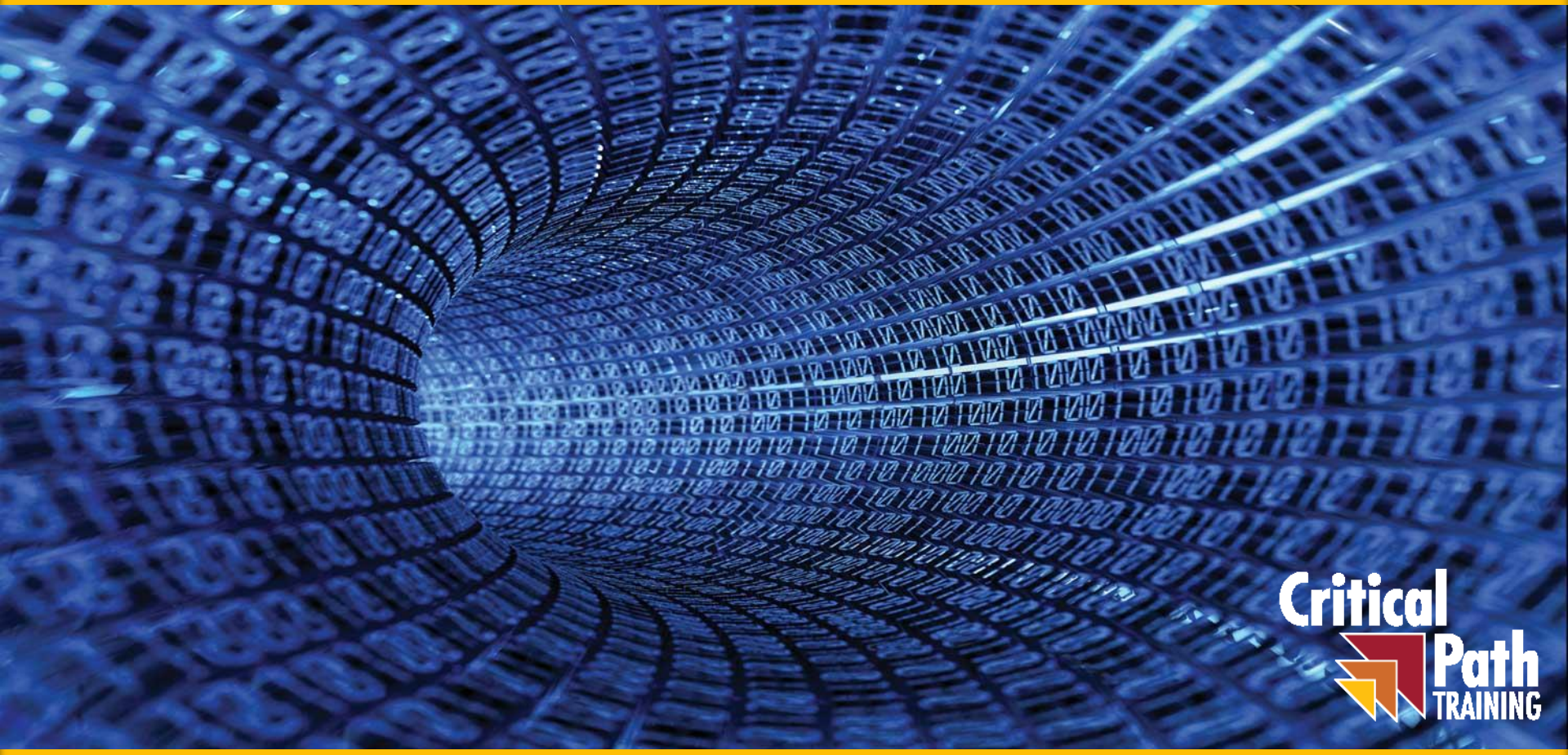
Integrating PowerApps with External Systems



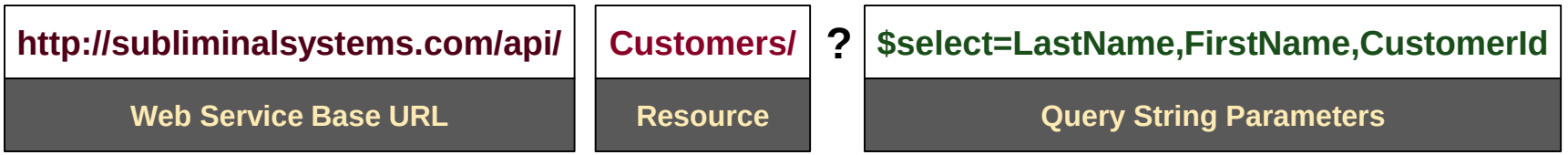
Agenda

- Calling External Services using HTTP Actions
- Executing Child Flows from a Parent Flow
- Creating and Testing Custom Connector
- Configuring a Custom Connector to use OAuth

Working With REST-based Web Service

- Calling REST-based web service involve creating structured URLs
  - **http://subliminalsystems.com/api/Customers/?$select=LastName,FirstName,CustomerId**

- REST-based URL structured into several parts



OData Query String Parameters

- Many web services support OData
  - OData is a REST-based specification for CRUD operations
  - OData defines standard query string parameters

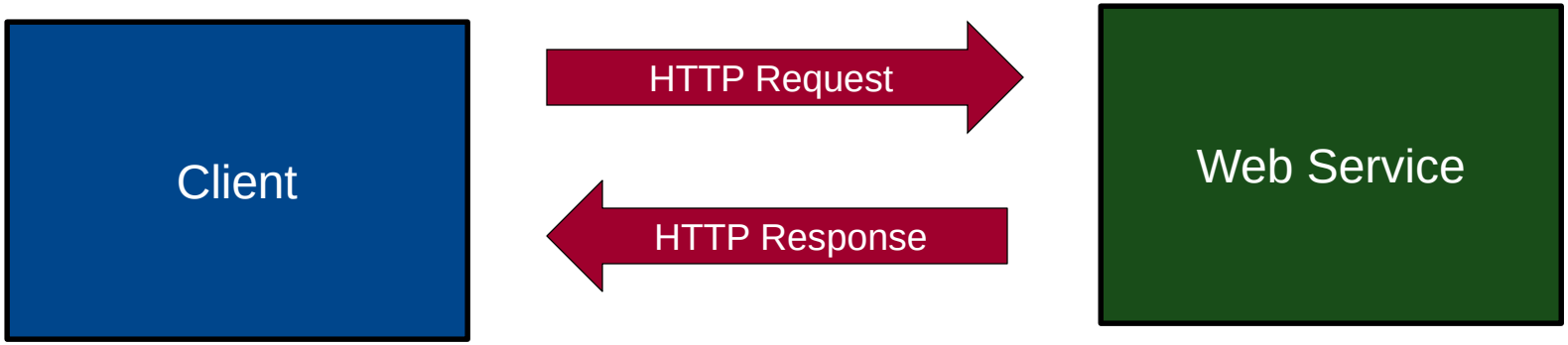
- Commonly-used OData query string parameters
  - **$select** – allows you to select which properties are returned
  - **$filter** – allows you to filter rows returned in result
  - **$orderby** – allows you to sort rows in result
  - **$top** – allows you to specify how many rows should be returned
  - **$skip** – allows you to skip over rows that are not needed
  - **$expand** – allows you to retrieve more data in one round trip

OData URL Examples

- Select properties returned
  - X
- Filter Rows returned
  - S
- Select properties and filter rows
  - S
- Return single entity instance by passing ID
  - d

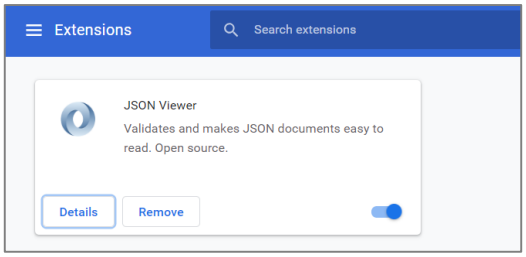
HTTP Request and Response

- HTTP Request
  - URL
  - Verb (e.g. GET, POST, PUT, PATCH, etc)
  - Headers
  - Body
- HTTP Response
  - Status code
  - Headers
  - Body



