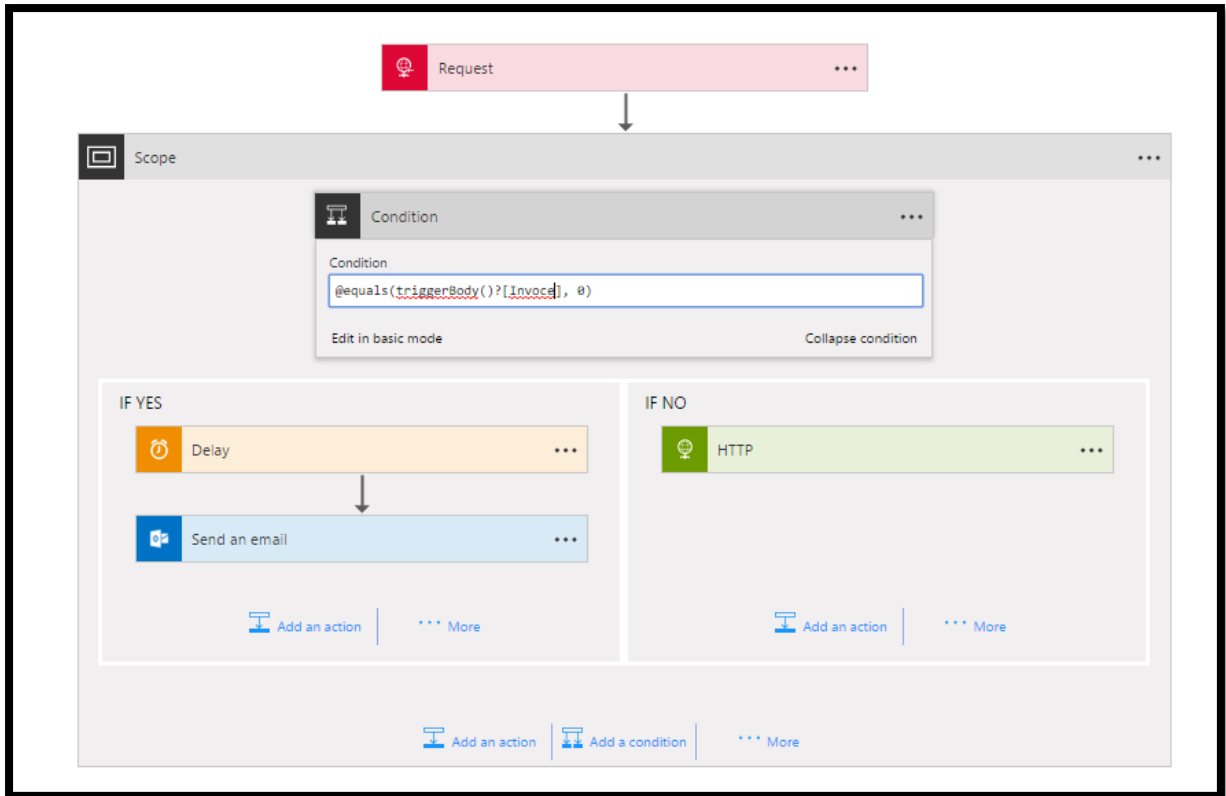
"inputs": {
  "schema": {
    "$schema": "http://json-schema.org/draft-04/schema#",
    "properties": {
      "Items": {
        "items": {
          "properties": {
            "id": {
              "type": "integer"
            },
            "name": {
              "type": "string"
            }
          }
        },
        "required": [
          "id",
          "name"
        ],
        "type": "object"
      },
      "type": "array"
    },
    "Status": {
      "type": "string"
    }
  },
  "required": [
    "Status",
    "Items"
  ],
  "type": "object"
}
},
"kind": "Http",
"splitOn": "@triggerBody()?.Items",
"type": "Request"
}

```

Summary

All runs

STATUS	START TIME	DURATION
✔ Succeeded	10/8/2016, 2:35 PM	343 Milliseconds
✔ Succeeded	10/8/2016, 2:35 PM	403 Milliseconds



```
    "scope": {
      "actions": {
        "condition": {
          "actions": {
            "Delay": {
              "inputs": {
                "interval": {
                  "count": 12,
                  "unit": "Minute"
                }
              },
              "runAfter": {},
              "type": "wait"
            }
          },
          "else": {
            "actions": {
              "HTTP": {
                "inputs": {
                  "body": "@triggerBody()",
                  "method": "POST",
                  "uri": "http://requestb.in/p9914dp9"
                },
                "runAfter": {},
                "type": "Http"
              }
            }
          }
        },
        "expression": "@equals(triggerBody()['Invoice']['Price'], 0)",
        "runAfter": {},
        "type": "if"
      }
    },
    "runAfter": {},
    "type": "Scope"
  },
}
```

Filter array

FROM*

Array to filter

Choose a value is equal to Choose a value

Terminate

i
⋮

STATUS*

Failed
▼

CODE

Enter error code

MESSAGE

Enter error message

HTTP

i
⋮

METHOD*

GET
▼

URI*

<http://www.marketwatch.com/investing/stock/msft/news>

HEADERS

Enter JSON object of request headers

BODY

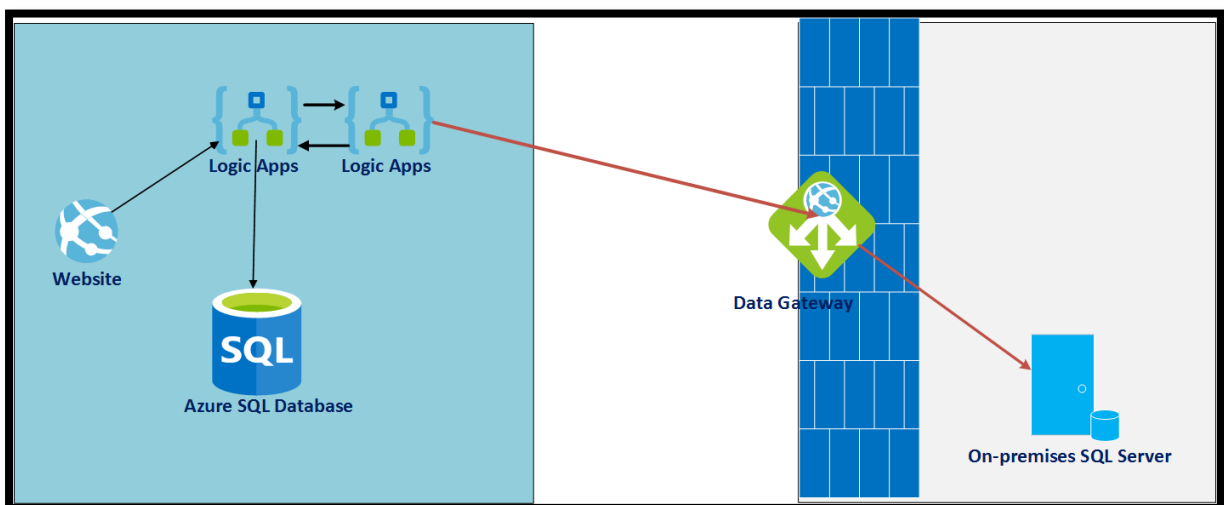
Enter request content

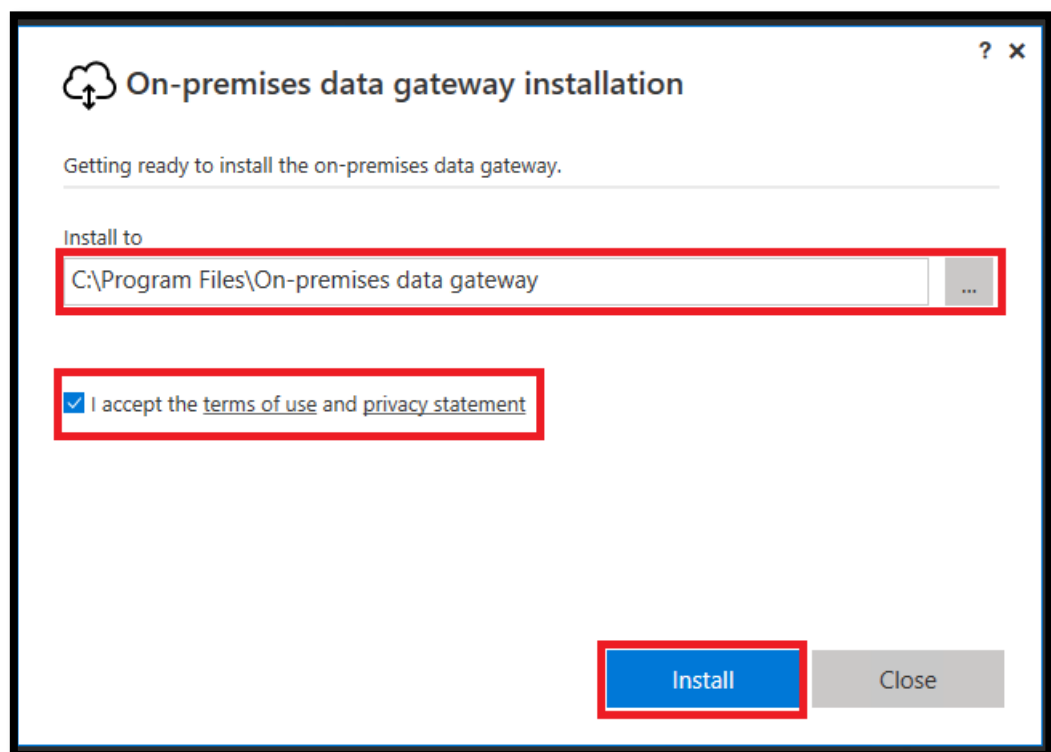
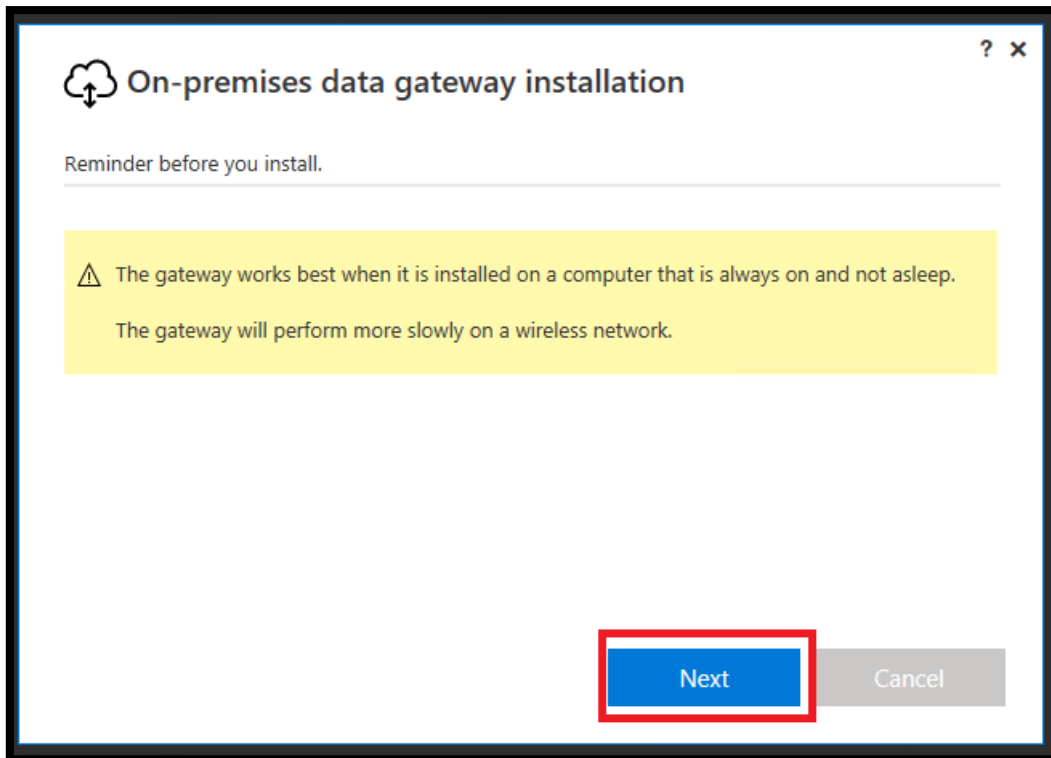
Show advanced options ▼

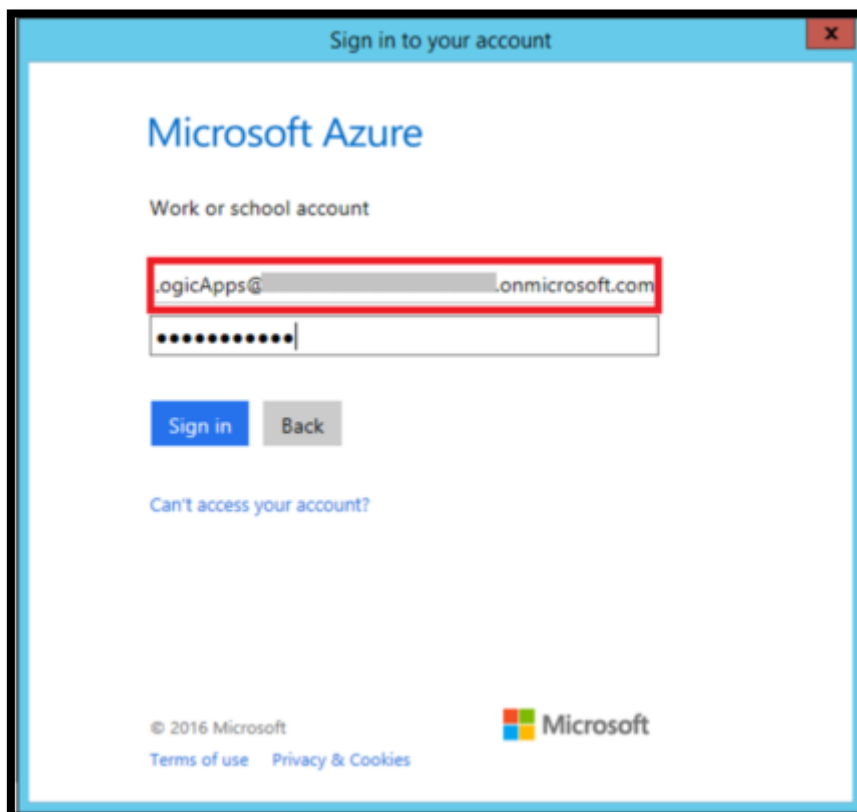
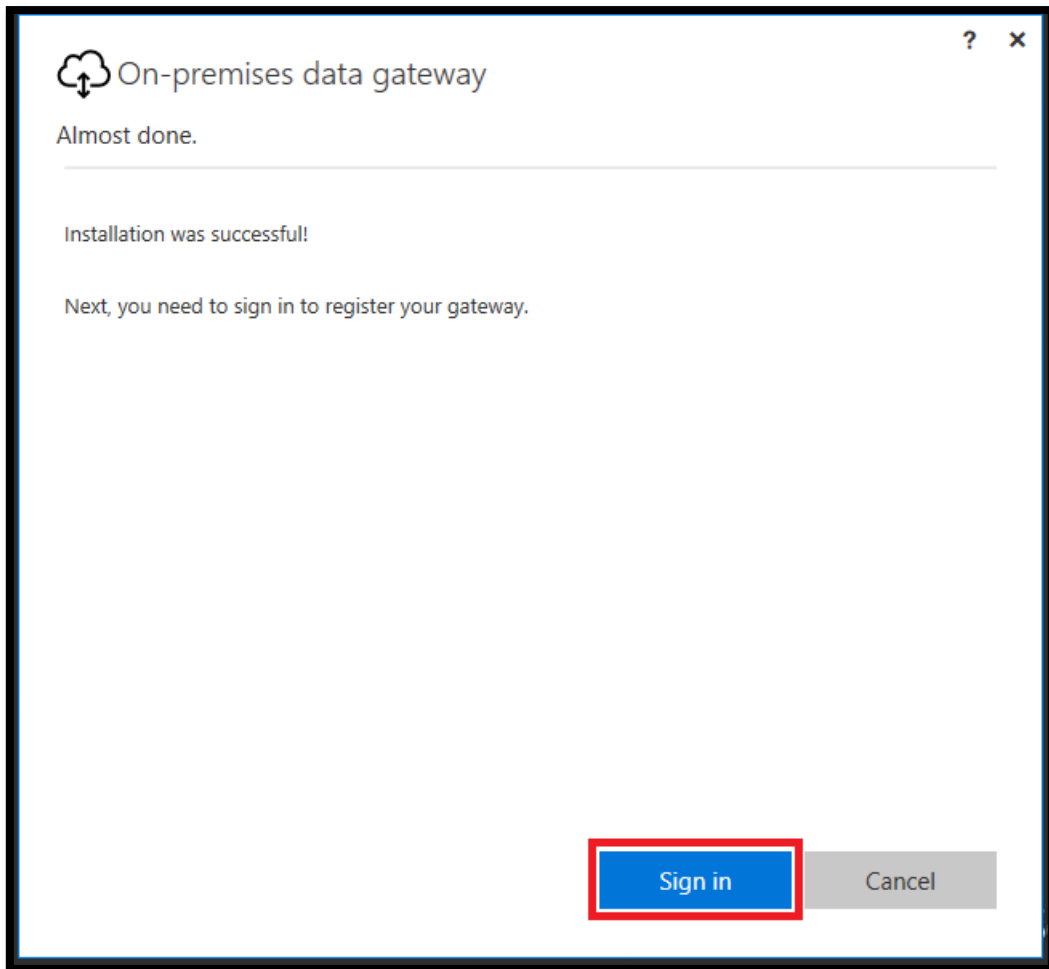
```

"actions": {
  "HTTP": {
    "inputs": {
      "method": "GET",
      "retryPolicy": {
        "count": 2,
        "interval": "PT30S",
        "type": "fixed"
      },
      "uri": "http://www.marketwatch.com/investing/stock/msft/news"
    },
    "runAfter": {
      "Response": [
        "Succeeded"
      ]
    },
    "type": "Http"
  }
}

```









On-premises data gateway



You are signed in as LogicApps@abhishekckumarhotmail.onmicrosoft.com and are ready to register the gateway.

- Register a new gateway on this computer.
- Migrate, restore, or takeover an existing gateway.
 - Move a gateway to a new computer
 - Recover a damaged gateway
 - Take ownership of a gatewayThe old gateway will be disconnected.

Next

Cancel



On-premises data gateway



You are signed in as LogicApps@abhishekckumarhotmail.onmicrosoft.com and are ready to register the gateway.

New on-premises data gateway name

Recovery key (8 character minimum)

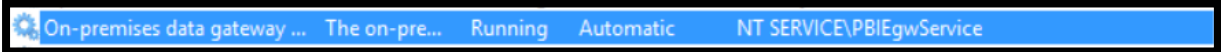
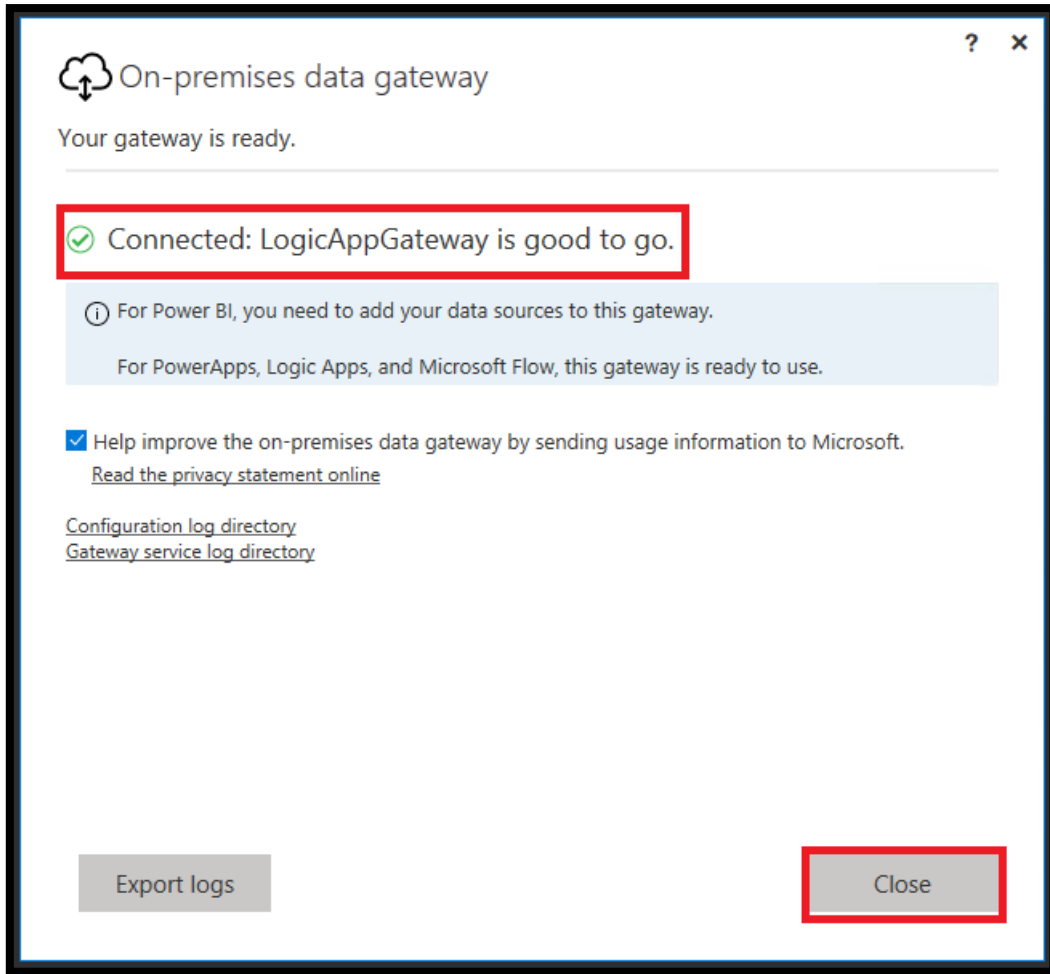
① This key is needed to restore the gateway and can't be changed. Record it in a safe place.

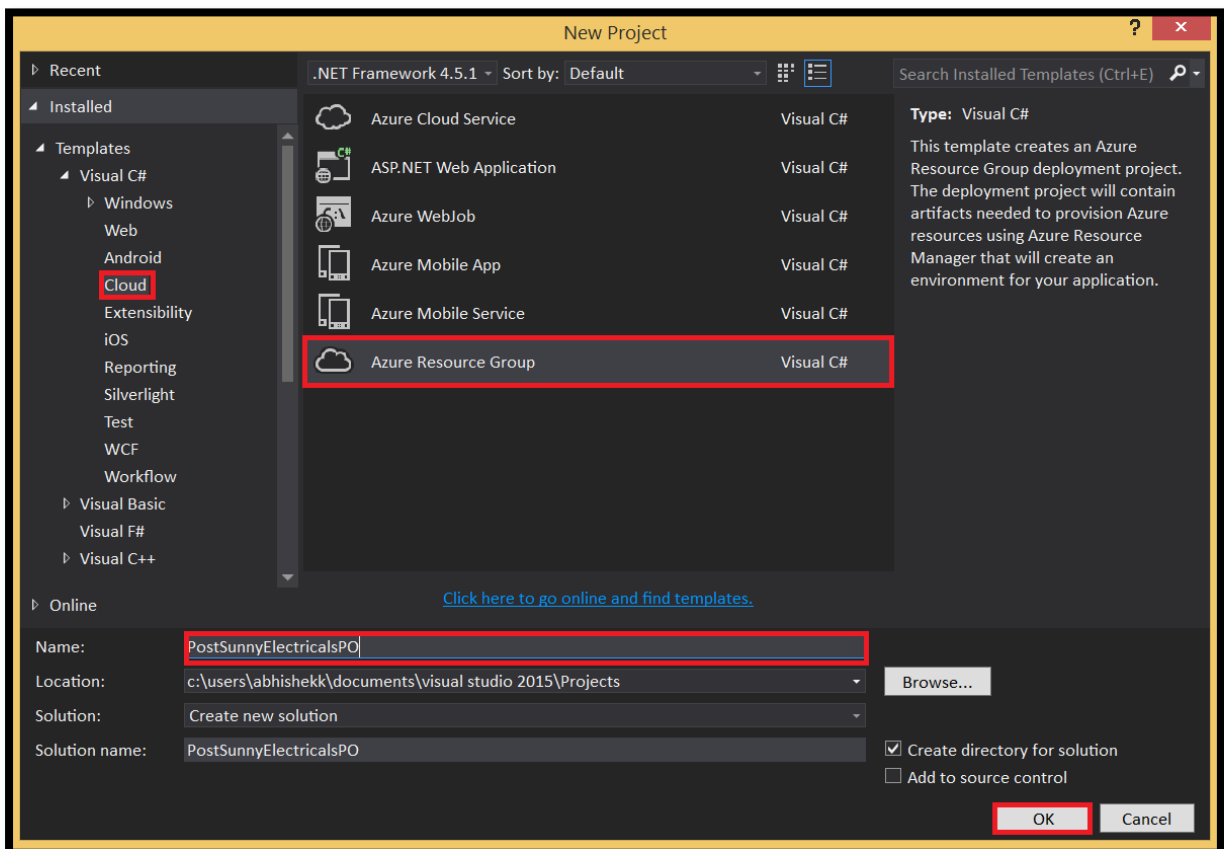
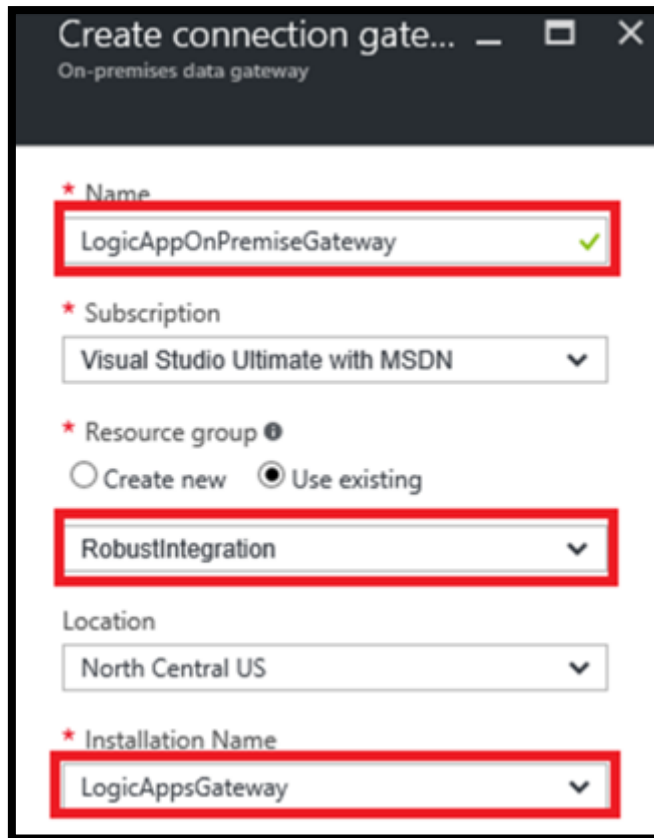
Confirm recovery key

<< Back

Configure

Cancel













Select Azure Template ×

Show templates from this location:
Visual Studio Templates




Search









-  Web app
MICROSOFT
-  Web app + SQL
MICROSOFT
-  Logic App
MICROSOFT
-  Windows Server Virtual
Machines with Load Balancer
MICROSOFT
-  Docker on Ubuntu Server
CANONICAL + MS OPEN TECH
-  Windows Virtual Machine
MICROSOFT
-  Ubuntu Server


Templates Found: 14





Blank Template
By: Microsoft
The blank template will add a deployment project with a blank template file and other files needed for deploying to Azure Resource Manager.
VERSION: 1.0




Solution Explorer   

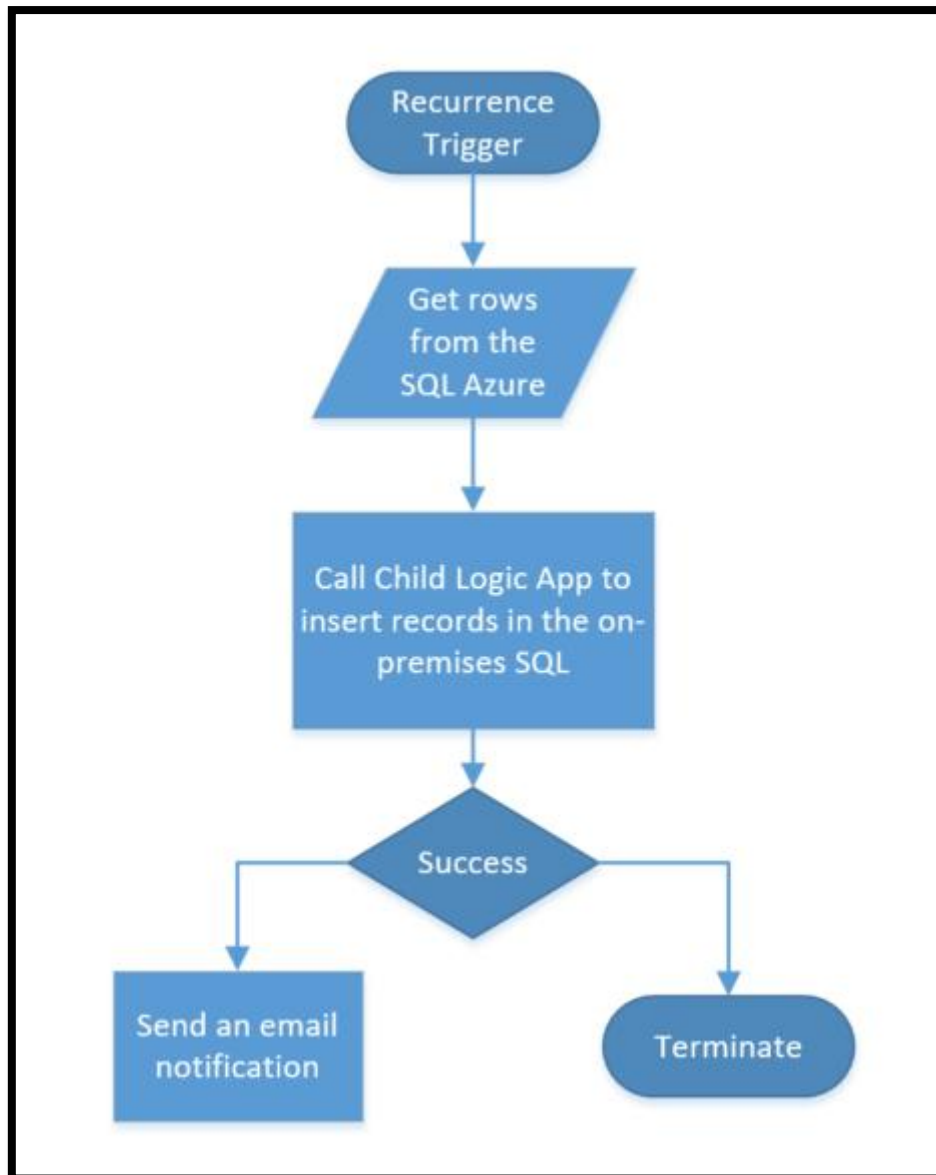
Search Solution Explorer (Ctrl+;) 

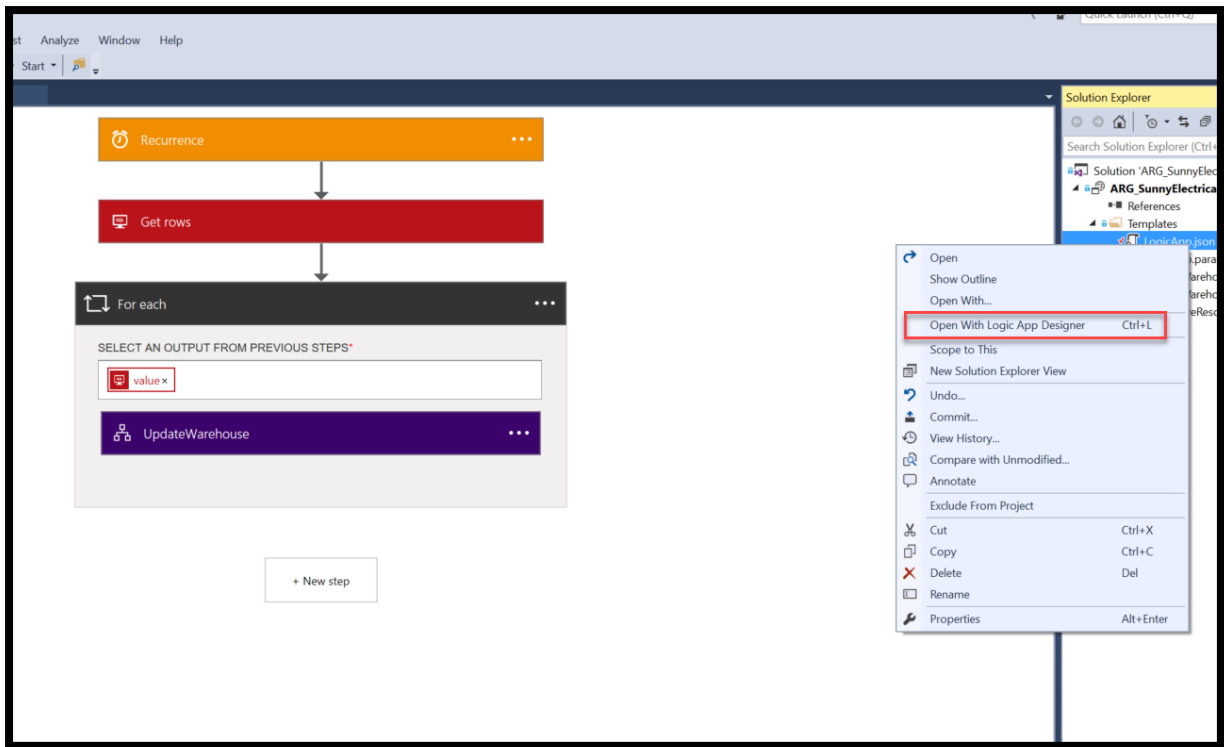
 Solution 'UpdatePurchaseOrderLogicApp' (1 project)

▲  **UpdatePurchaseOrderLogicApp**

- ■ References
-  Deploy-AzureResourceGroup.ps1
-  LogicApp.json
-  LogicApp.parameters.json

Solution Explorer | Team Explorer | Class View





SQL Get rows 2 (i) ...

TABLE NAME*

Name of SQL table ▼

FILTER QUERY

An ODATA filter query to restrict the number of entries

ORDER BY

An ODATA orderBy query for specifying the order of entries

SKIP COUNT

Number of entries to skip (default = 0)

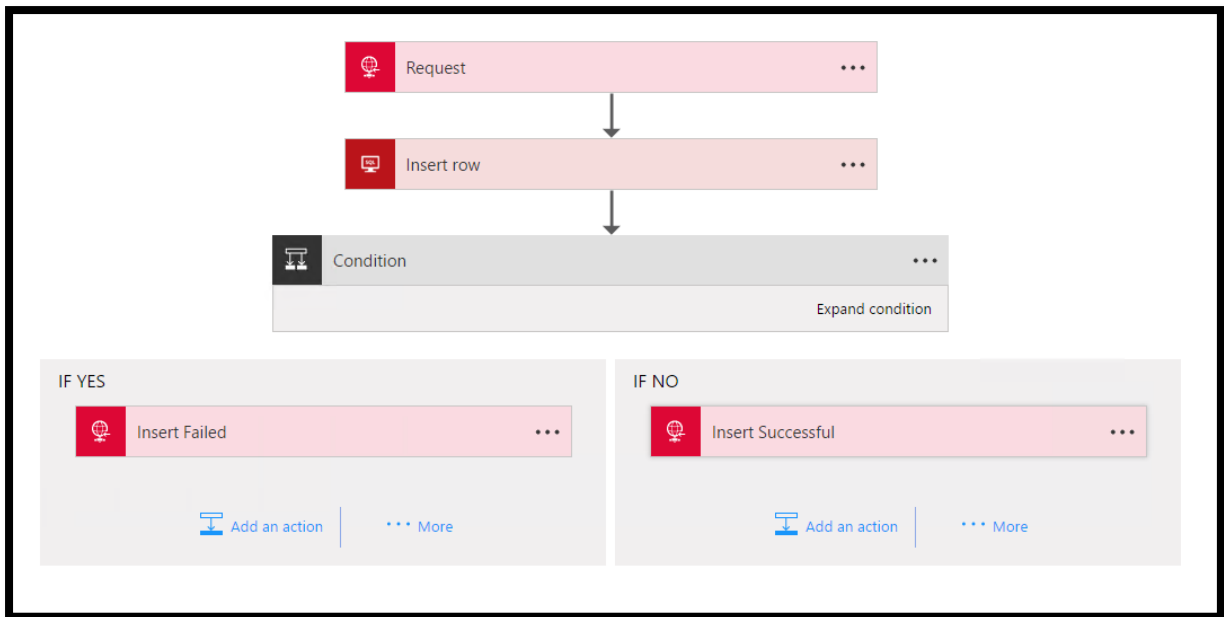
MAXIMUM GET COUNT

Maximum number of entries to retrieve (default = 256)

Hide advanced options ^

Connected to CustomerWarehouse. [Change connection.](#)

Order			
Tables			
▶	System Tables		
▶	External Tables		
▶	dbo.PurchaseOrder		
▶	Views		
▶	Synonyms		
▶	Programmability		
▶	External Resources		
▶	Storage		
▶	Security		
Id	PO	IsNew	
▶ 1	123ABC ...	1	
2	123XYZ ...	1	
* NULL	NULL	NULL	



SQL Server - Insert row

Connect via on-premise data gateway ⓘ

SQL SERVER NAME*

SunnyElectricals

SQL DATABASE NAME*

SunnyElectricalsDB

AUTHENTICATION TYPE

Windows

USERNAME*

AbhishekK

PASSWORD*

.....

GATEWAY*

LogicAppGateway

Cancel Create

Condition

CONDITION

```
@equals(actions('Insert_row').status, 'Failed')
```

Collapse condition

IF YES

Insert Failed

STATUS CODE*

400

HEADERS