Using the JSON Viewer Chrome Extension

- Xx



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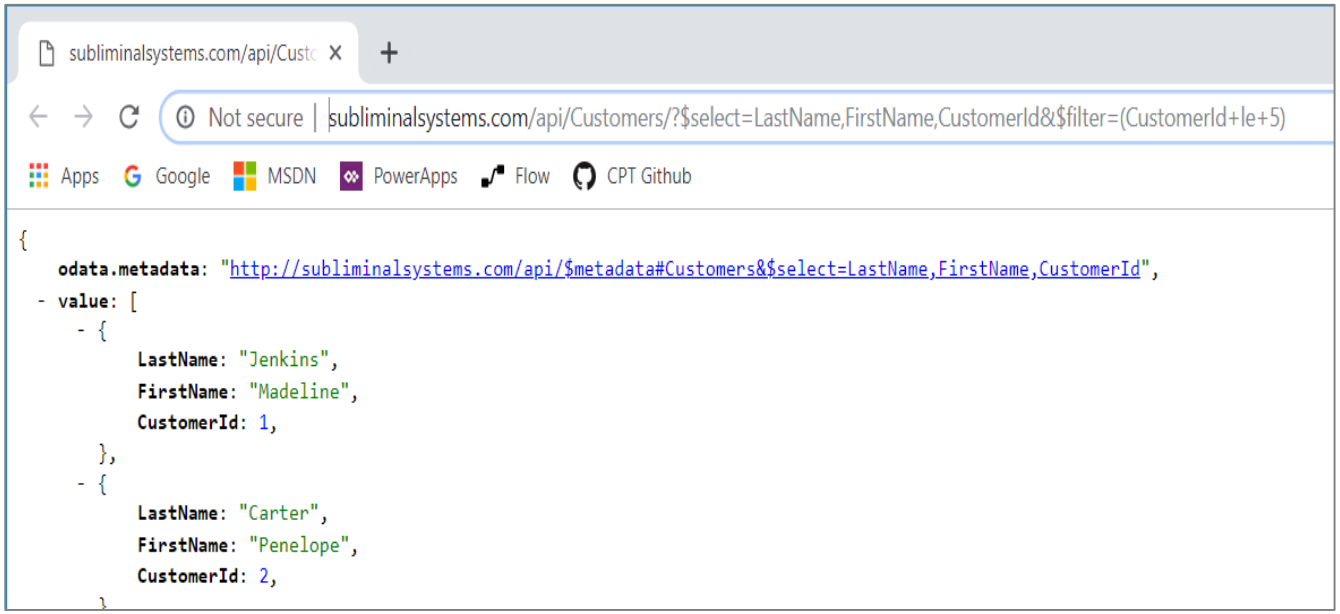
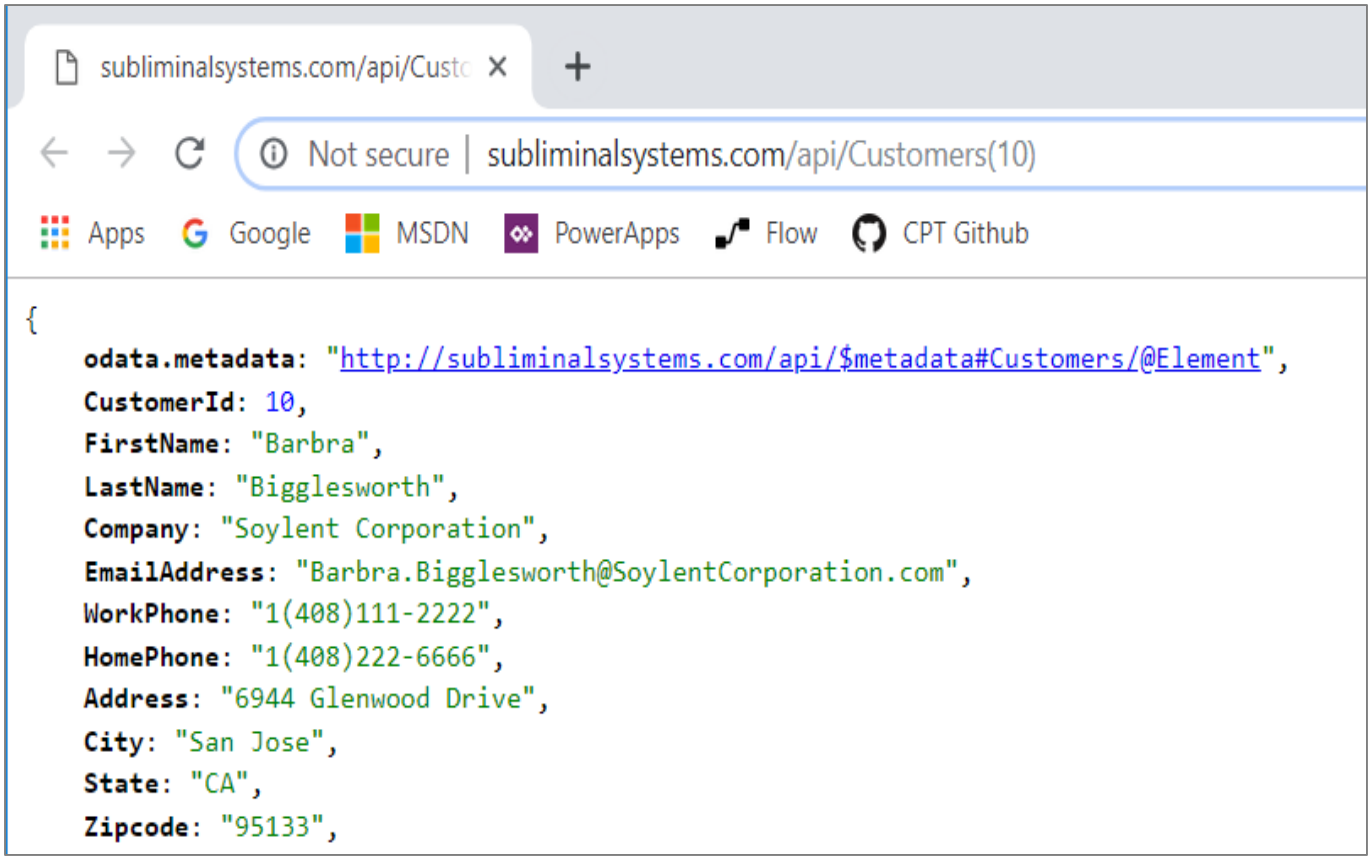
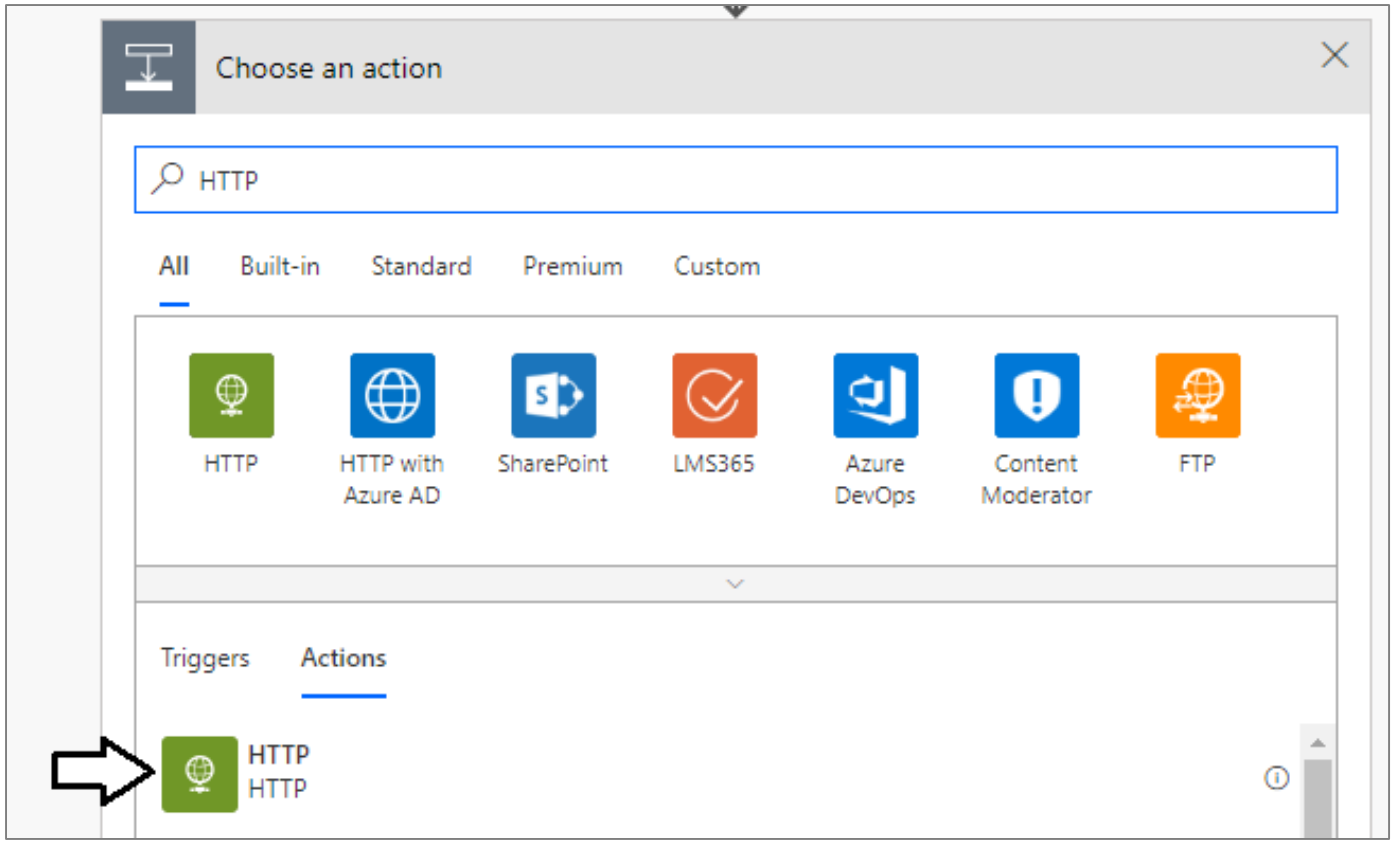
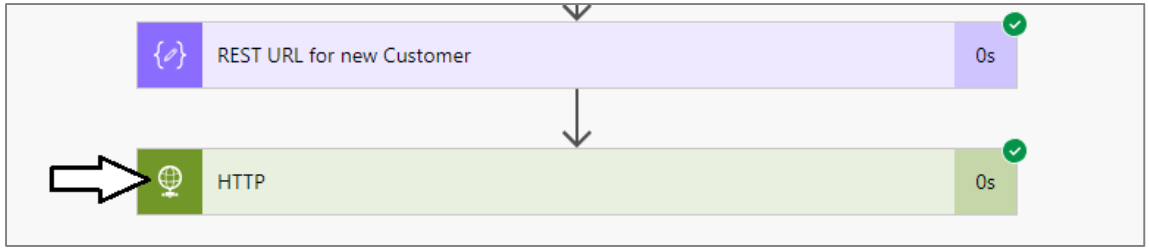
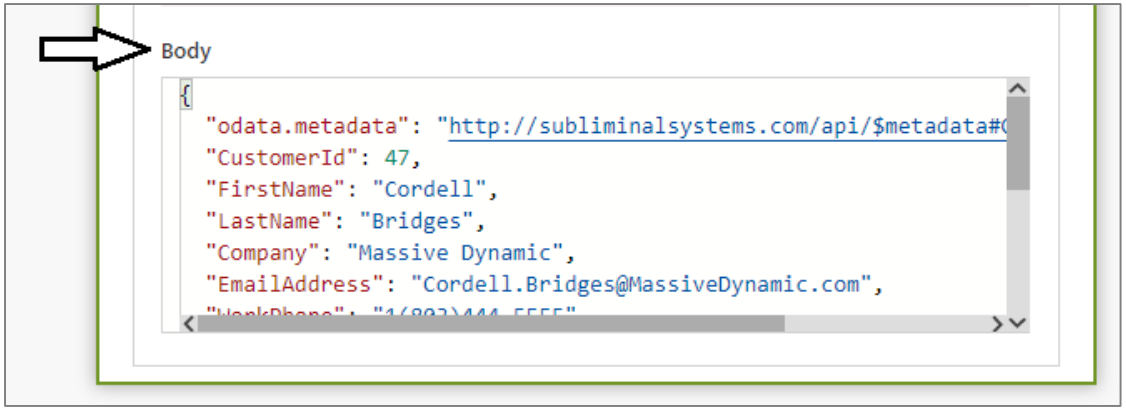


Retrieving a Single OData Instance

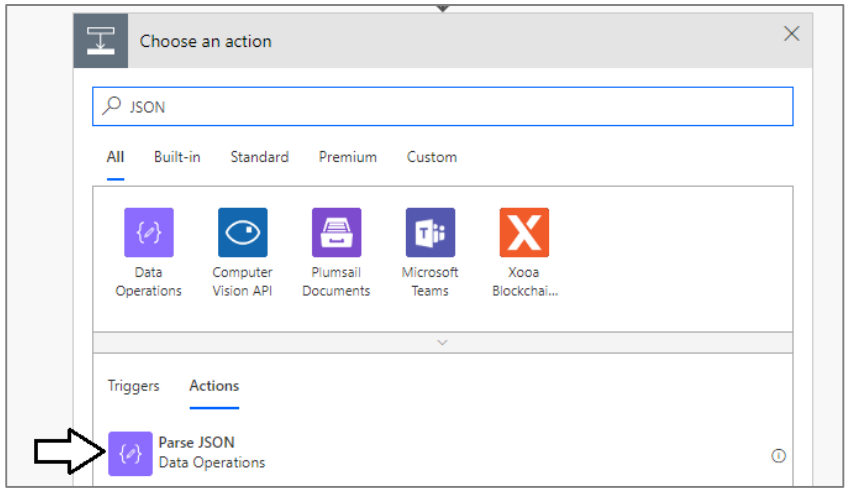


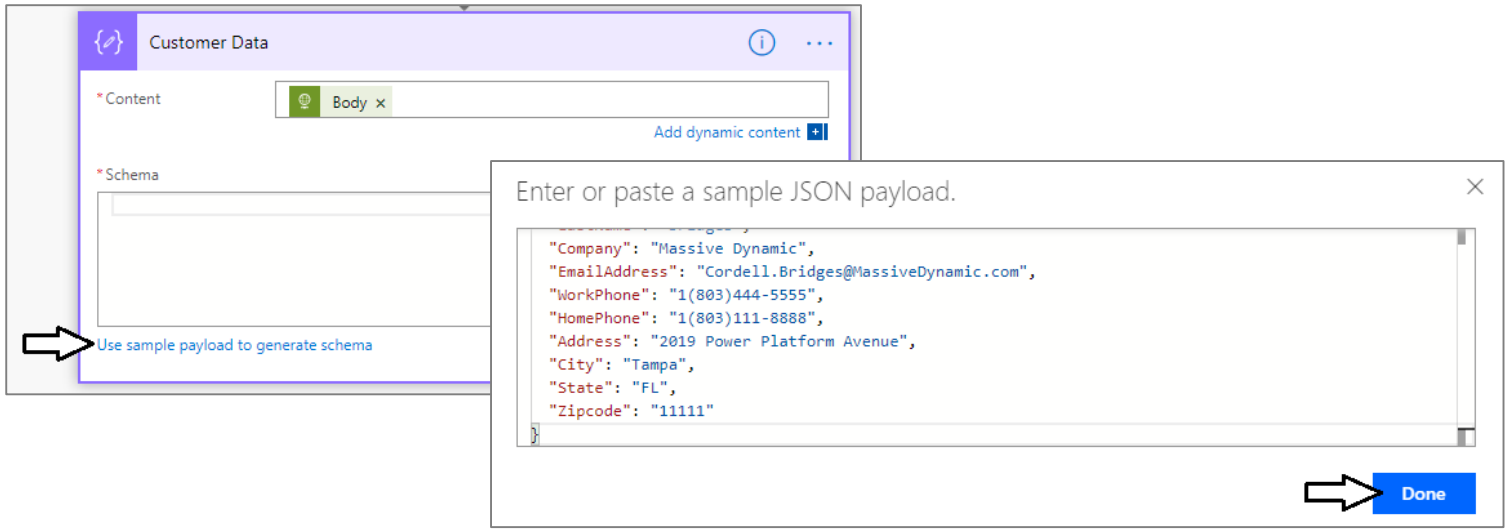

Choose an action
HTTP
All
Built-in
Standard
Premium
Custom
HTTP
HTTP with Azure AD
SharePoint
LMS365
Azure DevOps
Content Moderator
FTP
Triggers
Actions
HTTP
HTTP

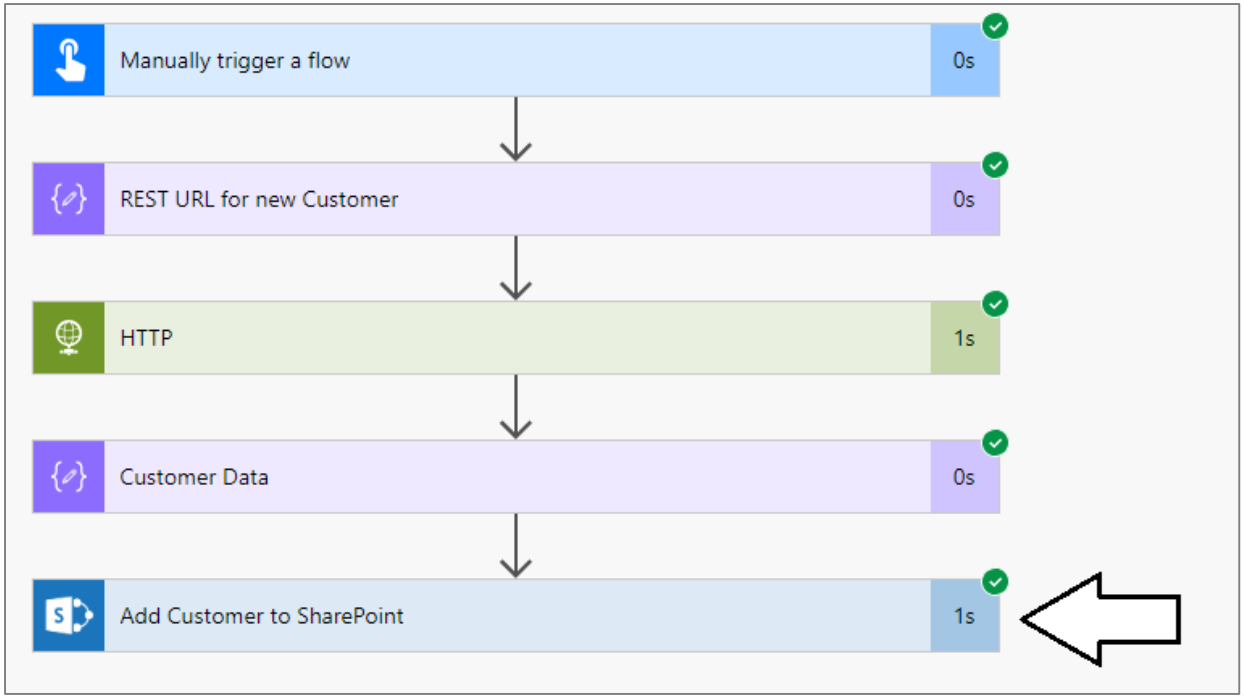

REST URL for new Customer
0s
HTTP
0s


Body
{
"odata.metadata": "http://subliminalsystems.com/api/$metadata#
"CustomerId": 47,
"FirstName": "Cordell",
"LastName": "Bridges",
"Company": "Massive Dynamic",
"EmailAddress": "Cordell.Bridges@MassiveDynamic.com",

Parsing JSON






Manually trigger a flow
0s
REST URL for new Customer
0s
HTTP
1s
Customer Data
0s
Add Customer to SharePoint
1s

Agenda

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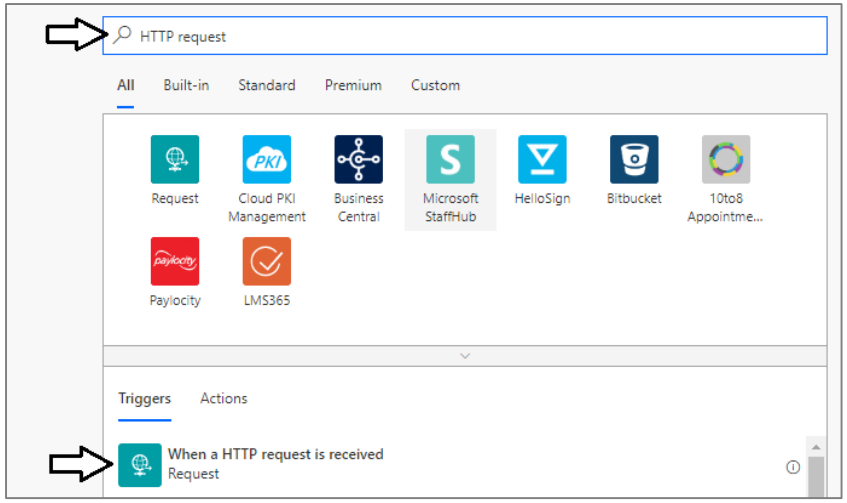
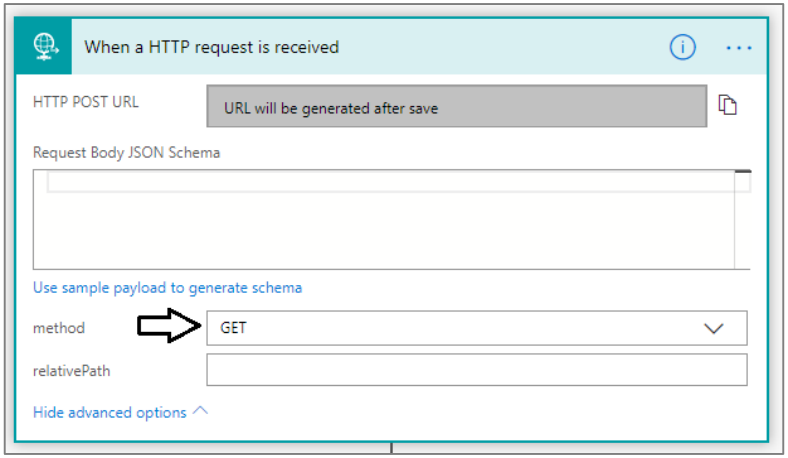
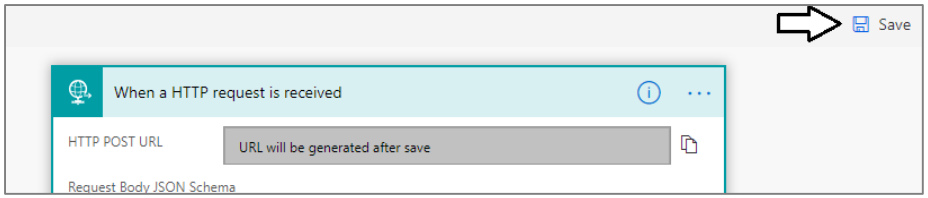
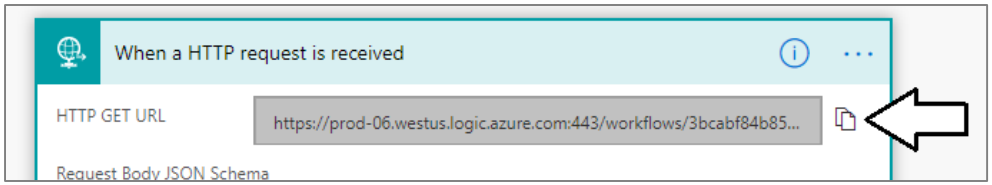
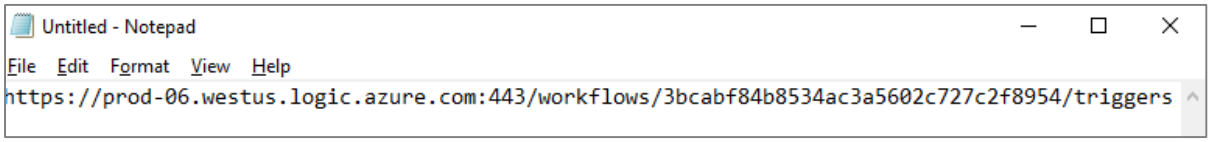
Creating the Child Flow

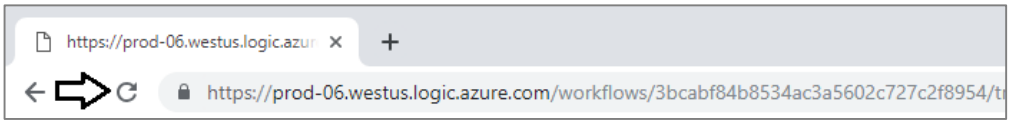




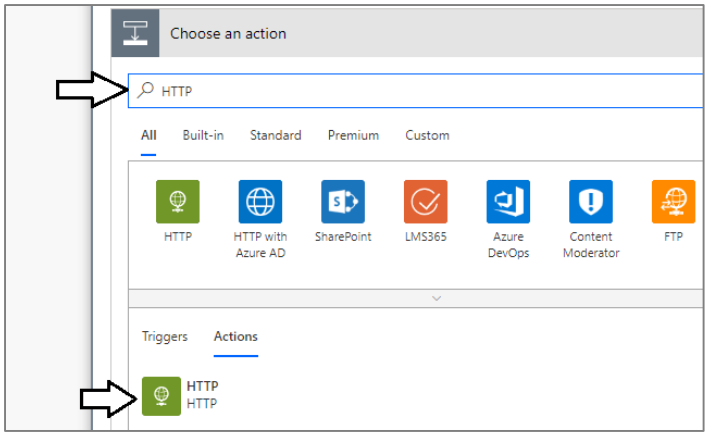

Save
When a HTTP request is received
HTTP POST URL
URL will be generated after save
Request Body JSON Schema

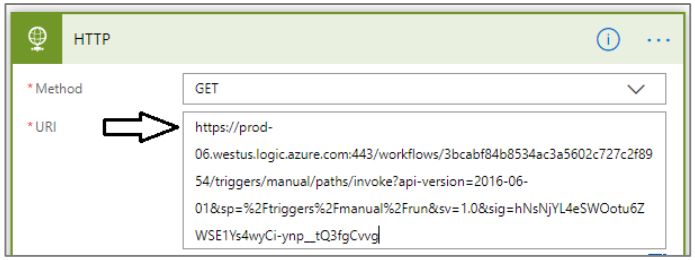

When a HTTP request is received
HTTP GET URL
https://prod-06.westus.logic.azure.com:443/workflows/3bcabf84b85...
Request Body JSON Schema


Untitled - Notepad
File Edit Format View Help
https://prod-06.westus.logic.azure.com:443/workflows/3bcabf84b8534ac3a5602c727c2f8954/triggers


https://prod-06.westus.logic.azur
https://prod-06.westus.logic.azure.com/workflows/3bcabf84b8534ac3a5602c727c2f8954/t

Parent Flow


Choose an action
HTTP
All
Built-in
Standard
Premium
Custom
HTTP
HTTP with Azure AD
SharePoint
LMS365
Azure DevOps
Content Moderator
FTP
Triggers
Actions
HTTP
HTTP


HTTP
* Method
GET
* URI
https://prod-06.westus.logic.azure.com:443/workflows/3bcabf84b8534ac3a5602c727c2f8954/triggers/manual/paths/invoke?api-version=2016-06-01&sp=%2Ftriggers%2Fmanual%2Frun&sv=1.0&sig=hNsNjYL4eSWOotu6ZWSE1Ys4wyCi-ynp_tQ3fgCvvg

Agenda

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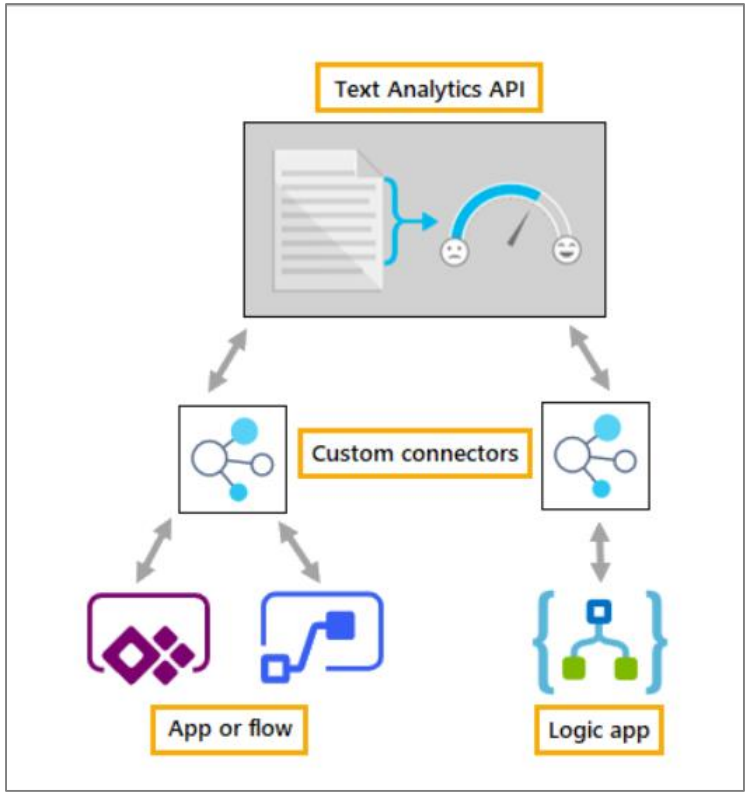
Standard Connectors vs Custom Connectors