```
{  
  "content-type": "application/json"  
}
```

BODY

Body

IF NO

Insert Successful

STATUS CODE*

200

HEADERS

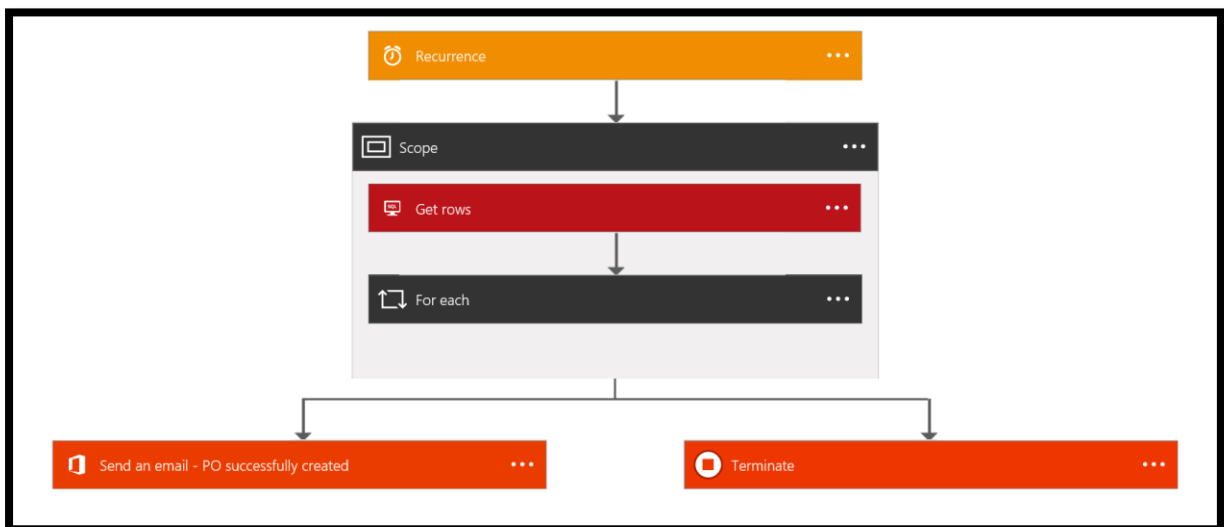
```
{  
  "content-type": "application/json"  
}
```

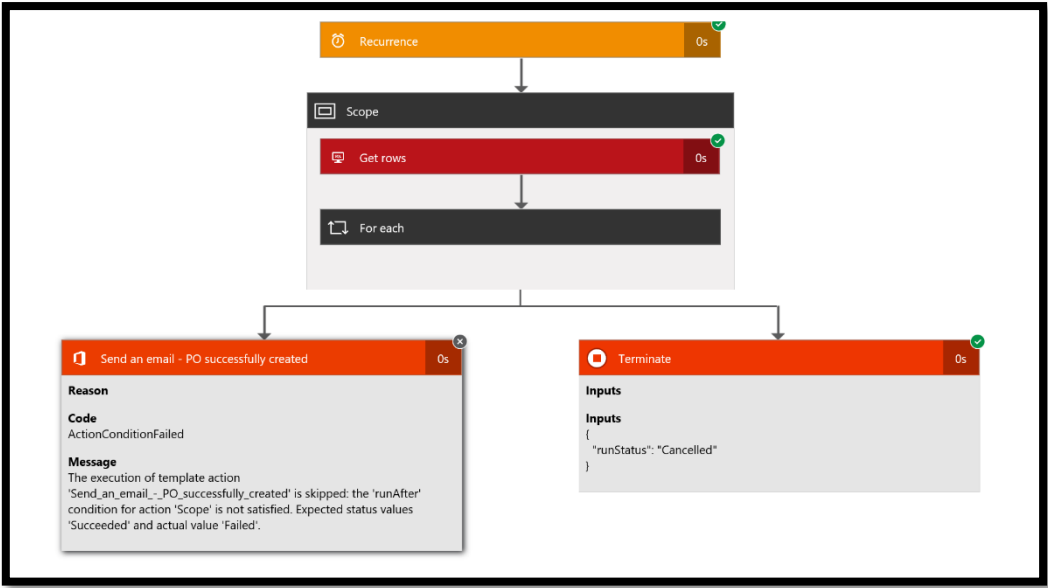
BODY

Body

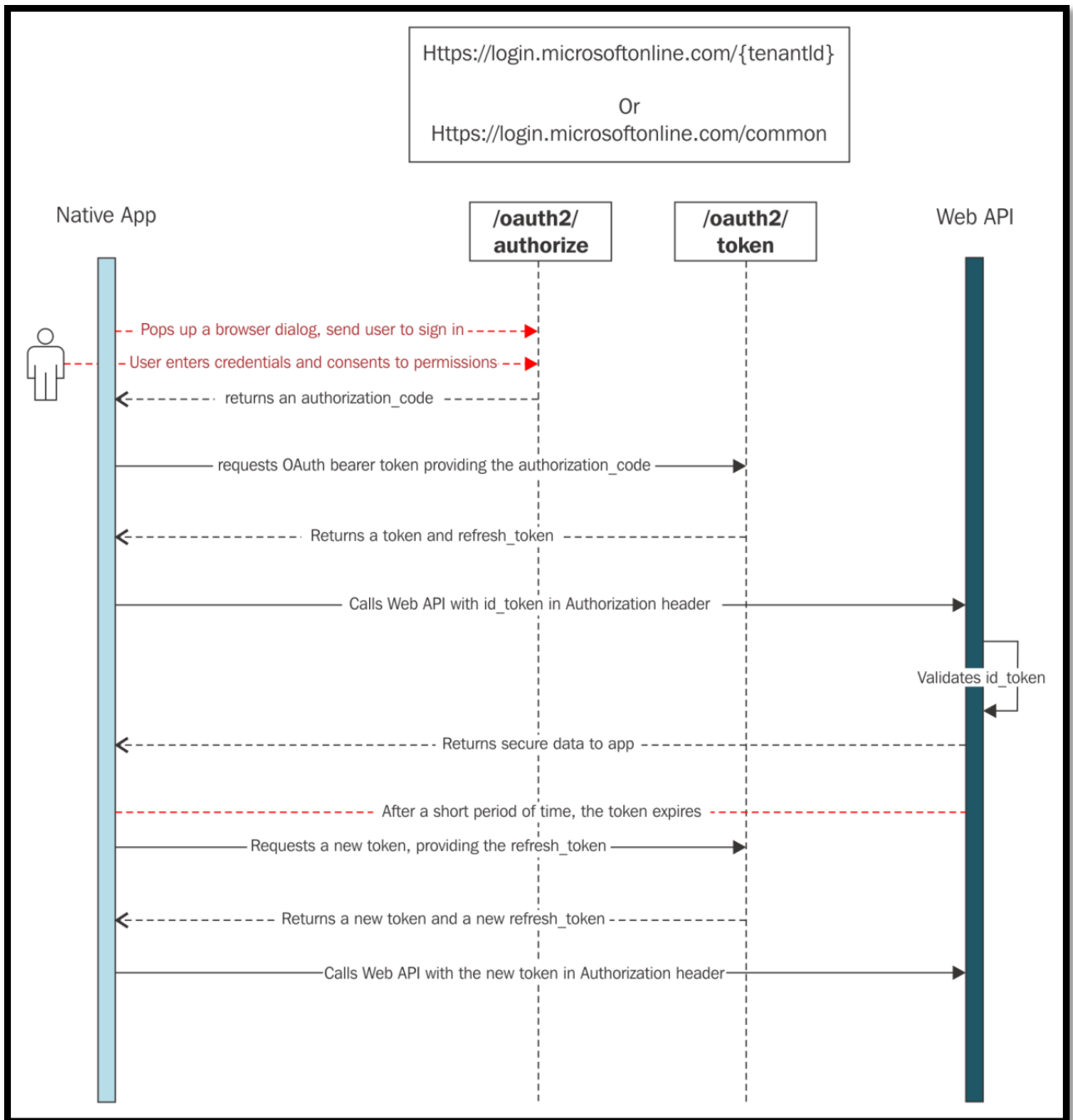
```
"Terminate": {  
  "inputs": {  
    "runError": {  
      "code": "@{outputs(  
    },  
    "runStatus": "Failed"  
  },  
  "runAfter": {  
    "Scope": [  
      "Failed"  
    ]  
  }  
}
```

```
"Send_an_email_-_PO_successfully_created": {  
  "inputs": {  
    "body": {  
      "Body": "PO created!",  
      "Subject": "Success",  
      "To": "asbhambh@microsoft.com"  
    },  
    "host": {  
      "api": {  
        "runtimeUrl": "https://logic-apis-westus.azure-apim.net/apim/office365"  
      },  
      "connection": {  
        "name": "@parameters('$connections')['office365']['connectionId']"  
      }  
    },  
    "method": "post",  
    "path": "/Mail"  
  },  
  "runAfter": {  
    "Scope": [  
      "Succeeded"  
    ]  
  },  
  "type": "ApiConnection"  
},
```







Chapter 9: Powerful Integration with SaaS Using Logic Apps




🔍 dynamics 365 record created


SERVICES SEE MORE

 Dynamics 365


 Dynamics 365 for Financials


TRIGGERS (2) ACTIONS (0) SEE MORE

 Dynamics 365 - When a record is created ⓘ

 Dynamics 365 for Financials - When a record is created ⓘ Preview

TELL US WHAT YOU NEED

 Help us decide which services and triggers to add next with [UserVoice](#)

 Dynamics 365 - When a record is created ⋮

Sign in to create a connection to Dynamics 365.

[Sign in](#)


When a record is created

* Organization Name
Sunny Electricals

* Entity Name
Leads

How often do you want to check for items?

* Frequency: Minute
* Interval: 3

Connected to  [Change connection.](#)

Office 365 Outlook

← Search all actions

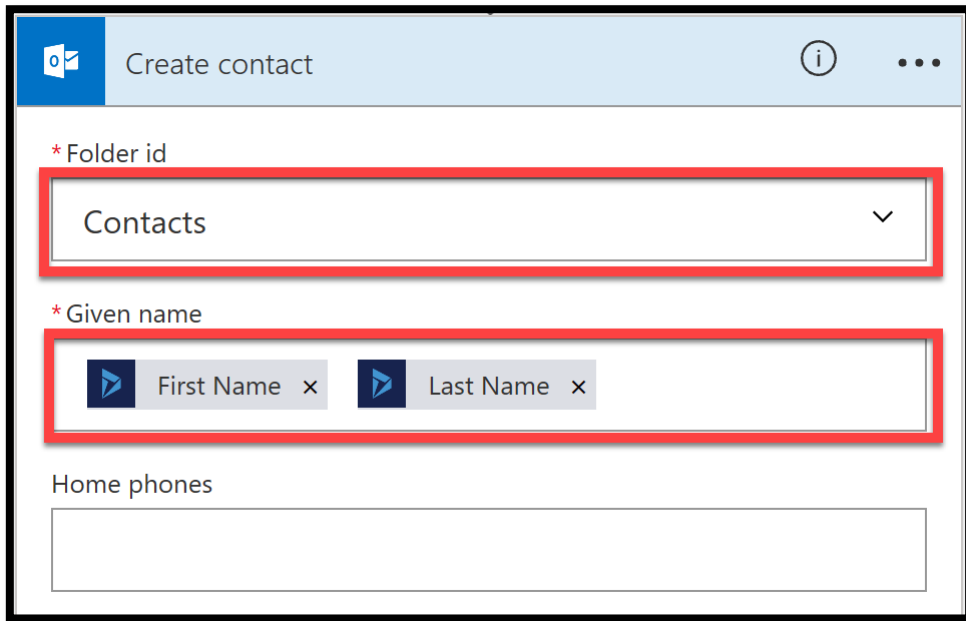
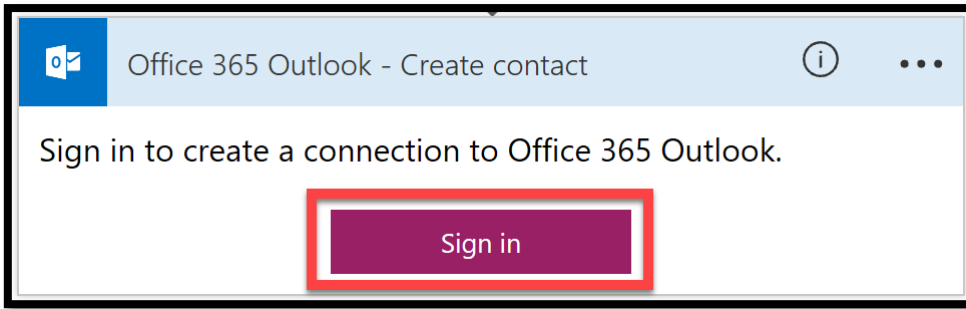
ACTIONS (4)

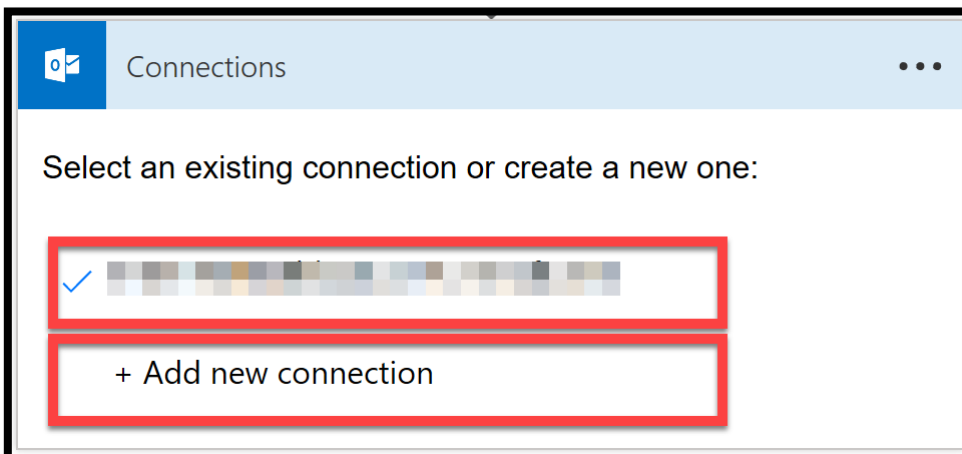
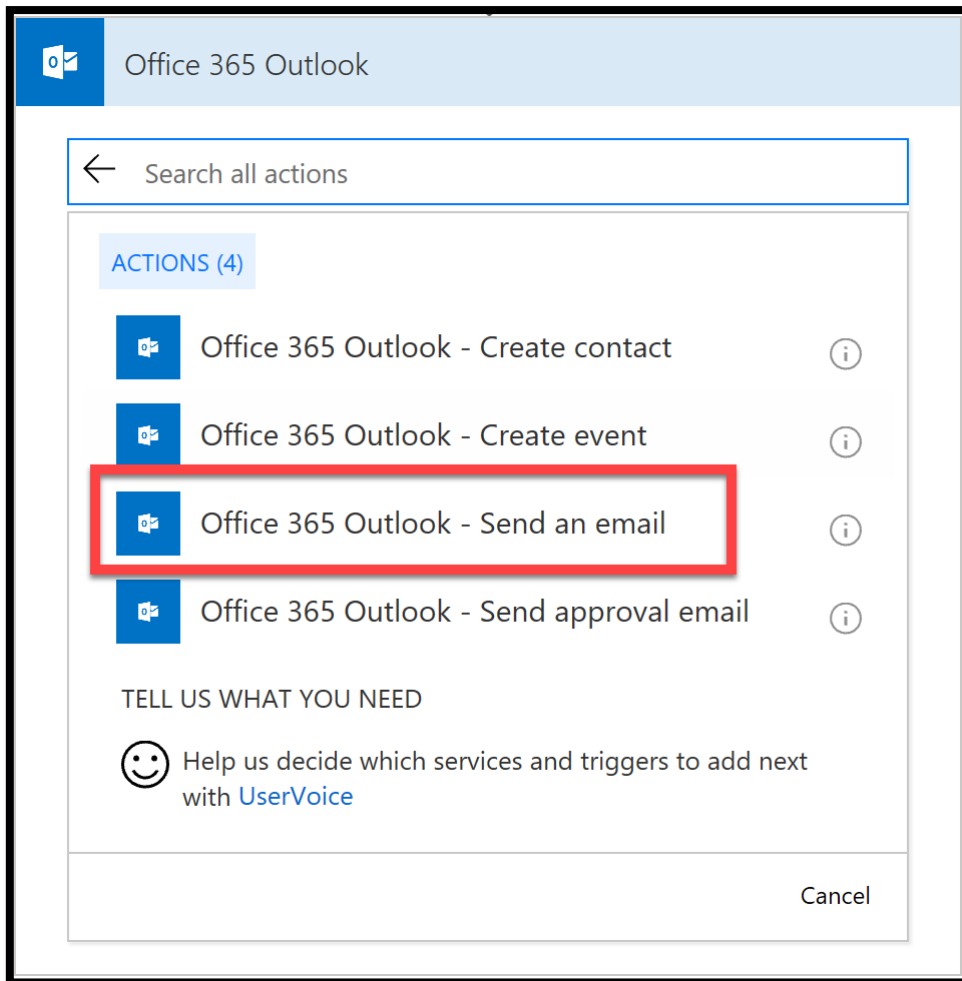
- Office 365 Outlook - Create contact
- Office 365 Outlook - Create event
- Office 365 Outlook - Send an email
- Office 365 Outlook - Send approval email


TELL US WHAT YOU NEED

😊 Help us decide which services and triggers to add next with [UserVoice](#)


Cancel





 Send an email i ...

* To




* Subject

New Lead created in Dynamics 365


* Body

Please update information for your new lead:

 Given name x

[Add dynamic content](#) + |

Show advanced options v

Connected to  . [Change connection.](#)

Office 365 Outlook

← Search all actions

ACTIONS (4)

- Office 365 Outlook - Create contact
- Office 365 Outlook - Create event
- Office 365 Outlook - Send an email
- Office 365 Outlook - Send approval email

TELL US WHAT YOU NEED

😊 Help us decide which services and triggers to add next with [UserVoice](#)

Cancel

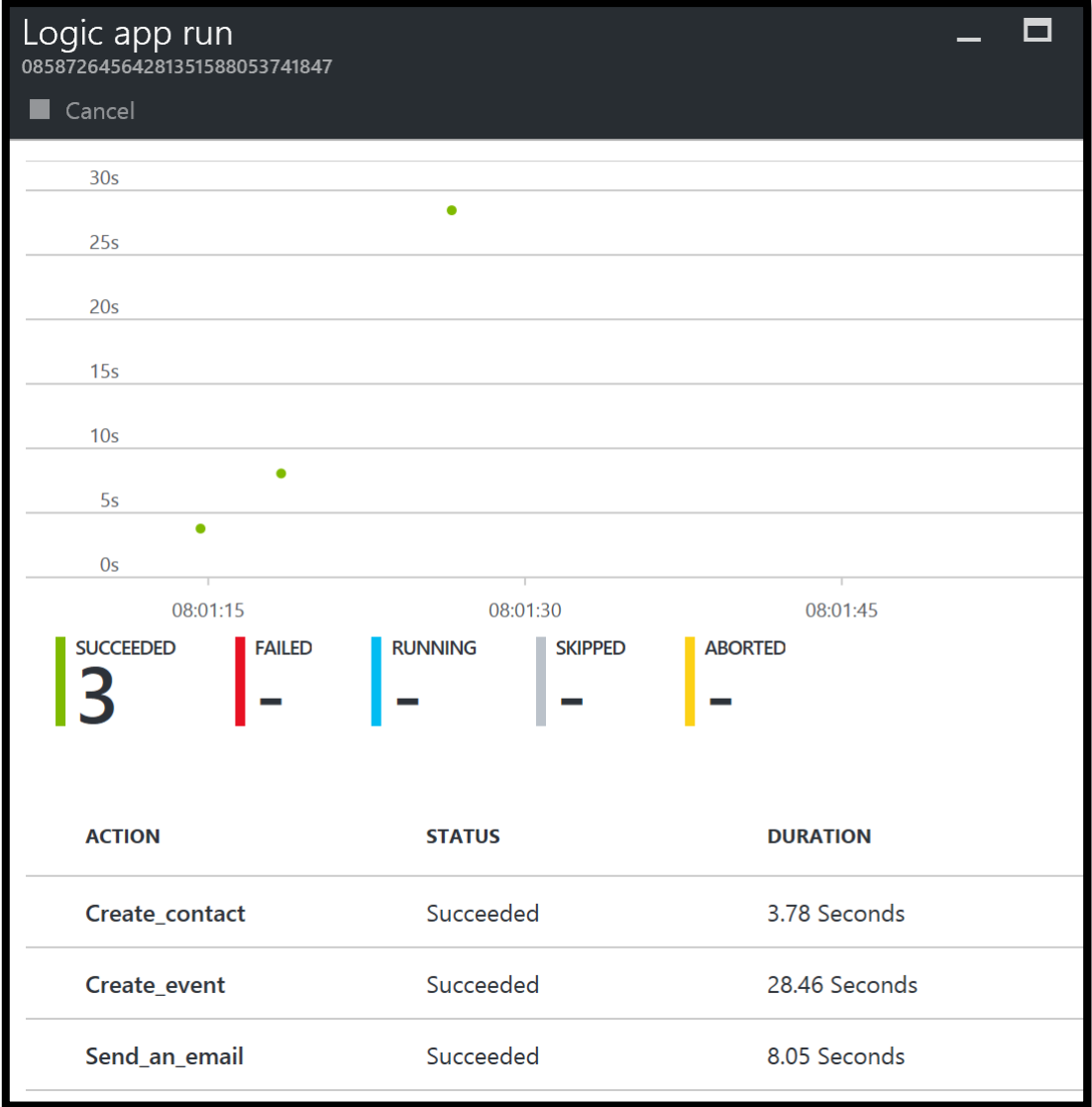
Create event

* Calendar id
Calendar

* End time
09:15

* Start time
09:00

* Subject
Follow up call with new lead



Jack Brown
Nightly Electricals

✉ [Redacted]

☎ 555-1234-1234

📅 [Schedule an event](#)

New Lead created in Dynamics 365



Martin Abbott

Today, 10:52 AM
Martin Abbott



Reply all

Inbox; Sent Items

This message was sent with low importance.

Please update information for your new lead:
Jack Brown

Details

Follow up call with new lead

Add a location or a room

Start

Sun 29/01/2017 9:00 AM

End

Sun 29/01/2017 9:15 AM

All day Private

Repeat

Never

Save to calendar

Calendar

Reminder

15 minutes

Show as

Busy

[Add an email reminder](#)



Call Jack Brown on 555-1234-1234

People

Scheduling assistant

Add people




Martin Abbott


Busy - Follow up call with new lead


salesforce

SERVICES SEE MORE


Salesforce



TRIGGERS (2) ACTIONS (6) SEE MORE

 Salesforce - When an object is created i


 Salesforce - When an object is modified i

Login | Salesforce - Google Chrome Allow Access? | Salesforce - Google Chrome

<https://login.salesforce.com/?startURL=%2Fsetup%2Fsecur%2FRemoteAccessAu> <https://ap2.salesforce.com/setup/secur/RemoteAccessAuthorizationPage.apexp?>

Username 1 Saved Username

 jamesc@sunnyelectricals.com x

Password

.....

[Log In](#)

Remember me

[Forgot Your Password?](#) [Use Custom Domain](#)

Not a customer? [Try for Free](#)

© 2016 salesforce.com, Inc. All rights reserved.

Allow Access?

Azure Logic Apps is asking to:

- Access your basic information
- Allow access to your unique identifier
- Access and manage your data
- Perform requests on your behalf at any time

Do you want to allow access for jamesc@sunnyelectricals.com? (Not you?)

[Deny](#) [Allow](#)

To revoke access at any time, go to your personal settings.

© 2016 salesforce.com, Inc. All rights reserved.

Show advanced options ∨

Connected to jamesc@datacom.co.nz [Change connection.](#)

```
Logic Apps Designer
Save Discard Designer </> Code view Templates Available APIs ? Help
25 }
26 },
27 "triggers": {
28   "When_an_object_is_modified": {
29     "inputs": {
30       "host": {
31         "api": {
32           "runtimeUrl": "https://logic-apis-australiasoutheast.azure-apim.net/apim/salesforce"
33         },
34         "connection": {
35           "name": "@parameters('$connections')['salesforce']['connectionId']"
36         }
37     },

```

When a lead is converted

* Object type
Leads

Filter Query
Status eq 'Closed - Converted'

Order By
An ODATA orderBy query for specifying the order of entries

Skip Count
Number of entries to skip (default = 0)

Maximum Get Count
Maximum number of entries to retrieve (default = 256)

Hide advanced options ^

How often do you want to check for items?

* Frequency
Minute

* Interval
3

```
Logic Apps Designer
Save Discard Designer </> Code view Templates Available APIs ? Help

27 "triggers": {
28   "When_a_lead_is_converted": {
29     "inputs": {
30       "host": {
31         "api": {
32           "runtimeUrl": "https://logic-apis-australiasoutheast.azure-apim.net/apim/salesforce"
33         },
34         "connection": {
35           "name": "@parameters('$connections')['salesforce']['connectionId']"
36         }
37       },
38       "method": "get",
39       "path": "/datasets/default/tables/{encodeURIComponent(encodeURIComponent('Lead'))}/onupdateditems",
40       "queries": {
41         "$filter": "Status eq 'Closed - Converted'"
42       }
43     },
44     "recurrence": {
45       "frequency": "Minute",
46       "interval": 3
47     },
48     "splitOn": "@triggerBody()?.value",
49     "type": "ApiConnection"
50   }
51 }
```

Credit Checkers Ltd API

HOME APIS PRODUCTS APPLICATIONS ISSUES JAMES CORBOULD

GET Accounts_GetAccountById

GET Accounts_GetAccounts API definition

CreditCheckAPI

Accounts_GetAccounts

Try it

Request URL

https://creditcheckers.azure-api.net/api/Accounts?accountName={accountName}&[address.streetAddress]&[address.suburb]&[address.city]&[address.postcode]

Request parameters

accountName	string
address.streetAddress (optional)	string
address.suburb (optional)	string

Accounts GetAccounts

* Method
GET

* Uri
https://creditcheckers.azure-api.net/api/Accounts?
accountName= First Name x Last Name x

Headers
{
"Ocp-Apim-Subscription-Key":
"4d3f1f6944a94f3e875a514eacac017c"
}

Body
Enter request content

Show advanced options

HTTP + Swagger

Failed to fetch swagger. Ensure you have CORS enabled on the endpoint and are calling an HTTPS endpoint.

SWAGGER ENDPOINT URL
https://creditcheckers.portal.azure-api.net/docs/services/57dfc7d13c028f

Next

Credit Checkers Ltd API

HOME APIS PRODUCTS APPLICATIONS ISSUES JAMES CORBOULD ▾

GET
Accounts_GetAccountById

GET
Accounts_GetAccounts

CreditCheckAPI

[API definition](#)

Accounts_GetAccounts

[Try it](#)

Request URL

```
https://creditcheckers.azure-api.net/api/Accounts?accountName={accountName}&[&address.streetAddress][&address.suburb][&address.city][&address.postcode]
```

Microsoft Azure Storage Explorer

Edit Help

Microsoft Azure

Search for resources

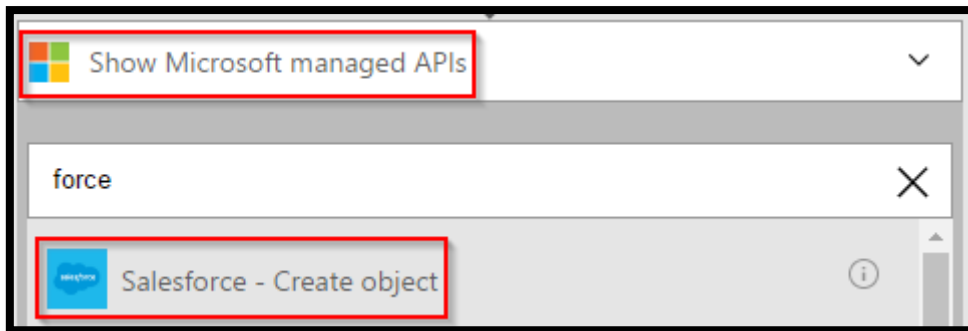
- (Local and Attached)
 - Storage Accounts
- Windows Azure MSDN - Visual Studio Premium
 - Storage Accounts
 - creditcheckers (Blob Storage)
 - Blob Containers
 - [Configure CORS Settings...](#)

{..} HTTP + Swagger

Choose an operation defined by the provided swagger

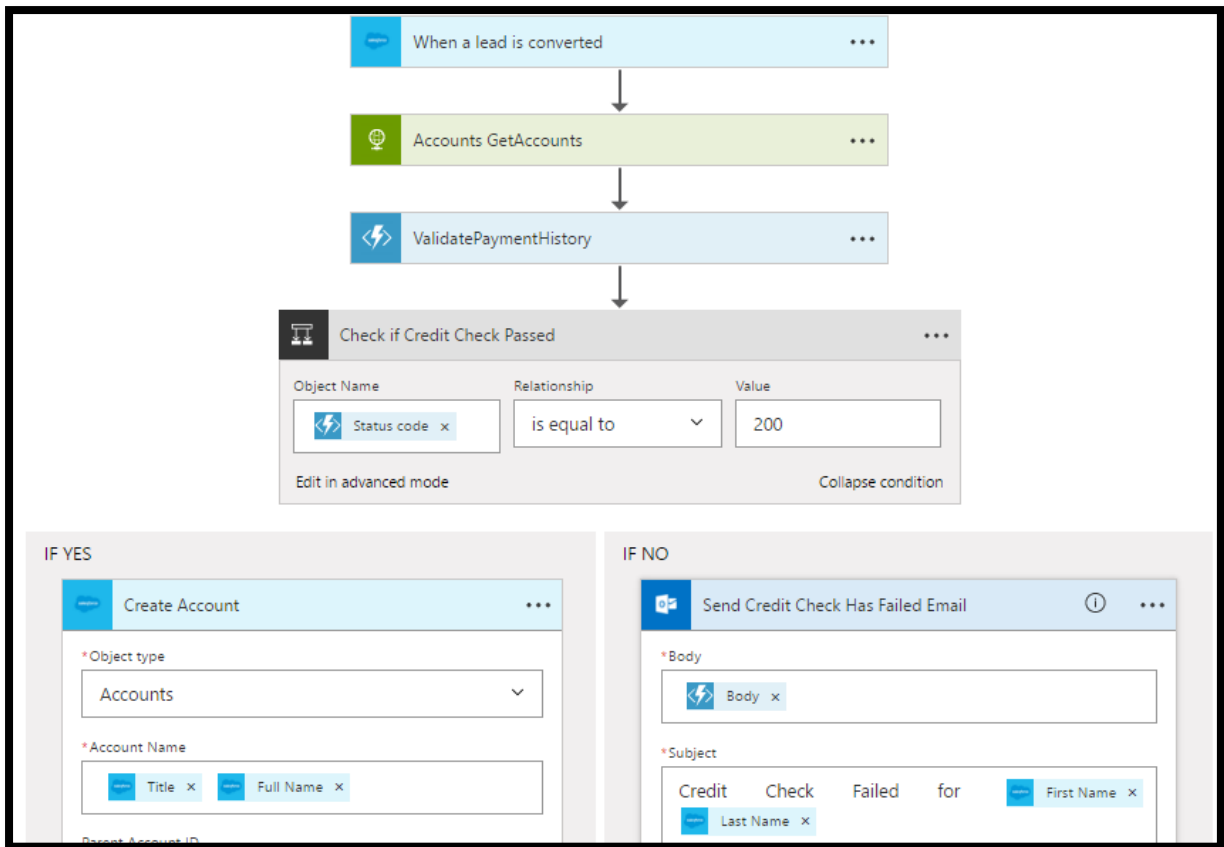
[get /api/Accounts](#)

get /api/Accounts/{id}



A screenshot of the "Create Account" form in Salesforce. The form has a light blue header with the Salesforce logo and the text "Create Account". Below the header, there are several fields:

- * Object type: A dropdown menu with "Accounts" selected. A red box highlights the "Accounts" text.
- * Account Name: A field containing two tags: "Title" and "Full Name", each with a close button (x).
- Parent Account ID: An empty text input field.
- Billing Street: An empty text input field.



Mr. Bob Smith

Customize Page | Edit Layout | Printable View |

Show Feed | Click to add topics: ⓘ

[Open Activities \(0\)](#) | [Activity History \(0\)](#) | [Campaign History \(0\)](#) | [HTML Email Status \(0\)](#)

Lead Detail [Edit] [Delete] [Convert] [Clone] [Find Duplicates]

Lead Owner	James Corbould [Change]	Phone	
Name	Mr. Bob Smith	Mobile	
Company	Crescendo	Fax	
Title		Email	jamesc@datacom.co.nz
Lead Source		Website	
Industry		Lead Status	Closed - Converted
Annual Revenue		Rating	Warm
Address		No. of Employees	
Product Interest		Current Generator(s)	
SIC Code		Primary	
Number of Locations			
Created By	James Corbould, 8/26/2016 2:39 AM	Last Modified By	James Corbould, 10/1/2016 7:04 AM
Description			



Accounts
Home

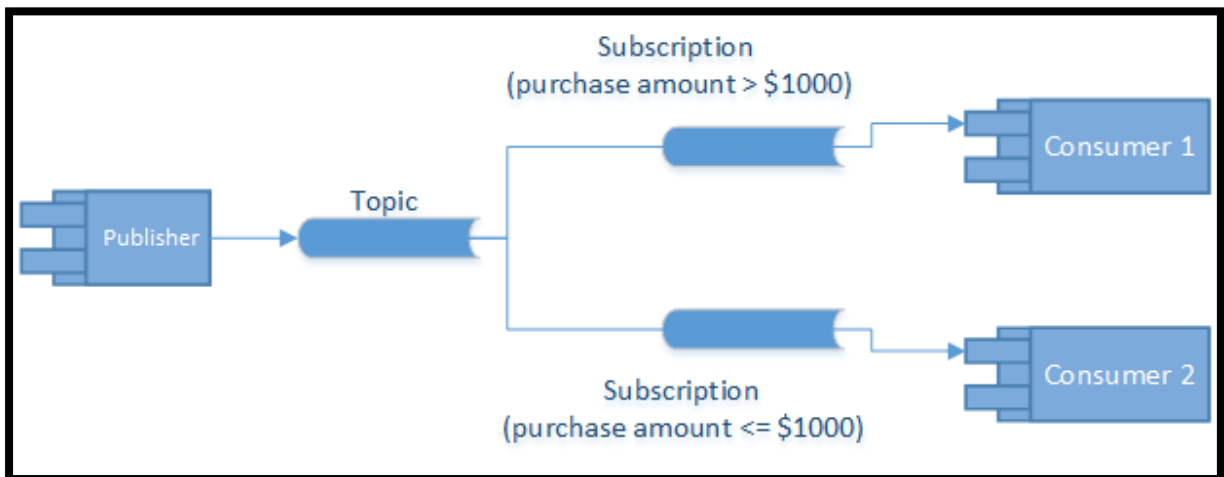
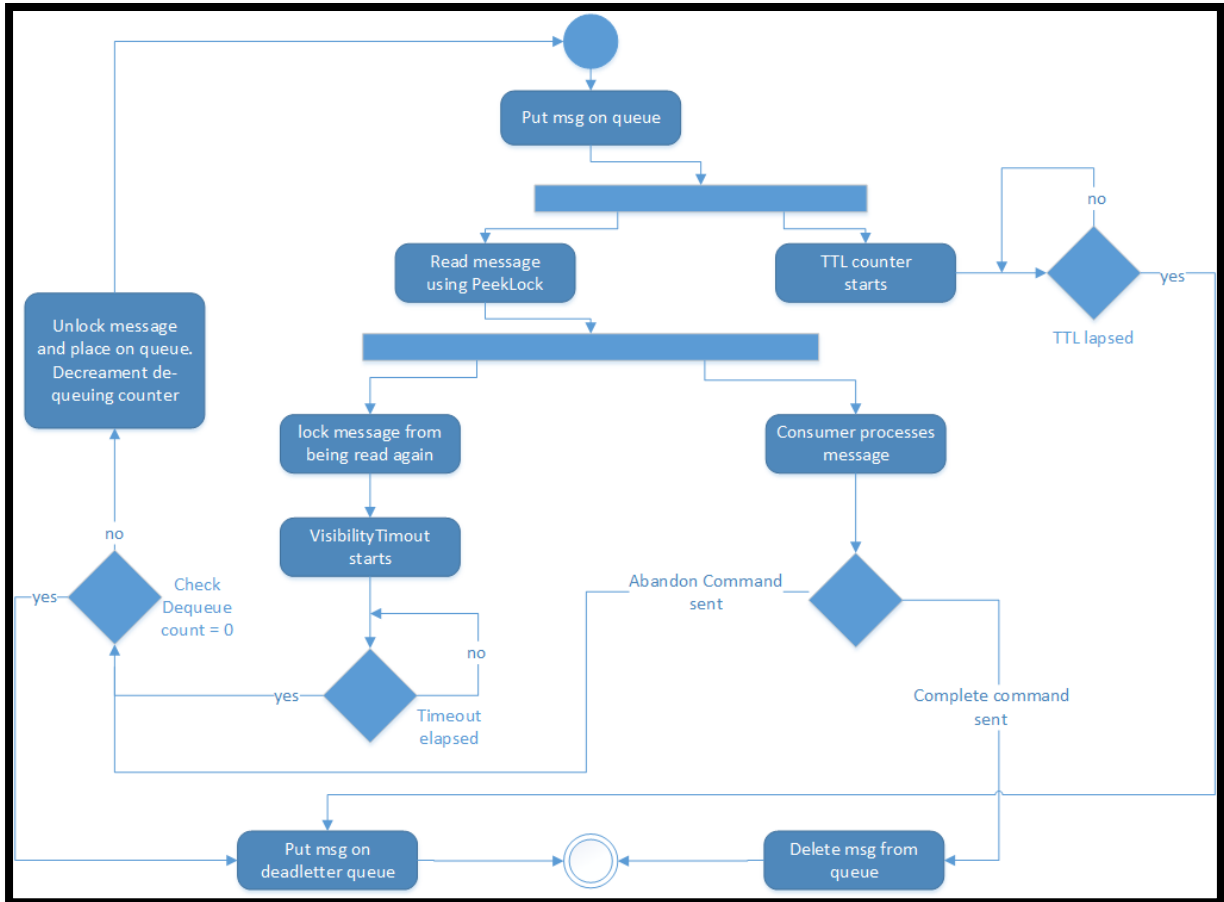
View:

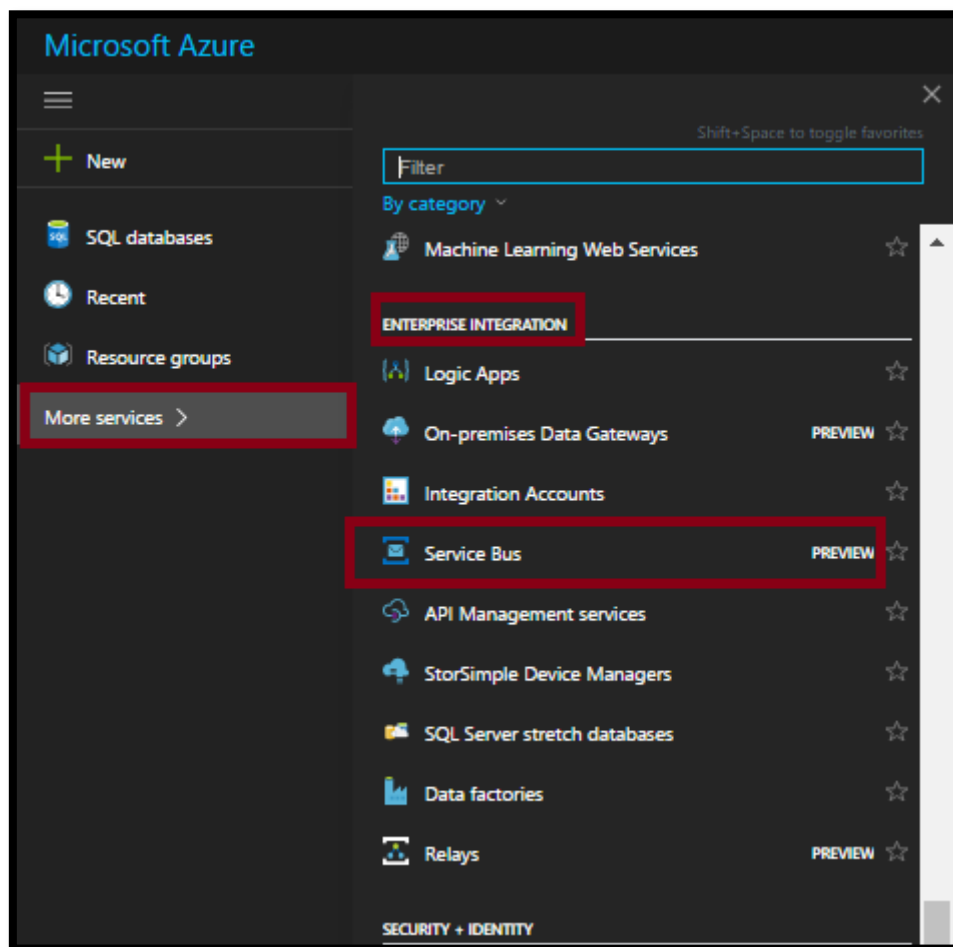
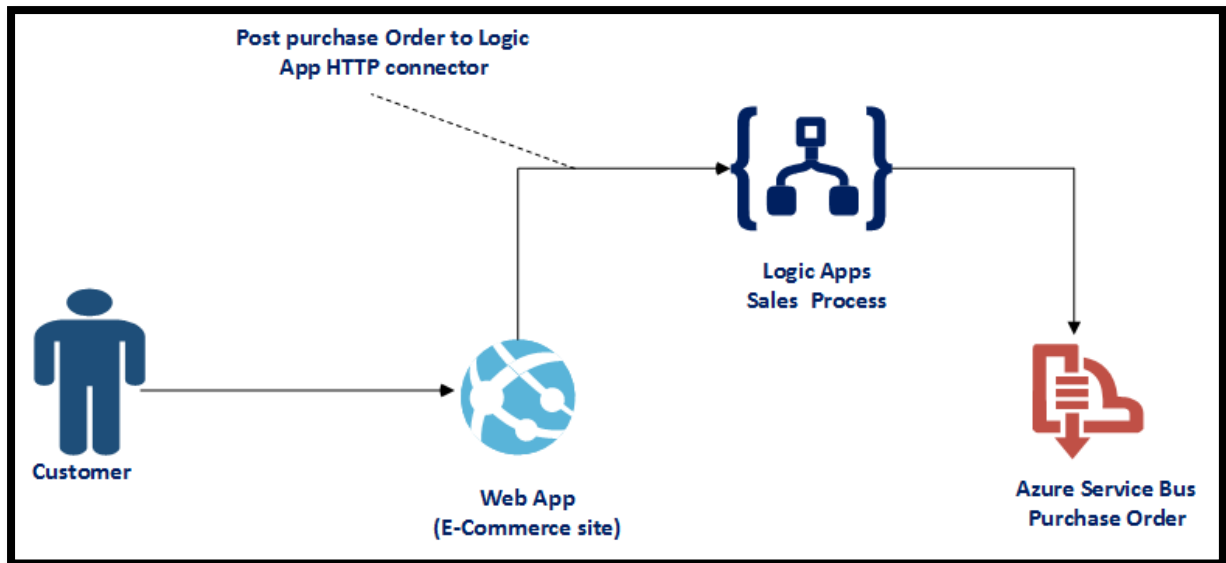
[Edit](#) | [Create New View](#)

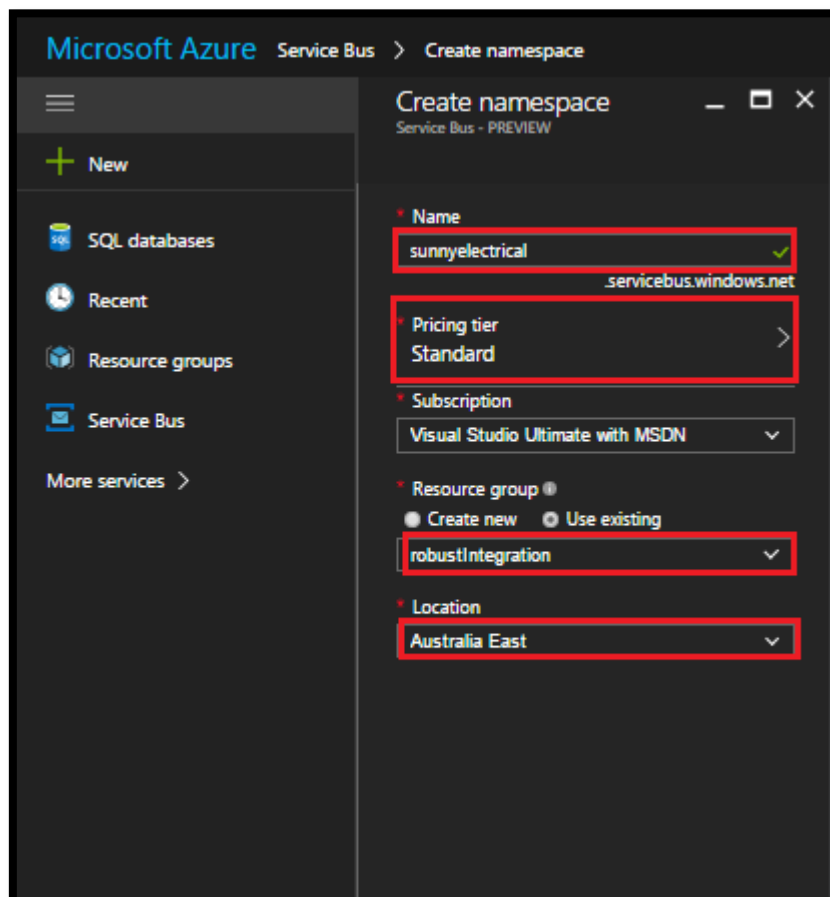
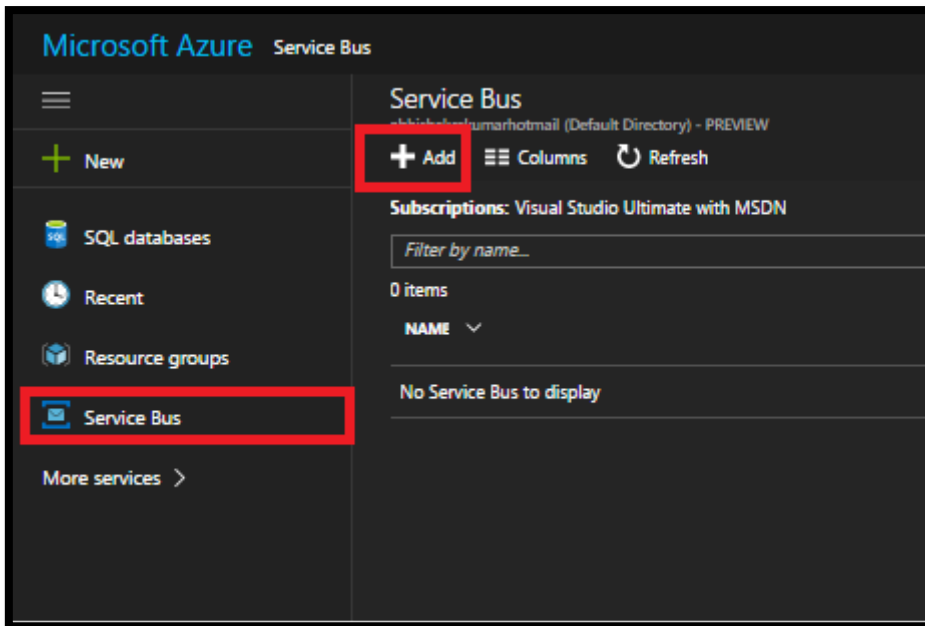
Recent Accounts

Account Name	Billing City
Bob Smith	
<u>3788/00</u>	

Chapter 10: Advanced Integration with Powerful, Scalable Service Bus in the Cloud







sunnyelectrical
Service Bus - PREVIEW

Search resources

+ Queue + Topic Delete Convert

Essentials ^

Resource group (change)
robustIntegration

Pricing tier
Standard

Status
Active

Connection Strings
Connection Strings

Location
Australia East

Subscription name (change)
Visual Studio Ultimate with MSDN

Subscription ID
[REDACTED]

Search to filter items...

NAME	TYPE	STATUS	LOCATION
No Queues or Topics found.			

Create topic
sunnyelectrical - PREVIEW

* Name
PremiumInvoice ✓

Max size
1 GB

Message time to live (default)
14 days

Enable duplicate detection
 Enable partitioning

Search (Ctrl+/)

Overview

Access control (IAM)

Tags

Diagnose and solve problems

SETTINGS

Shared access policies

Scale

Properties

Locks

Automation script

ENTITIES

Queues

Topics

MONITORING

Diagnostics logs

SUPPORT + TROUBLESHOOTING

New support request

sunyelectrical
Service Bus - PREVIEW

[+ Queue](#)
[+ Topic](#)
[Delete](#)
[Convert](#)

Search (Ctrl+/)

Overview

Access control (IAM)

Tags

Diagnose and solve problems

SETTINGS

Shared access policies

Scale

Properties

Locks

Automation script

ENTITIES

Queues

Topics

MONITORING

Diagnostics logs

Essentials ^

Resource group (change)
robustintegration

Pricing tier
Standard

Status
Active

Connection Strings
Connection Strings

Location
Australia East

Subscription name (change)
Visual Studio Ultimate with MSDN

Subscription ID
[REDACTED]

Search to filter items...

NAME	TYPE	STATUS	LOCATION
Invoice	Topics	Active	Australia East
PremiumInvoice	Topics	Active	Australia East

premiuminvoice
Service Bus - PREVIEW

[+ Subscription](#)
[Delete](#)

Essentials ^

Namespace
sunyelectrical

Topic URL
https://sunyelectrical.servicebus.windows...

ACTIVE MESSAGE COUNT
0 MESSAGES

SCHEDULED MESSAGE COUNT
0 MESSAGES

DEAD-LETTER MESSAGE COUNT
0 MESSAGES

TRANSFER MESSAGE COUNT
0 MESSAGES

TRANSFER DEAD-LETTER MESSAGE COUNT
0 MESSAGES

MAX SIZE
16 GB

CURRENT
0.0 KB

100% FREE SPACE

Search to filter items...

NAME	STATUS	MESSAGE COUNT	MAX DELIVERY C...	SESSIONS ENABL...
no subscriptions yet				

Create subscription
premiuminvoice - PREVIEW

Name
preminumcustomed ✓

Message time to live (default)
14 days

Lock duration
30 seconds

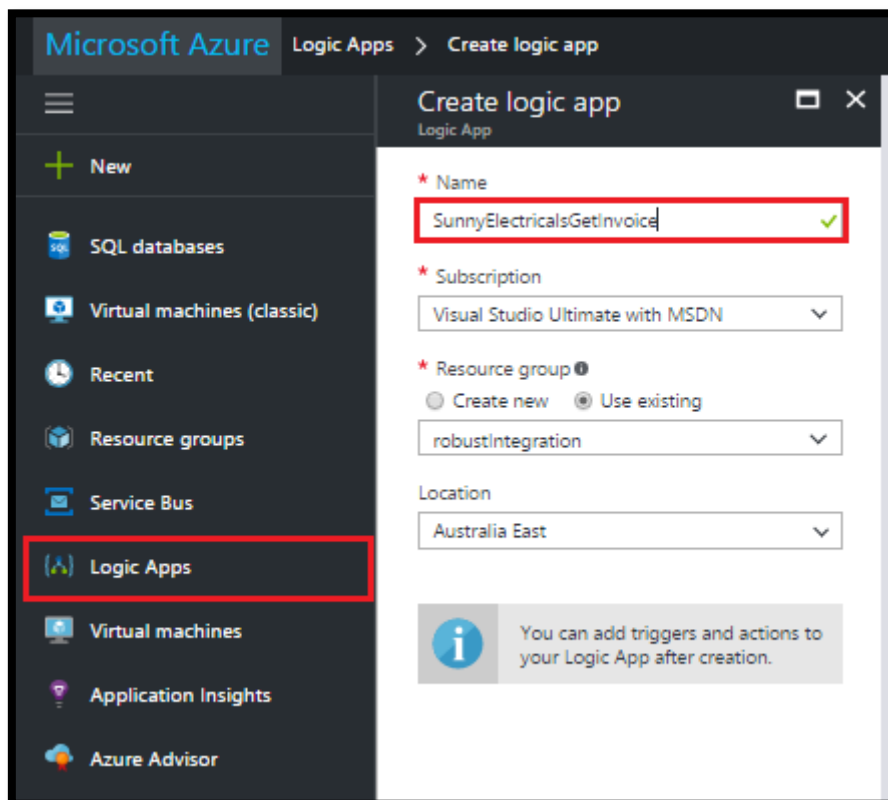
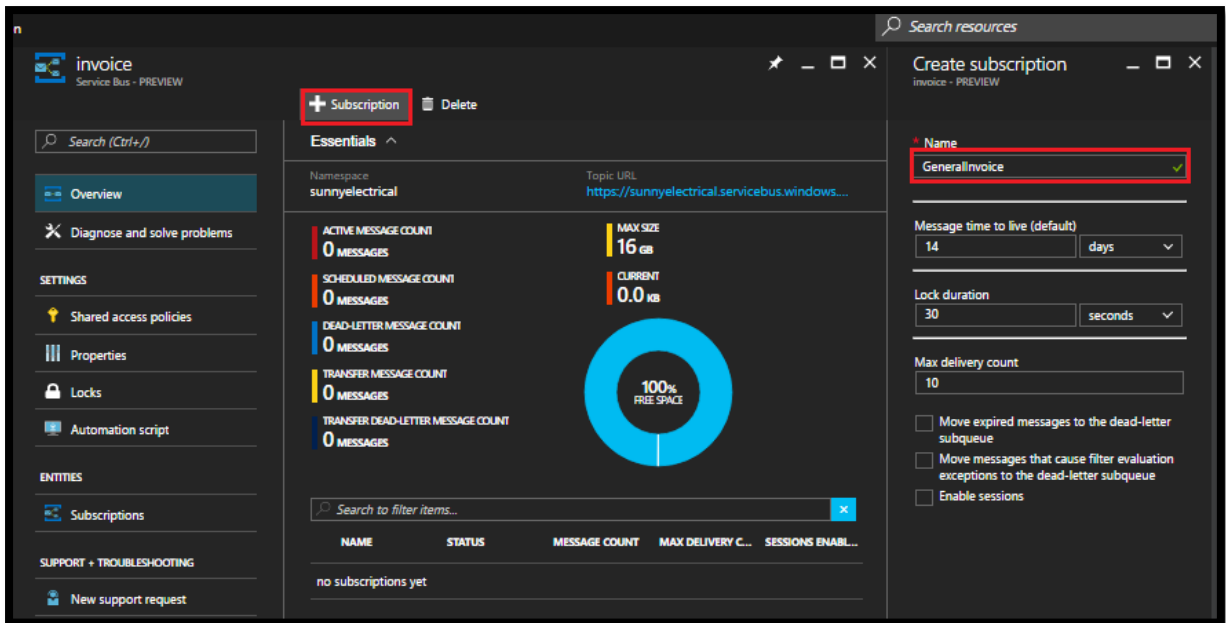
Max delivery count
10

Move expired messages to the dead-letter subqueue
 Move messages that cause filter evaluation exceptions to the dead-letter subqueue
 Enable sessions

SETTINGS
 Shared access policies
 Properties
 Locks
 Automation script

ENTITIES
 Subscriptions

SUPPORT + TROUBLESHOOTING
 New support request



Request

HTTP POST to this URL

<https://prod-17.australiaeast.logic.azure.com:443/workflows/202...>

Request Body JSON Schema

```
{
  "type": "object",
  "properties": {
    "Invoice": {
      "type": "object",
      "properties": {
        "InvoiceId": {
          "type": "string"
        },
        "JobId": {
          "type": "string"
        }
      }
    }
  }
}
```

Use sample payload to generate schema

Show advanced options ▾

Save Discard Run Designer Code view Templates Available APIs Help

Request

HTTP POST to this URL

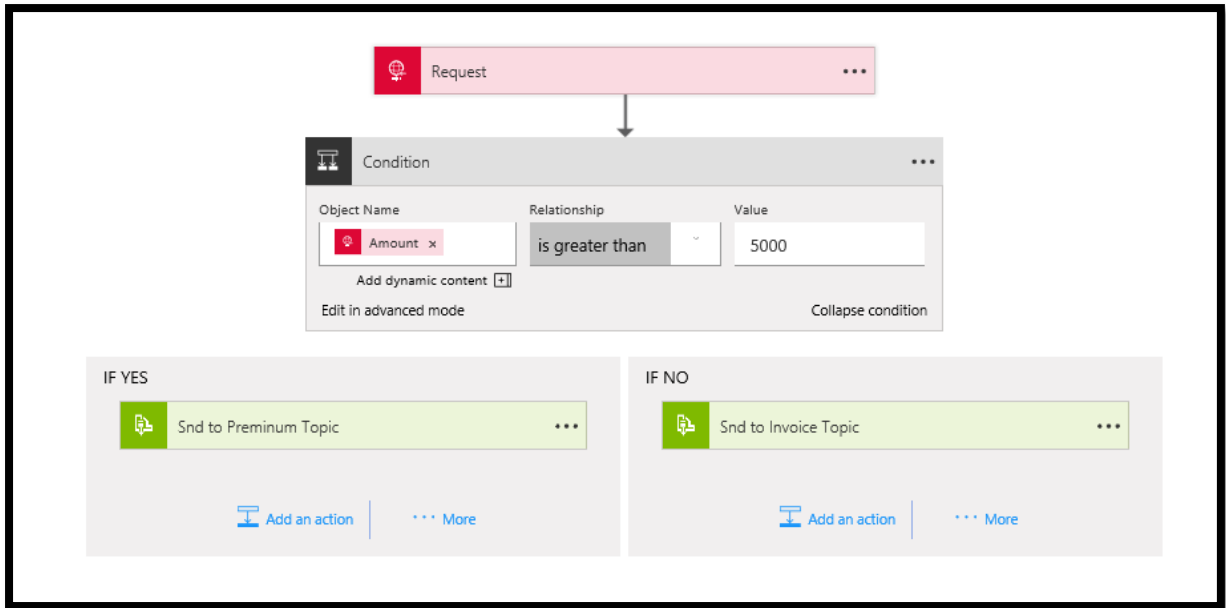
<https://prod-17.australiaeast.logic.azure.com:443/workflows/202...>

Request Body JSON Schema

```
{
  "type": "object",
  "properties": {
    "Invoice": {
      "type": "object",
      "properties": {
        "InvoiceId": {
          "type": "string"
        },
        "JobId": {
          "type": "string"
        }
      }
    }
  }
}
```

Use sample payload to generate schema

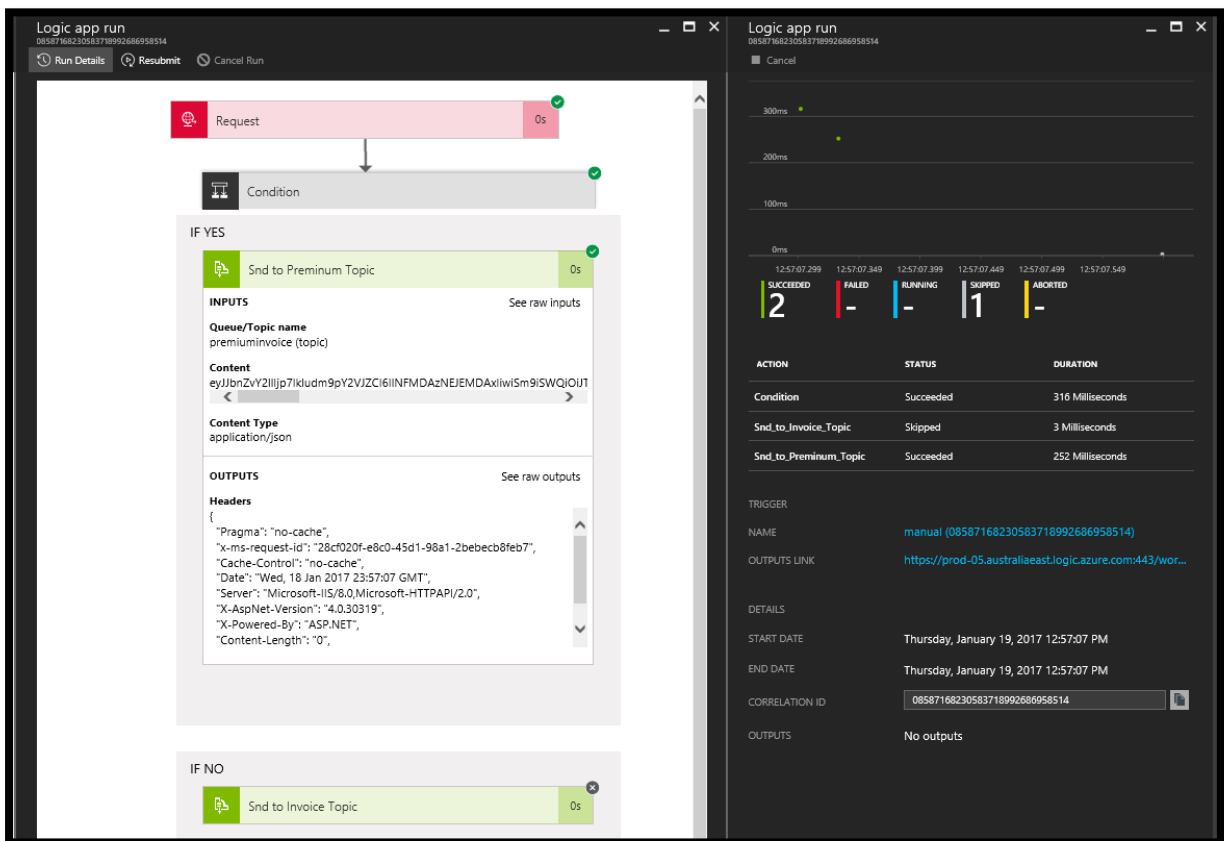
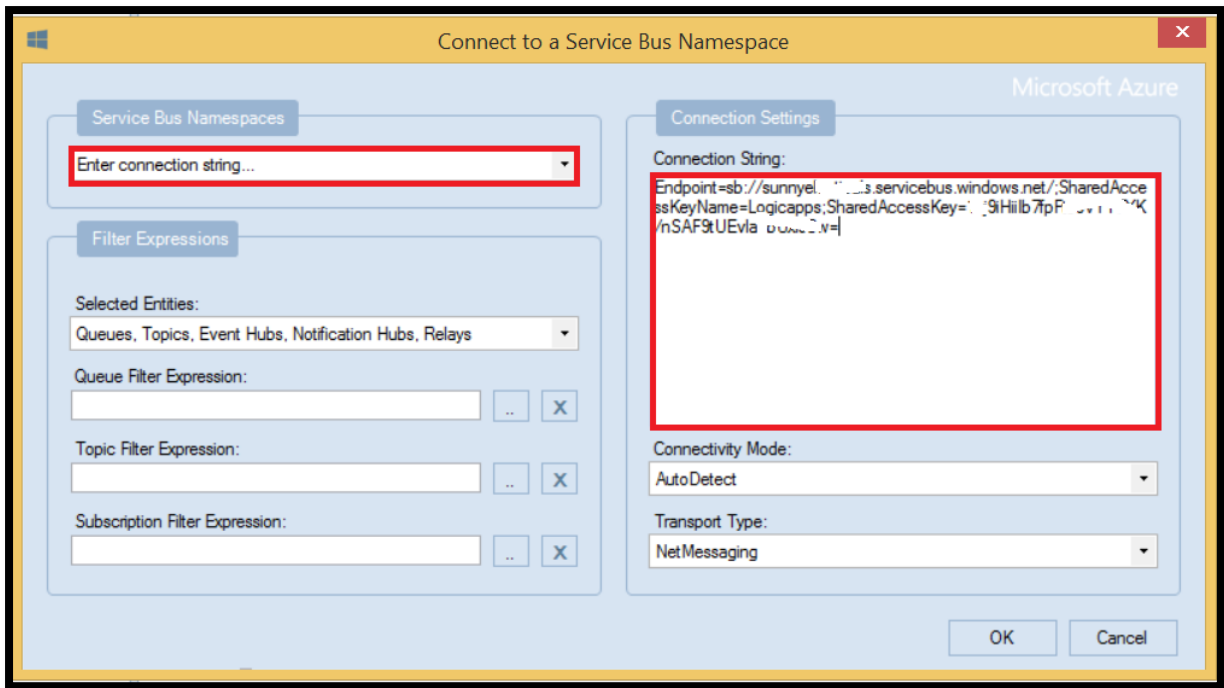
Show advanced options ▾



The screenshot shows the configuration for the 'Snd to Premium Topic' action. The form has a green header with the action name and an information icon. The configuration fields are:

- *Queue/Topic name:** A dropdown menu with 'premiuminvoice (topic)' selected.
- Content:** A dropdown menu with 'Body' selected.
- Content Type:** A text input field containing 'application/json'.
- Properties:** A text input field with the placeholder text 'Key-value pairs for each brokered property'.

At the bottom of the form, there is a 'Show advanced options' dropdown menu and a status message: 'Connected to SunnyElectricalsServiceBus. [Change connection.](#)'



View Topic: premiuminvoice

Description | Authorization Rules | Metrics

Path

Relative URI:
premiuminvoice

Auto Delete On Idle

Days: 106751 | Hours: 2 | Minutes: 48 | Seconds: 5 | Millsecs: 477

Default Message Time To Live

Days: 14 | Hours: 0 | Minutes: 0 | Seconds: 0 | Millsecs: 0

Topic Properties

Max Queue Size In GB: 1 GB

User Description:

Duplicate Detection History Time Window

Days: 0 | Hours: 0 | Minutes: 0 | Seconds: 30 | Millsecs: 0

Topic Settings

- Enable Batched Operations
- Enable Filtering Messages Before Publishing
- Enable Partitioning
- Enable Express
- Requires Duplicate Detection
- Enforce Message Ordering

Topic Information

Name	Value
Status	Active
Is ReadOnly	False
Size In Bytes	22,711
Created At	18/09/2016 1:...
Accessed At	21/09/2016 12:...
Updated At	18/09/2016 1:...
Active Message Count	0
DeadLetter Message Count	0
Scheduled Message Count	0
Transfer Message Count	0
Transfer DL Message Count	0

Get Metrics | Close Tabs | Refresh | Disable | Delete | Update

Create logic app


Logic App

* Name
GetPremiumCustomer ✓

* Subscription
Visual Studio Ultimate with MSDN

* Resource group ⓘ
 Create new Use existing
 robustIntegration

Location
Australia East

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

GET MESSAGE FROM PREMIUM TOPIC

TOPIC NAME*

TOPIC SUBSCRIPTION NAME*

FREQUENCY*

INTERVAL*

Show advanced options ▾

Connected to sunnyElectricalsTopics. [Change connection.](#)



```

"actions": [
  "HTTP": {
    "inputs": {
      "body": "@json(base64ToString(triggerBody()?['ContentData']))?['Invocie']?['UserEmail']",
      "method": "POST",
      "uri": "http://requestb.in/1j1jvc71"
    },
    "runAfter": {},
    "type": "Http"
  },
  "Send_an_email": {
    "inputs": {
      "body": {
        "Body": "Hi \nThanks for purchasing from Sunny Electricals",
        "Subject": "Thank you for valuable Customer",
        "To": "@json(base64ToString(triggerBody()?['ContentData']))?['Invocie']?['UserEmail']"
      },
      "host": {
        "api": {
          "runtimeUrl": "https://logic-apis-australiaeast.azure-apim.net/apim/outlook"
        },
        "connection": {
          "name": "@parameters('$connections')['outlook']['connectionId']"
        }
      },
      "method": "post",
      "path": "/Mail"
    },
    "runAfter": {},
    "type": "ApiConnection"
  }
]

```


Logic app run

0858716815464160853489180181

Run Details Resubmit Cancel Run

Logic app run

0858716815464160853489180181

Cancel

SUCCESSFUL	FAILED	RUNNING	STOPPED	ABORTED
2	-	-	-	-

ACTION	STATUS	DURATION
HTTP	Succeeded	498 Milliseconds
Send_an_email	Succeeded	3.2 Seconds

RequestBin

http://requestbin POST /1j1vc71

application/json; charset=utf-8
233 bytes

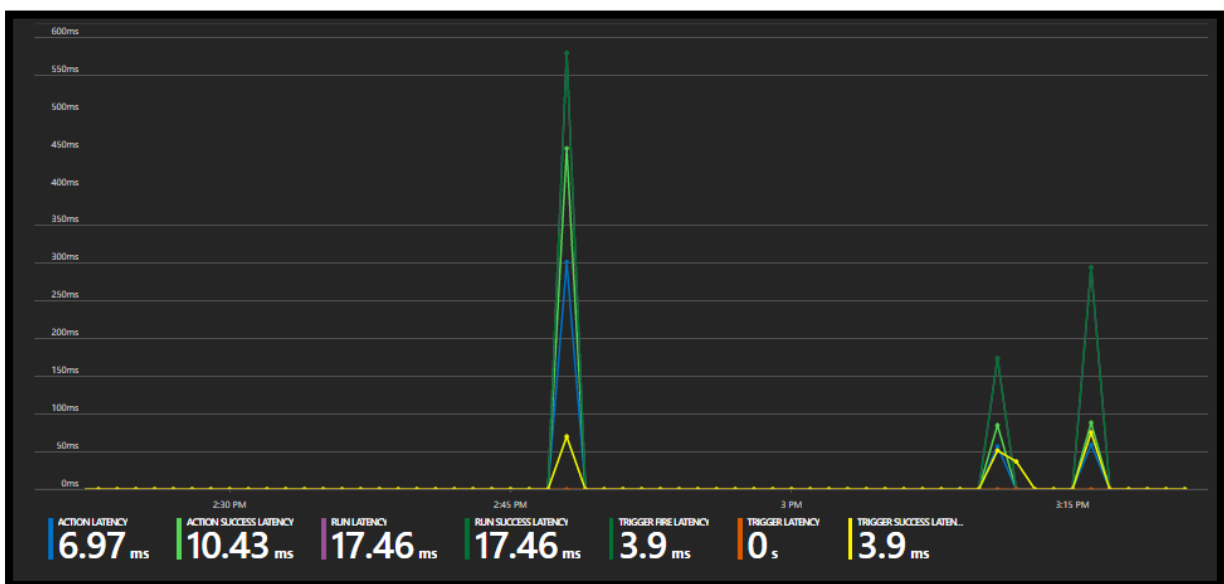
FORM/POST PARAMETERS: None

HEADERS:

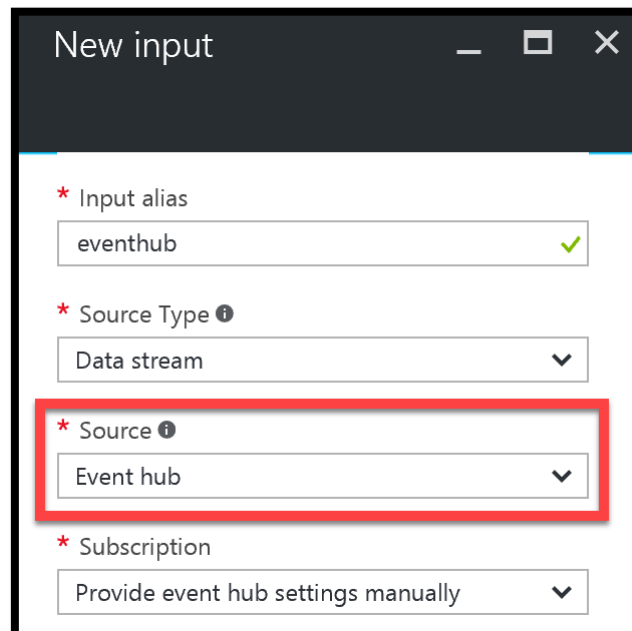
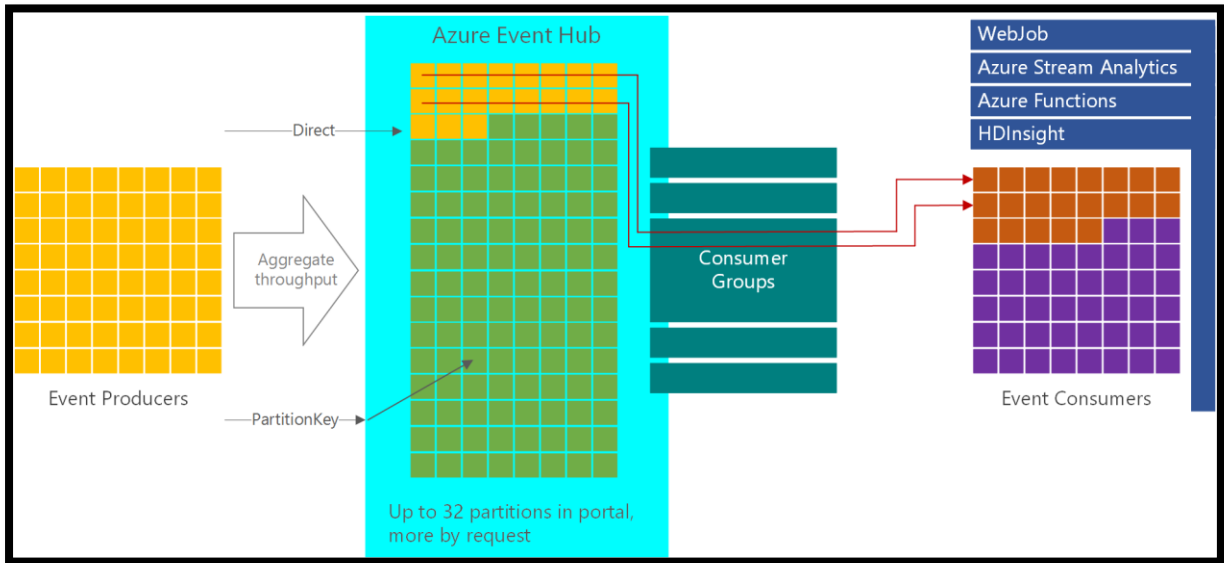
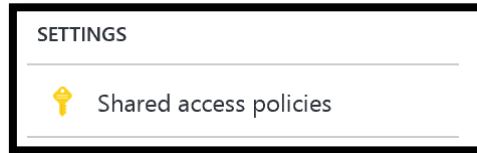
- X-Ms-Workflow-System-Id: flocations/australiaeast/localseunita/prod-06/workflows/671974b7e164a3897f98b3fe2ae43c8
- X-Ms-Workflow-Run-Id: 0858716815464282245572251873
- Accept-Encoding: gzip
- X-Ms-Client-Request-Id: 75b3c6d0-1fca-4a69-853c-b248cee5677e
- Cookie: __cfduid=de0ef1a42bb374cfe0afce28a2c11ab71484690646
- Via: 1.1 vegur
- X-Request-Id: a808d31f-ebcd-4278-a5db-465e61d828d2
- Content-Type: application/json; charset=utf-8
- Content-Length: 233
- Connect-Time: 1
- X-Ms-Workflow-Id: 671974b7e164a3897f98b3fe2ae43c8
- CF-Ray: 3238b66e5147659f-SYD
- X-Ms-Correlation-Id: 75b3c6d0-1fca-4a69-853c-b248cee5677e
- Host: requestbin
- X-Ms-Action-Tracking-Id: a6e41978-e08e-4a59-b564-9e02d75e47a5
- X-Ms-Client-Tracking-Id: 08587168163864318733599320394
- X-Ms-Workflow-Operation-Name: HTTP
- X-Ms-Workflow-Version: 08587168154624629347
- Connection: close
- X-Ms-Tracking-Id: 75b3c6d0-1fca-4a69-853c-b248cee5677e
- Accept-Language: en
- CF-IPcountry: AU
- Total-Route-Time: 0
- User-Agent: azure-logic-apps/1.0 (workflow 671974b7e164a3897f98b3fe2ae43c8; version 08587168154624629347)
- X-Ms-Execution-Location: australiaeast
- CF-Visitor: {"scheme": "http"}
- CF-Connecting-IP: 13.75.149.4
- X-Ms-Workflow-Name: GetPremiumCustomer

RAW BODY

```
{ "Invoice": { "InvoiceId": "SE08348D001", "JobId": "SE005", "Status": "PENDING", "UserId": "B0001", "UserName": "JOHN MAC", "UserEmail": "abhishhekstumar@hotmail.com", "Date": "04/01/1986", "Amount": 18000, "Comments": "PENDING INVOICE", "Address": "NZ" } }
```



Chapter 11: Connecting to Event Hubs and an Introduction to IoT Hubs



Name your function

ProcessEventHub

Configure

Azure Event Hub trigger (myEventHubMessage)

Event Hub name **?**
telemetrydata

Event Hub connection **?**
motoralerts new

Create

IoT hub

Microsoft

*** Name**
Name your hub

*** Pricing and scale tier**
S1 - Standard

*** IoT Hub units**
1

*** Device-to-cloud partitions**
4 partitions

*** Subscription**

*** Resource group**
 Create new Use existing
 SunnyElectrical

Enable Device Management—PREVIEW **?**

By checking "Device Management" you create a PREVIEW IoT hub not intended for production scenarios.

*** Location**
West Europe

Pin to dashboard

Create [Automation options](#)

Choose your pricing and scale tier

F1 Free	S1 Standard	S2 Standard
8k messages/unit/day	400k messages/unit/day	6M messages/unit/day
Device-to-cloud telemetry Cloud-to-device messaging 1 unit	Device-to-cloud telemetry Cloud-to-device messaging 200 units maximum	Device-to-cloud telemetry Cloud-to-device messaging 200 units maximum
USD PER IOT HUB UNIT	USD PER IOT HUB UNIT	USD PER IOT HUB UNIT

S3 Standard
300M messages/unit/day

Device-to-cloud telemetry
 Cloud-to-device messaging
 10 units maximum

Select

sunnyelectrical - Pricing and scale
IoT Hub

Save Discard

Search (Ctrl+*/*)

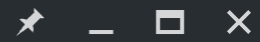
- Overview
- Activity log
- Access control (IAM)

SETTINGS

- Properties
- Locks

Pricing and scale tier
S1 - Standard

IoT Hub units ⓘ
10 ✓



Save

Discard

Search (Ctrl+/)

Overview

Activity log

Access control (IAM)

SETTINGS

Properties

Locks

Automation script

GENERAL

Shared access policies

Messaging

File upload

Pricing and scale

Operations monitoring

IP Filter

Diagnostics

SUPPORT + TROUBLESHOOTING

Cloud-to-device settings

Default TTL ⓘ

1 hr

Feedback retention time ⓘ

1 hr

Maximum delivery count ⓘ

10

Device-to-cloud settings

Partitions ⓘ

4

Event Hub-compatible name ⓘ

sunnyelectrical

Event Hub-compatible endpoint ⓘ

sb://iothub-ns-sunyelect-78134-23caed

Retention time ⓘ

1 days

Consumer groups ⓘ

\$Default
allmessages ...

Device Explorer
sunnyelectrical

Columns Refresh

Filter by Device Id

DEVICE ID	STATUS	LAST ACTIVITY
motordata	enabled	Mon Jan 01 1 00:00:00 GMT+...

Device Details
sunnyelectrical

Device Id
motordata

Primary key

Secondary key

Connection string—primary key

Connection string—secondary key

Connect device to IoT Hub
Enable Disable

iothubowner
sunnyelectrical

Save Discard More

Regen key

Delete

Access point
iothubowner

Permissions

- Registry read
- Registry write
- Service connect
- Device connect

Shared access keys

Primary key

Secondary key

Connection string—primary key

Connection string—secondary key

+ Add **↶ Undo** **🗑 Delete** **💾 Save**

If the table is empty or no rule matches, the connection is accepted. Rules are applied in order: the first matching rule decides the action. To change the order of the IP filter rules, hover over the row to drag and drop to the desired location in the grid

<input type="checkbox"/>	IP FILTER RULE NAME	ACTION	IPV4 ADDRESS RANGE
	Non-company	Reject	10.10.0.0/24

Operations monitoring ✦ — □

💾 Save **✕ Discard**

Monitoring categories

Device identity operations ⓘ

Device-to-cloud communications ⓘ


Cloud-to-device communications ⓘ

Connections ⓘ

File uploads ⓘ


[Browse](#) Installed Updates

microsoft.azure.devices.client Include prerelease

 **Microsoft.Azure.Devices.Client** by Microsoft Corp, **52K** downloads
Device SDK for Azure IoT Devices

[Browse](#) Installed Updates

microsoft.azure.devices Include prerelease

 **Microsoft.Azure.Devices** by Microsoft, **50.4K** downloads
Service SDK for Azure IoT Devices
Prerelease

sunnyelectrical - File upload
IoT Hub

Save Discard

Search (Ctrl+ /)

- Activity log
- Access control (IAM)

SETTINGS

- Properties
- Locks
- Automation script

GENERAL

- Shared access policies
- Messaging
- File upload**
- Pricing and scale

Storage container
sunnyup

Receive notifications for uploaded files ⓘ
Off On

SAS TTL ⓘ
1 hr

File notification settings

Default TTL ⓘ
1 hr

Maximum delivery count ⓘ
10

Device Explorer

Configuration Management Data Messages To Device

Connection Information
IoT Hub Connection String:

Protocol Gateway HostName:

Update

Shared Access Signature

Key Name: iothubowner
Key Value:
Target: sunnyelectrical.azure-devices.net
TTL (Days): 365
Generate SAS

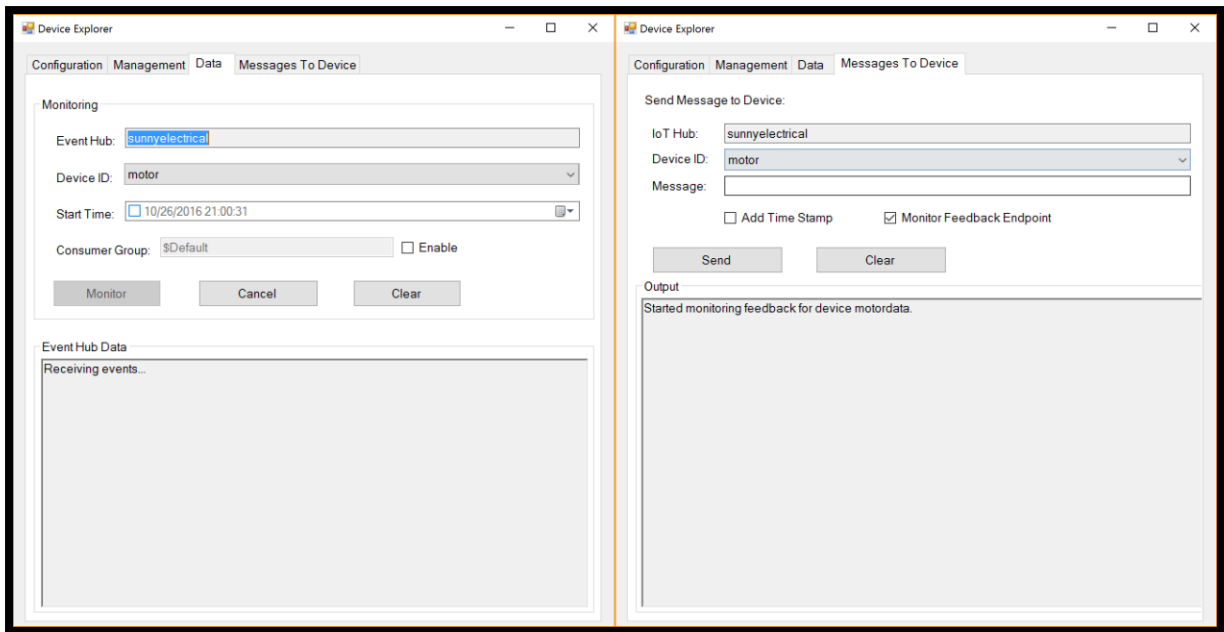
Device Explorer

Configuration Management Data Messages To Device

Actions
Create Refresh Update Delete SAS Token...

Devices
Total: 1

Id	PrimaryKey	SecondaryKey	ConnectionStr	ConnectionStat	LastActiv
motor			HostName=s	Disconnected	

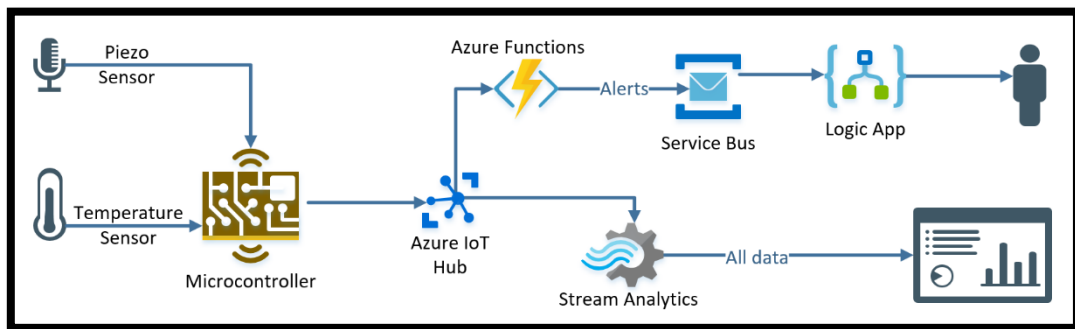


```

Windows PowerShell
PS C:\> iotHub-explorer --help

Usage
iotHub-explorer login <connection-string> [--duration=<num-seconds>]
  Creates a session lasting <num-seconds>; commands during the session can omit <connection-string>
  Default duration is 3600 (one hour).
iotHub-explorer logout
  Cancels any session started by 'login'
iotHub-explorer [<connection-string>] list [--display="<property>,..."] [--connection-string]
  Returns a list of (at most 1000) devices
  Can optionally display only selected properties and/or connection strings.
iotHub-explorer [<connection-string>] get <device-id> [--display="<property>,..."] [--connection-string]
  Returns information about the given device
  Can optionally display just the selected properties and/or the connection string.
iotHub-explorer [<connection-string>] create <device-id|device-json> [--display="<property>,..."] [--connection-string]
  Adds the given device to the IoT Hub and displays information about it
  Can optionally display just the selected properties and/or the connection string.
iotHub-explorer [<connection-string>] delete <device-id>
  Deletes the given device from the IoT Hub.
iotHub-explorer <connection-string> monitor-events <device-id>
  Monitors and displays the events received from a specific device.
iotHub-explorer [<connection-string>] send <device-id> <msg> [--ack="none|positive|negative|full"]
  Sends a cloud-to-device message to the given device, optionally with acknowledgment of receipt
iotHub-explorer [<connection-string>] receive [--messages=n]
  Receives feedback about the delivery of cloud-to-device messages; optionally exits after receiving n messages.
iotHub-explorer [<connection-string>] sas-token <device-id> [--duration=<num-seconds>]
  Generates a SAS Token for the given device with an expiry time <num-seconds> from now
  Default duration is 3600 (one hour).
iotHub-explorer help
  Displays this help message.