- PowerApps Supports two types of connectors
  - Standard connectors supplied out-of-box and vetted by Microsoft
  - Custom connectors created by organizations for their own use



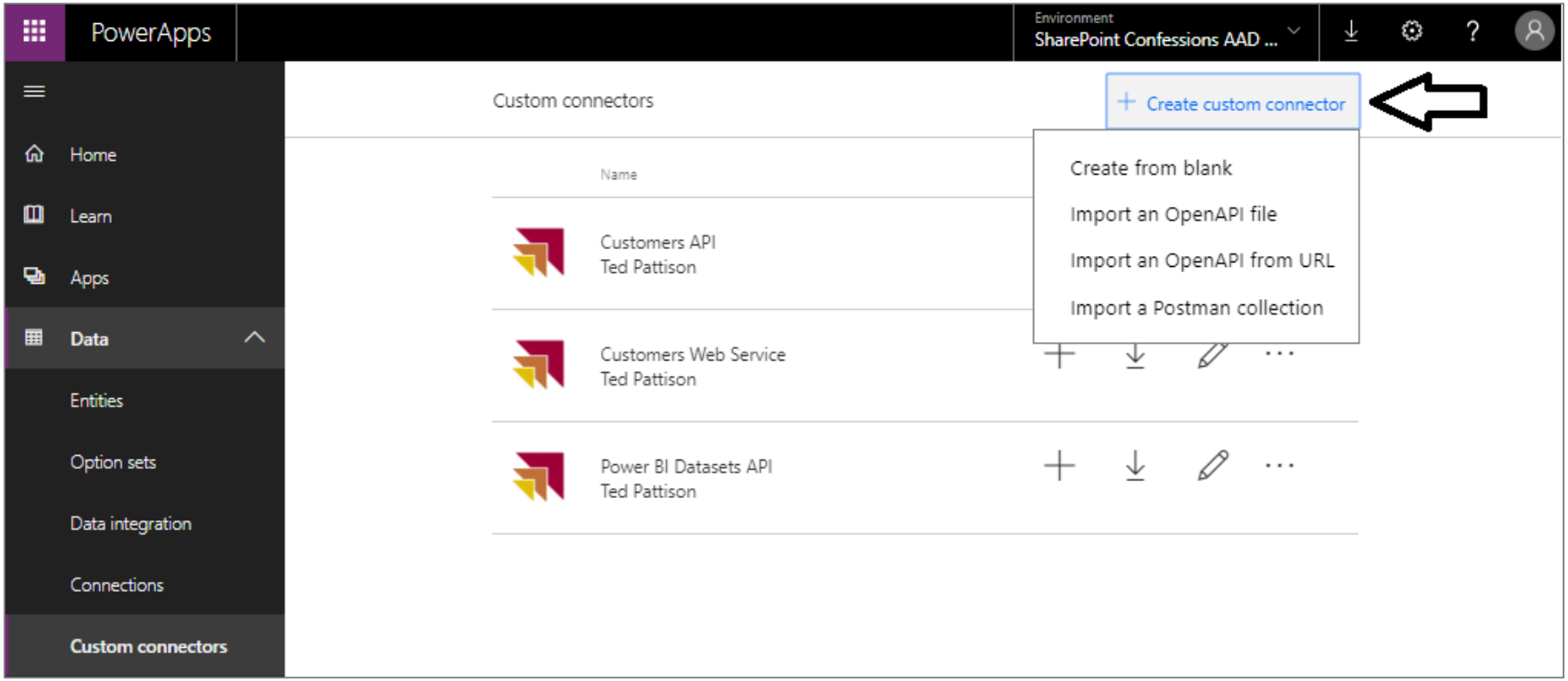
OpenAPI Specification and Swagger

- OpenAPI specification (OAS)
  - Community-driven open specification
  - defines a standard, programming language-agnostic interface description for REST APIs
  - allows both humans and computers to discover and understand web service API
  - OpenAPI Specification removes guesswork in calling a service.
- API description defined using JSON

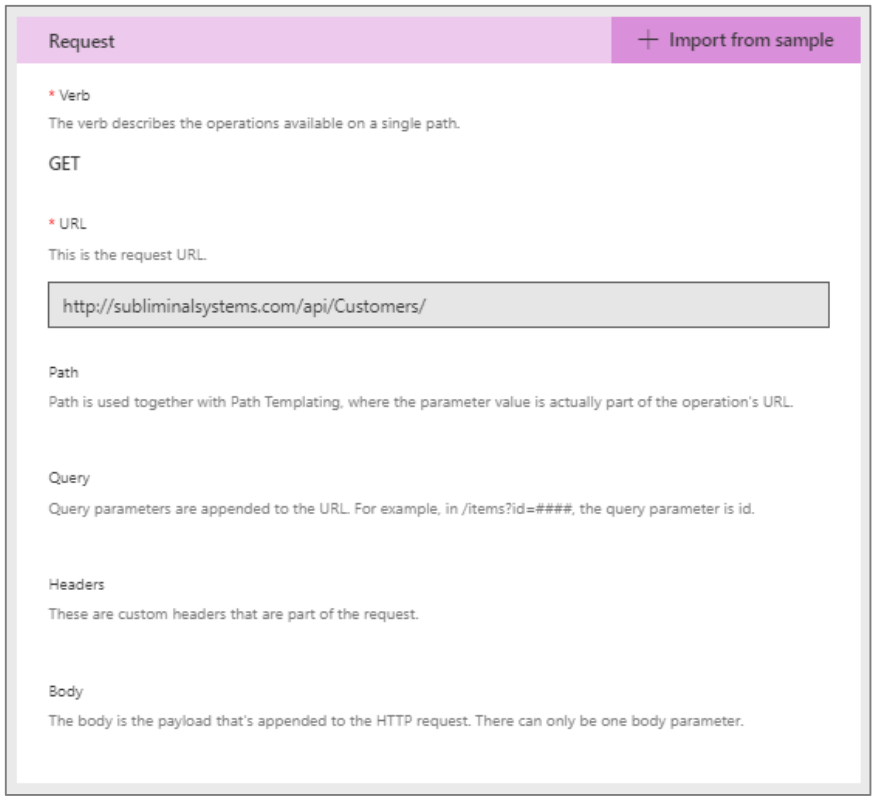
Open API Concepts

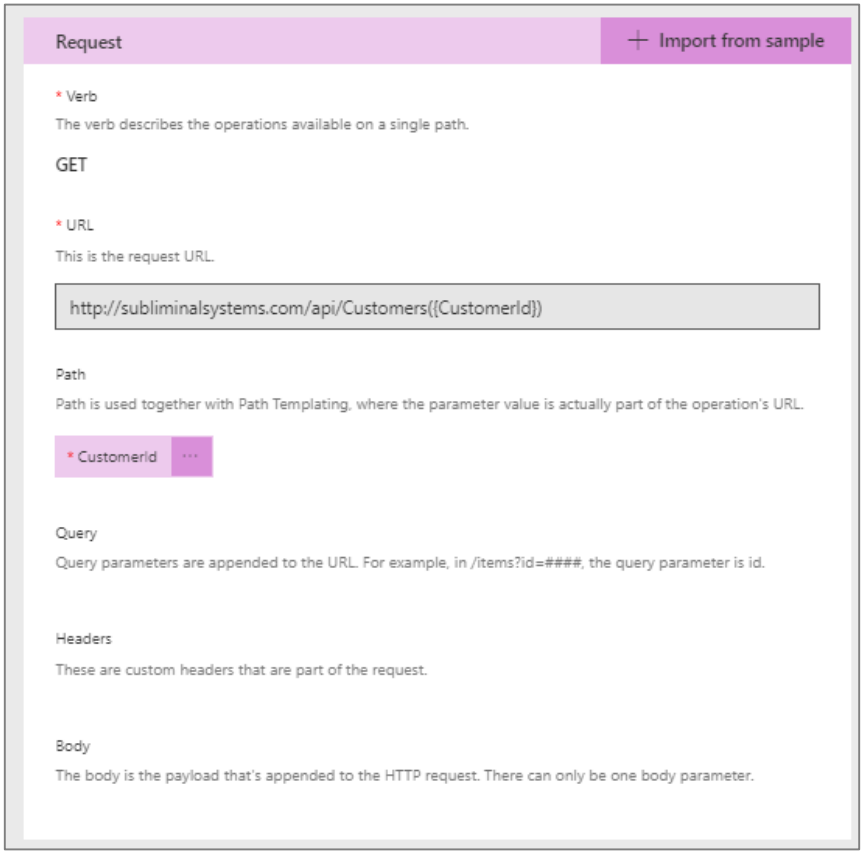
- Paths
  - s
- Parameters
  - s
- Responses
  - s
- Security
  - s

Creating a New Custom Connector

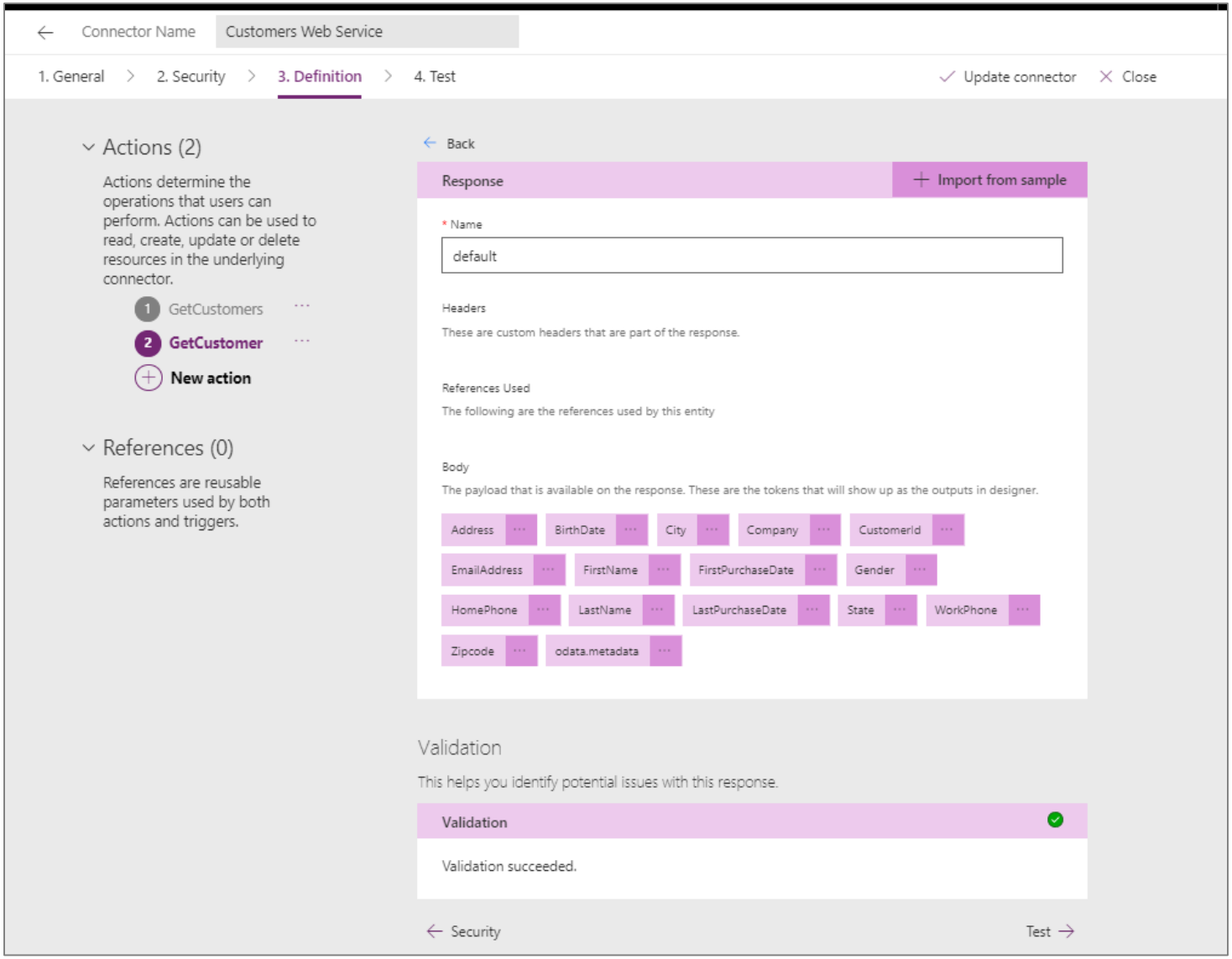


Defining Requests





Defining the Response



Agenda

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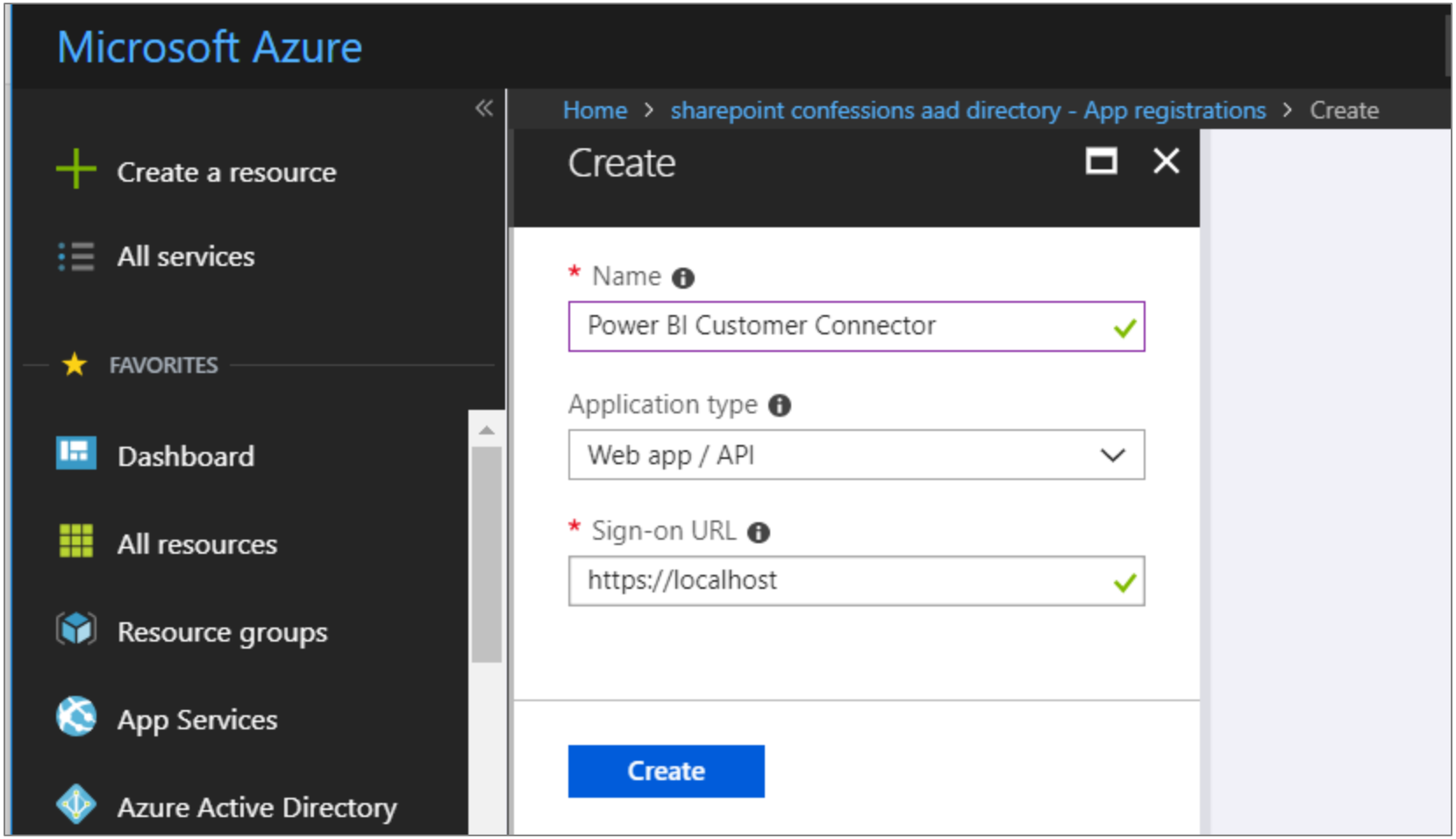
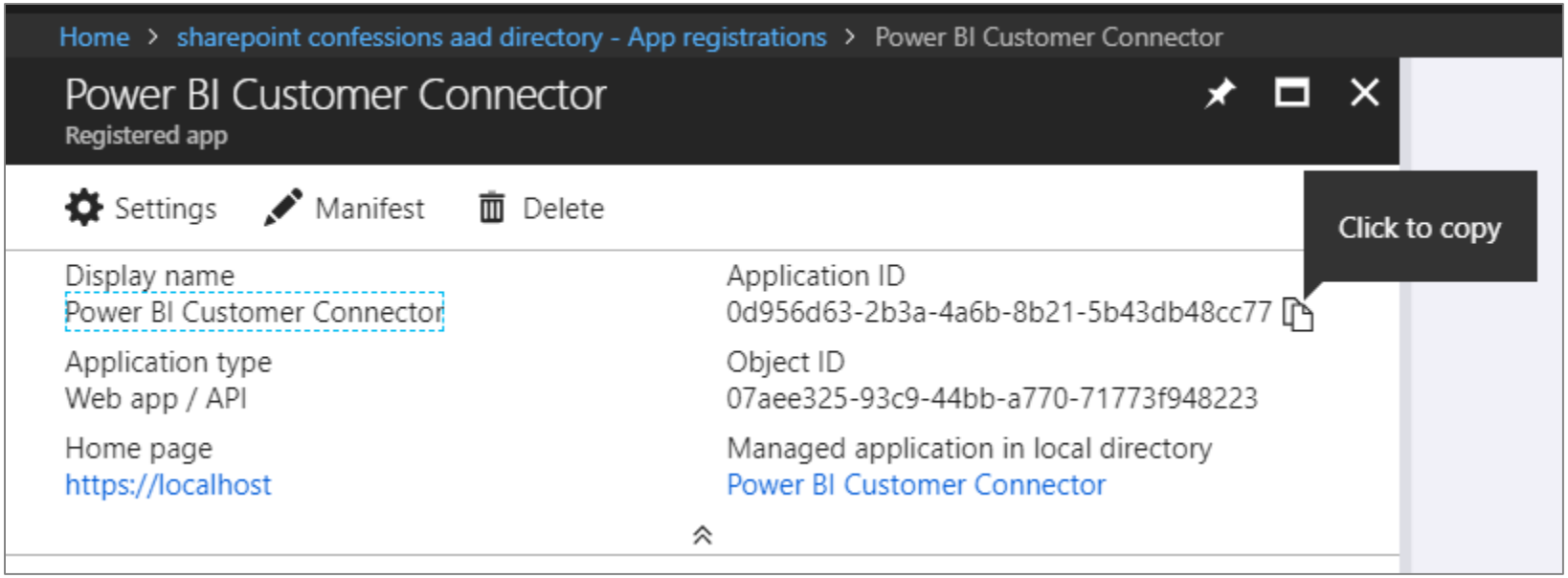
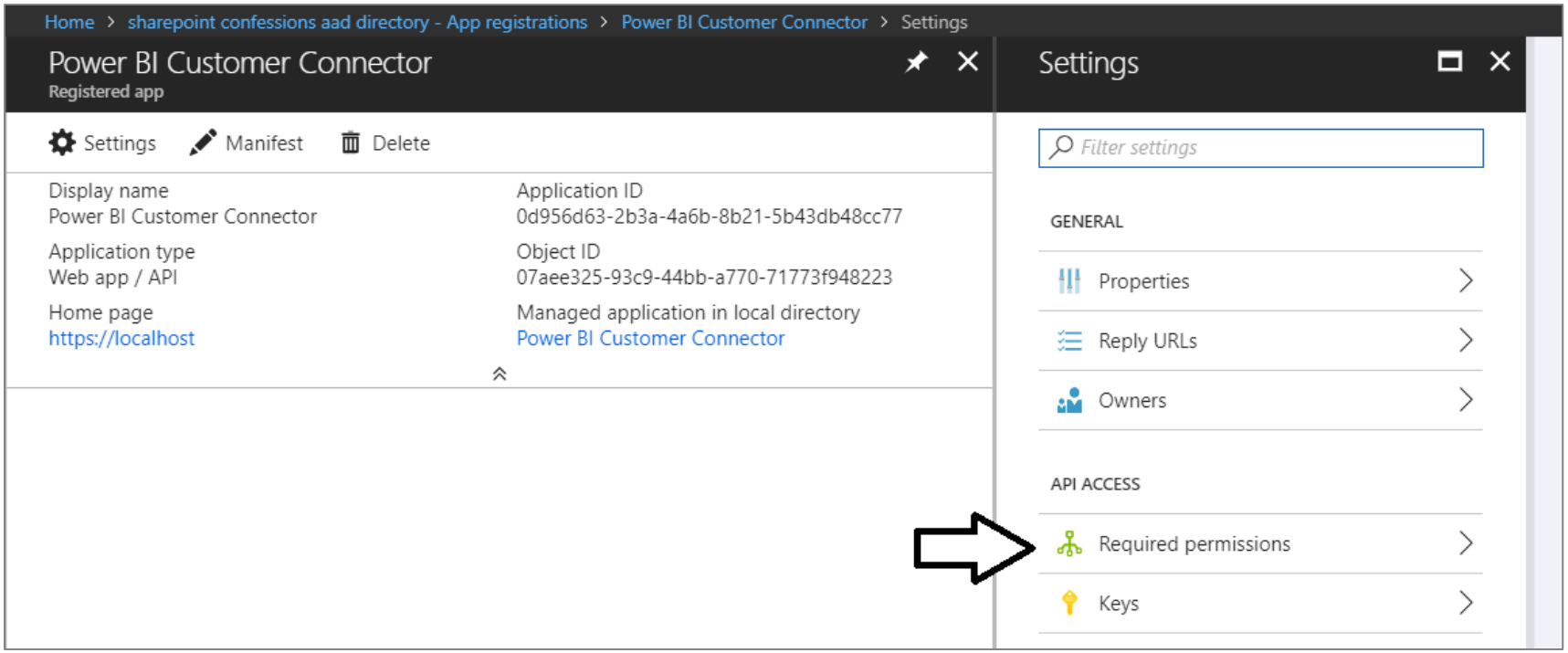
Creating an Azure AD Application