Use the --display option to show only the given properties from the azure-iotHub.Device object.
Use the --connection-string option to generate a connection string for the device(s).
Add the --raw option to any command (except help) to minimize output and format results as JSON.
PS C:\>
  
```



New output

* Output alias
dashboard ✓

* Sink ⓘ
Power BI ▼

Authorize Connection
You'll need to authorize with Power BI to configure your output settings.

Authorize

When a message is received in a queue (auto-c... ⓘ ...

* Queue name
motoralerts ▼

Show advanced options ▼

How often do you want to check for items?

* Frequency * Interval
Second ▼ 20

Connected to MotorQueue. [Change connection.](#)

Send an email ...

* To
martin@acme.com

* Subject
Alert Info


* Body
Content x

Show advanced options ▼

Connected to ... [Change connection.](#)

```
file:///C:/Users/Compe/onedrive/documents/visual studio 2015/Projects/SunnyMotor/SunnyMotor/bin/De...
Sent message: {"deviceId":"motor","eventTime":"2016-10-28T11:10:31.5616912Z","temperature":36.40
2185819764711,"piezo":10.404886910880398}
Sent message: {"deviceId":"motor","eventTime":"2016-10-28T11:10:36.7850115Z","temperature":38.64
6752615294773,"piezo":12.664020309999595}
Sent message: {"deviceId":"motor","eventTime":"2016-10-28T11:10:41.7863502Z","temperature":39.40
6178289282217,"piezo":12.943284160896802}
Sent message: {"deviceId":"motor","eventTime":"2016-10-28T11:10:46.787783Z","temperature":40.165
603963269668,"piezo":10.222548011794011}
Sent message: {"deviceId":"motor","eventTime":"2016-10-28T11:10:51.7888712Z","temperature":40.92
5029637257119,"piezo":10.501811862691218}
Sent message: {"deviceId":"motor","eventTime":"2016-10-28T11:10:56.790762Z","temperature":35.684
455311244562,"piezo":10.781075713588425}
Sent message: {"deviceId":"motor","eventTime":"2016-10-28T11:11:01.7927108Z","temperature":36.44
3880985232013,"piezo":11.060339564485634}
Sent message: {"deviceId":"motor","eventTime":"2016-10-28T11:11:06.7936706Z","temperature":37.20
3306659219464,"piezo":11.339603415382841}
```

Alert Info ⤴



Martin Abbott
Today, 2:29 PM
Martin Abbott ▾

👍 ↻ Reply all | ▾

Inbox; Sent Items

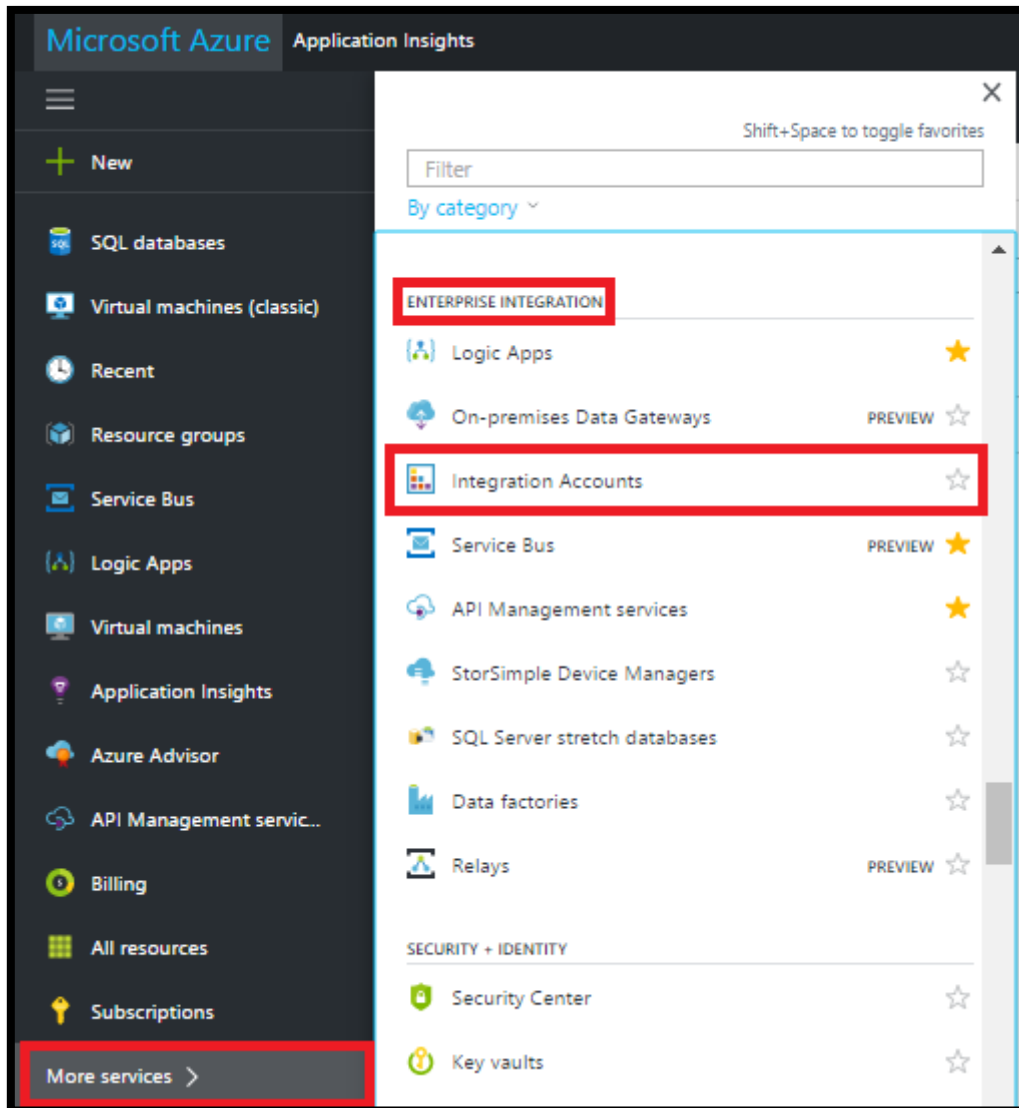
This message was sent with low importance.

```
{"alertType":"Temperature","date":"10/28/2016 6:29:31
AM","deviceId":"motor","value":"Temperature: 40.4021890728745"}
```

Motor Data
PAGE 1



Chapter 12: EAI/B2B Integration Using Logic Apps



Integration Account

* Name
 ✓

* Subscription

* Resource group
 Create new Use existing

* Location

* Pricing Tier

SampleIntegrationAccount

Integration Account

Search (Ctrl+/)

Overview
 Access control (IAM)
 Tags

SETTINGS
 Callback URL
 Schemas
 Maps
 Certificates
 Partners
 Agreements

Upgrade Pricing Tier Delete

Essentials ^

Resource group (change)
 robustIntegration

Name
 SampleIntegrationAccount

Location
 Australia East

Subscription name (change)
 Visual Studio Ultimate with MSDN

Subscription ID

Components

Schemas 0	Maps 0	Certificates 0	Partners 0	Agreements 0
--------------	-----------	-------------------	---------------	-----------------

Add New Item - IntegrationAccount2

Sort by: Default

Search Installed Templates (Ctrl+E)

Logic Apps	Flat File Schema	Logic Apps	Type: Logic Apps
Online	XML Schema	Logic Apps	Flat File Schema
	Map	Logic Apps	



XML
validation



XML
transform



Flat file
encode



Flat file
decode



AS2
decode



AS2
encode



X12
decode



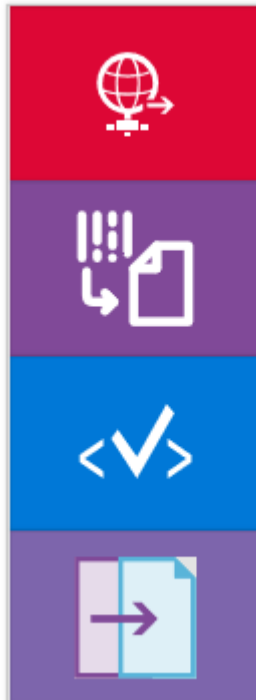
X12
encode



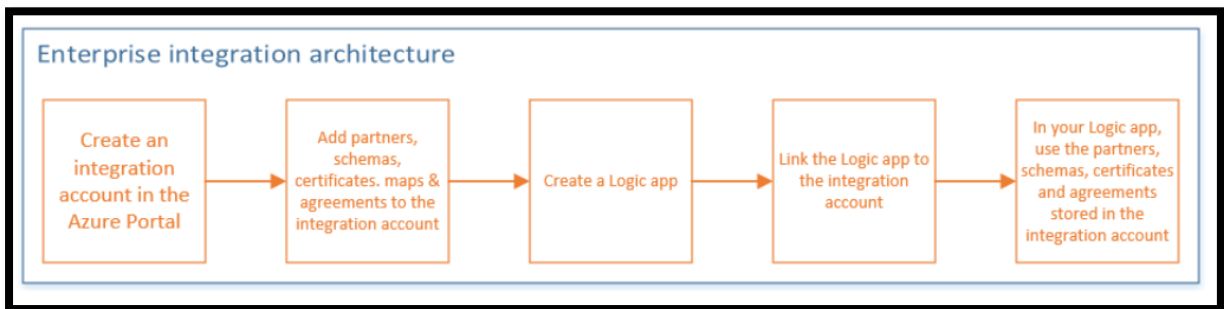
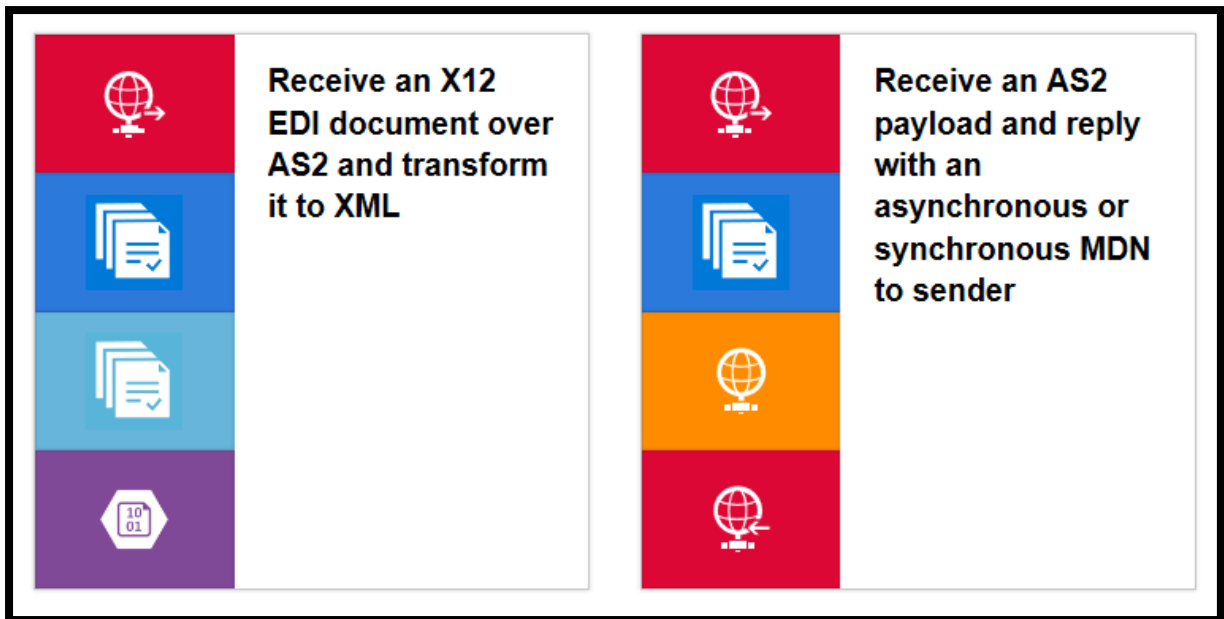
EDIFACT
decode



EDIFACT
encode



VETER pipeline
that receives a flat
file over HTTP,
converts it to XML
and transforms the
content to another
format

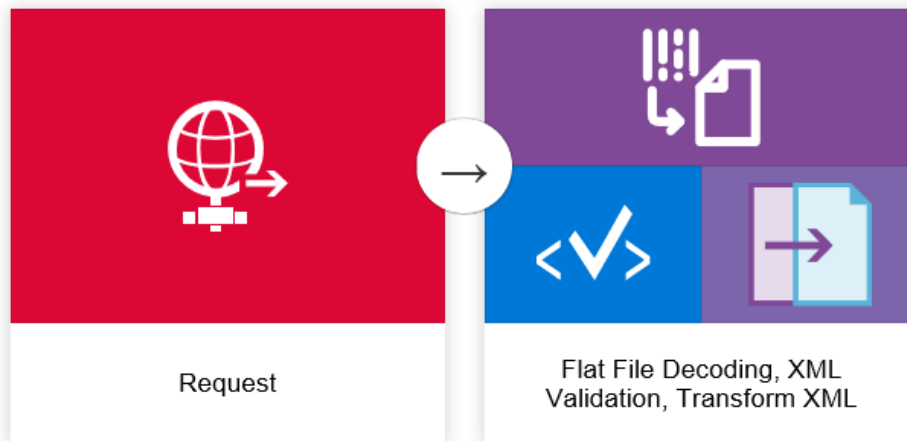


OrderNumber	Item	Quantity	UnitPrice
1001	Pencils HB	100	1
1002	Highlighter	60	2



dbo.HighOrder [Data] ⌵ ✕			
↻ ⌵ ⌵ ⌵ Max Rows: 1000 ⌵ ⌵			
	OrderNumber	ItemName	TotalAmount
	1001	Pencils HB	100
	1002	Highlighter	120

VETER pipeline that receives a flat file over HTTP, converts it to XML and transforms the content to another format



A VETER (validate, extract, transform, enrich, route) pipeline that receives a flat file over HTTP, converts it to XML and transforms the content to another format using an xpath() function to extract data from the message. An integration account is required to use this template. See [here](#) for details on how to create an integration account and add maps and schema to it.

Use this template

SampleIntegrationAccount
Integration Account

Search (Ctrl+/)

Upgrade Pricing Tier Delete

Essentials ^

Resource group (change)
robustIntegration

Name
SampleIntegrationAccount

Location
Australia East

Subscription name (change)
Visual Studio Ultimate with MSDN

Subscription ID

Components

Schemas 0	Maps 0	Certificates 0	Partners 0	Agreements 0
--------------	-----------	-------------------	---------------	-----------------

Add New Item - IntegrationAccount2

Sort by: Default

Search Installed Templates (Ctrl+E)

Flat File Schema	Logic Apps	Type: Logic Apps
XML Schema	Logic Apps	Flat File Schema
Map	Logic Apps	

Logic Apps Flat File Schema Wizard

Welcome to the Logic Apps Flat File Schema Wizard

Azure Logic Apps
Tools for Visual Studio

This wizard guides you through the steps to create a new flat file schema and define records and fields based on the specified document instance.

Do not show this introductory page again.

Help < Back Next > Cancel

```

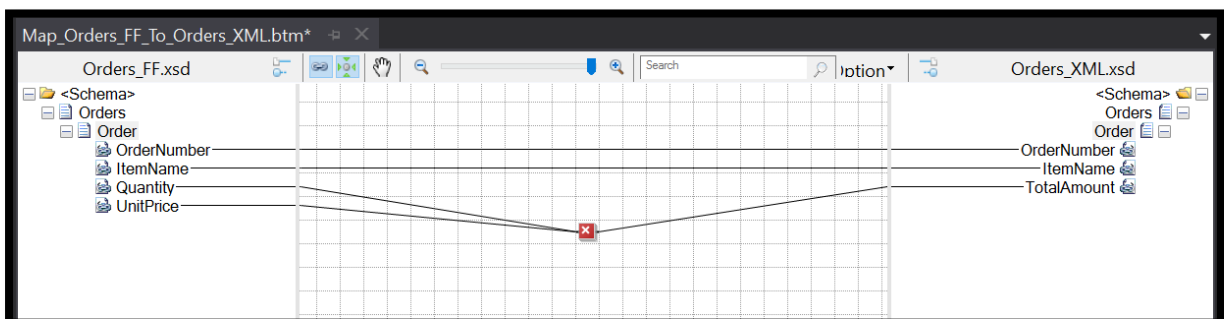
Orders_FF.xsd
<?xml version="1.0" encoding="UTF-16"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" targetNamespace="http://EAIDemo.Orders_FF"
xmlns:b="http://schemas.microsoft.com/BizTalk/2003" xmlns="http://EAIDemo.Orders_FF">
  <xs:annotation>
    <xs:appinfo>
      <schemaEditorExtension:schemaInfo
        xmlns:schemaEditorExtension="http://schemas.microsoft.com/BizTalk/2003/SchemaEditorExtensions"
        standardName="Flat File"
        extensionClass="Microsoft.Azure.Integration.DesignTools.FlatFileExtension.FlatFileExtension"
        namespaceAlias="b"/>
      <b:schemaInfo root_reference="Orders" compile_parse_tables="false" allow_message_breakup_of_infix_root="false"
        early_terminate_optional_fields="false" allow_early_termination="false" generate_empty_nodes="true"
        suppress_empty_nodes="false" lookahead_depth="3" parser_optimization="speed"
        count_positions_by_byte="false" pad_char_type="char" default_pad_char=" " codepage="65001" standard="Flat
        File"/>
    </xs:appinfo>
  </xs:annotation>
  <xs:element name="Orders">
    <xs:annotation>
      <xs:appinfo>
        <b:recordInfo suppress_trailing_delimiters="false" preserve_delimiter_for_empty_data="true"
          sequence_number="1" child_order="postfix" child_delimiter="0xD 0xA" child_delimiter_type="hex"
          structure="delimited"/>
      </xs:appinfo>
    </xs:annotation>
  </xs:element>
</xs:schema>

```

```

Orders_XML.xsd
<?xml version="1.0" encoding="UTF-16"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" targetNamespace="http://EAIDemo.Orders_XML"
xmlns:b="http://schemas.microsoft.com/BizTalk/2003" xmlns="http://EAIDemo.Orders_XML">
  <xs:element name="Orders">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="Order">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="OrderNumber" type="xs:int"/>
              <xs:element name="ItemName" type="xs:string"/>
              <xs:element name="TotalAmount" type="xs:double" maxOccurs="unbounded"/>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>

```



Schemas
SampleIntegrationAccount

+ Add Edit Download Delete

NAME	TYPE	CONTENT SIZE	CHANGED TIME
Orders_FF	Xml	3.5 KiB	11/6/2016 11:52 AM
Orders_XML	Xml	803 B	11/6/2016 11:53 AM

Maps
SampleIntegrationAccount

+ Add ↶ Update ⬇ Download 🗑 Delete

NAME	TYPE	CONTENT SIZE	CHANGED TIME
Map_Orders_FF_To_Or...	Xslt	1.28 KiB	11/6/2016 11:43 AM

EAIOrderMessaging - Integration Account
Logic App

📁 Save ✖ Discard

🔍 Search (Ctrl+/)

- 👤 Access control (IAM)
- 🏷 Tags

DEVELOPMENT TOOLS

- 🔗 Logic App Designer
- 📄 Logic App Code View
- 🔗 API Connections
- 👤 Quick Start Guides

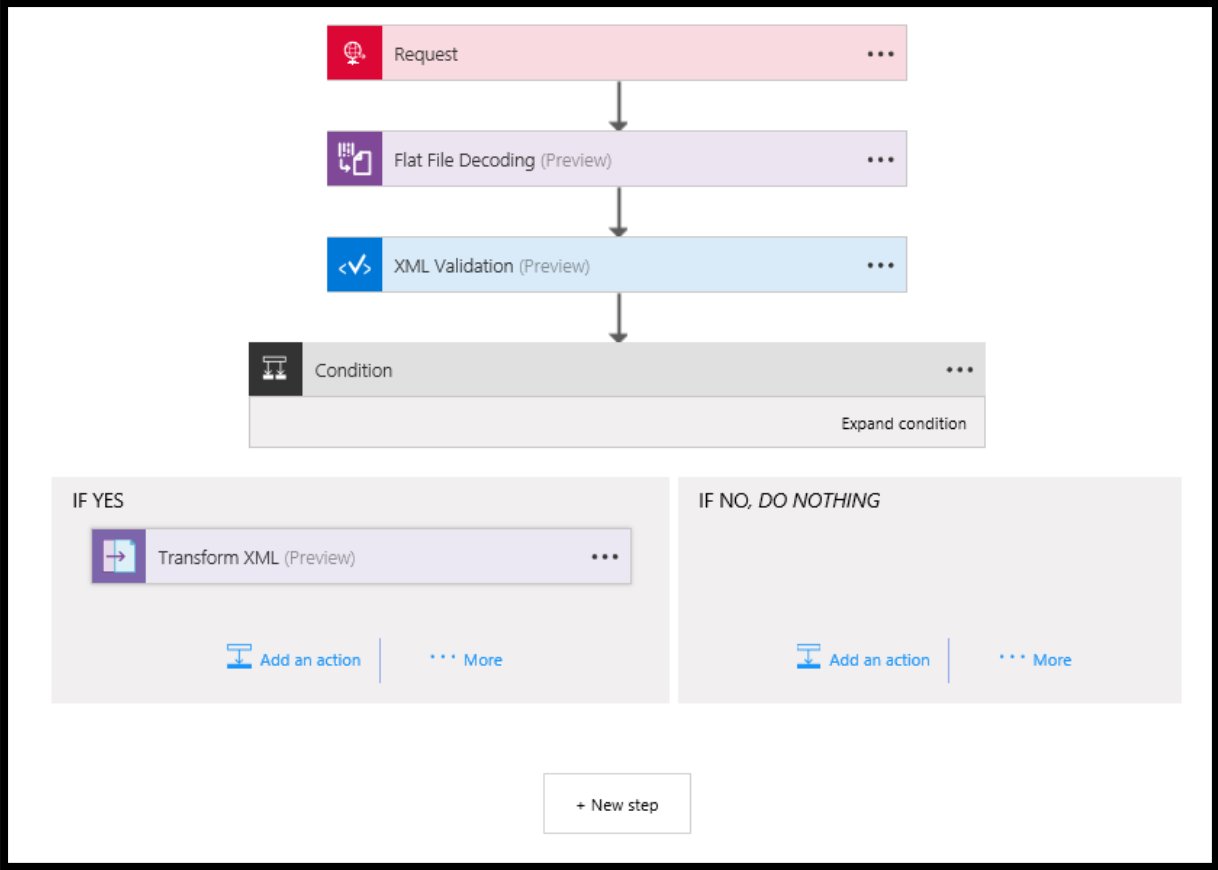
SETTINGS

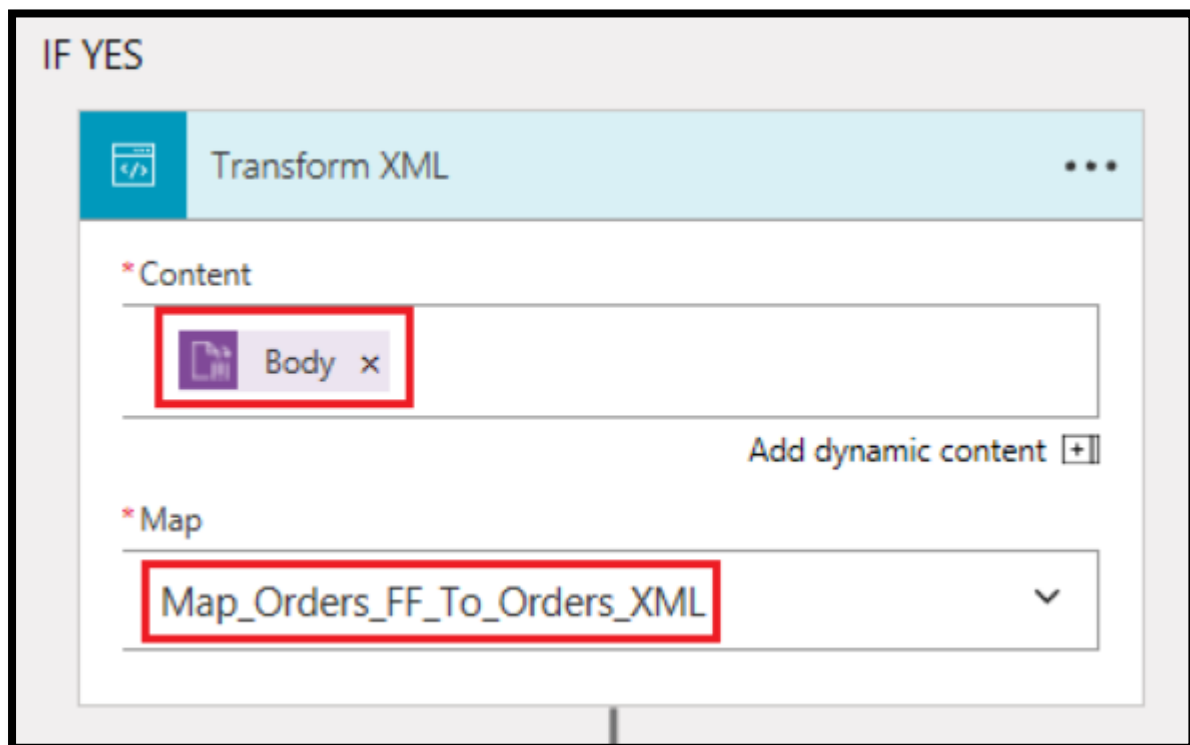
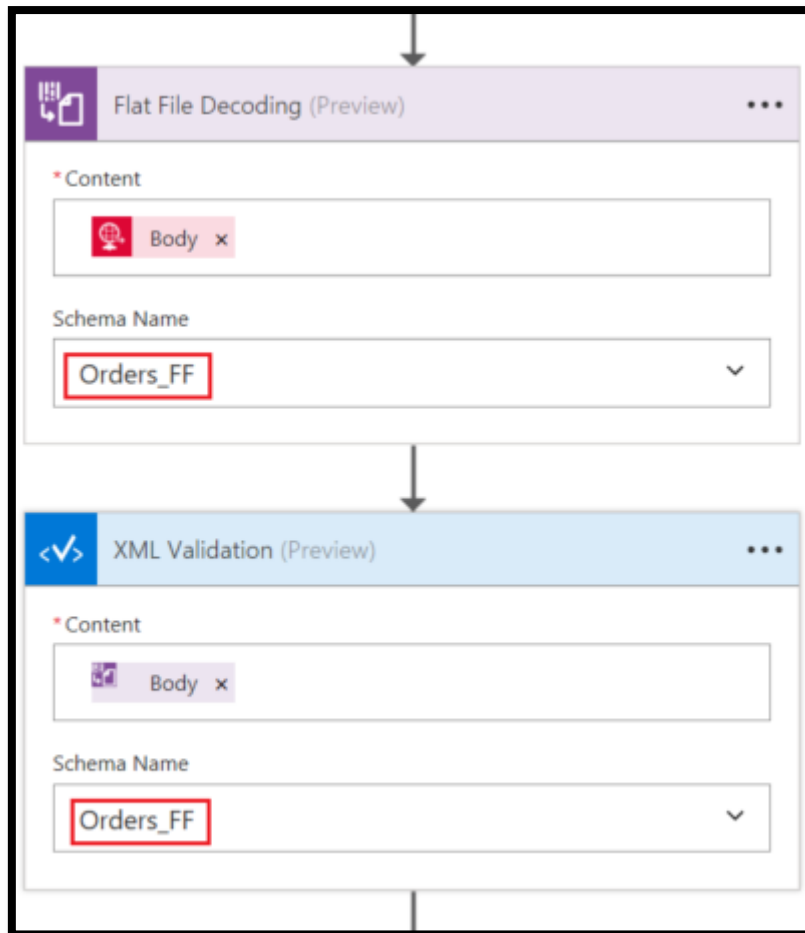
- 📄 Integration Account

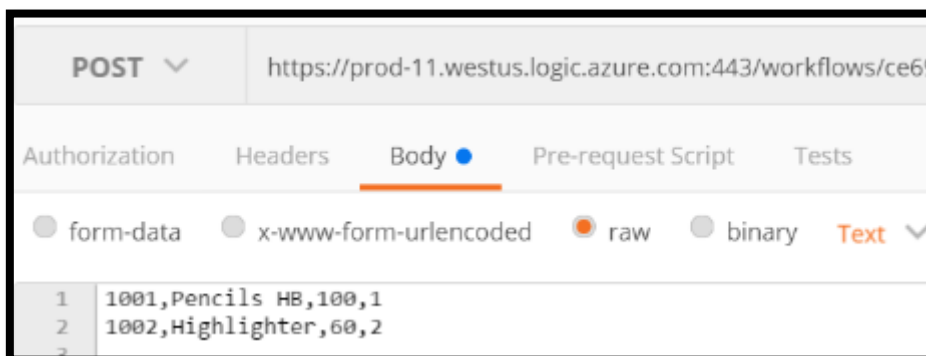
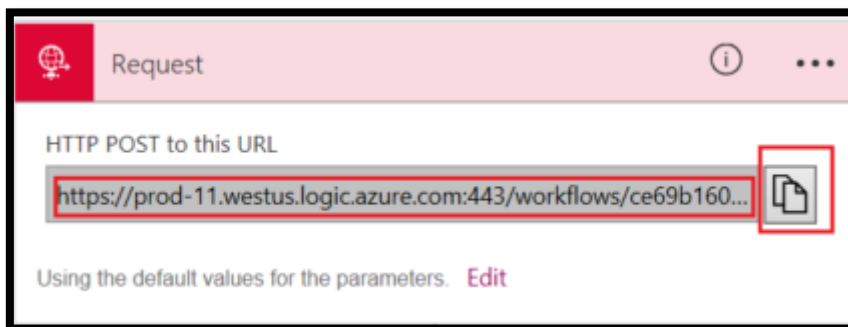
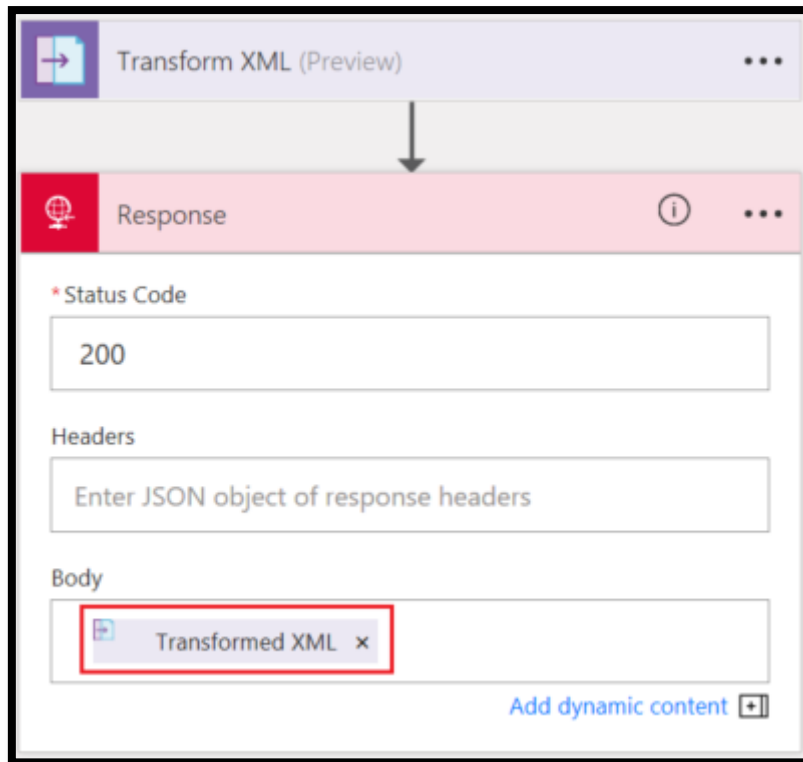
* Select an Integration account. ⓘ

Filter


- DemoIntegrationAccount
- SampleIntegrationAccount



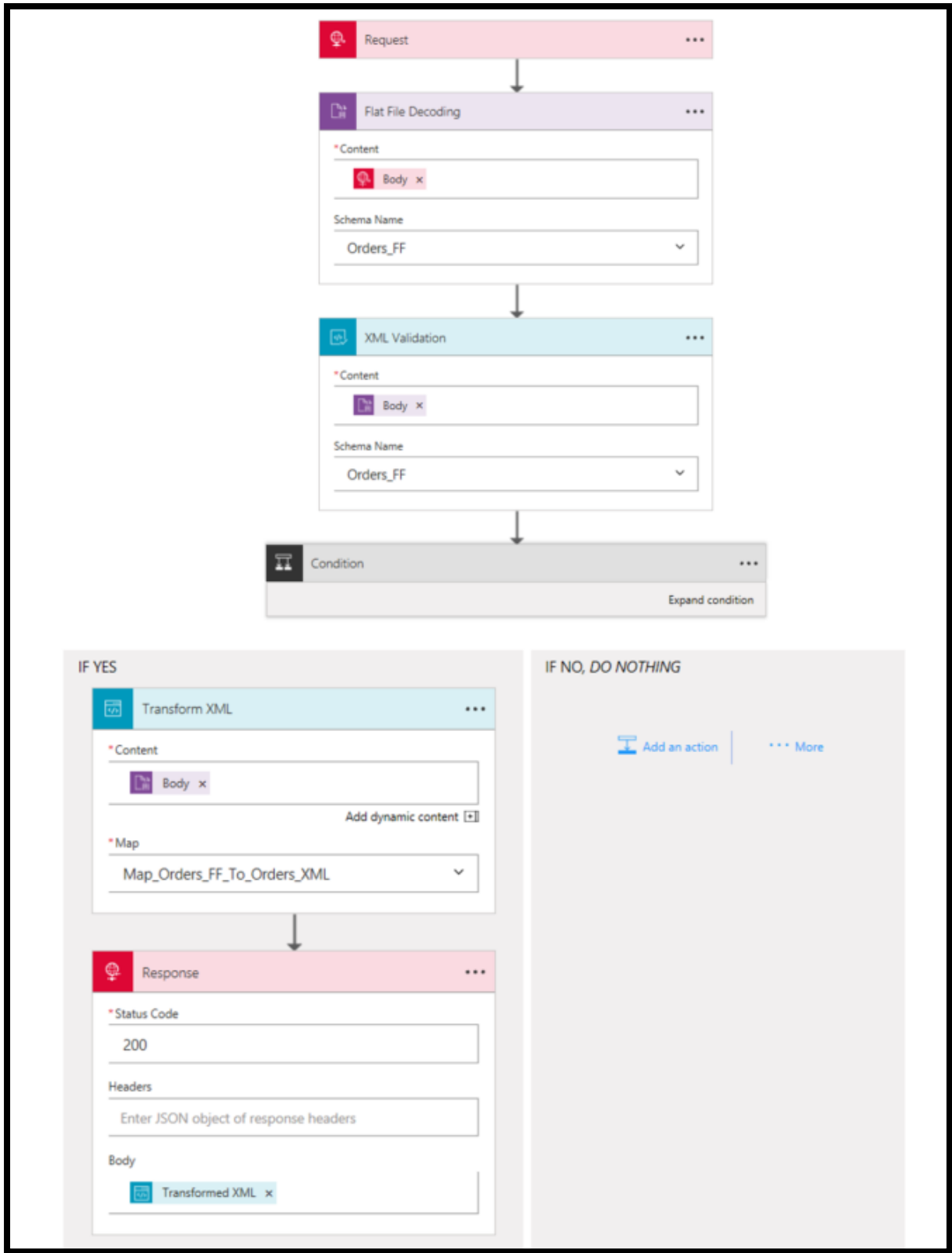




Body Cookies Headers (21) Tests

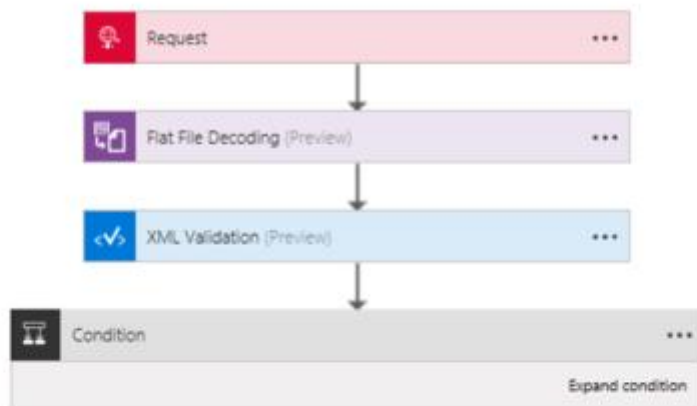
Pretty Raw Preview XML ▾ 

```
1
2 <?xml version="1.0" encoding="utf-8"?>
3 <ns0:Orders xmlns:ns0="http://EAIDemo.Orders_XML">
4   <Order>
5     <OrderNumber>1001</OrderNumber>
6     <ItemName>Pencils HB</ItemName>
7     <TotalAmount>100</TotalAmount>
8   </Order>
9   <Order>
10    <OrderNumber>1002</OrderNumber>
11    <ItemName>Highlighter</ItemName>
12    <TotalAmount>120</TotalAmount>
13  </Order>
14 </ns0:Orders>
```

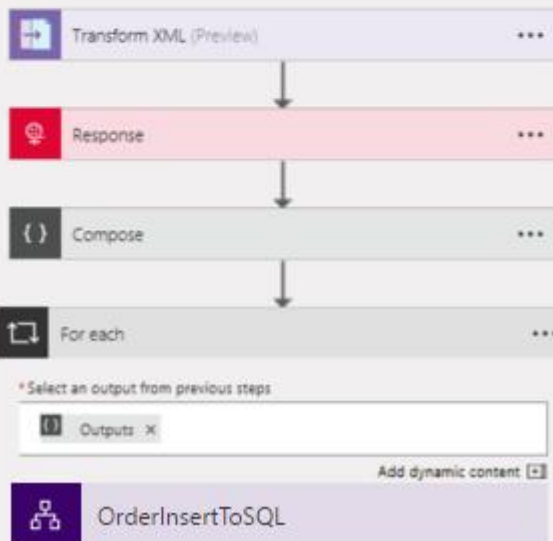


The image shows a workflow editor interface with two main steps:

- Compose Step:** The title bar shows a code icon and the text "Compose". Below it, under the heading "* Inputs", there is a text area containing an XPath expression: `@xpath(xml(body('Transform_XML')),/*[local-name()='Orders' and namespace-uri()='http://EAI Demo.Orders_XML']/*[local-name()='Order' and namespace-uri()=''])`. This text area is highlighted with a red rectangular border.
- For each Step:** The title bar shows a loop icon and the text "For each". Below it, under the heading "* Select an output from previous steps", there is a dropdown menu with "Outputs" selected. To the right of the dropdown is a button labeled "Add dynamic content". Below this is a purple header bar for an action named "OrderInsertToSQL". Underneath, there are two input fields: "Trigger name" with the value "manual" and "Body" with the value "@json(item())". To the right of the "Body" field is another "Add dynamic content" button. At the bottom left of the step is a link "Show advanced options" with a downward arrow.



IF YES



IF NO, DO NOTHING

[Add an action](#) | [More](#)

The screenshot shows a Power Automate workflow. At the top is a 'Request' trigger. Below it is a 'Condition' step with the following configuration:

Object Name	Relationship	Value
TotalAmount	is greater than or equal to	100

Below the condition, there are two paths:

- IF YES:** An 'Insert row' action is configured with:
 - Table name: HighOrder
 - OrderNumber: OrderNumber
 - ItemName: ItemName
 - TotalAmount: TotalAmount
- IF NO, DO NOTHING:** This path is currently empty, with options to 'Add an action' or 'More'.