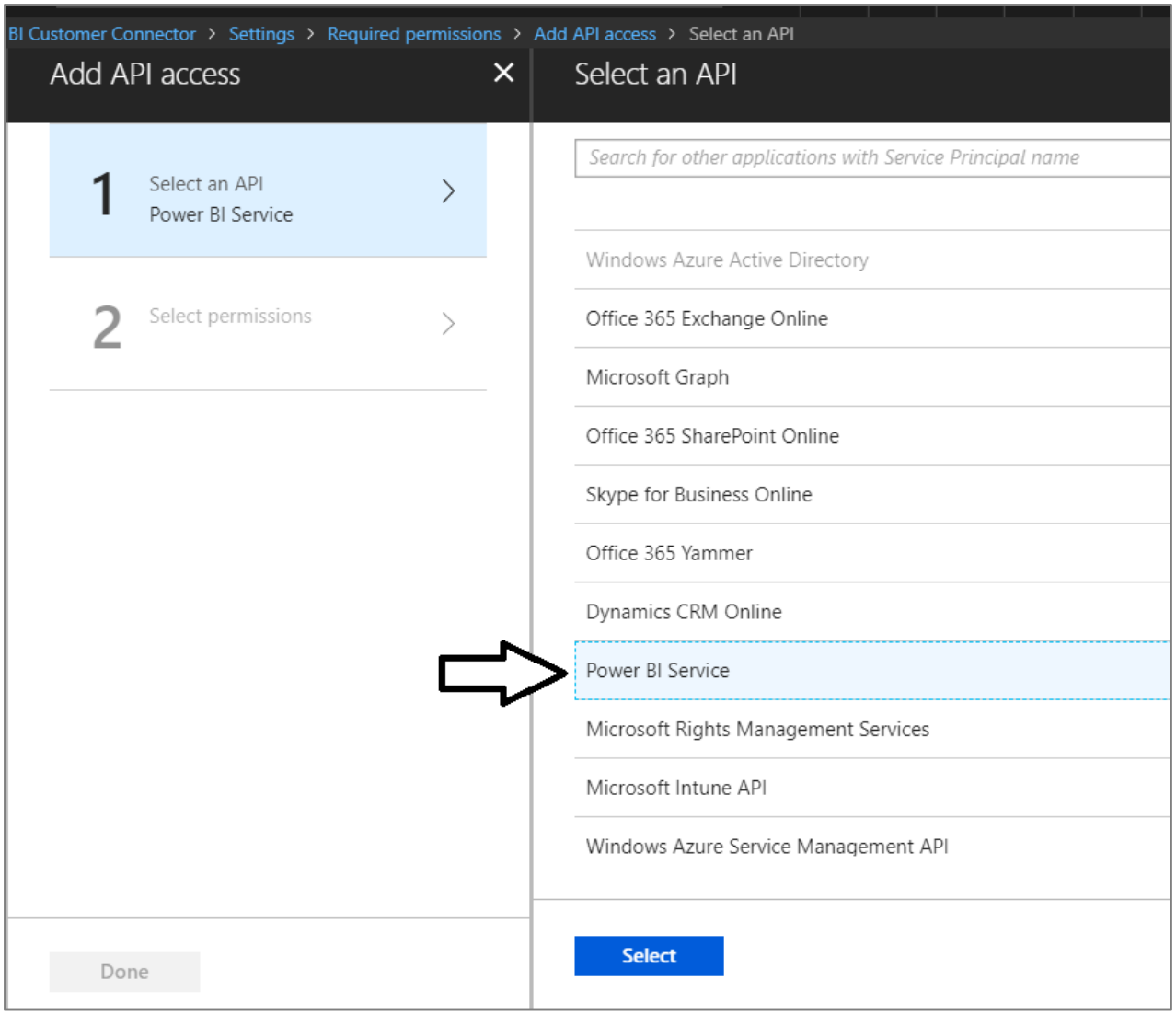
Application ID (aka Client ID)