```
{
  "Order": {
    "OrderNumber": "1001",
    "ItemName": "Pencils HB",
    "TotalAmount": "100"
  }
}
```

dbo.HighOrder [Data] Max Rows: 1000

OrderNumber	ItemName	TotalAmount
1001	Pencils HB	100
1002	Highlighter	120

SampleIntegrationAccount
Integration Account

Search (Ctrl+/)

Overview
Access control (IAM)
Tags

SETTINGS
Callback URL
Schemas
Maps
Certificates
Partners
Agreements
Properties

Upgrade Pricing Tier Delete

Essentials
Resource group (change) **robustIntegration**
Location: Australia East
Subscription ID

Name: SampleIntegrationAccount
Subscription name (change): Visual Studio Ultimate with MSDN

Components

Schemas 1	Maps 0	Certificates 0	Partners 0	Agreements 0
--------------	-----------	-------------------	---------------	-----------------

Partners
SampleIntegrationAccount

+ Add Edit Edit as JSON Delete

NAME	TYPE
There are no partners to display.	

Add Partner

* Name: ContosoCorp ✓

* Qualifier: 1 - D-U-N-S (Dun & Bradstreet) ▼

* Value: ContosoNY ✓

Upgrade Pricing Tier Delete

Essentials
Resource group (change) **robustIntegration**
Location: Australia East
Subscription ID

Name: SampleIntegrationAccount
Subscription name (change): Visual Studio Ultimate with MSDN

Components

Schemas 1	Maps 0	Certificates 0	Partners 1	Agreements 0
--------------	-----------	-------------------	---------------	-----------------

Partners
SampleIntegrationAccount

+ Add Edit Edit as JSON Delete

NAME	TYPE
ContosoCorp	B2B
SunnyElectricalsCorp	B2B

Edit

NAME: SunnyElectricalsCorp

BUSINESS IDENTITIES

QUALIFIER	VALUE
2 - SCAC (Standard Carrier Alpha Code) (X12)	512345 ...
1 - D-U-N-S (Dun & Bradstreet)	...

METADATA

KEY	VALUE
-----	-------

SampleIntegrationAccount
Integration Account

Search (Ctrl+/)

Upgrade Pricing Tier Delete

Essentials ^

Resource group (change)
robustintegration
Location
Australia East
Subscription ID

Name
SampleIntegrationAccount
Subscription name (change)
Visual Studio Ultimate with MSDN

Components

Schemas 1	Maps 0	Certificates 0	Partners 2	Agreements 0
--------------	-----------	-------------------	---------------	-----------------

Add Receive Settings

Name: AS2Agreement ✓

Agreement type: AS2

Host Partner: SunnyElectricalsCorp

Host Identity: AS2Identity : 512345

Guest Partner: ContosoCorp

Guest Identity: AS2Identity : ContosoNY

Receive Settings >

Send Settings >

Override message properties

Message

Message should be signed

Certificate

Message should be encrypted

Certificate

Message should be compressed

Acknowledgement

MDN Text

Enter MDN text

Send MDN

Send signed MDN

MIC Algorithm: SHA1

Send asynchronous MDN

URL: https://sunnyelectrical.com/message ✓

OK OK

Add

- * Name: AS2Agreement ✓
- * Agreement type: AS2
- * Host Partner: SunnyElectricalsCorp
- * Host Identity: AS2Identity : S12345
- * Guest Partner: ContosoCorp
- * Guest Identity: AS2Identity : ContosoNY

Receive Settings >

Send Settings >

OK

Send Settings

Messages

- Enable message signing
- * MIC Algorithm: SHA1
- * Certificate: [Empty]
- Enable message encryption
- * Encryption Algorithm: DES3
- * Certificate: [Empty]
- Enable message compression
- Unfold HTTP headers

Acknowledgement

- Request MDN
- Request signed MDN
- Request asynchronous MDN
- * URL:

NRR Status

- Enable NRR

OK

SampleIntegrationAccount
Integration Account

Search (Ctrl+/)

- Overview
- Access control (IAM)
- Tags

SETTINGS

- Callback URL
- Schemas
- Maps
- Certificates
- Partners
- Agreements

Upgrade Pricing Tier

Delete

Name: SampleIntegrationAccount

Subscription name: Visual Studio Ultimate with MSDN

Essentials

Resource group: robustIntegration

Location: Australia East

Subscription ID: [Empty]

Components

Schemas	Maps	Certificates	Partners
1	0	0	2

Agreements

1

Schemas
SampleIntegrationAccount

+ Add Edit Edit as JSON Download Delete

NAME	TYPE	CONTENT SIZE	CHANGED TIME
There are no schemas to display.			

Add Schema

* Name
EmployeeMetadata ✓

Small file Large file (larger than 2MB)

* Schema
EmployeeMetadata.xsd ✓

EmployeeMetadata.xsd

Schemas
SampleIntegrationAccount

+ Add Edit **Edit as JSON** Download Delete

NAME	TYPE	CONTENT SIZE	CHANGED TIME
EmployeeMetadata	Xml	693 B	3/14/2017, 1:59 PM

Edit as JSON

```

1 {
2   "properties": {
3     "schemaType": "Xml",
4     "targetNamespace": "http://BizTalk_Server_Project6.EmployeeMetadata",
5     "documentName": "Employee",
6     "contentLink": {
7       "uri": "https://flowprodco04sy01.blob.core.windows.net/integrationaccountsdec23f0c12c",
8       "contentVersion": "\0x0d046A755E57300\"",
9       "contentSize": 693,
10      "contentHash": {
11        "algorithm": "md5",
12        "value": "KmEQ5FXZYufpwI+GEPH1tQ=="
13      }
14    },
15    "createdTime": "2017-03-14T00:59:30.1155313Z",
16    "changedTime": "2017-03-14T00:59:30.1167228Z",
17    "metadata": {
18      "Name": "SunnyElectricals",
19      "OrganisationId": "SE0032F32",
20      "UploadURL": "http://sunnyelectricals.com",
21      "fileName": "EmployeeMetadata.xsd"
22    },
23    "contentType": "application/xml"
24  },
25  "id": "/subscriptions/ccc221de-2ef7-4396-98cc-ce3acdac9399/resourceGroups/robustIntegration/pr",
26  "name": "EmployeeMetadata",
27  "type": "Microsoft.Logic/integrationAccounts/schemas"
28 }

```

Request

Choose an action

integration

SERVICES SEE MORE

Integration Account PagerDuty

TRIGGERS (0) ACTIONS (2) SEE MORE

Integration Account - Integration Account Artifact Lookup

PagerDuty - Create incident Preview

TELL US WHAT YOU NEED

Help us decide which services and triggers to add next with UserVoice

Cancel

Request

Integration Account Artifact Lookup

*Artifact Type
Schema

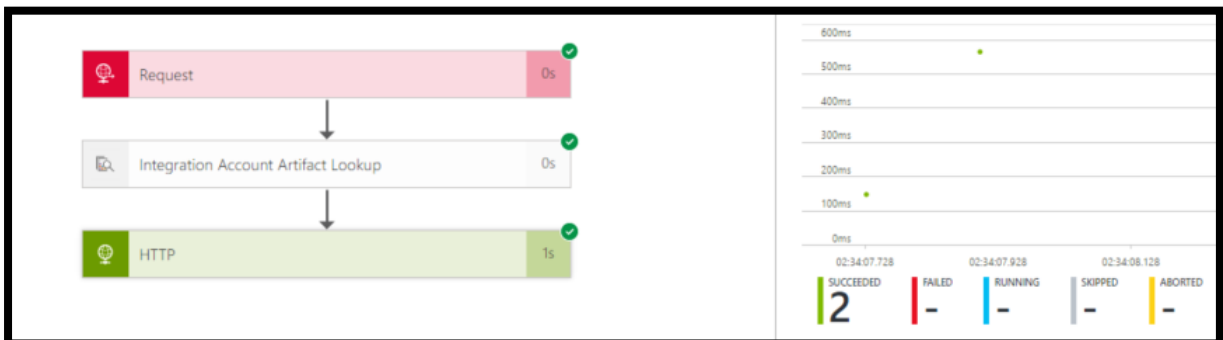
*Artifact Name
Include a Artifact Name.
Name of the artifact to be fetched.

Add dynamic content

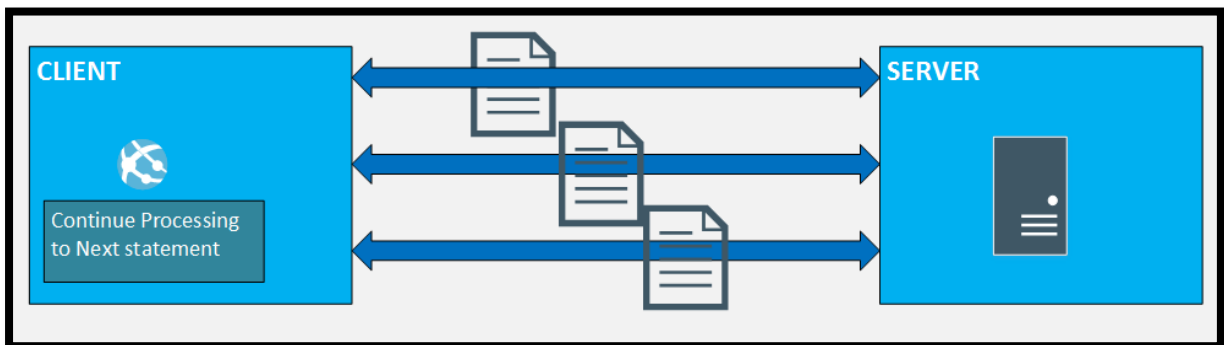
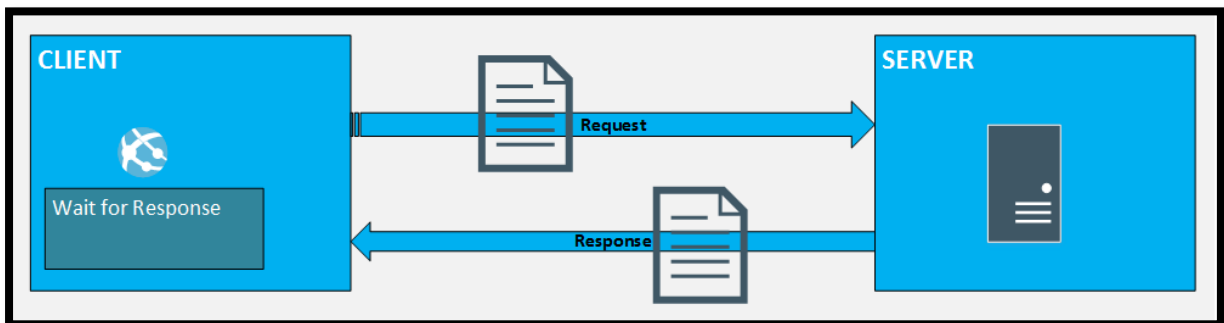
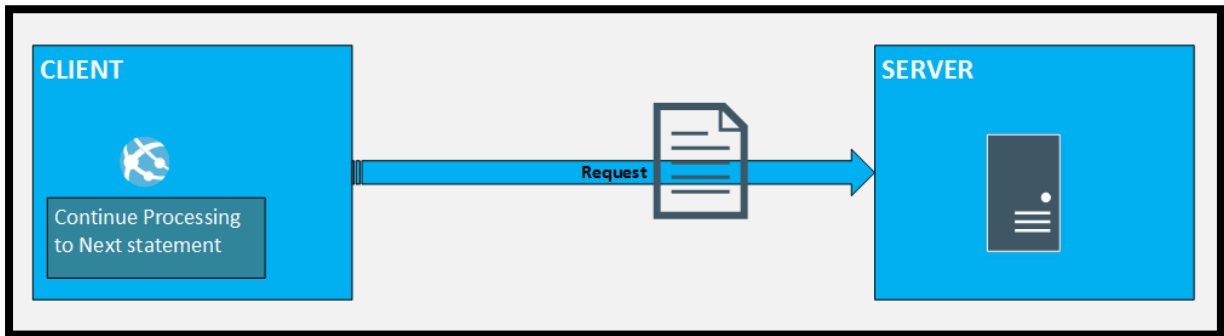
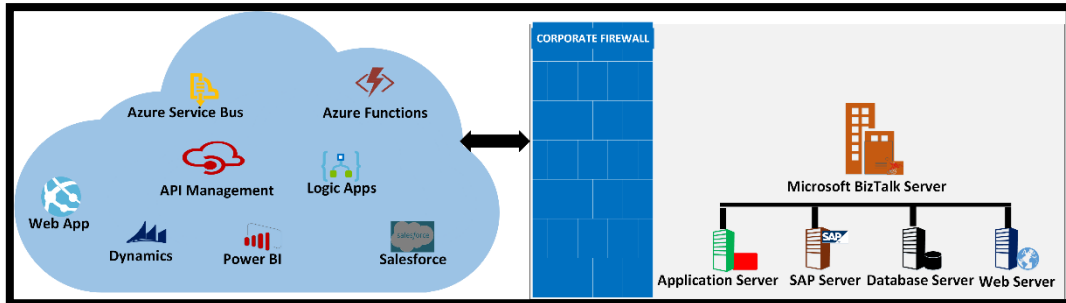
```

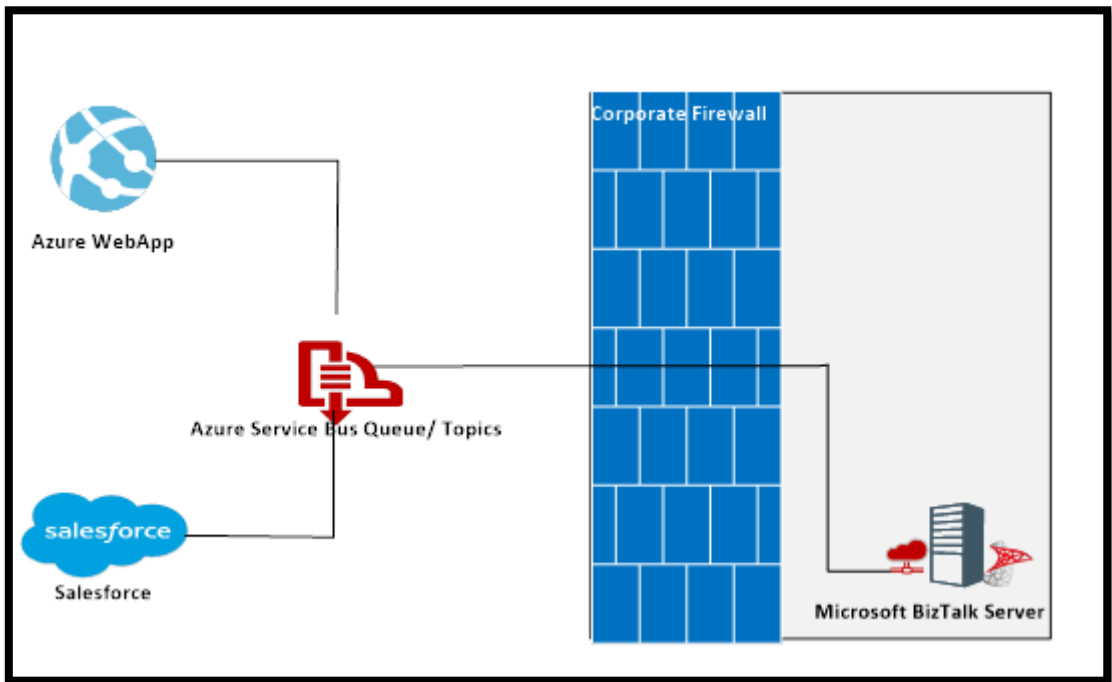
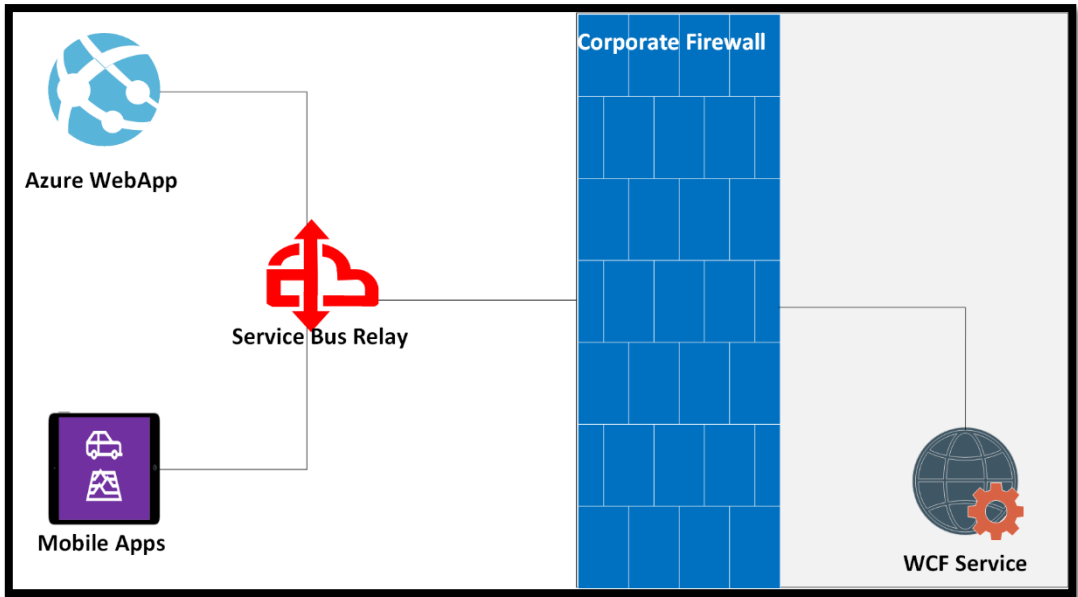
{
  "definition": {
    "$schema": "https://schema.management.azure.com/providers/Microsoft.Logic/schemas/2016-06-01/workflowdefinition.json#",
    "actions": {
      "HTTP": {
        "inputs": {
          "body": "@{outputs('Integration_Account_Artifact_Lookup')['properties']['metadata']['UploadURL']}",
          "method": "POST",
          "uri": "http://requestb.in/1eobw0f1"
        },
        "runAfter": {
          "Integration_Account_Artifact_Lookup": [
            "Succeeded"
          ]
        },
        "type": "Http"
      },
      "Integration_Account_Artifact_Lookup": {
        "inputs": {
          "artifactName": "EmployeeMetadata",
          "artifactType": "Schema"
        },
        "runAfter": {},
        "type": "IntegrationAccountArtifactLookup"
      }
    },
    "contentVersion": "1.0.0.0",
    "outputs": {},
    "parameters": {},
    "triggers": {
      "manual": {
        "inputs": {
          "schema": {}
        },
        "kind": "Http",
        "type": "Request"
      }
    }
  }
}

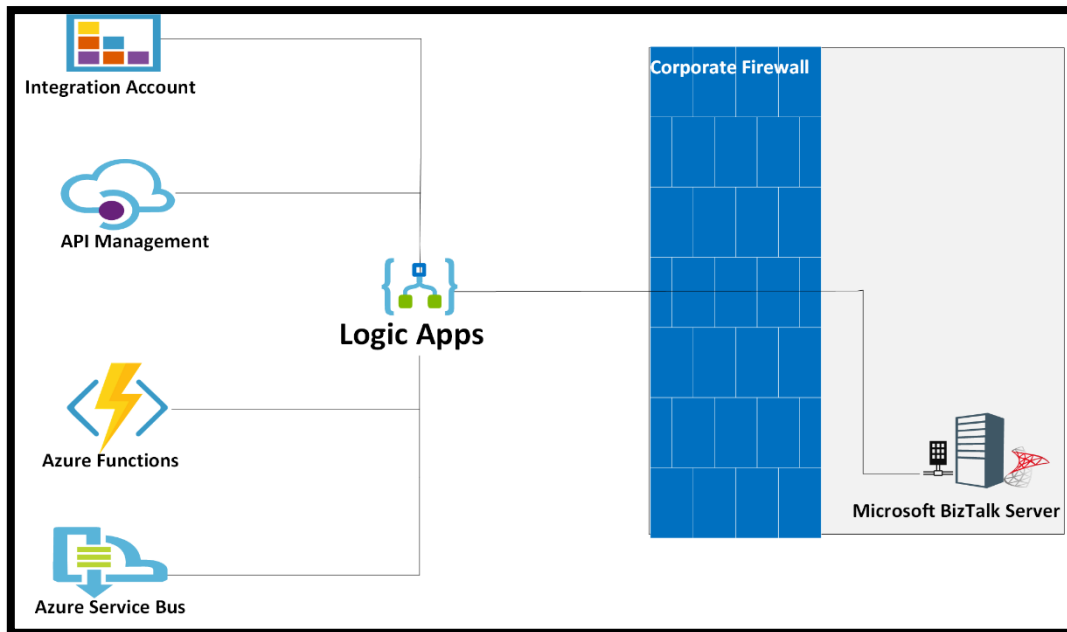
```



Chapter 13: Hybrid Integration Using BizTalk Server 2016 and Logic Apps







Start

Prepare

[Read the installation guide](#)


Install

Install Microsoft BizTalk Server 2016.

Install Microsoft BizTalk Adapters.

Install Microsoft BizTalk ESB Toolkit.

Important: Please make sure you have the latest CAB files by referring to the installation guide if using pre-downloaded files.



Start

Prepare

Read the WCF LOB Adapter SDK installation guide.

Read the BizTalk Adapter Pack installation guide.

Install

Step 1: Install Microsoft WCF LOB Adapter SDK.



Microsoft WCF LOB Adapter SDK is installed with all the required components.

Step 2: Install Microsoft BizTalk Adapter Pack.



Microsoft BizTalk Adapter Pack needs to be installed.

Step 3: Install Microsoft BizTalk Adapter Pack(x64).



Microsoft BizTalk Adapter Pack(x64) needs to be installed.

Step 4: Install Microsoft BizTalk Adapters for Enterprise Applications.



Microsoft BizTalk Adapters for Enterprise Applications needs to be installed.

Start

Prepare

Read the WCF LOB Adapter SDK installation guide.

Read the BizTalk Adapter Pack installation guide.

Install

Step 1: Install Microsoft WCF LOB Adapter SDK.



Microsoft WCF LOB Adapter SDK is installed with all the required components.

Step 2: Install Microsoft BizTalk Adapter Pack.



Microsoft BizTalk Adapter Pack needs to be installed.

Step 3: Install Microsoft BizTalk Adapter Pack(x64).



Microsoft BizTalk Adapter Pack(x64) needs to be installed.

Step 4: Install Microsoft BizTalk Adapters for Enterprise Applications.



Microsoft BizTalk Adapters for Enterprise Applications needs to be installed.

Start

Prepare

Read the WCF LOB Adapter SDK installation guide.

Read the BizTalk Adapter Pack installation guide.

Install

Step 1: Install Microsoft WCF LOB Adapter SDK.

✔ *Microsoft WCF LOB Adapter SDK is installed with all the required components.*

Step 2: Install Microsoft BizTalk Adapter Pack.

✔ *Microsoft BizTalk Adapter Pack is installed. You may run the setup again to change or repair the installed adapters.*

Step 3: Install Microsoft BizTalk Adapter Pack(x64).

✘ *Microsoft BizTalk Adapter Pack(x64) needs to be installed.*

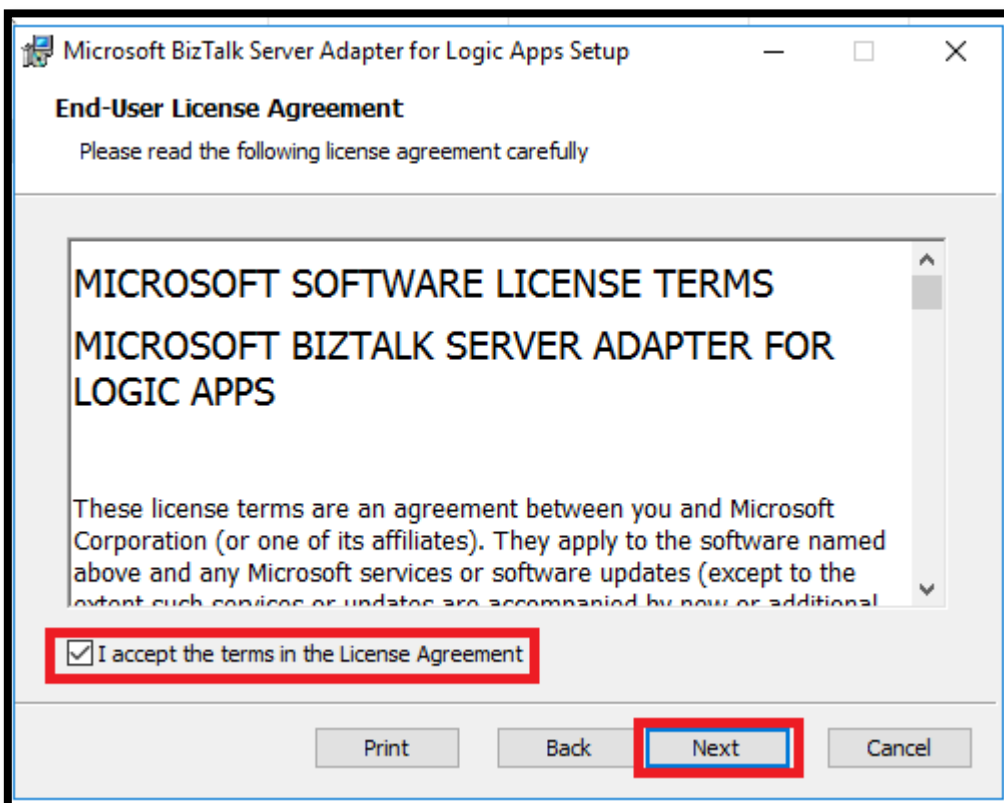
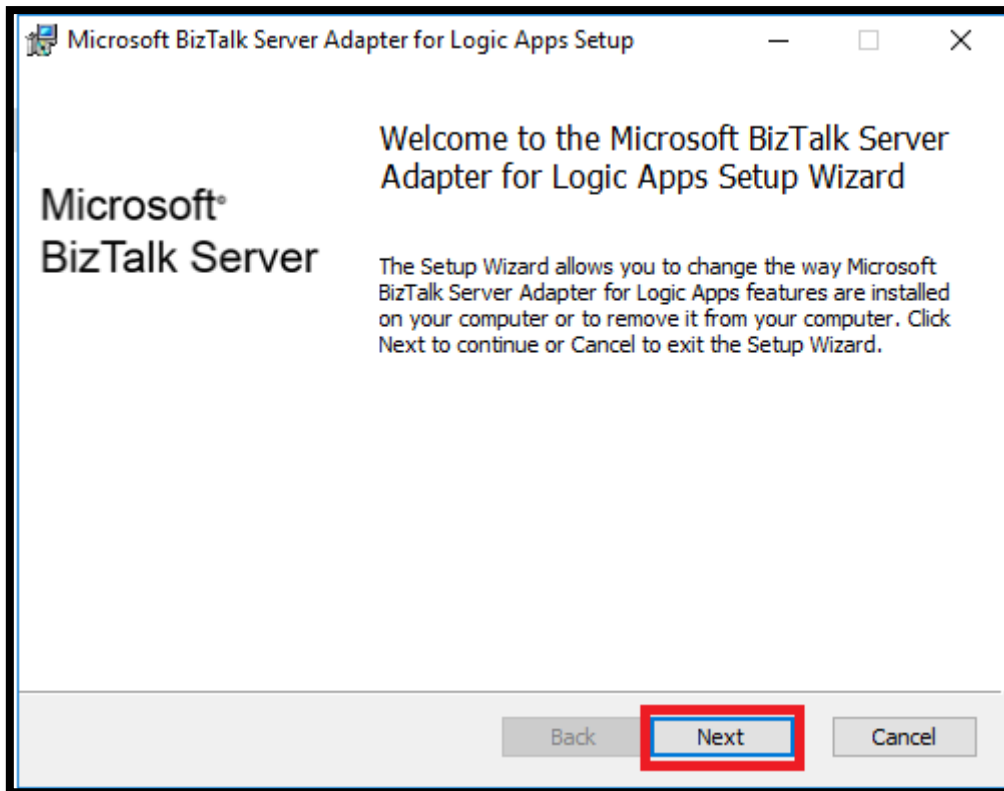
Step 4: Install Microsoft BizTalk Adapters for Enterprise Applications.

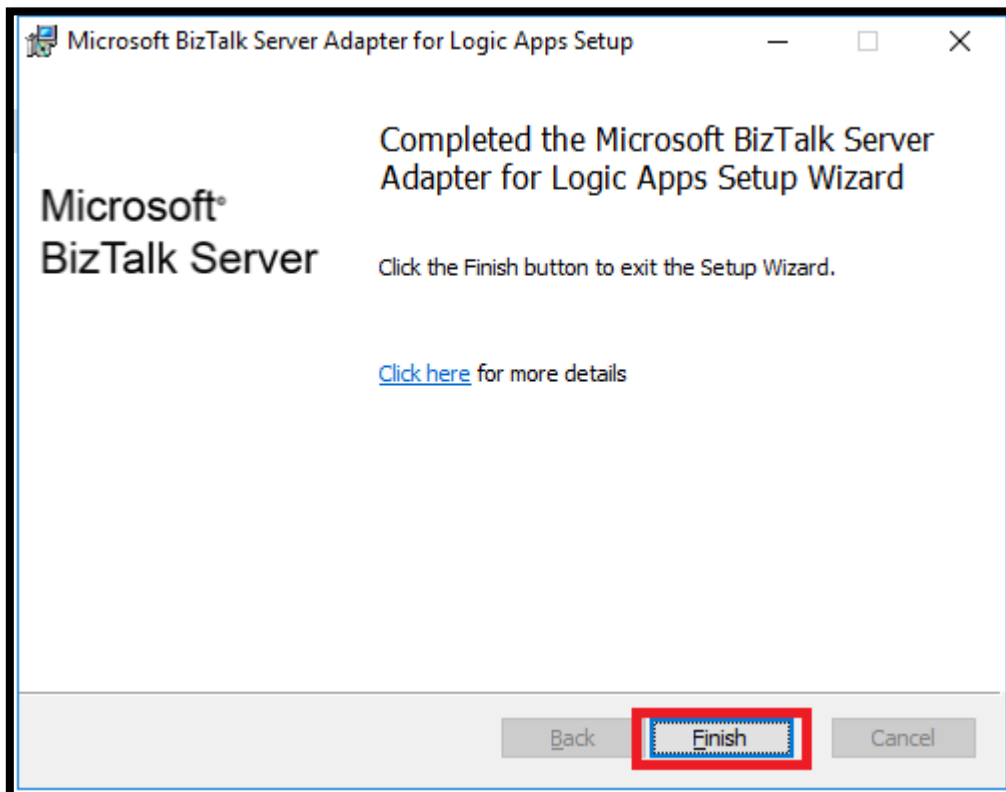
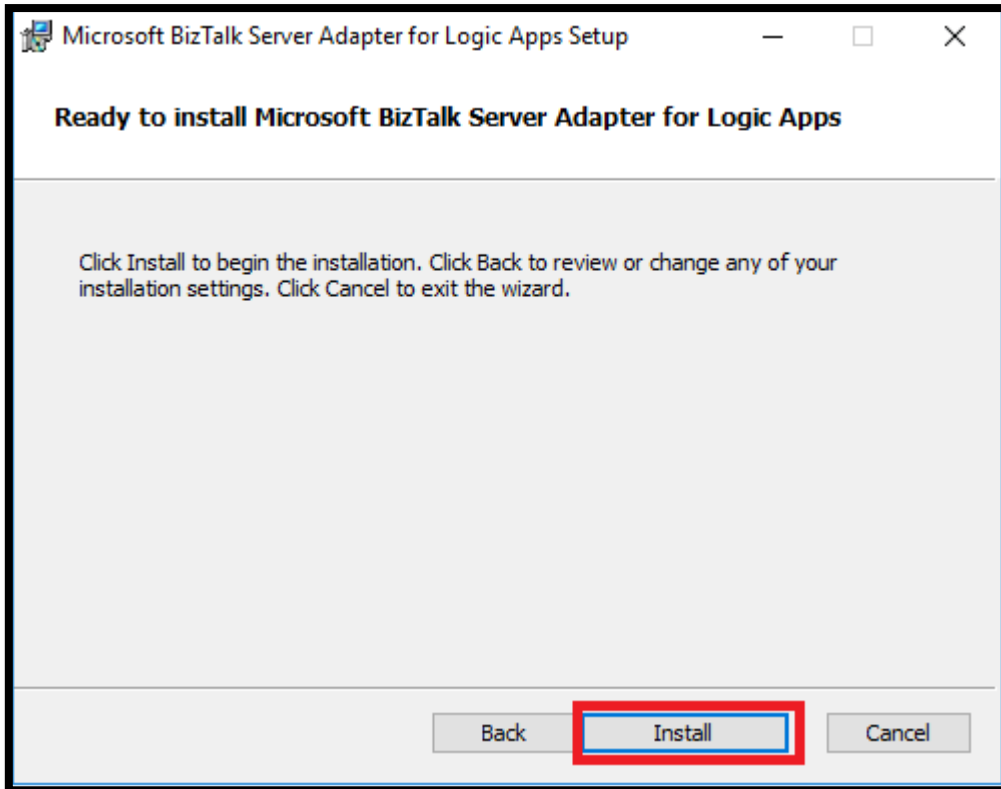
✘ *Microsoft BizTalk Adapters for Enterprise Applications needs to be installed.*

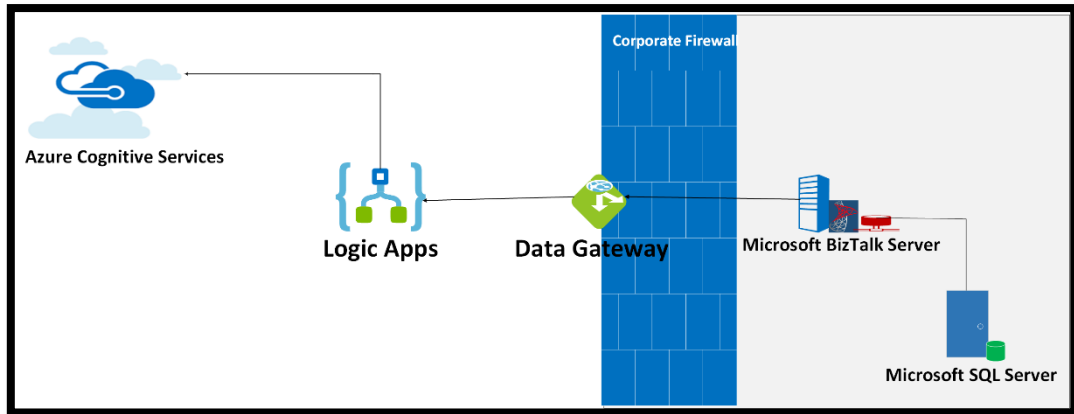
Microsoft BizTalk Server Adapter for Logic Apps

Language: English

[Download](#)



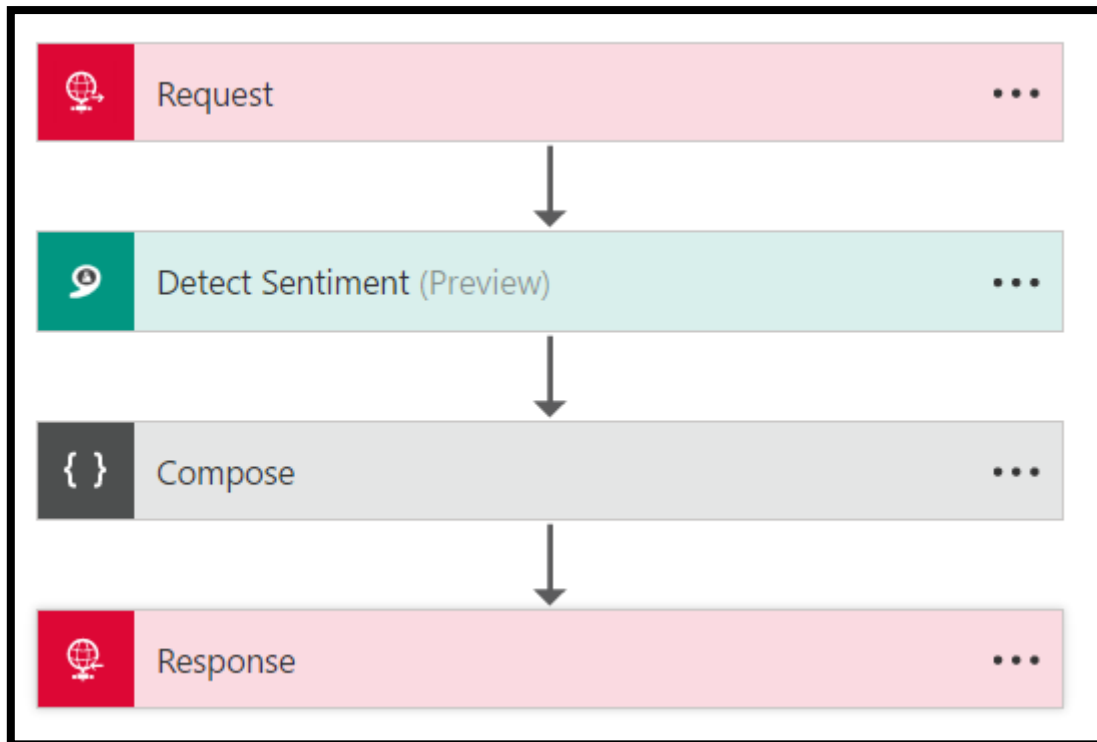




Create

Cognitive Services account - PREVIEW

- * Account name
CognitiveServices ✓
- * Subscription
Visual Studio Ultimate with MSDN ▼
- * API type
Text Analytics API (preview) >
- * Location
West US ▼
- * Pricing tier
Configure required settings >