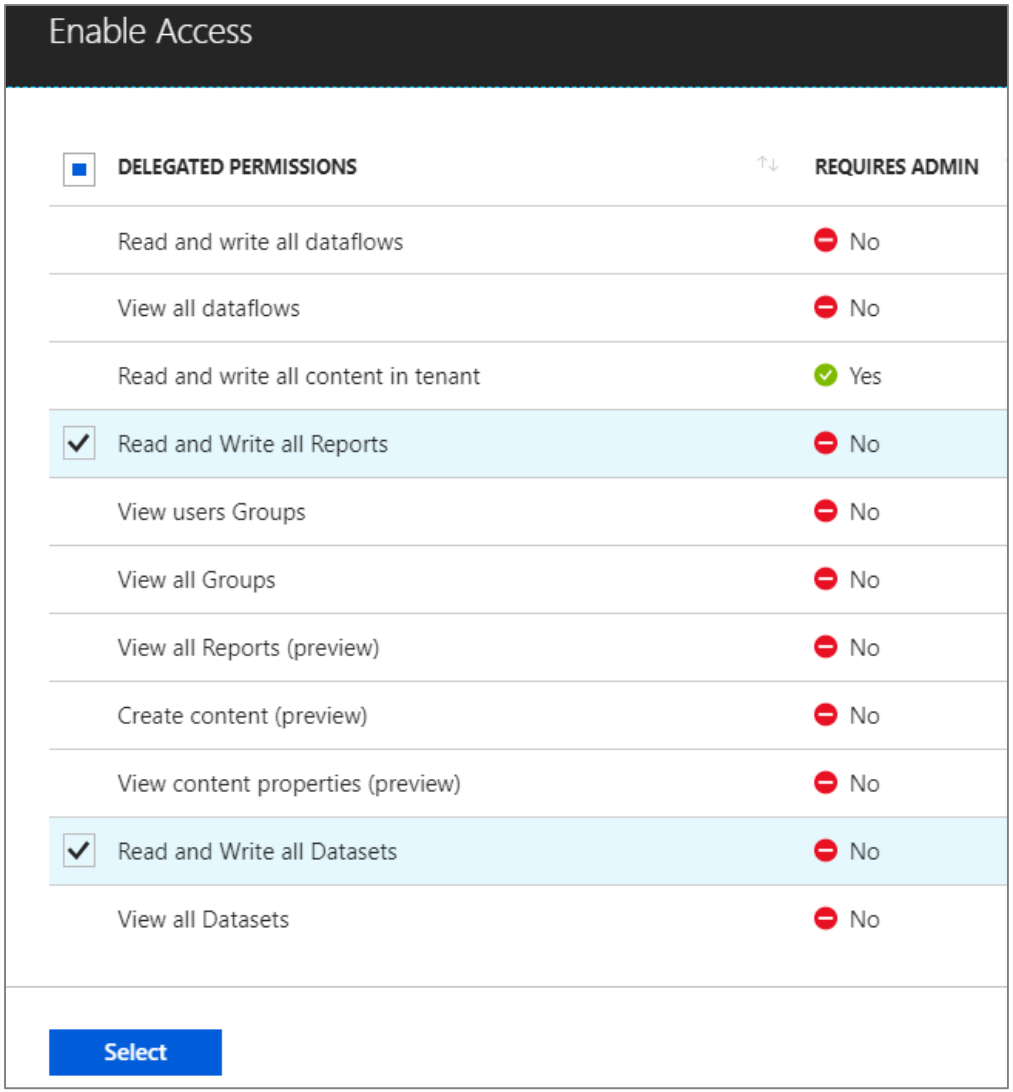
Configuring Permissions



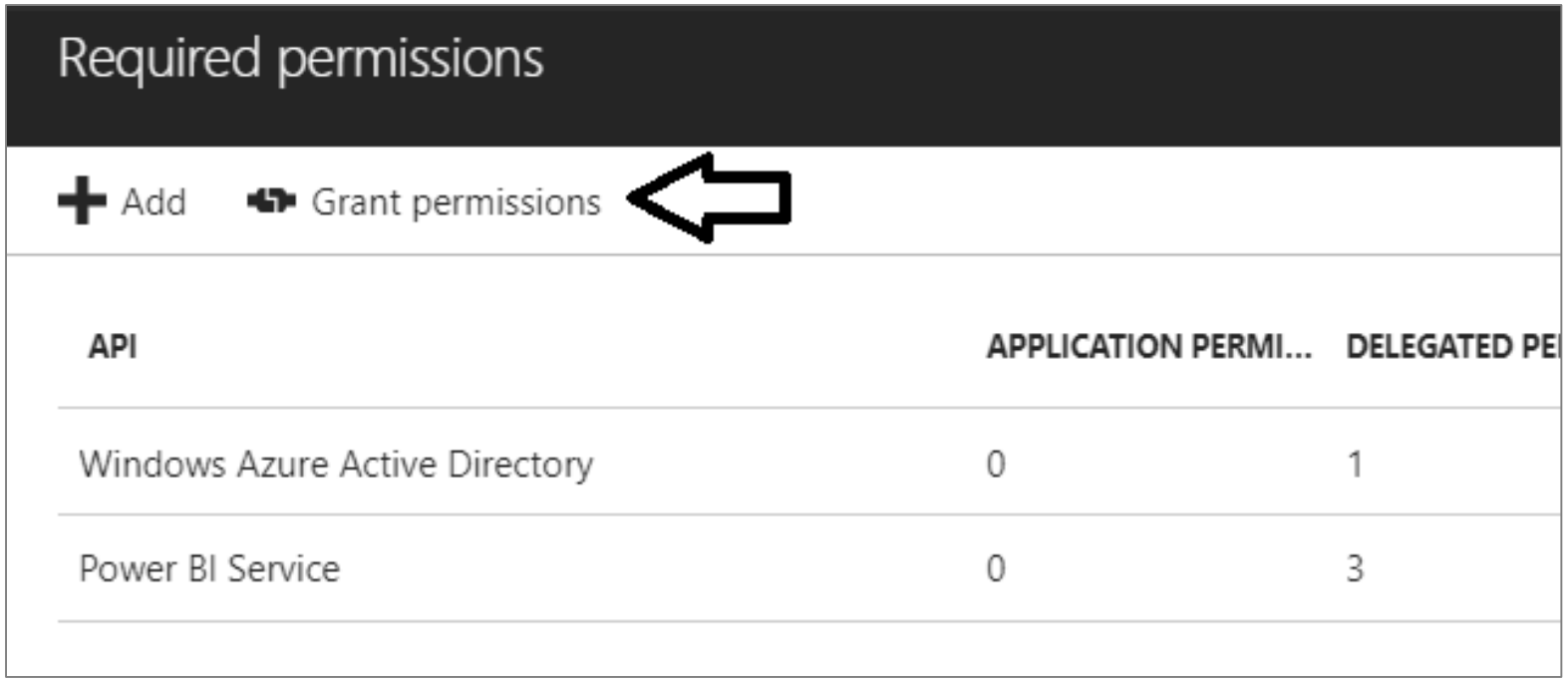
Select the Power BI Service for the API



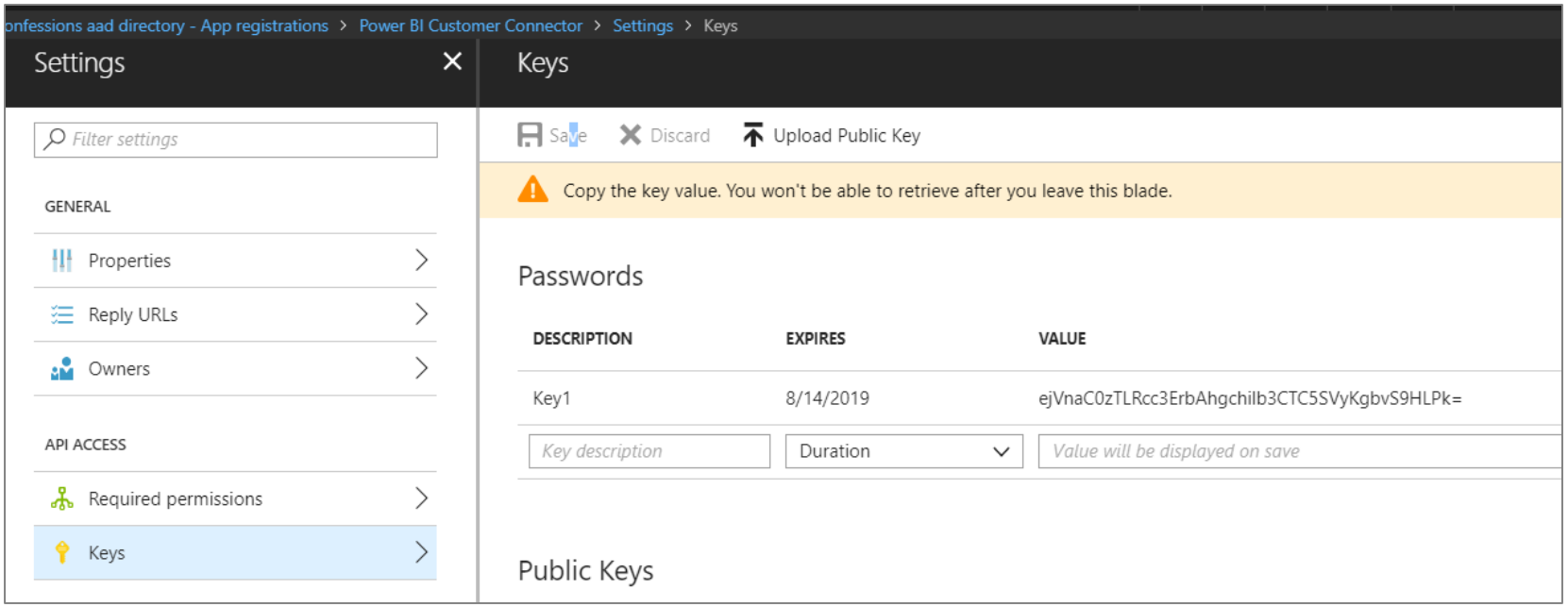
Select the Required Permissions



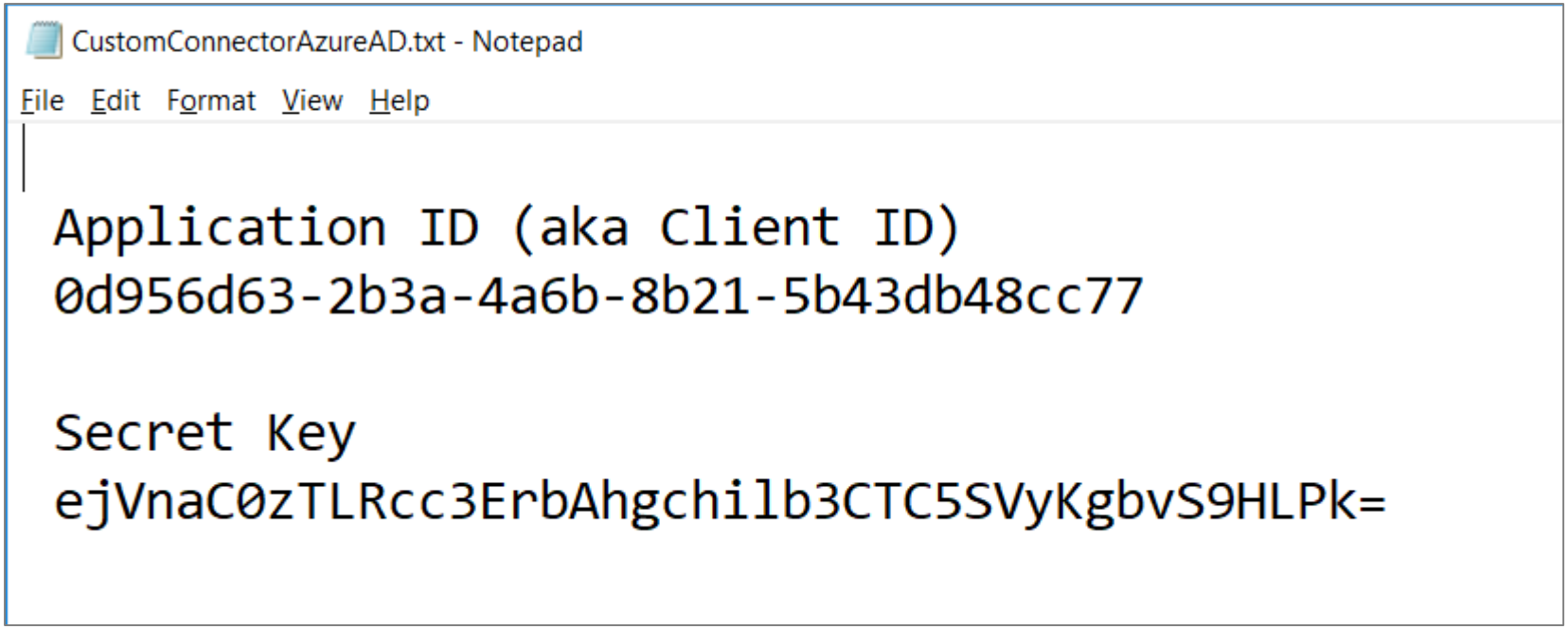
Granting Permissions in Azure AD Portal



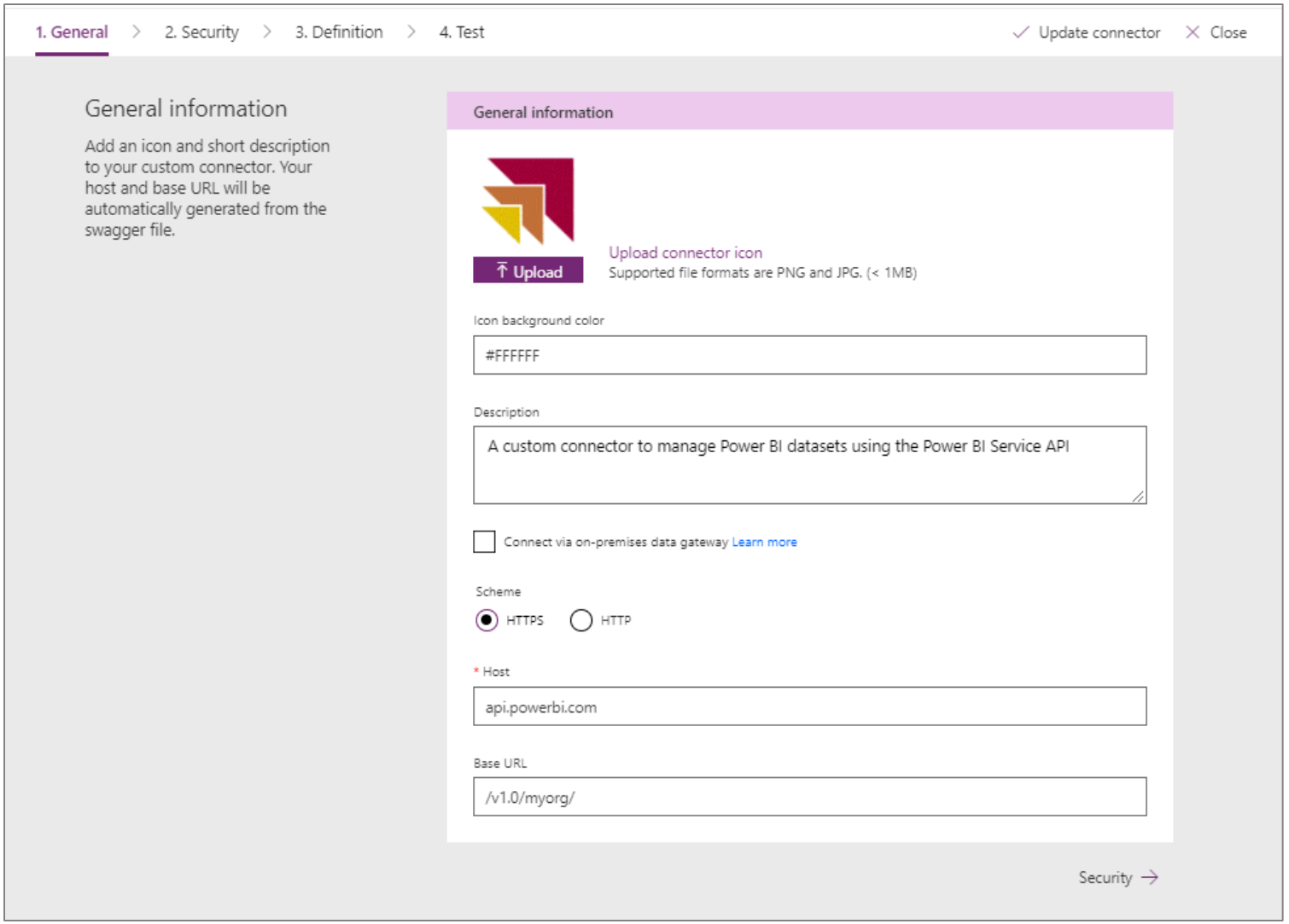
Generating a Key Secret



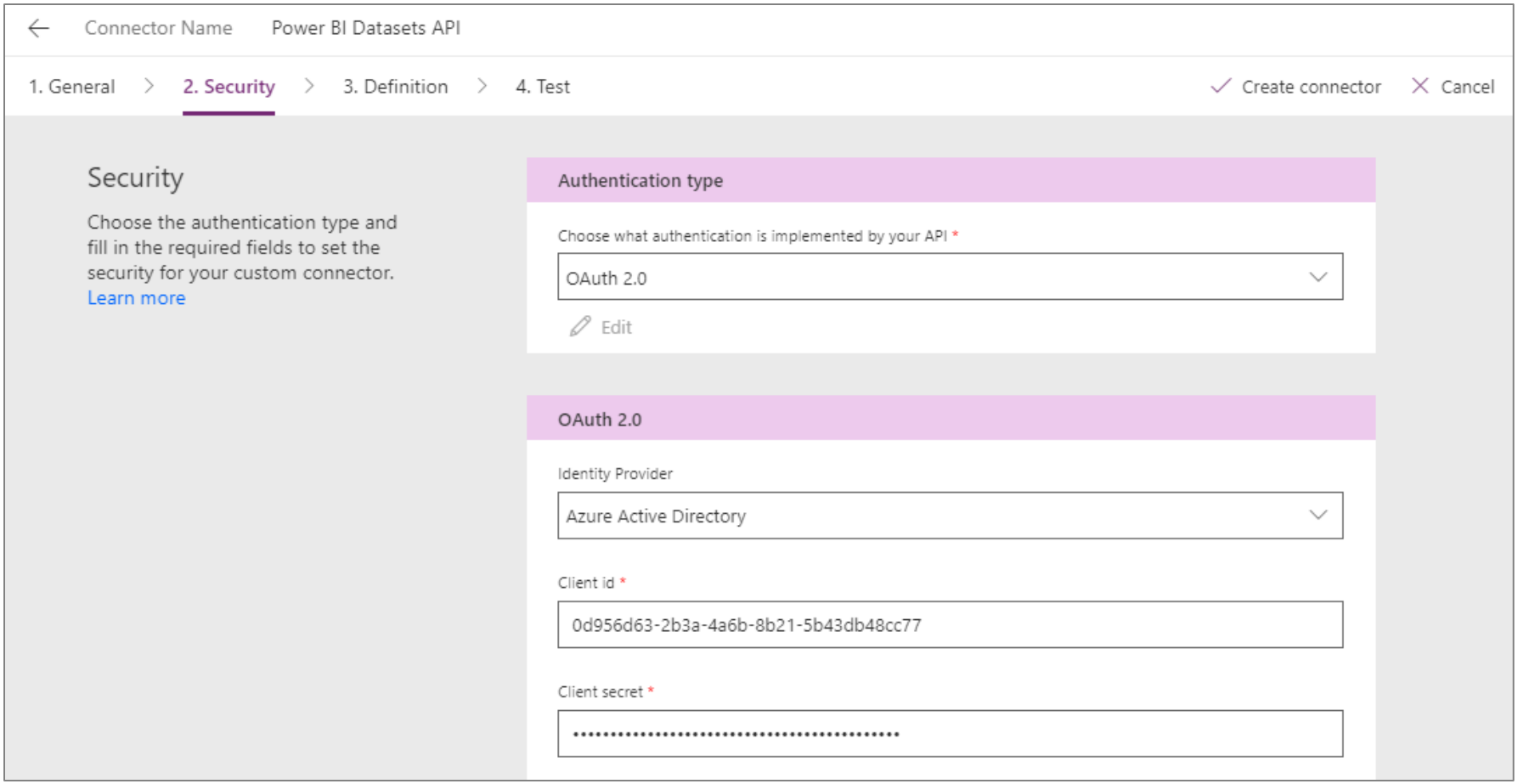
Data Required to Create Custom Connector