```

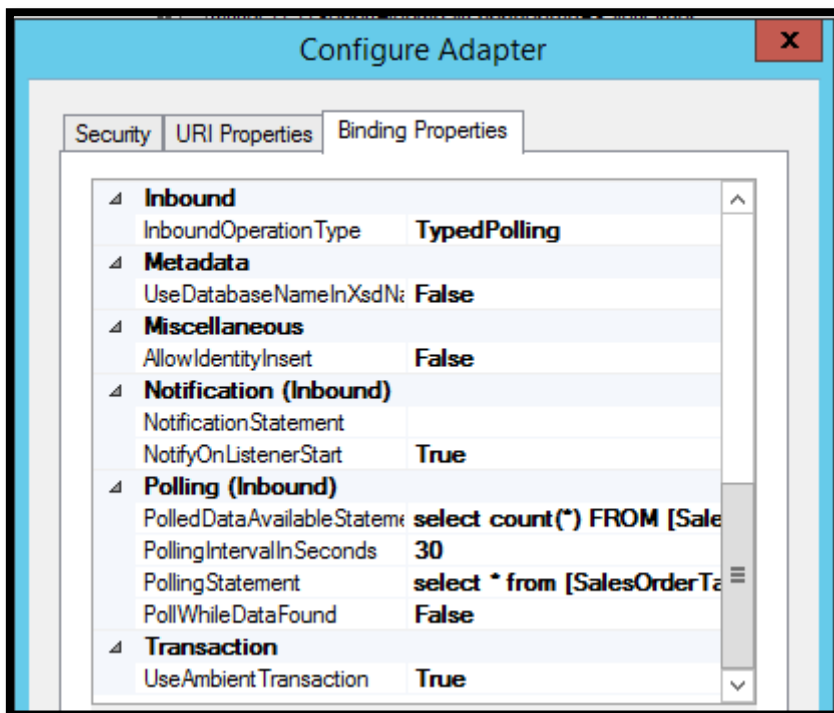
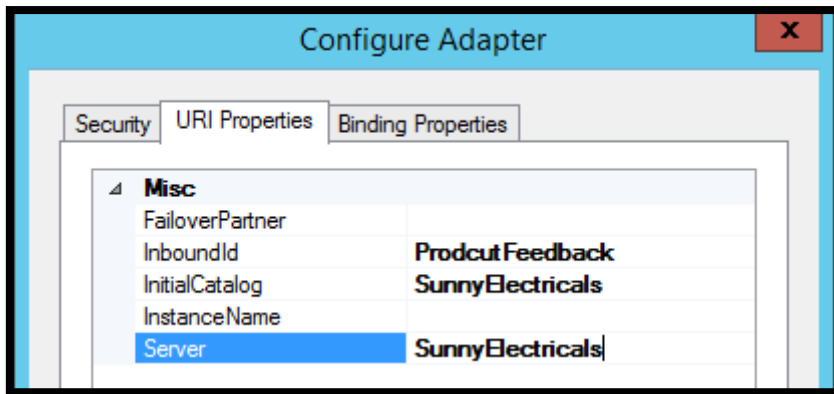
CREATE TABLE [dbo].[SalesOrderTable](
  → [SalesId] [int] IDENTITY(1,1) NOT NULL,
  → [CustomerId] [int] NOT NULL,
  → [Transationdate] [datetime] NULL,
  → [ProductName] [varchar](50) NULL,
  → [IsProcessed] [int] NULL,
  → [ProductScore] [varchar](50) NULL,
  → [CustomerProdcutFeedback] [varchar](max) NULL
) ON [PRIMARY] TEXTIMAGE_ON [PRIMARY]
  
```

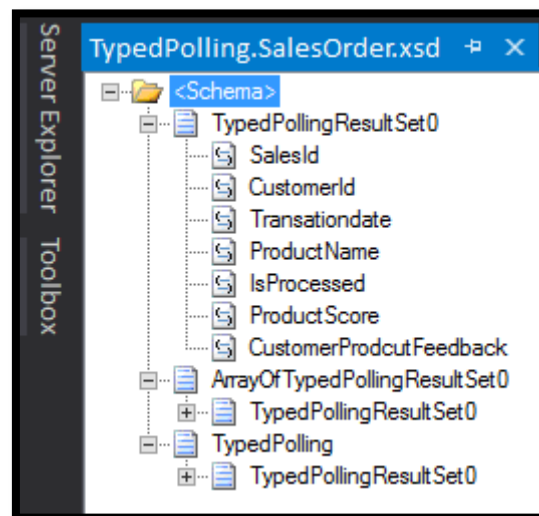
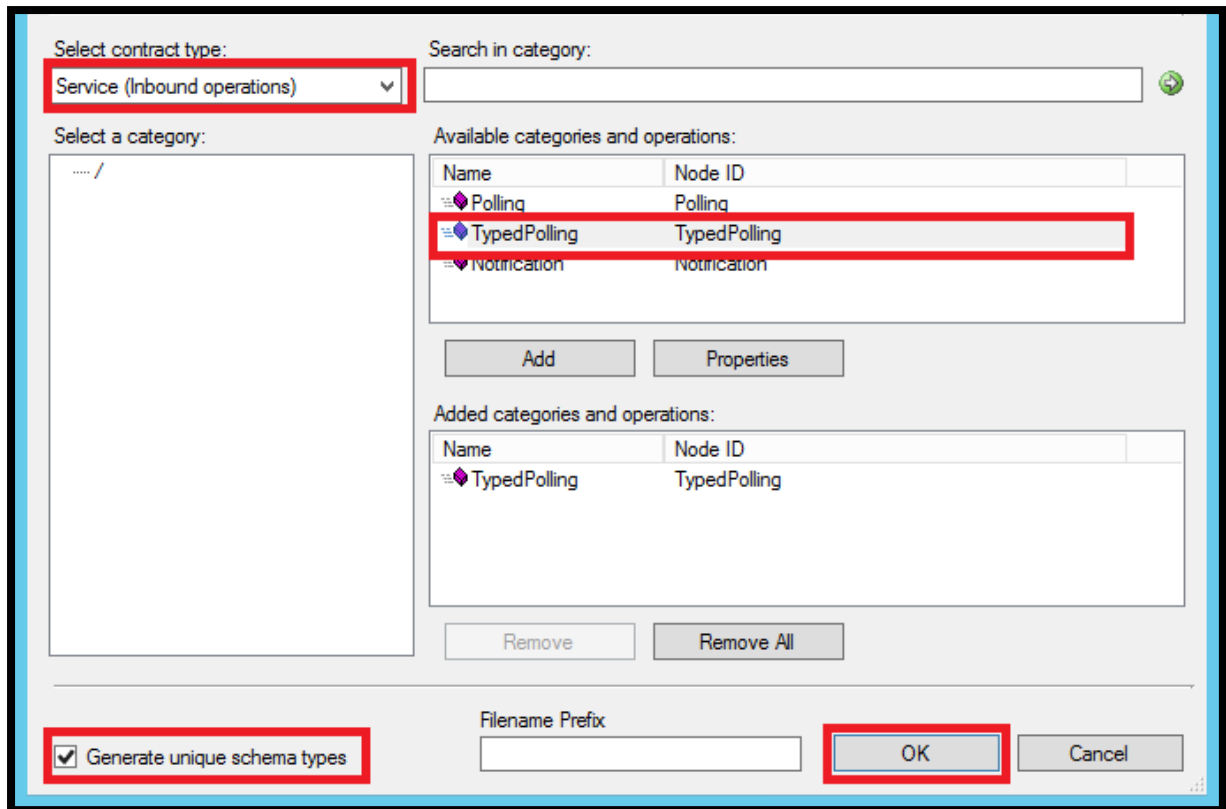
Installed

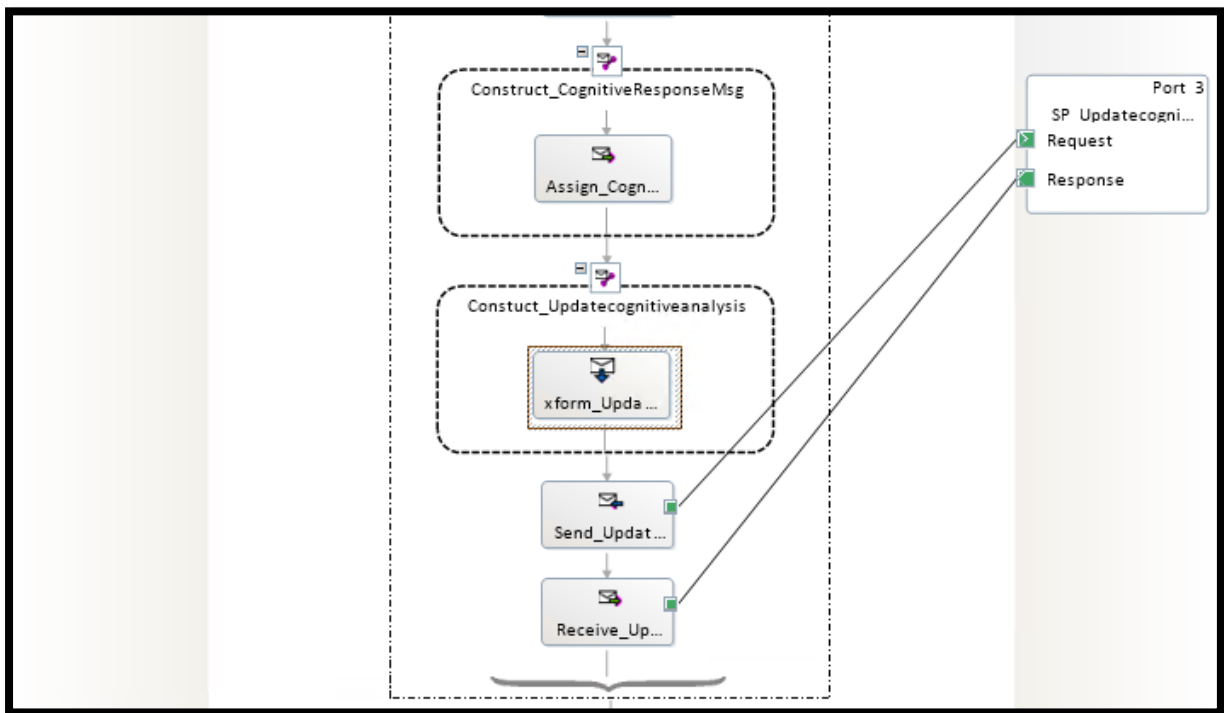
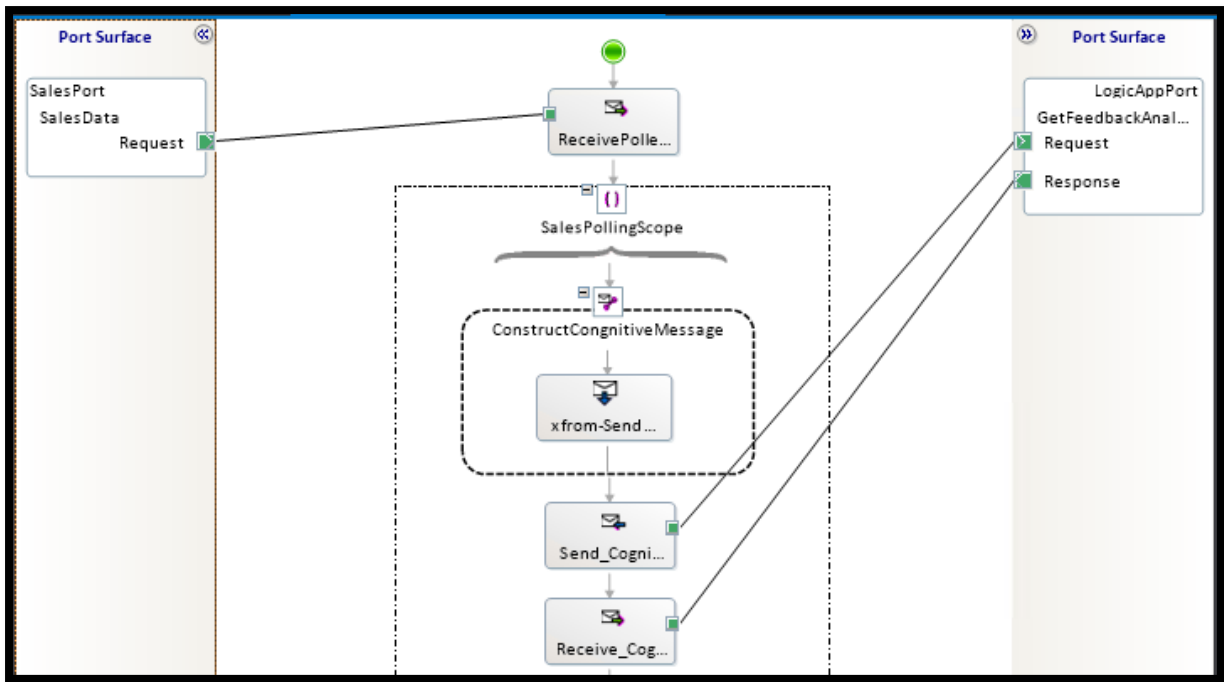
Sort by: Default

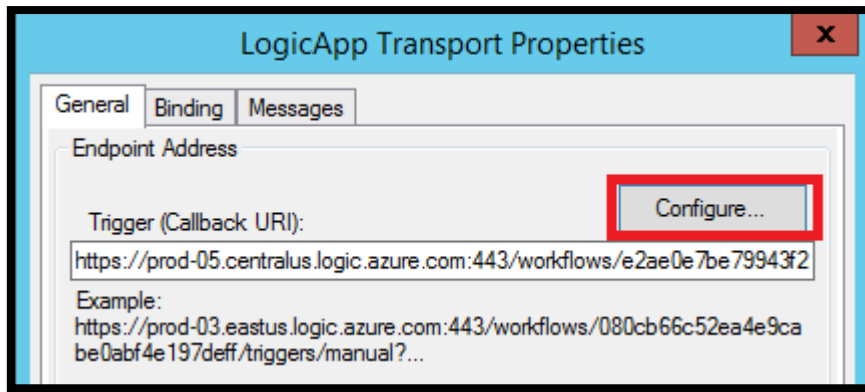
- Generated Schema Files
 - Add Adapter Metadata
 - Generate Schemas
 - Consume WCF Service
 - Consume Adapter Service**

Consume Adapter Service Generated Schema File





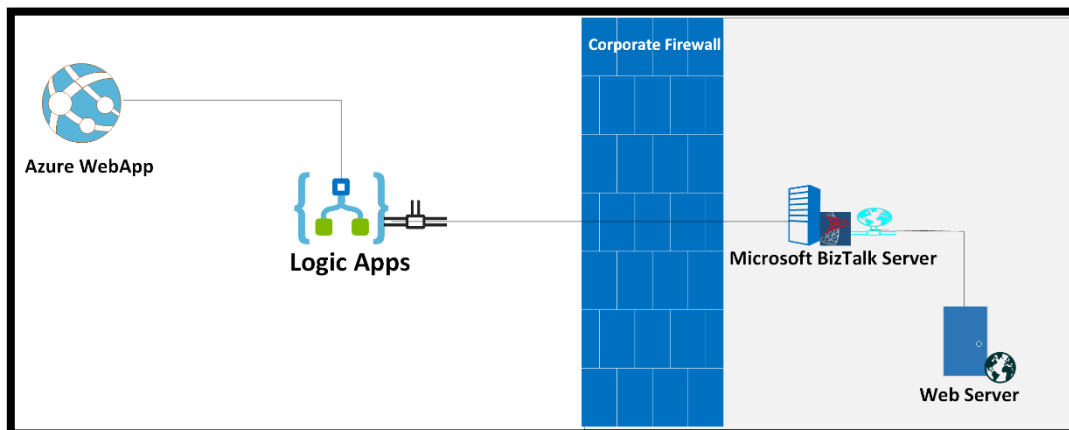


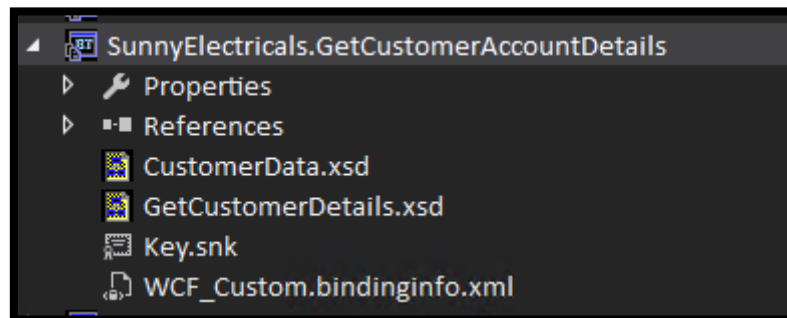
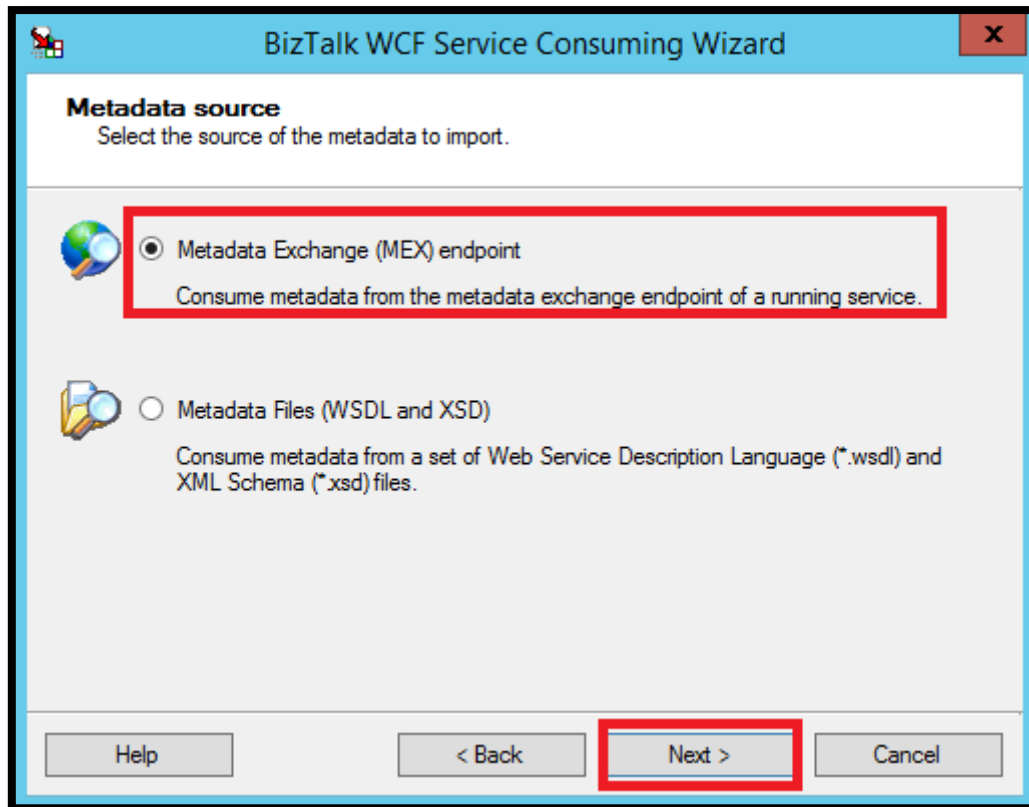


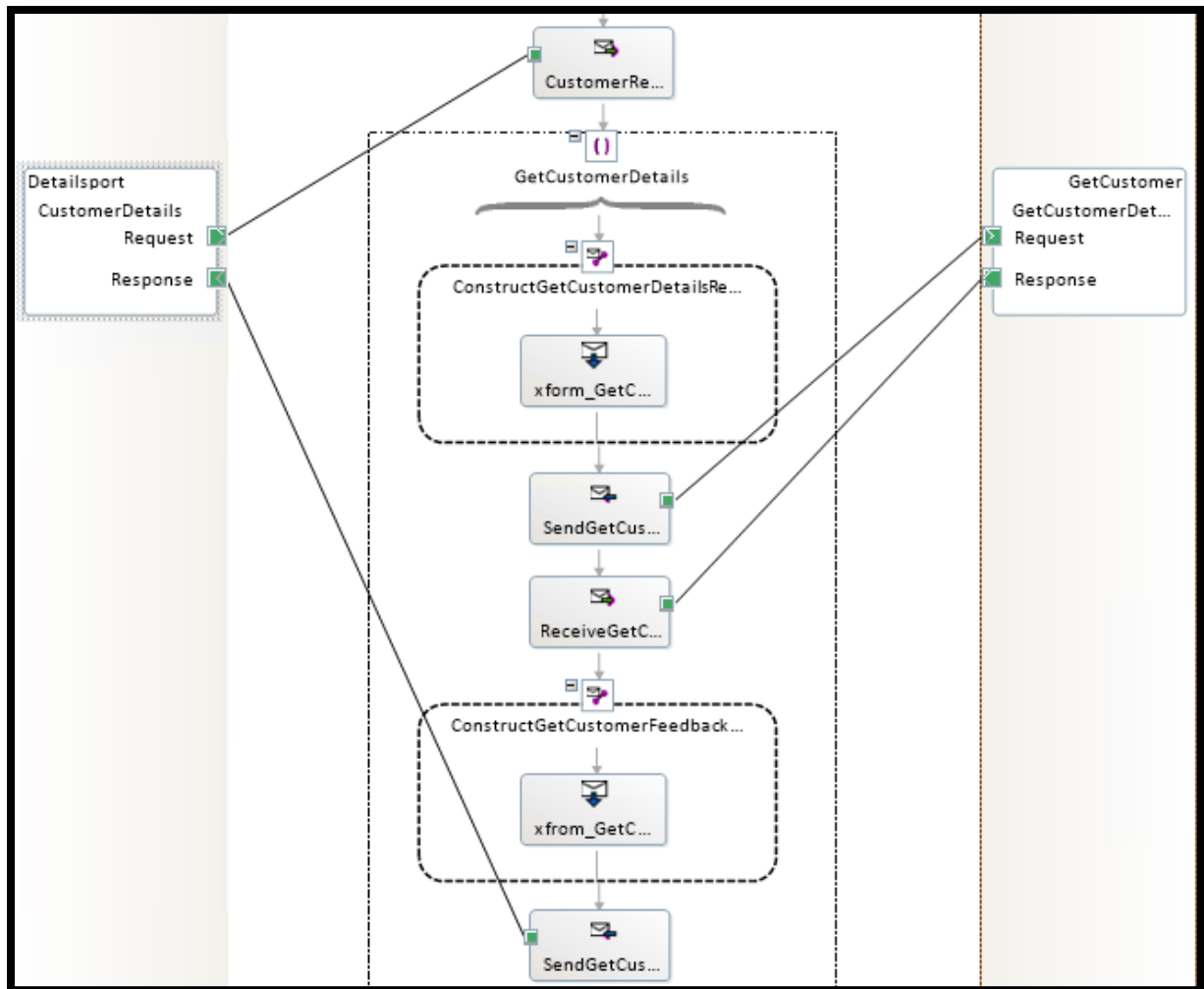
ACTION	STATUS	DURATION
Compose	Succeeded	29 Milliseconds
Detect_Sentiment	Succeeded	505 Milliseconds
<input checked="" type="checkbox"/> Response	Succeeded	46 Milliseconds

Summary: 3 SUCCEEDED, 0 FAILED, 0 RUNNING, 0 SKIPPED, 0 ABORTED

SalesId	CustomerId	Transationdate	ProductName	IsProcessed	ProductScore	CustomerProd...
1	1	2015-12-11 00:0...	FAN	1	0.9661295	Prodcut is good
2	2	2016-09-11 00:0...	FAN	1	0.9937462	Awsome. but it ...
3	1	2016-08-05 00:0...	AIRCONDITION	1	0.2740484	not good







LogicApp Transport Properties

General | Binding | Security | Messages

Endpoint Address

Address (URI):

Specify the path of the IIS virtual directory, including .svc file, where the WCF service for this receive location is hosted

Example:
 • /BizTalkWcfService/Service1.svc

Public Address:

Specify the fully qualified URI for this receive location that you will use to configure your LogicApp

Example:
 • http://<myservename>/BizTalkWcfService/Service1.svc

Service

localhost/GetCustomerDetails/Service1.svc

Service

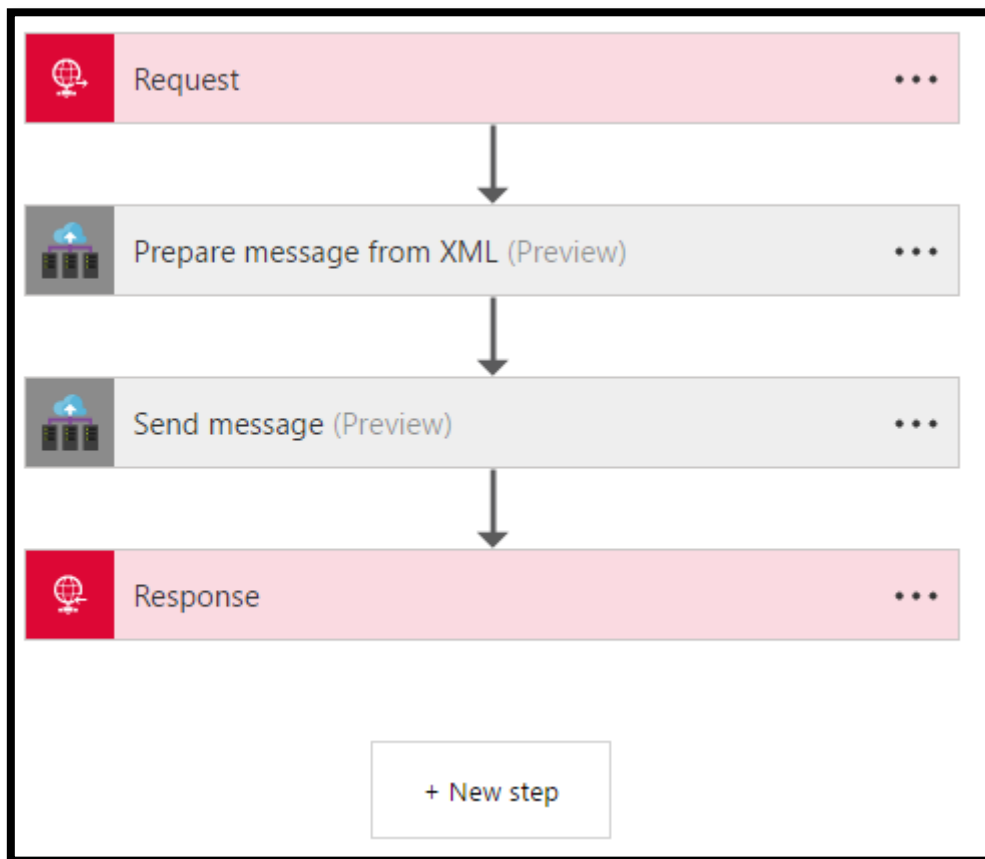
This is a Windows® Communication Foundation service.

Metadata publishing for this service is currently disabled.

If you have access to the service, you can enable metadata publishing by completing the following steps to modify your web or application configuration file:

1. Create the following service behavior configuration, or add the <serviceMetadata> element to an existing service behavior configuration:

```
<behaviors>
  <serviceBehaviors>
    <behavior name="MyServiceTypeBehaviors" >
      <serviceMetadata httpGetEnabled="true" />
    </behavior>
  </serviceBehaviors>
</behaviors>
```



Microsoft Azure Logic Apps > test1 > Logic app run > Logic app run

10536888

Resubmit Cancel Run

Logic app run
08587173044513775851680536888

Cancel

2.5s
2s
1.5s
1s
0.5s
0s

10:13:52 10:13:53 10:13:54 10:13:55 10:13:56 10:13:57

3 SUCCEEDED FAILED RUNNING SKIPPED ABORTED

ACTION	STATUS	DURATION
Prepare_message_from_XML	Succeeded	225 Milliseconds
Response	Succeeded	12 Milliseconds
Send_message	Succeeded	2.2 Seconds

POST https://prod-06.northcentralus.logic.azure.com:443/workflows/f62095f75d2b46bab70a3c998d2f75fd/triggers/m Params Send

Authorization Headers (1) Body Pre-request Script Tests

form-data x-www-form-urlencoded raw binary XML(application/xml)

```

1 <ns0:Customer xmlns:ns0="http://HybridIntegration2.GetCustomerRequest">
2   <CustomerId>SE001</CustomerId>
3 </ns0:Customer>

```

Body Cookies Headers (23) Tests Status: 200 OK

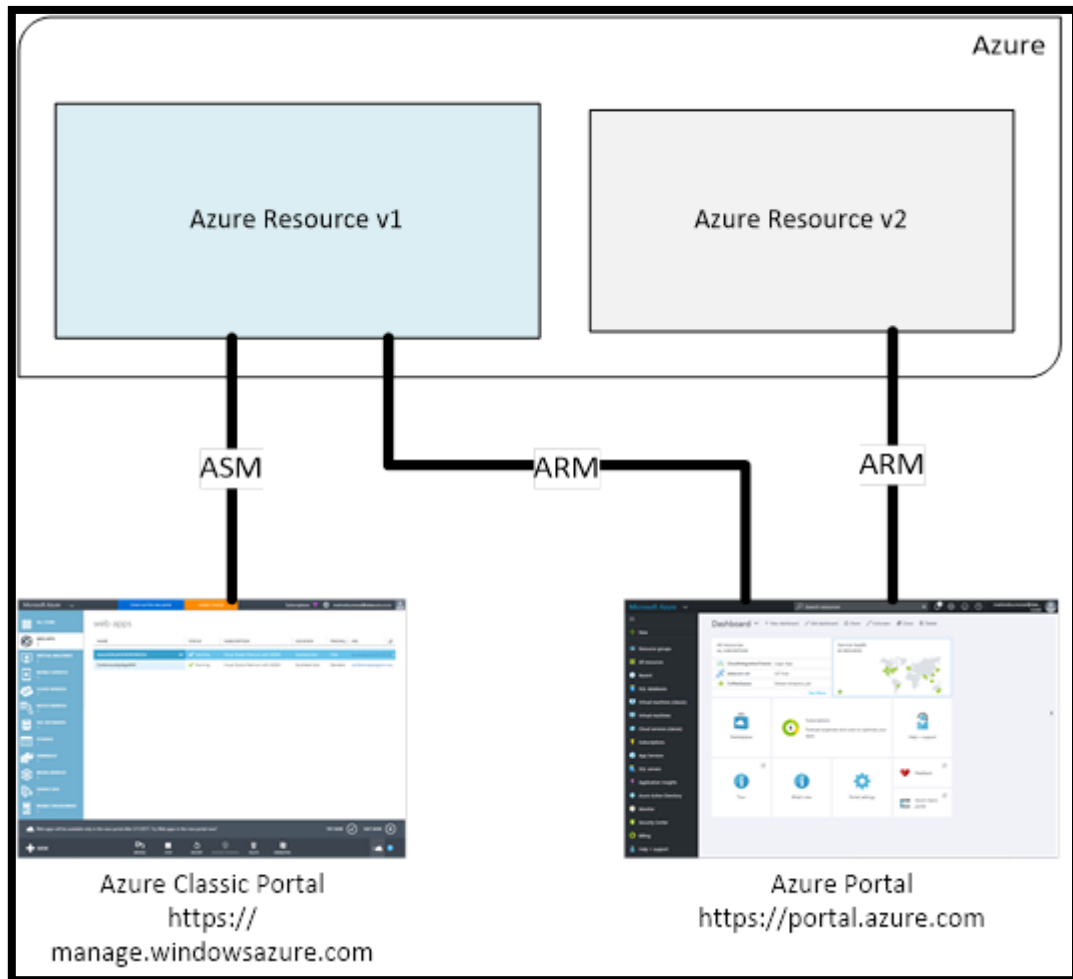
Pretty Raw Preview XML

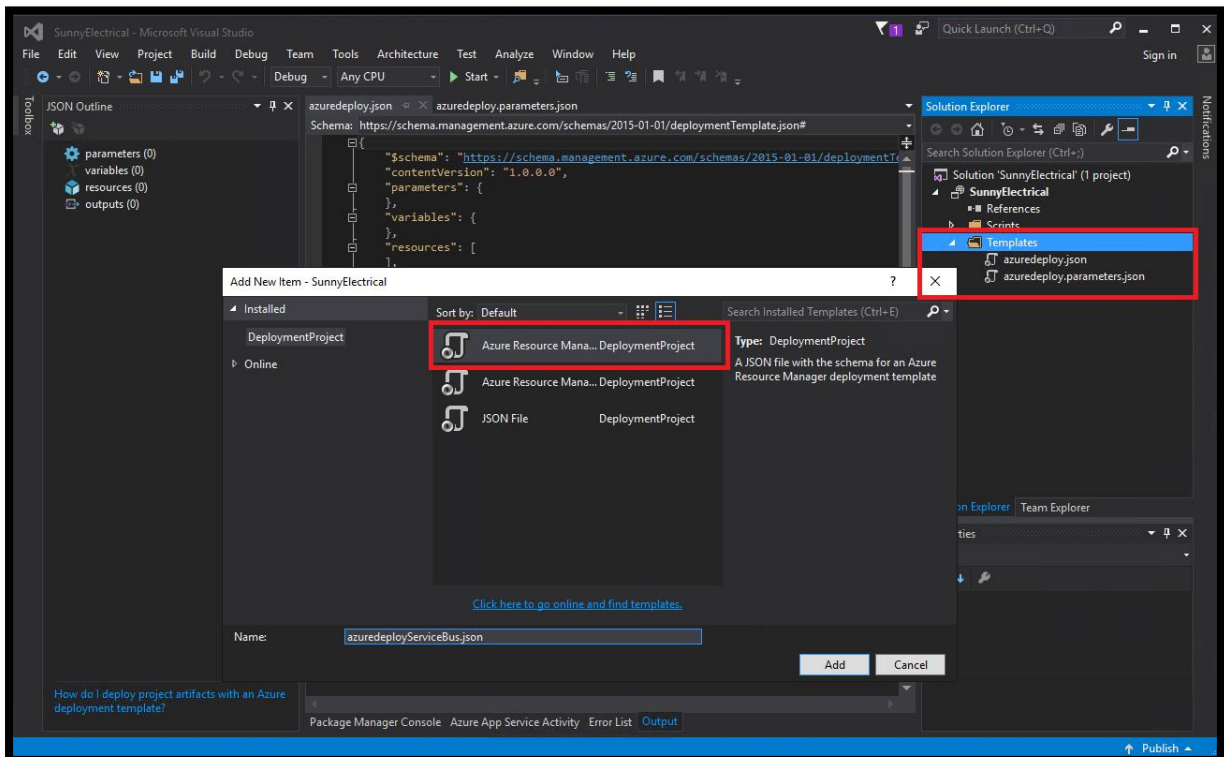
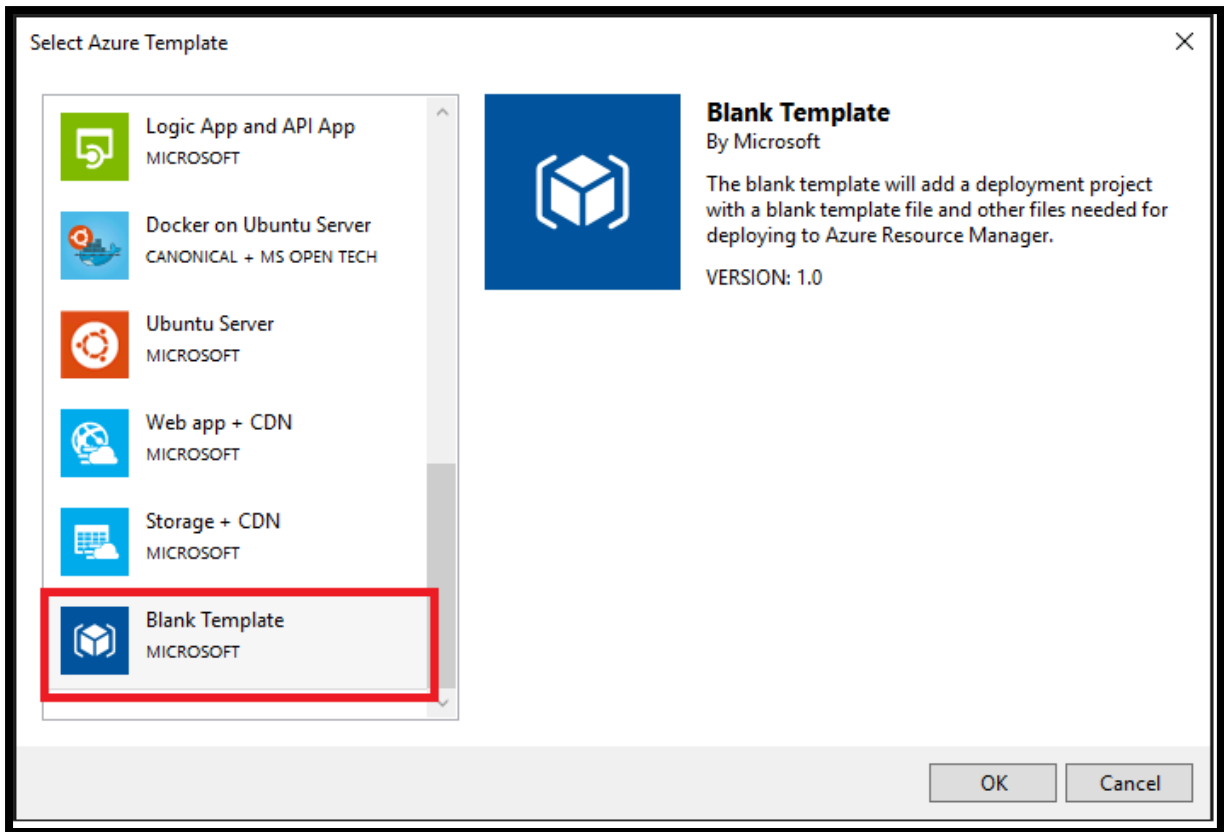
```

1 <ns0:CustomerResponse xmlns:ns0="http://HybridIntegration2.GetCustomerResponse" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
2   <CustomerFName>Abhishek</CustomerFName>
3   <CustomerLName>Kumar</CustomerLName>
4   <MobileNo>89433345</MobileNo>
5   <Country>NZ</Country>
6 </ns0:CustomerResponse>

```

Chapter 14: Tooling and Monitoring for Logic Apps





Deploy to Resource Group

Microsoft account

Subscription:
Visual Studio Premium with MSDN

Resource group:
SunnyElectrical (Australia East)

Deployment template:
azuredeploy.servicebus.json

Template parameters file:
azuredeploy.parameters.json [Edit Parameters...](#)

Artifact storage account: ⓘ

[How do I deploy project artifacts with an Azure deployment template?](#)

Deploy Cancel

Edit Parameters

The following parameter values will be used for this deployment:

Parameter Name	Value
serviceBusNamespace	SunnyElectricalSB
serviceBusSku	Standard
serviceBusTopic	WebTransactions
serviceBusSubscription	Orders
serviceBusRule	PurchaseOrders
serviceBusApiVersion	2015-08-01

Save Cancel

```

Output
Show output from: SunnyElectrical
11:32:14 - VERBOSE: 11:32:14 AM - Resource Microsoft.ServiceBus/namespaces/authorizationRules
11:32:14 - 'SunnyElectricalSB/RootManageSharedAccessKey' provisioning status is succeeded
11:32:25 -
11:32:25 - DeploymentName      : azuredeploy-servicebus-1112-2230
11:32:25 - CorrelationId       : b2fbee10-a26d-4a80-be5a-895a26735d3b
11:32:25 - ResourceGroupName   : SunnyElectrical
11:32:25 - ProvisioningState   : Succeeded
11:32:25 - Timestamp           : 12/11/2016 10:32:33 PM
11:32:25 - Mode                : Incremental
11:32:25 - TemplateLink        :
11:32:25 - TemplateLinkString  :
11:32:25 - DeploymentDebugLogLevel :
11:32:25 - Parameters          : {[serviceBusNamespace, Microsoft.Azure.Commands.Resources.Models.DeploymentVariable],
11:32:25 -                    [serviceBusSku, Microsoft.Azure.Commands.Resources.Models.DeploymentVariable],
11:32:25 -                    [serviceBusTopic, Microsoft.Azure.Commands.Resources.Models.DeploymentVariable],
11:32:25 -                    [serviceBusSubscription, Microsoft.Azure.Commands.Resources.Models.DeploymentVariable]...}
11:32:25 - ParametersString    :
11:32:25 -                    Name      Type      Value
11:32:25 -                    -----
11:32:25 -                    serviceBusNamespace String    SunnyElectricalSB
11:32:25 -                    serviceBusSku String    Standard
11:32:25 -                    serviceBusTopic String    WebTransactions
11:32:25 -                    serviceBusSubscription String    Orders
11:32:25 -                    serviceBusRule String    PurchaseOrders
11:32:25 -                    serviceBusApiVersion String    2015-08-01
11:32:25 - Outputs             : {[namespaceDefaultConnectionString,
11:32:25 -                    Microsoft.Azure.Commands.Resources.Models.DeploymentVariable],
11:32:25 -                    [defaultSharedAccessPolicyPrimaryKey,
11:32:25 -                    Microsoft.Azure.Commands.Resources.Models.DeploymentVariable]}
11:32:25 - OutputsString       :
11:32:25 -                    Name      Type      Value
11:32:25 -                    -----
11:32:25 -                    namespaceDefaultConnectionString String    Endpoint=sb://sunnyelectricalsb.
11:32:25 -                    servicebus.windows.net/;SharedAccessKeyName=RootManageSharedAccessKey;SharedAccessKey=rPbQbdQ
11:32:25 -                    8t8yV0fjYLaIoxcIFLDnoTq6Wnz+bUbwqG70=
11:32:25 -                    defaultSharedAccessPolicyPrimaryKey String
11:32:25 -                    rPbQbdQ8t8yV0fjYLaIoxcIFLDnoTq6Wnz+bUbwqG70=
11:32:25 -

```

```

Windows PowerShell
PS C:\> New-AzureRmResourceGroupDeployment -Name azureservicebus-2016-11-13 -ResourceGroupName SunnyElectrical -Template
File 'e:\@projects\sunnyelectrical\sunnyelectrical\templates\azuredeploy-servicebus.json' -TemplateParameterFile 'e:\@pro
jects\sunnyelectrical\sunnyelectrical\templates\azuredeploy.parameters.json'

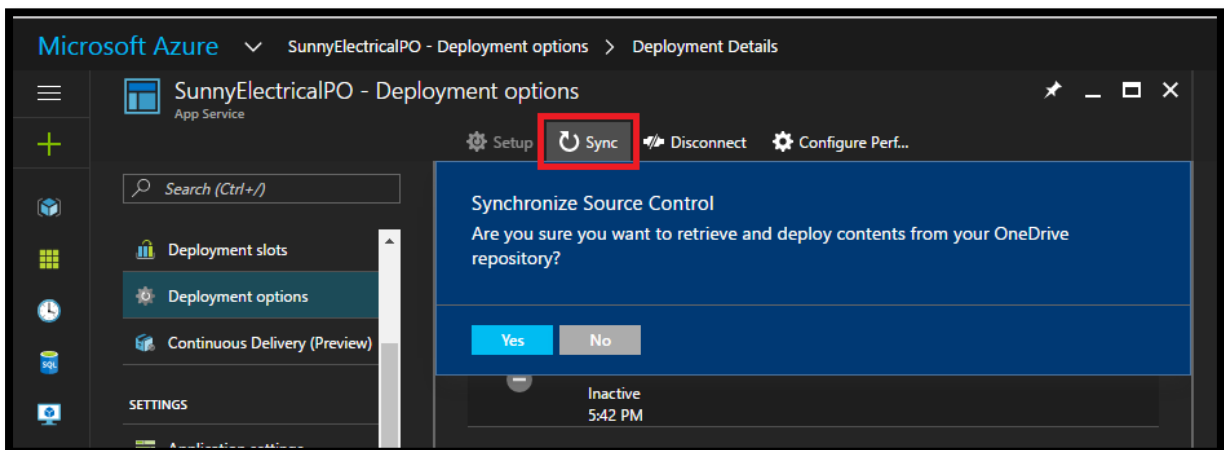
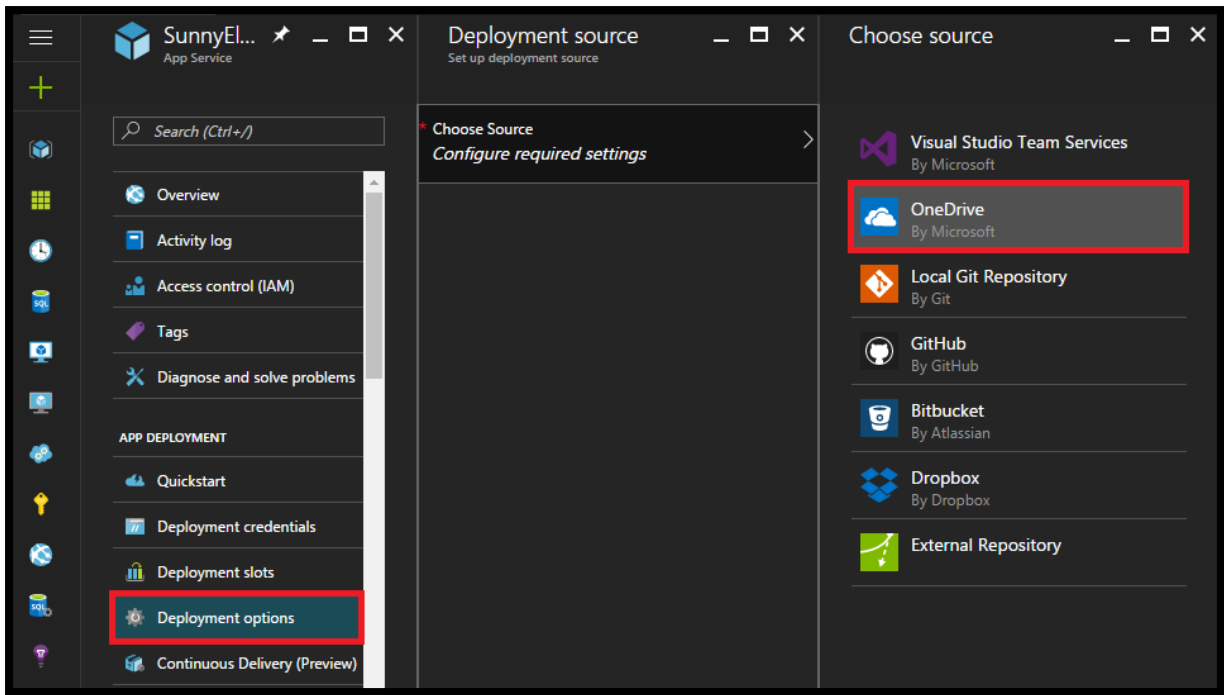
DeploymentName      : azureservicebus-2016-11-13
ResourceGroupName   : SunnyElectrical
ProvisioningState   : Succeeded
Timestamp           : 12/11/2016 11:45:41 PM
Mode                : Incremental
TemplateLink        :
TemplateLinkString  :
Parameters          :
                    Name      Type      Value
                    -----
                    serviceBusNamespace String    SunnyElectricalSB
                    serviceBusSku String    Standard
                    serviceBusTopic String    WebTransactions
                    serviceBusSubscription String    Orders
                    serviceBusRule String    PurchaseOrders
                    serviceBusApiVersion String    2015-08-01

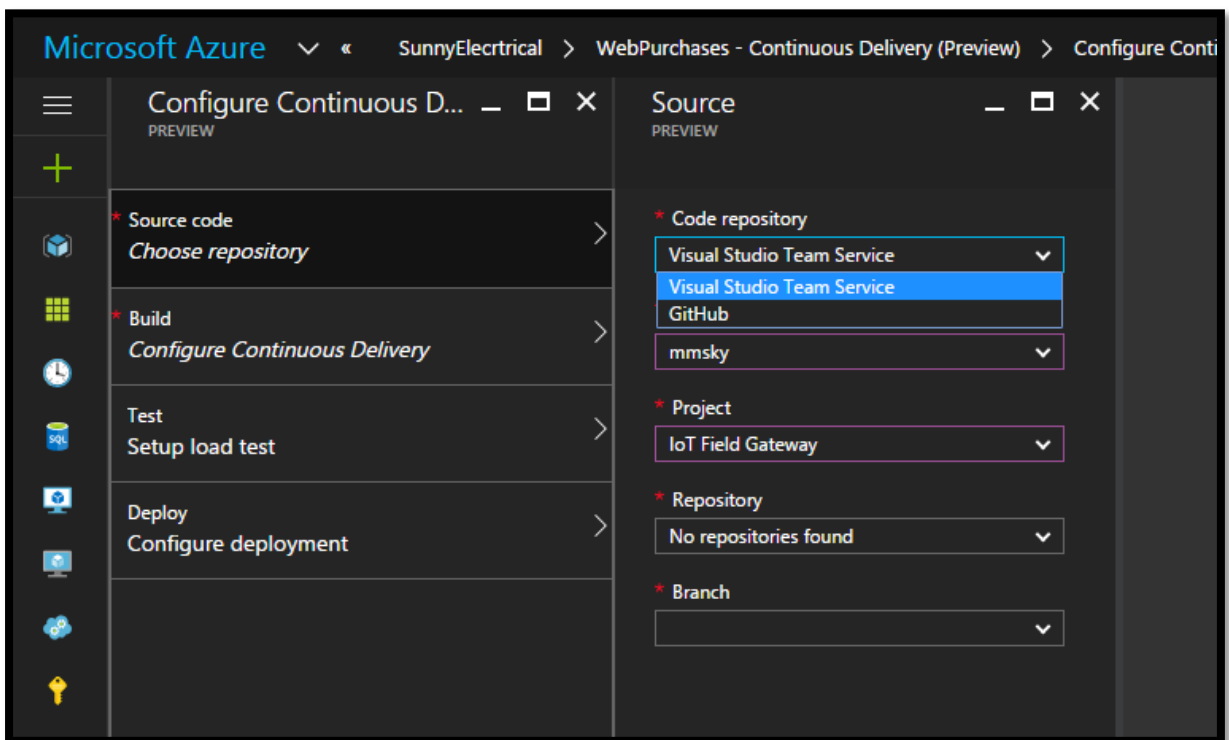
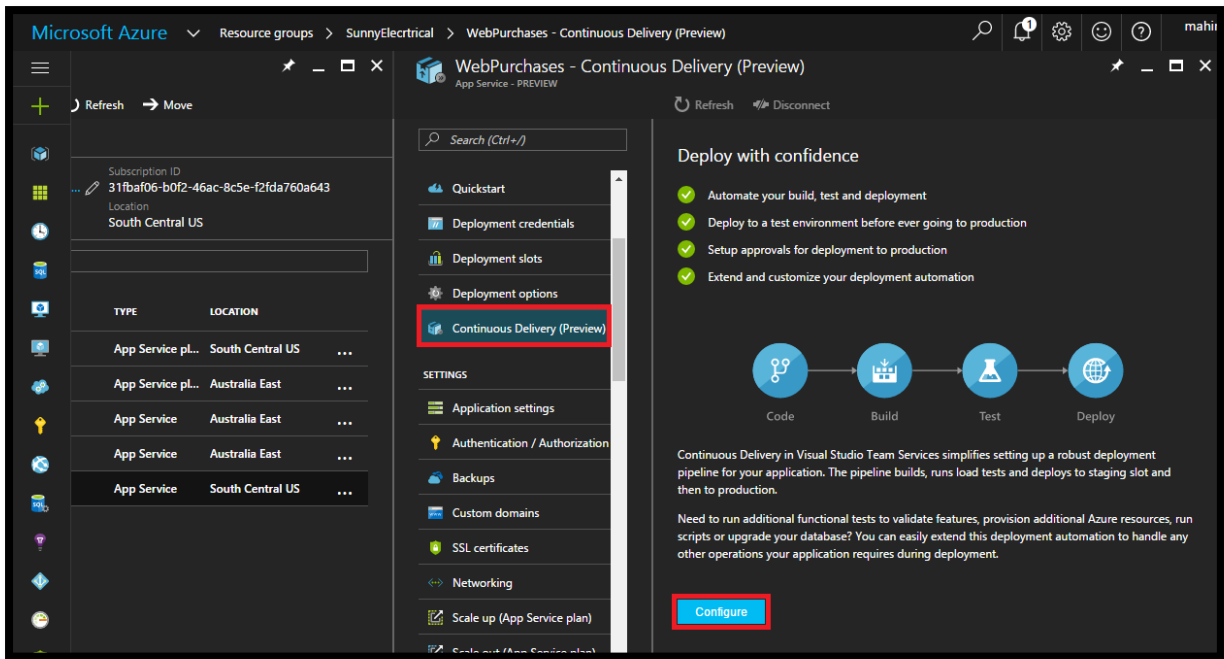
Outputs             :
                    Name      Type      Value
                    -----
                    namespaceDefaultConnectionString String    Endpoint=sb://sunnyelectricalsb.
                    servicebus.windows.net/;SharedAccessKeyName=RootManageSharedAccessKey;SharedAccessKey=rPbQbdQ
                    8t8yV0fjYLaIoxcIFLDnoTq6Wnz+bUbwqG70=
                    defaultSharedAccessPolicyPrimaryKey String
                    rPbQbdQ8t8yV0fjYLaIoxcIFLDnoTq6Wnz+bUbwqG70=

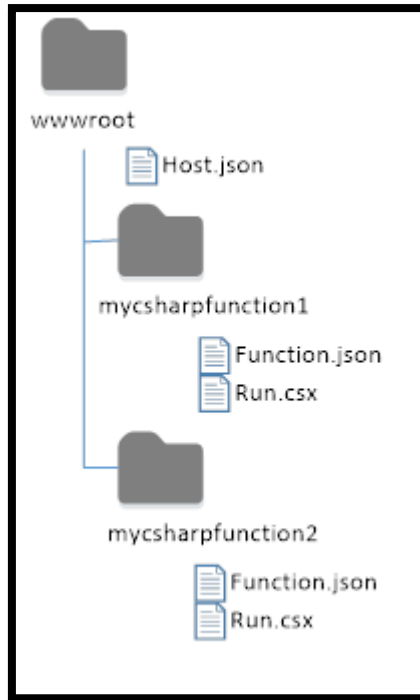
DeploymentDebugLogLevel :

PS C:\>

```





unnyElectrical > Function app > SEPaymentFn - App Service Editor (Preview) mahindra.morar@dat... CLOUD

Function app

SEPaymentFn

Search my functions

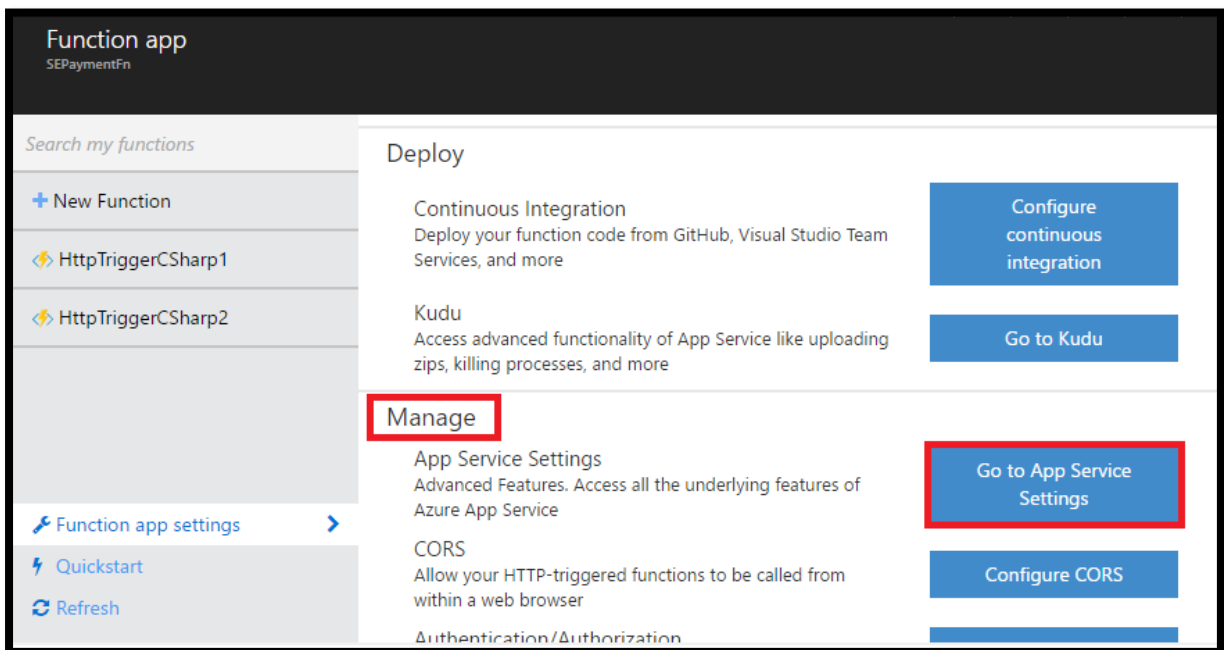
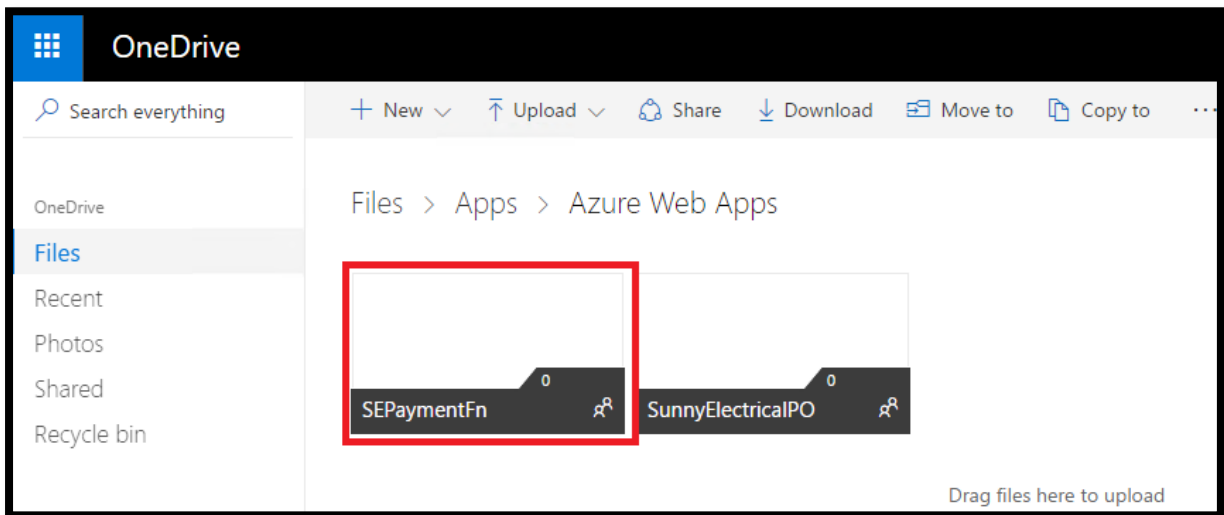
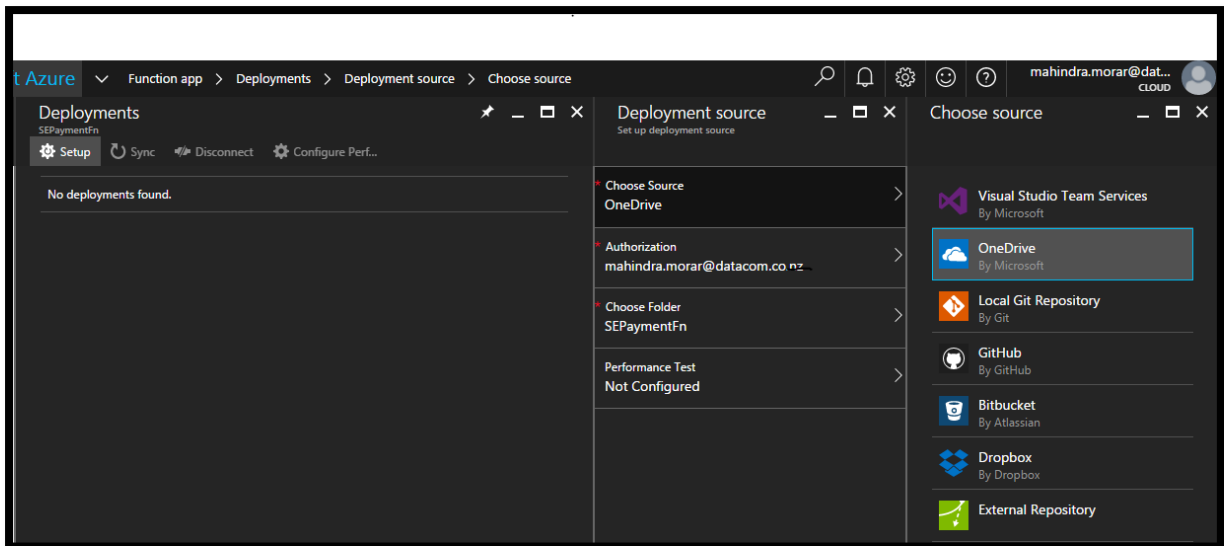
- + New Function
- <⚡ HttpTriggerCSharp1
- <⚡ HttpTriggerCSharp2
- <⚡ Function app settings >**
- ⚡ Quickstart
- 🔄 Refresh

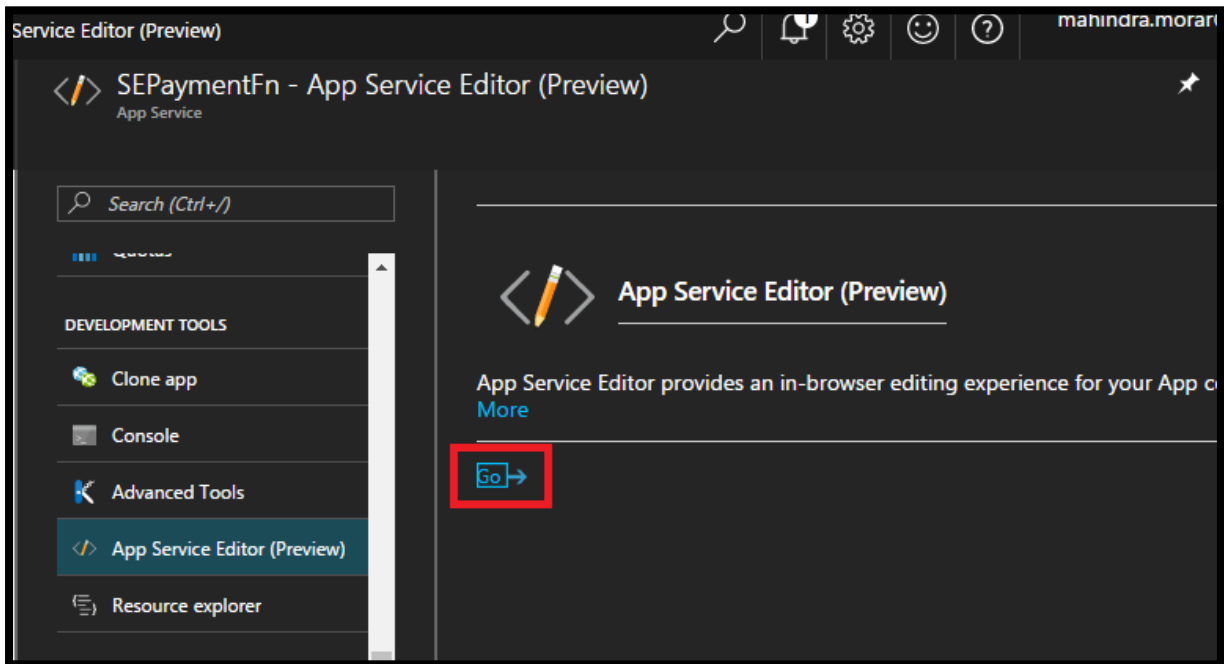
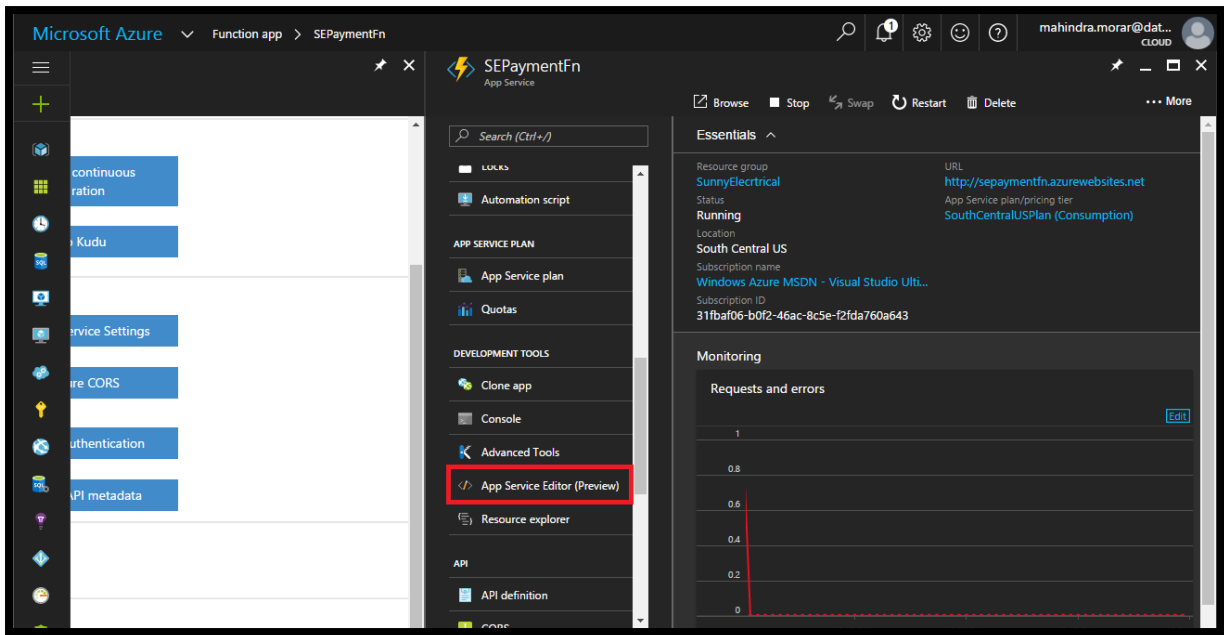
Develop

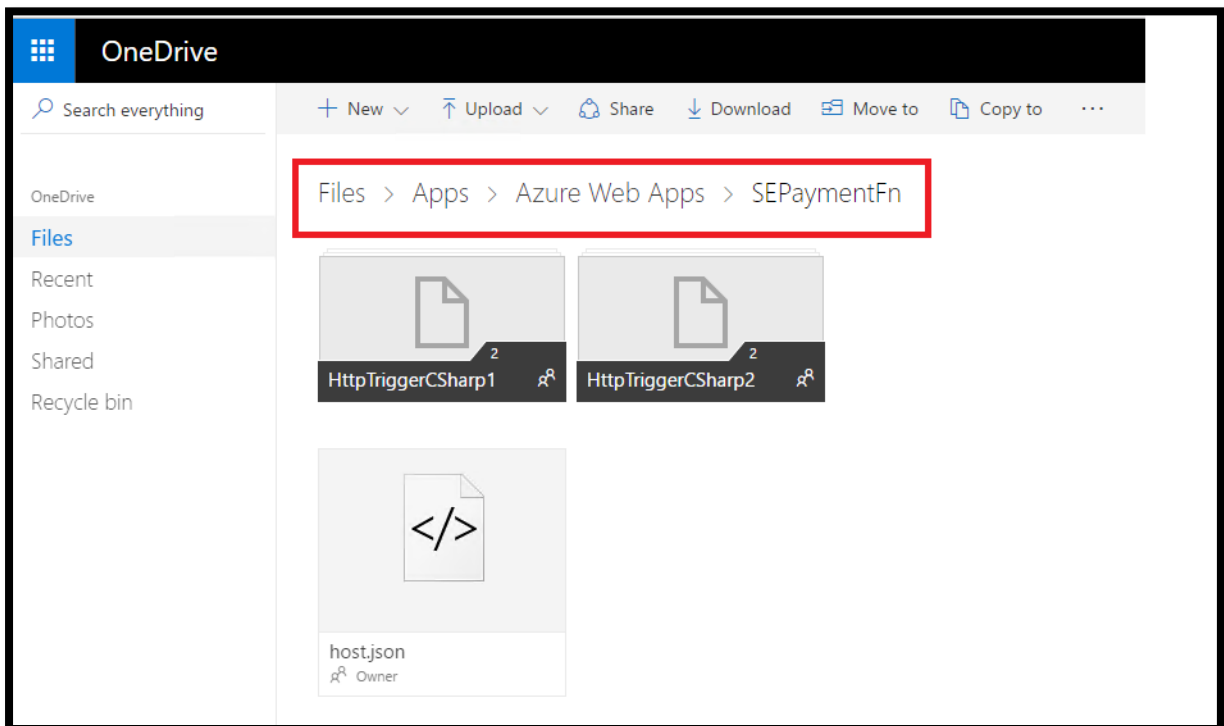
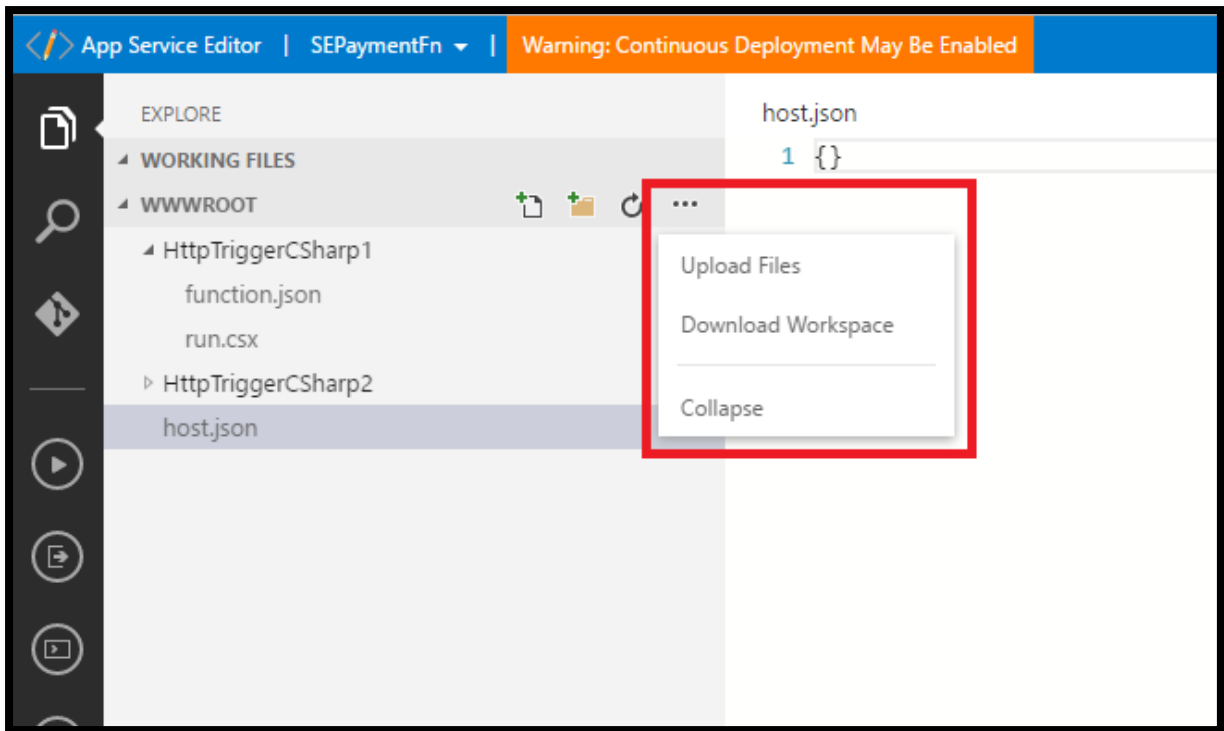
- App Service Editor**
In portal editor with an integrated console and streaming logs
[Go to App Service Editor](#)
- Application settings**
Manage environment variables and connection strings for your function app
[Configure app settings](#)
- Dev Console**
In-portal console for accessing your function app's file system
[Open dev console](#)

Deploy

- Continuous Integration**
Deploy your function code from GitHub, Visual Studio Team Services, and more
[Configure continuous integration](#)
- Kudu**
Access advanced functionality of App Service like uploading zips, killing processes, and more
[Go to Kudu](#)







Deployments

SEPaymentFn

Setup Sync Disconnect Configure Perf...

FRI 11/25

- ✓ Synchronized 5 change(s) from OneDrive.
 OneDrive
 Active
 10:23 PM
- Synchronized 1 change(s) from OneDrive.
 OneDrive
 Inactive
 9:52 PM

Deployment Details

SEPaymentFn

Redeploy Delete

STATUS: Success

TRIGGERED BY: OneDrive

AUTHOR: Mahindra Morar

RAN FOR: 8 seconds

REASON: Synchronized 1 change(s) from OneDrive.

DEPLOY TO: SEPaymentFn

ST...	TIME	ACTIVITY	LOG
✓	Fri 11/25	Updating submodules.	
✓	Fri 11/25	Preparing deployment for commit id '1abe0385d0'.	
✓	Fri 11/25	Generating deployment script.	View Log
✓	Fri 11/25	Running deployment command...	View Log
✓	Fri 11/25	Running post deployment command(s)...	
✓	Fri 11/25	Deployment successful.	

```

.<#
.SYNOPSIS
  Powershell script to Deploy Logic App within specific
  subscription and resource group
.NOTES
  Created on:      20/11/2016
  Created by:      RobustIntegration
  Filename:        SunnyElectricals.ps1
#>

#Requires -Version 3.0
#Requires -Module AzureRM.Resources
#Requires -Module Azure.Storage
Param(
  [string] [Parameter(Mandatory=$true)]
  $SubscriptionID,
  [string] [Parameter(Mandatory=$true)]
  $ResourceGroupName,
  [string] [Parameter(Mandatory=$true)]
  $ResourceGroupLocation
)
  
```

```

.<#
.SYNOPSIS
  > Define SilentlyContinue and Set-StrictMode to gracefully
  complete the execution of powershell script in exception.

  > Function RegisterResourceProvider to register the resource provider
  based on the Azure subscription
.NOTES
  Created on:      20/11/2016
#>
Import-Module Azure -ErrorAction SilentlyContinue
Set-StrictMode -Version 3
Function RegisterResourceProvider {
  Param(
    [string]$ResourceProviderNamespace
  )
  Write-Host "Registering resource provider '$ResourceProviderNamespace'" -ForegroundColor Green;
  Register-AzureRmResourceProvider -ProviderNamespace $ResourceProviderNamespace;
}
  
```

```

<#
.SYNOPSIS
> Function CheckDependentComponentStatus to check the resource group
based on the Azure subscription
#>
Function CheckDependentComponentStatus
{
    param($dependencyComponent)
    foreach ($component in $dependencyComponent)
    {Get-AzureRmResource -ResourceGroupName $ResourceGroupName -ResourceName $dependencyComponent}
}

<#
.SYNOPSIS
> Function DeployAzureComponent to deploy Azure resources
#>
Function DeployAzureComponent
{
    param($templateFilePath, $parametersFilePath, $componentName)

    Write-Host "Initialising deployment of $componentName Logic App Workflow..." -ForegroundColor Green;
    if(Test-Path $parametersFilePath) {
        New-AzureRmResourceGroupDeployment -ResourceGroupName $ResourceGroupName -TemplateFile
        $templateFilePath
        -TemplateParameterFile $parametersFilePath;
    }
    else {
        New-AzureRmResourceGroupDeployment -ResourceGroupName $ResourceGroupName -TemplateFile
        $templateFilePath;
    }
}

Write-Host "Finished deployment of $componentName Logic App Workflow..." -ForegroundColor Green;
}

```

```

<#
.SYNOPSIS
> Function to select the Logical Environment within Logic App and related artifacts
are deployed.
#>

Function SelectEnvironment{
    Write-Host "Please select environment: 'P' for Production, 'U' for UAT, 'S' for Staging, 'D'
for Development" -ForegroundColor Yellow
    $env = Read-Host
    IF(-not($env -eq "P" -or $env -eq "U" -or $env -eq "S" -or $env -eq "D"))
    {
        SelectEnvironment;
    }
    IF($env -eq "P"){
        Write-Host "Deploying using Production Settings..." -ForegroundColor Green;
        return "-Prod";
    }
    ElseIf ($env -eq "U"){
        Write-Host "Deploying using UAT Settings..." -ForegroundColor Green;
        return "-UAT";
    }
    ElseIf ($env -eq "S"){
        Write-Host "Deploying using Staging Settings..." -ForegroundColor Green;
        return "-Staging";
    }
    ElseIf ($env -eq "D"){
        Write-Host "Deploying using Development Settings..." -ForegroundColor Green;
        return "-DEV";
    }
    return "";
}

```



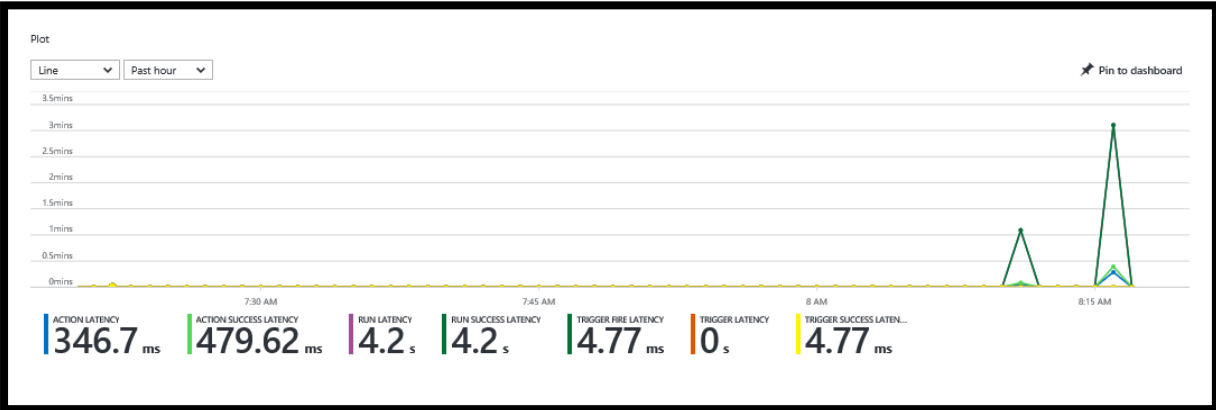
```

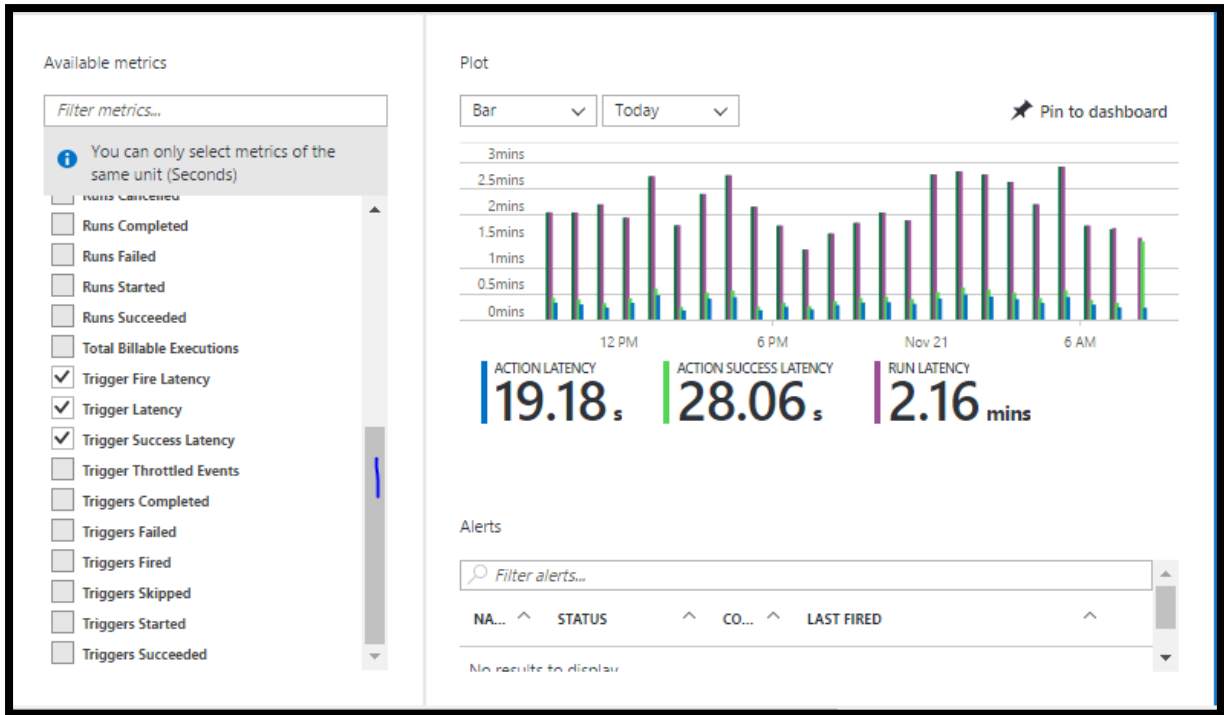
Login-AzureRmAccount -SubscriptionId $SubscriptionID
# Register RPs
$resourceProviders = @("microsoft.web");
if($resourceProviders.length) {
    write-Host "Registering resource providers" -ForegroundColor Green;
    foreach($resourceProvider in $resourceProviders) {
        RegisterRP($resourceProvider);
    }
}
$env = Select-Environment
#Create or check for existing resource group
$resourceGroup = Get-AzureRmResourceGroup -Name $resourceGroupName -ErrorAction SilentlyContinue
if(!$resourceGroup)
{
    write-Host "Resource group '$resourceGroupName' does not exist.
    To create a new resource group, please enter a location."-ForegroundColor Green;
    if(!$resourceGroupLocation) {
        $resourceGroupLocation = Read-Host "resourceGroupLocation";
    }
    write-Host "Creating resource group '$resourceGroupName' in location '$resourceGroupLocation'
    "-ForegroundColor Green;
    New-AzureRmResourceGroup -Name $resourceGroupName -Location $resourceGroupLocation
}
else{
    write-Host "Using existing resource group '$resourceGroupName'" -ForegroundColor Green;
}

# Start the deployment
write-Host "Starting deployment..."-ForegroundColor Green;

#Deploy SunnyElectricalsGetTweet Logic App
DeployAzureComponent .\SunnyElectricalsGetTweet\SunnyElectricalsGetTweet.json .\SunnyElectricalsGetTweet
\SunnyElectricalsGetTweet$env.parameters.json "SunnyElectricalsGetTweet"
Read-Host 'Press any key to continue..'

```





Diagnostics set... + Add metric alert

Gain insights across Azure resources and multiple subscriptions using log search and visualization


* Subscription: Visual Studio Ultimate with MSDN


* Resource group: robustIntegration

Resource type: 2 selected


* Resource: ScheduleLogicApp (Wor...)

Add rule

* Name 


LogicApp Failure 

Description

Failed logic App 


Source

Alert on


Metrics 

Criteria


Subscription


Visual Studio Ultimate with MSDN 


Resource group

robustIntegration 


Resource

ScheduleLogicApp 

Metric 

Runs Failed 

Dear Customer,

 'RunsStarted GreaterThanOrEqual 1 (Count) in the last 5 minutes' was activated for schedulelogicapp

You can view more details for this alert in the [Microsoft Azure Management Portal](#).

Notify via

Email owners, contributors, and readers

Additional administrator email(s)

Webhook ⓘ

Diagnostics settings

Save Discard

i You'll be charged normal data rates for storage and transactions when you send diagnostics to a storage account.

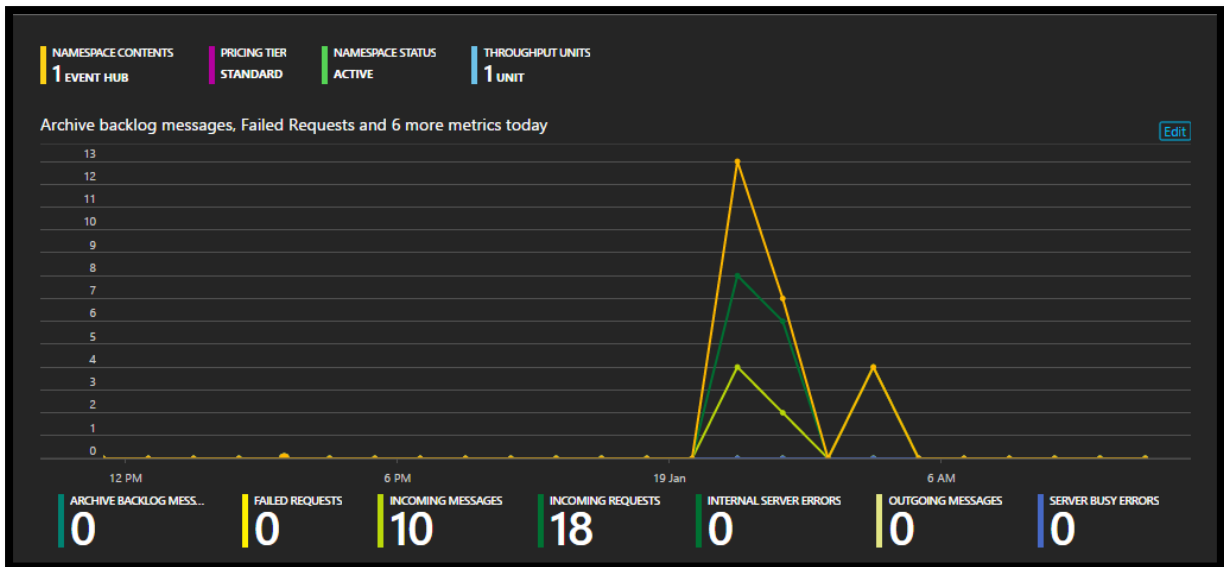
Status

On Off

Archive to a storage account

Stream to an event hub

Send to Log Analytics



Diagnostics settings

Save Discard

Status

On Off

Archive to a storage account

Stream to an event hub

Send to Log Analytics

Log Analytics
robustintegration >

LOG

WorkflowRuntime

METRIC

5 minutes

OMS Workspaces

+ Create New Workspace

robustIntegration eastus

OMS Workspace

Create new or link existing one created in ...

*** OMS Workspace** ⓘ

✓

[Or link existing](#) .portal.mms.microsoft.com

*** Subscription**

▼

*** Resource group** ⓘ

Create new Use existing

▼

*** Location**

▼

OMS Portal Delete

Resource group: **robustintegration**

Status: Active

Location: East US

Subscription name: Visual Studio Ultimate with MSDN

Subscription ID: cce221de-2ef7-4396-98cc-ce3acdac9399

Management

Overview | Log Search | OMS Portal

Pricing tier

OMS SUNYELECTRICAL

No daily limit
Data retention 30 d...

Events

Filter | Columns | Hide chart | Export

Filtered for past week
by resource /subscriptions/cce221de-2ef7-4396-98cc-ce3acdac9399/resourcegroups/robustintegra...
event category = All, levels = All

Severity	Count
CRITICAL	0
ERROR	0
WARNING	0
INFORMATIONAL	1

11:16 AM

Filter items ...

Search (Ctrl+/)

Run Trigger Refresh Edit Delete Disable Update Schema Clone

Essentials

Runs history

All Specify the run identifier to open

STATUS	START TIME	IDENTIFIER	DURATION
Succeeded	3/6/2017, 11:48 AM	0858712805947885...	1.07 Seconds
Succeeded	3/6/2017, 11:48 AM	0858712805949076...	562 Milliseconds
Succeeded	3/6/2017, 11:48 AM	0858712805950615...	553 Milliseconds
Succeeded	3/6/2017, 11:48 AM	0858712805952083...	1.07 Seconds
Succeeded	3/6/2017, 11:48 AM	0858712805953720...	1.07 Seconds
Succeeded	3/6/2017, 11:48 AM	0858712805955348...	1.11 Seconds
Succeeded	3/6/2017, 11:47 AM	0858712806011780...	1.07 Seconds
Succeeded	3/6/2017, 11:47 AM	0858712806036973...	234 Milliseconds
Succeeded	3/6/2017, 11:47 AM	0858712806040041...	189 Milliseconds
Succeeded	3/6/2017, 11:46 AM	0858712806093558...	340 Milliseconds

Trigger History

manual All

Callback url [POST]
https://prod-30.australiaeast.logic.azure.com:443/workflows/33852b494a9944

STATUS	START TIME	FIRED
Succeeded	3/6/2017, 11:48 AM	Fired
Succeeded	3/6/2017, 11:48 AM	Fired
Succeeded	3/6/2017, 11:48 AM	Fired
Succeeded	3/6/2017, 11:48 AM	Fired
Succeeded	3/6/2017, 11:48 AM	Fired
Succeeded	3/6/2017, 11:48 AM	Fired
Succeeded	3/6/2017, 11:47 AM	Fired
Succeeded	3/6/2017, 11:47 AM	Fired
Succeeded	3/6/2017, 11:47 AM	Fired
Succeeded	3/6/2017, 11:47 AM	Fired

Logic app run 08587128060935589474688695197

Run Details Resubmit Cancel Run

Request 0s

Condition

IF YES

Response 0s

IF NO

HTTP 0s

Cancel

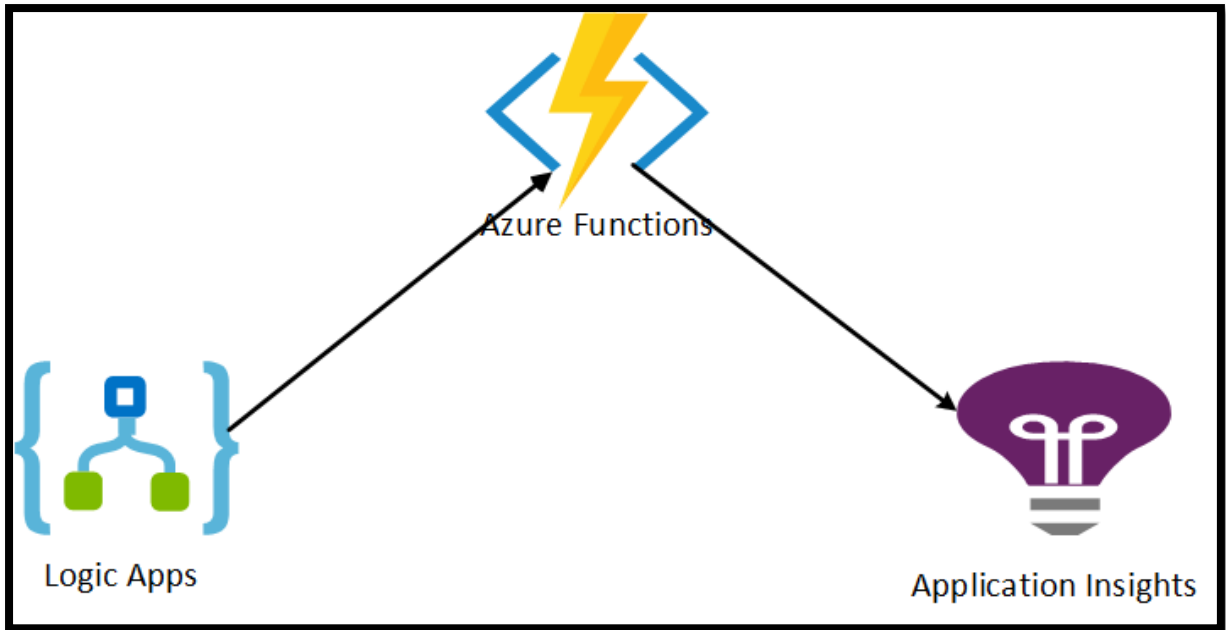
ACTION	STATUS	DURATION
Condition	Succeeded	163 Milliseconds
HTTP	Skipped	23 Milliseconds
Response	Succeeded	21 Milliseconds

Trigger History

manual All

Callback url [POST]
https://prod-30.australiaeast.logic.azure.com:443/workflows/33852b494a9944

STATUS	START TIME	FIRED
Succeeded	3/6/2017, 11:48 AM	Fired
Succeeded	3/6/2017, 11:48 AM	Fired
Succeeded	3/6/2017, 11:48 AM	Fired
Succeeded	3/6/2017, 11:48 AM	Fired
Succeeded	3/6/2017, 11:48 AM	Fired



Application Insights — □ ×
Monitor and improve a web or mobile ap...

Name ⓘ
sunnyelectricals ✓

* Application Type ⓘ
ASP.NET web application ▼

* Subscription
Visual Studio Ultimate with MSDN ▼

* Resource Group ⓘ
 Create new Use existing
robustIntegration ▼

* Location
South Central US ▼

IntegrationApplication
Application Insights

Search (Ctrl+/)

Search Metrics Explorer Analytics Time range Refresh More

Click here to see a map of KPIs for your app components and dependencies. →

Essentials ^

Resource group (change) **robustIntegration** Type ASP.NET
 Location South Central US Instrumentation Key [REDACTED]
 Subscription name (change) Visual Studio Ultimate with MSDN
 Subscription ID

0 Alerts Live Stream Click to configure
 Smart Detection INTEGRATIONAPPLICATION 0 detections (last 24h)
 0 Web tests App map

Overview
 Activity log
 Access control (IAM)
 Tags

USAGE
 Usage

INVESTIGATE
 Application map
 Smart Detection

Kudu Environment Debug console Process explorer Tools Site extensions

... / GetmessageLoggingFunApp + | 4 items | Home Refresh Upload

Name	Modified	Size
function.json	1/19/2017, 12:35:42 PM	1 KB
project.json	1/19/2017, 12:40:19 PM	1 KB
project.lock.json	1/19/2017, 12:40:35 PM	2 KB
run.csx	1/19/2017, 12:35:42 PM	1 KB

```

using System;
using System.Net;
using Newtonsoft.Json;
using Microsoft.ApplicationInsights;
using System.Threading;

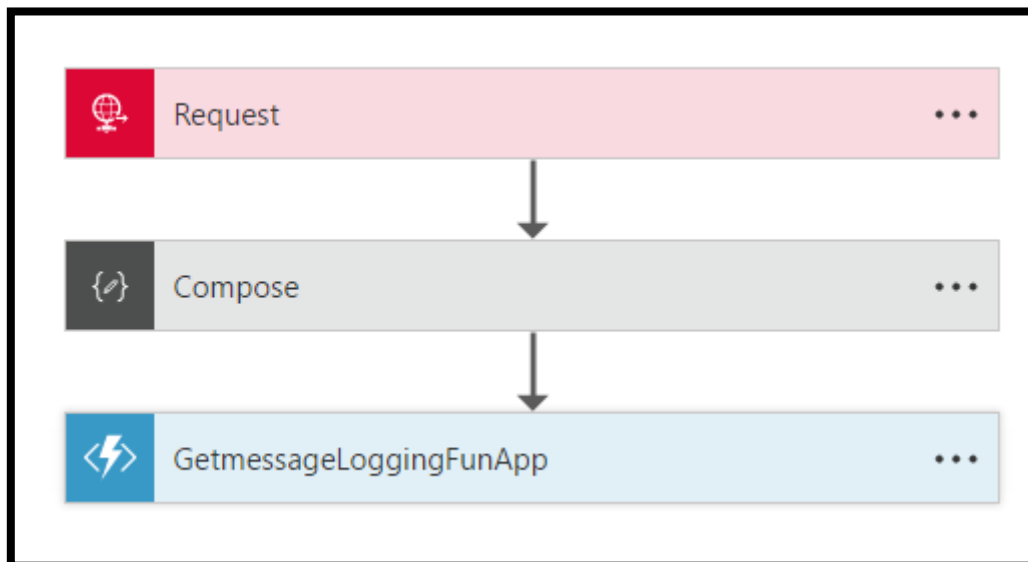
- references
public static async void Run(HttpRequestMessage req, TraceWriter log)
{
    var appInsights = GetTelemetryClient();
    string jsonContent = await req.Content.ReadAsStringAsync();
    dynamic expetionMessage = JsonConvert.DeserializeObject(jsonContent);

    appInsights.TrackEvent("LogicAppMessage", new Dictionary<string, string>()
    { { "Message", jsonContent } }, new Dictionary<string, string>()
    { { "LogicAppId", "LogicAppInstanceId" } });
}

- references
private static TelemetryClient GetTelemetryClient()
{
    var telemetryClient = new TelemetryClient();
    telemetryClient.InstrumentationKey = "7d8b1eea-b9d0-4376-8390-bf13c64124c7";
    return telemetryClient;
}

- references
private static void TrackException(Exception ex, string exceptiondesc, string LogicAppName)
{
    var appInsights = GetTelemetryClient();
    Dictionary<string, string> properties = new Dictionary<string, string>()
    { { "LogicAppName", LogicAppName }, { "Description", exceptiondesc } };
    appInsights.TrackException(ex, properties);
}

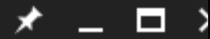
```





Search

1/19/2017 2:00 PM to 2:10 PM (1 minute granularity) - sunnyelectricals



🕒 Time range

🔍 Filters

🔄 Refresh

↶ Reset

📊 Analytics

⋮ More

1/19/2017, 2:05:02 PM - DEPENDENCY

myDependency

Dependency duration: 2 s Successful call: **true** remoteDependency.url: myCall

1/19/2017, 2:05:02 PM - EXCEPTION

Random exception at 1/19/2017 2:05:02 PM

Exception type: **System.Exception** Failed method: **Unknown** Problem Id: **System.Exception**

1/19/2017, 2:04:59 PM - DEPENDENCY

myDependency

Dependency duration: 2.06 s Successful call: **true** remoteDependency.url: myCall

1/19/2017, 2:04:59 PM - CUSTOM EVENT

Method: POST, RequestUri: 'https://sunnyelectricals.azurewebsites.net/api/GetmesageLoggingFunApp?code=HMMPRgoSZ1ia9Eo7f4GxhZKu8WwVGSnWS37D/zFT52xwTAFkbGGVQ='', Version: 1.1, Content: System.Web.Http.WebHost.HttpControllerHandler+LazySt...

Device type: PC

1/19/2017, 2:04:59 PM - EXCEPTION

Random exception at 1/19/2017 2:04:59 PM

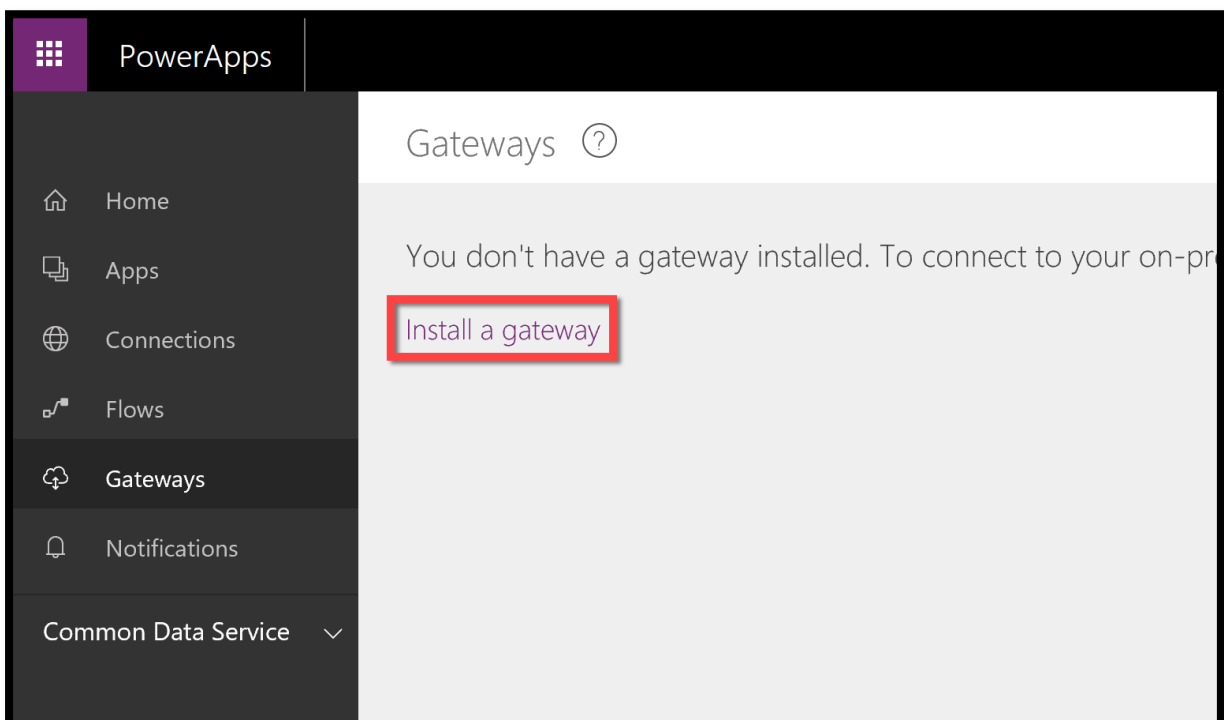
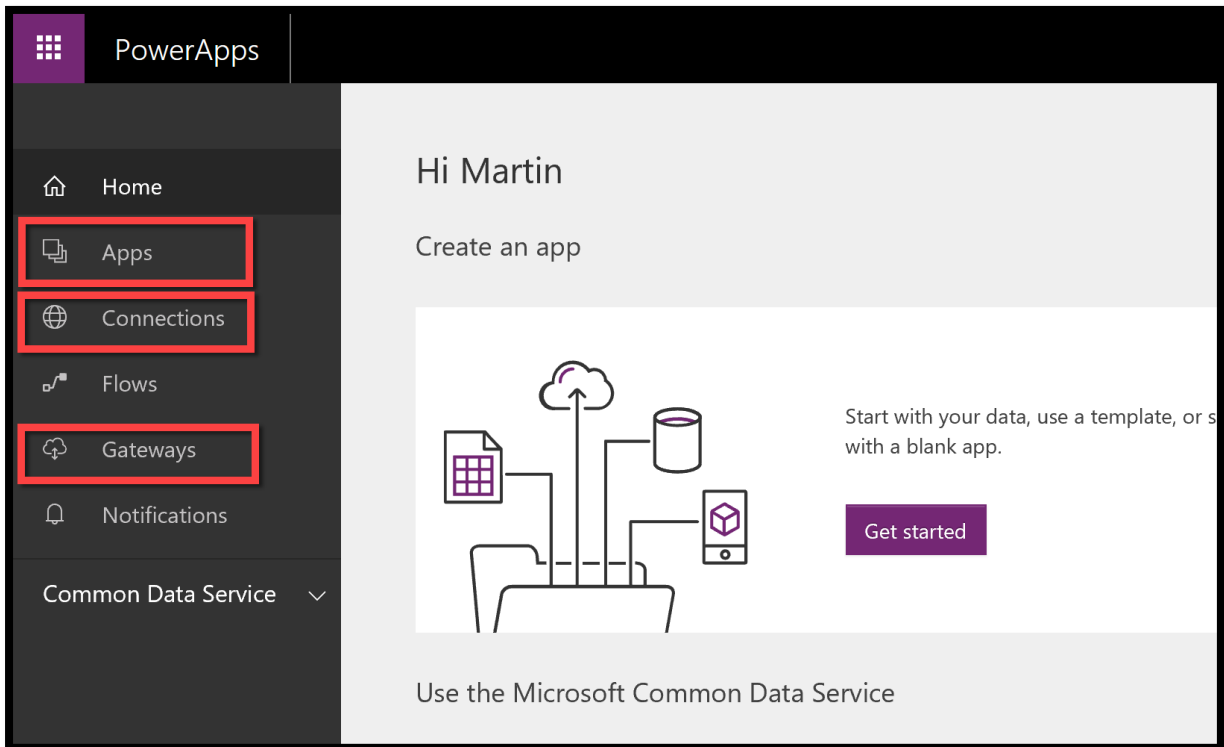
Exception type: **System.Exception** Failed method: **Unknown** Problem Id: **System.Exception**

1/19/2017, 2:04:57 PM - CUSTOM EVENT

Method: POST, RequestUri: 'https://sunnyelectricals.azurewebsites.net/api/GetmesageLoggingFunApp?code=HMMPRgoSZ1ia9Eo7f4GxhZKu8WwVGSnWS37D/zFT52xwTAFkbGGVQ='', Version: 1.1, Content: System.Web.Http.WebHost.HttpControllerHandler+LazySt...

Device type: PC

Chapter 15: Whats Next for Azure Integration?





On-premises data gateway



You are signed in as [redacted] and are ready to register the gateway.

New on-premises data gateway name

CustomerCreditGateway

Recovery key (8 character minimum)

••••••••

i This key is needed to restore the gateway and can't be changed. Record it in a safe place.

Confirm recovery key

••••••••

<< Back

Configure

Cancel

On-premises data gateway

Your gateway is ready.

✔ Connected: CustomerCreditGateway is good to go.

ⓘ For Power BI, you need to add your data sources to this gateway.
For PowerApps, Logic Apps, and Microsoft Flow, this gateway is ready to use.

✔ Help improve the on-premises data gateway by sending usage information to Microsoft.
[Read the privacy statement online](#)

[Configuration log directory](#)
[Gateway service log directory](#)


Export logs Close

MartinAbbott (default) ↓

↓ ⚙️ ? 👤

🔍

+ New connection



SQL Server

Microsoft

✕

Microsoft SQL Server is a relational database management system developed by Microsoft. Connect to SQL Server to manage data. You can perform various actions such as create, update, get, and delete on rows in a table.

How do you want to connect to your data?

Connect directly (cloud services)


Connect using on-premises data gateway (?)

SQL server name *

SQL database name *

Cancel Create

←




SQL Server


Created: 19/11/2016 Modified: 19/11/2016

Edit Delete

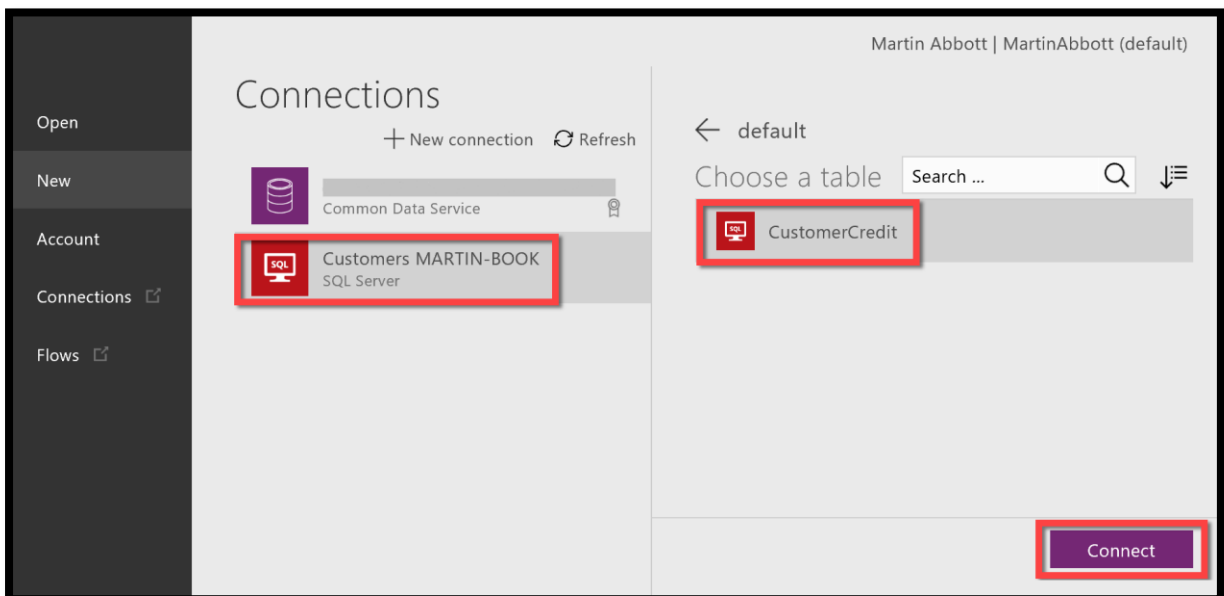
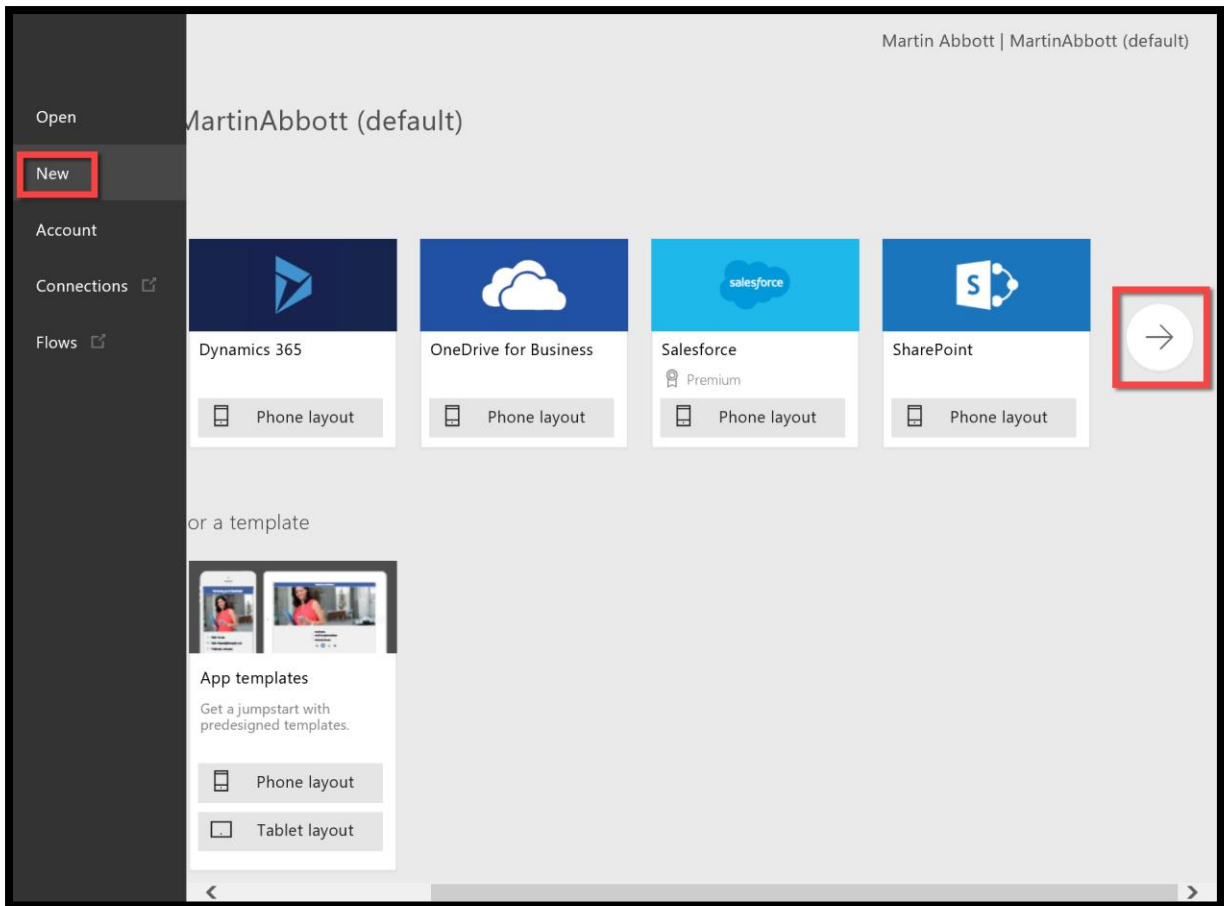
Details • Share

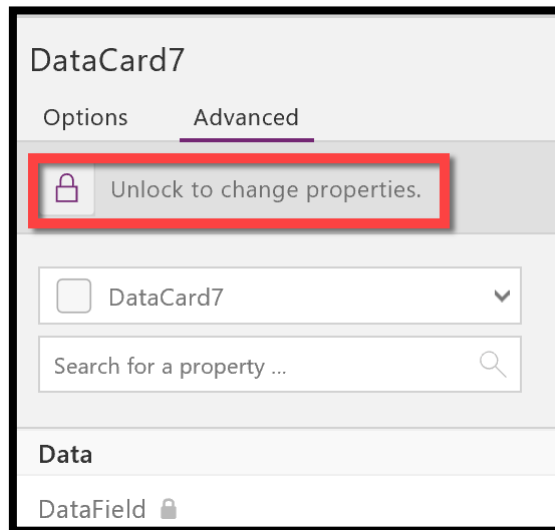
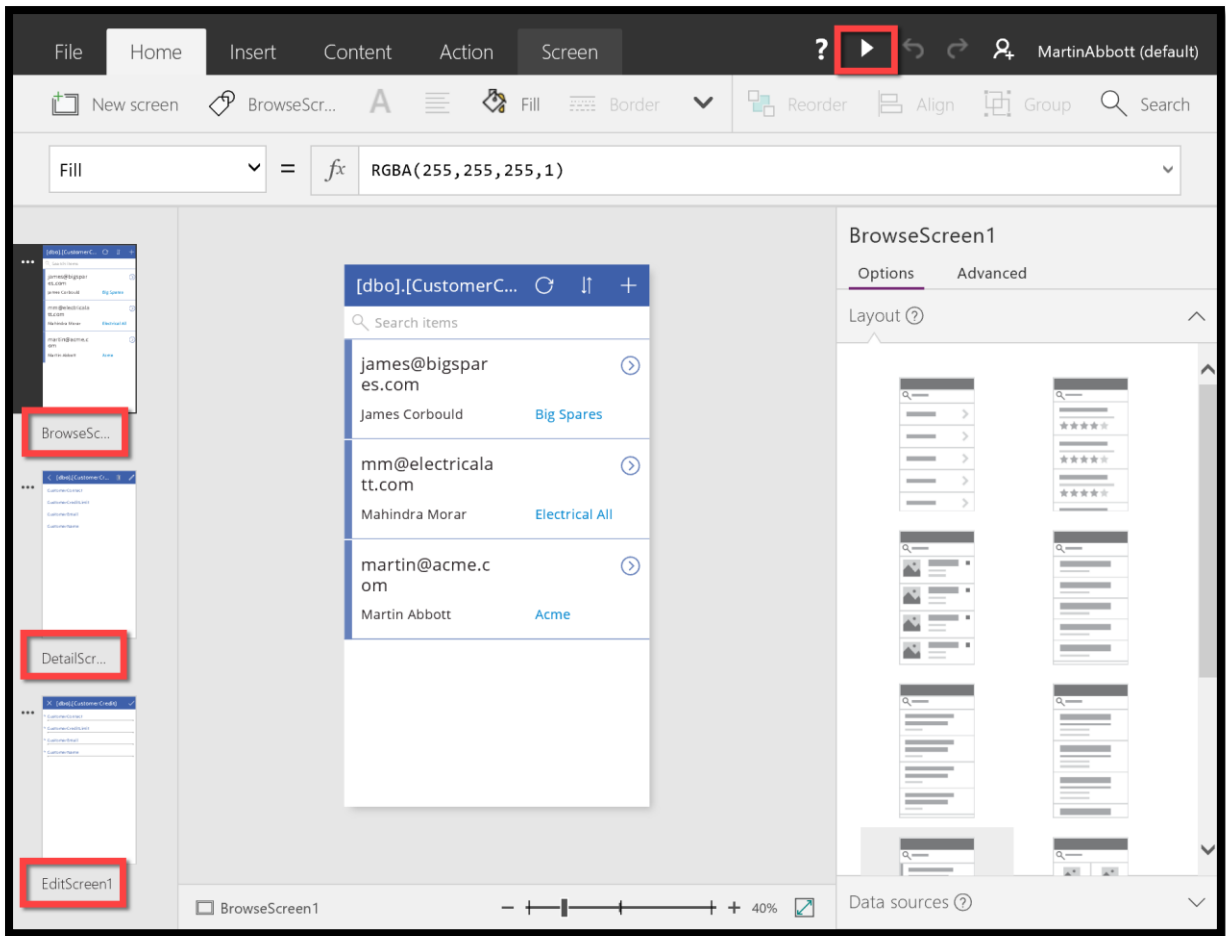
 MartinAbbott Share with org (?)

This connection is currently shared with

Name	Email	Role
 Martin Abbott	[REDACTED]	Owner ▼ ✕

Cancel Save





Browse Customers   



 Search items

james@bigspares.com 

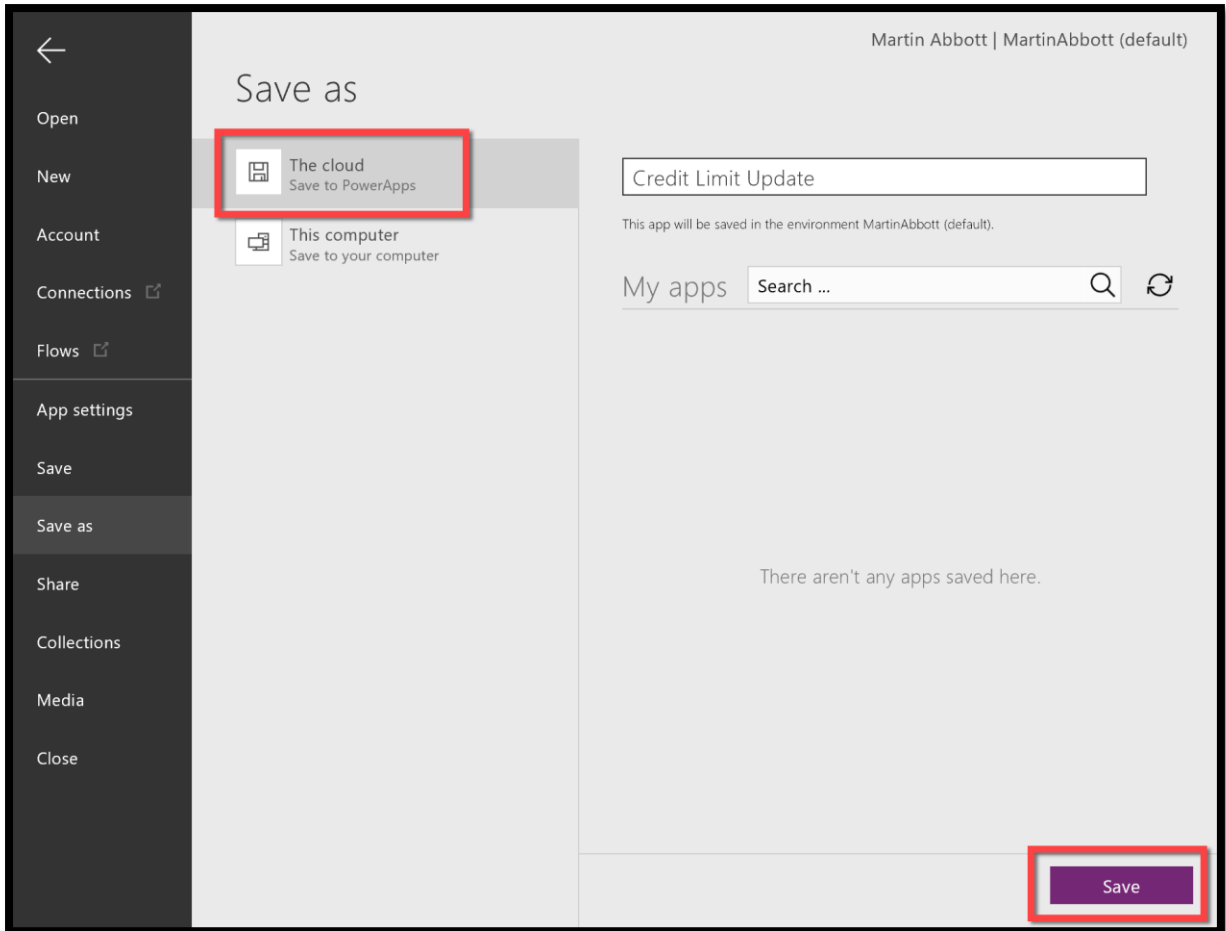
James Corbould [Big Spares](#)


mm@electricalatt.com 

Mahindra Morar [Electrical All](#)


martin@acme.com 

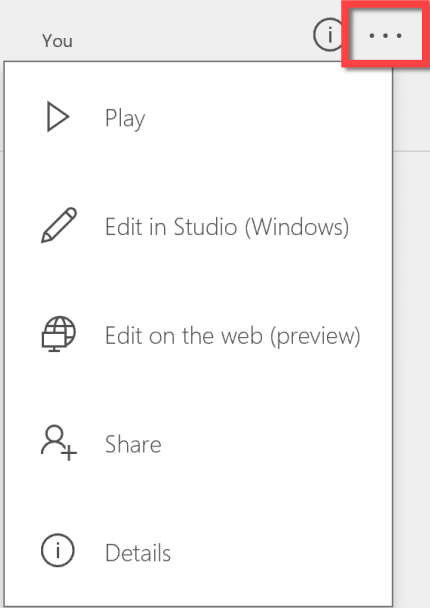
Martin Abbott [Acme Holdin](#)









Apps I can edit ▼ 

Find all of your apps across all environments at **Microsoft Dynamics 365**.

NAME	PERMISSIONS	MODIFIED ^	MODIFIED BY
 Credit Limit Update by You	Owner	18 min ago	You



-  Play
-  Edit in Studio (Windows)
-  Edit on the web (preview)
-  Share
-  Details

 PowerApps ...


My flows Create from blank Create from template

Showing flows starting from an app. [Click here to see all of your flows.](#)

Flow My flows Templates Services Learn

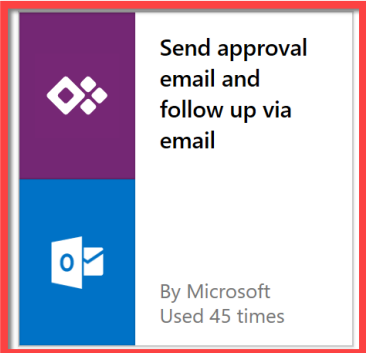
Showing All flows

sorted by Popularity




PowerApps button

By Microsoft
Used 508 times



Send approval email and follow up via email

By Microsoft
Used 45 times



Upload a file to SharePoint from PowerApps

By Microsoft
Used 38 times

PowerApps

Send approval email

Using the default values for the parameters. [Edit](#)

Condition

Object Name	Relationship	Value
SelectedOption x	is equal to	Approve

[Edit in advanced mode](#) [Collapse condition](#)

IF YES

Send email informing approval

Using the default values for the parameters. [Edit](#)

[Add an action](#) [More](#)

IF NO


Send email informing rejection

Using the default values for the parameters. [Edit](#)


[Add an action](#) [More](#)

Add dynamic content from the apps and services used in this flow.


Hide

 Search dynamic content


Send approval email

 **SelectedOption**
User response


manual

 **ApproverToEmail**
Specify email addresses to send the approval email t...


 **Ask in PowerApps**

 **ResultFollowUpToEmail**
Specify email addresses to inform about the result of...

IF YES

 Send email informing approval ⋮

↓

 Update row ⋮

* Table name


Name of table ▼


CustomerCredit


[Enter custom value](#)

* Row id

Unique identifier of the row to update

 Add an action | ⋮ More

 Flow 😊 🔔 ⚙️ 👤

Send approval email and follow up via email  ✕

Processing

We are processing your request for a credit limit increase., and thank you for your patience.

< Home

The screenshot displays a software development environment with a ribbon menu at the top. The 'Action' and 'Flows' tabs are highlighted with red boxes. The 'Action' dropdown is set to 'OnSelect', and the formula bar contains the following code: `DataCardValue9.Text,DataCardValue8.Text,DataCardValue5.Text,DataCardValue7.Text,DataCardValue6.Text);Navigate(Screen1,`. The main workspace shows a form titled 'Edit Details' with fields for 'Customer Contact' (James Corbould), 'Credit Limit' (16000), 'Customer Email' (james@bigspares.com), and 'Customer Name' (Big Spares Ltd). A red box highlights a checkmark icon in the top right corner of the form. On the right side, the 'Flows' panel is visible, showing a list of flows associated with 'IconAccept1'. One flow, 'Send approval email and f...', is highlighted with a red box. The bottom status bar shows 'IconAccept1' and a zoom level of 40%.

✕ Edit Details ✓

* Customer Contact

* Credit Limit

* Customer Email


* Customer Name

Processing

We are processing your request for a credit limit increase., and thank you for your patience.

< Home


Approval Request



Martin Abbott
Today, 7:16 PM
Martin Abbott

Inbox; Sent Items

Approval Request

 Approve or Reject Request for Acme Holdings Ltd for \$17000

Approval Request



Martin Abbott

Today, 7:16 PM

Martin Abbott



Inbox; Sent Items

Thanks! Your response 'Approve' has been successfully registered.

< Customer Details



Customer Contact

Martin Abbott

Credit Limit

17000

Customer Email

martin@acme.com

Customer Name





Acme Holdings Ltd

PowerApps

My flows

Create from blank Create from template

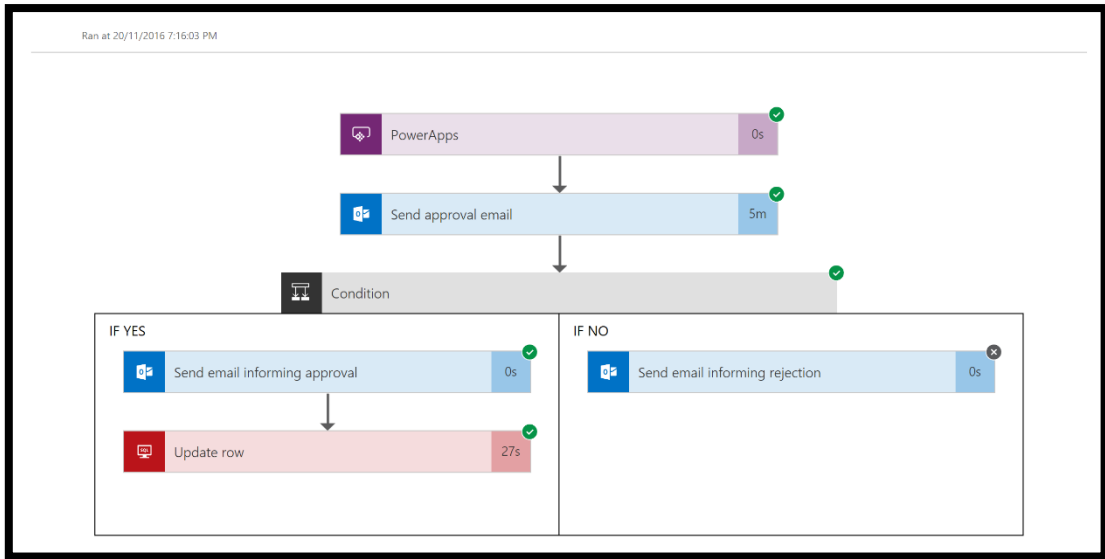
Showing flows starting from an app. [Click here to see all of your flows.](#)

Name	Last modified	
 Send approval email and f	1 hour ago	<input checked="" type="checkbox"/> On   

Flow

← Flow runs for Send appro... Successes and failures ▾

Status	Start time	Duration	
Succeeded	25 minutes ago	5 minutes	>



OUTPUTS

ApproverToEmail
[Redacted]

ResultFollowUpToEmail
[Redacted]

Updaterow_Rowid
1

Updaterow_CustomerName
Acme Holdings Ltd

Updaterow_CustomerContact
Martin Abbott

Updaterow_CustomerEmail
martin@acme.com

Updaterow_CustomerCreditLimit
17000

Flow

Showing sorted by

- All flows
- Featured
- Approval
- Button
- Collect data
- Email
- Events and calendar
- Mobile
- Notifications
- Productivity
- Social media
- Sync

Send myse

By Microsoft
Used 6521 times