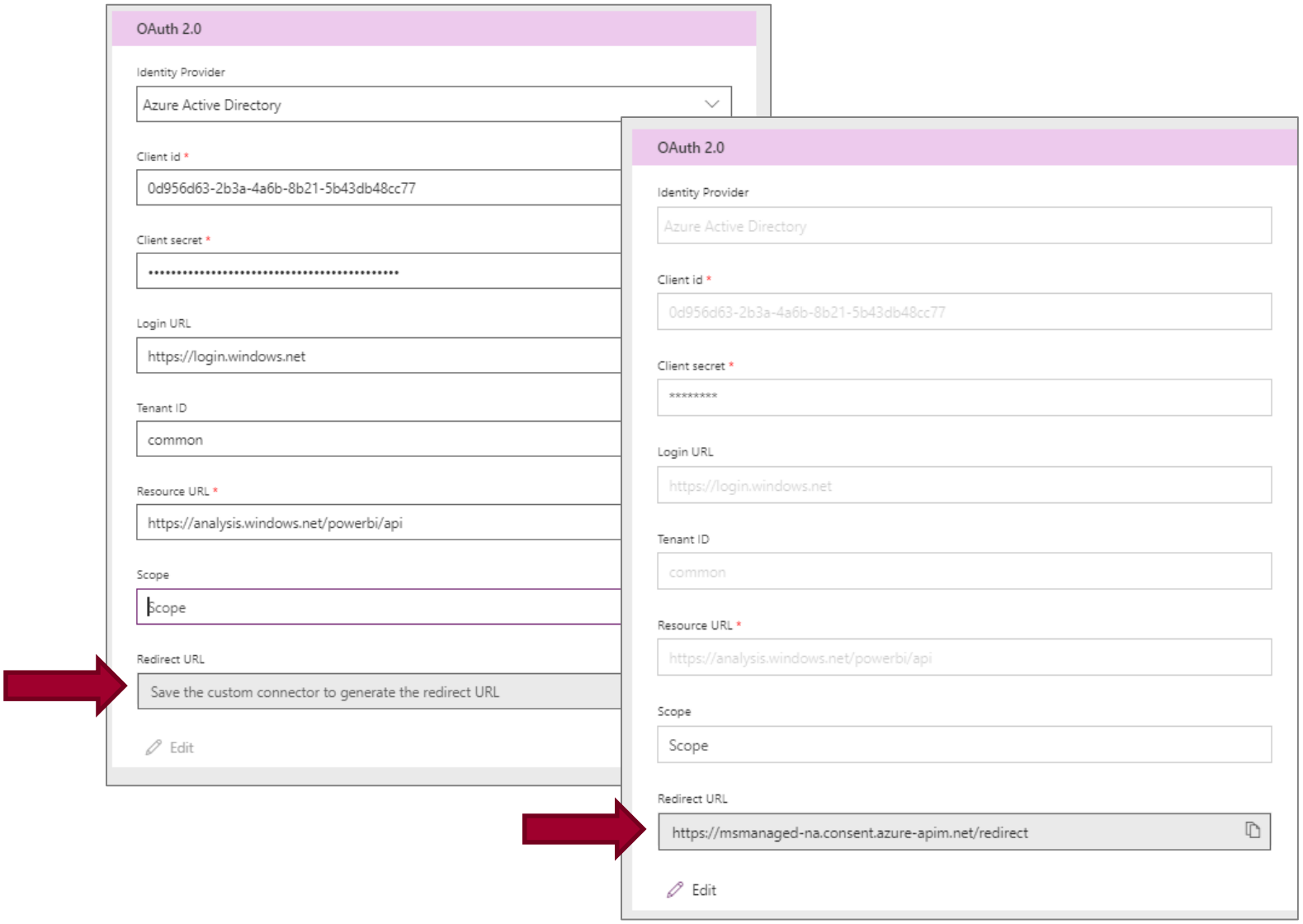
Creating the New Custom Connector



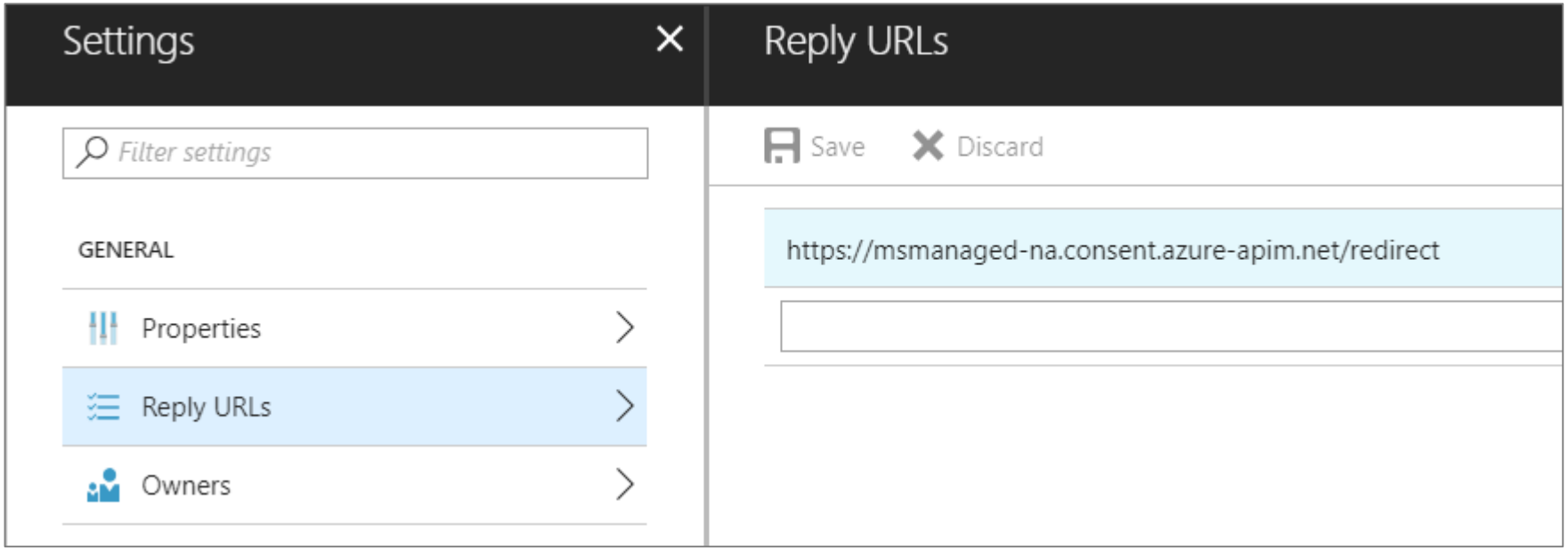
Configuring the Client Id and Client Secret



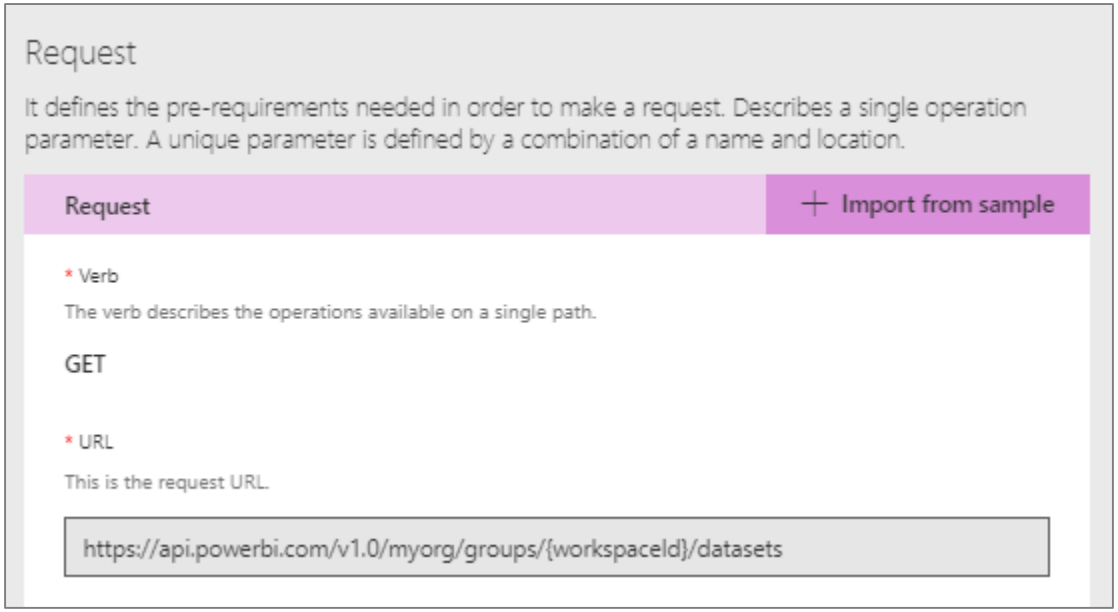
What About the Redirect URL?



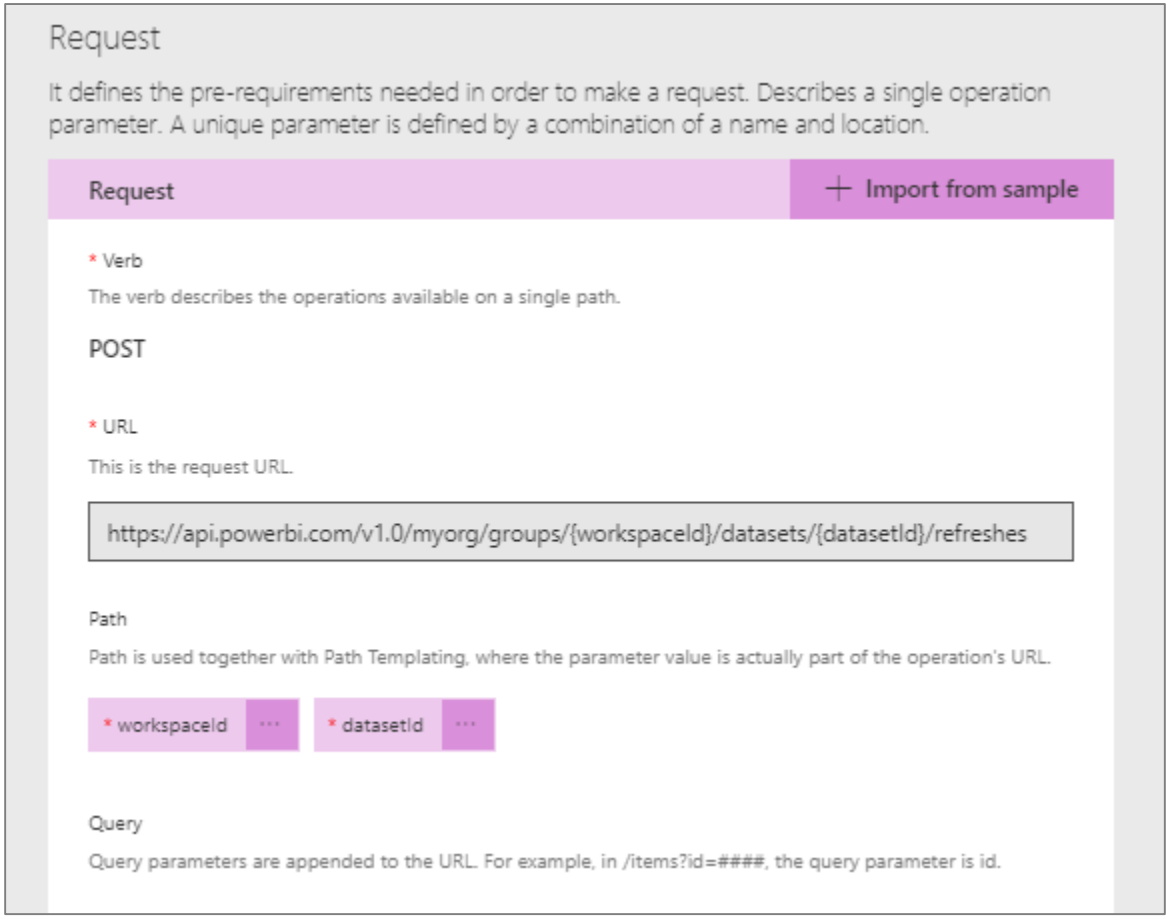
Adding the Redirect URL back in Azure AD



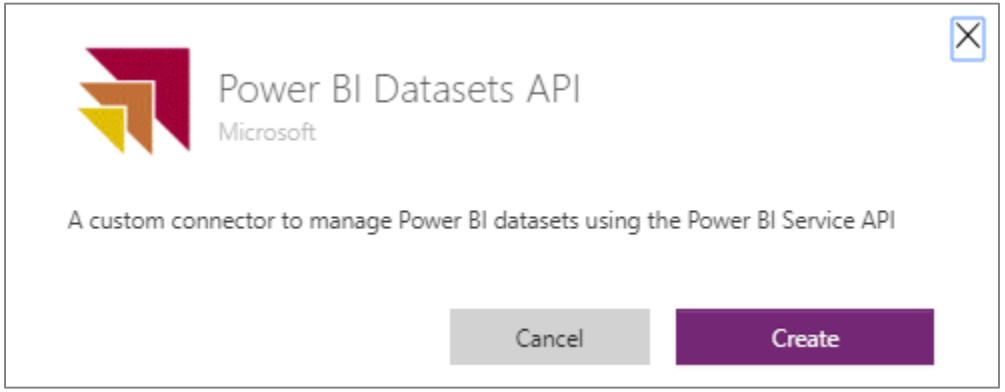
GetDatasets

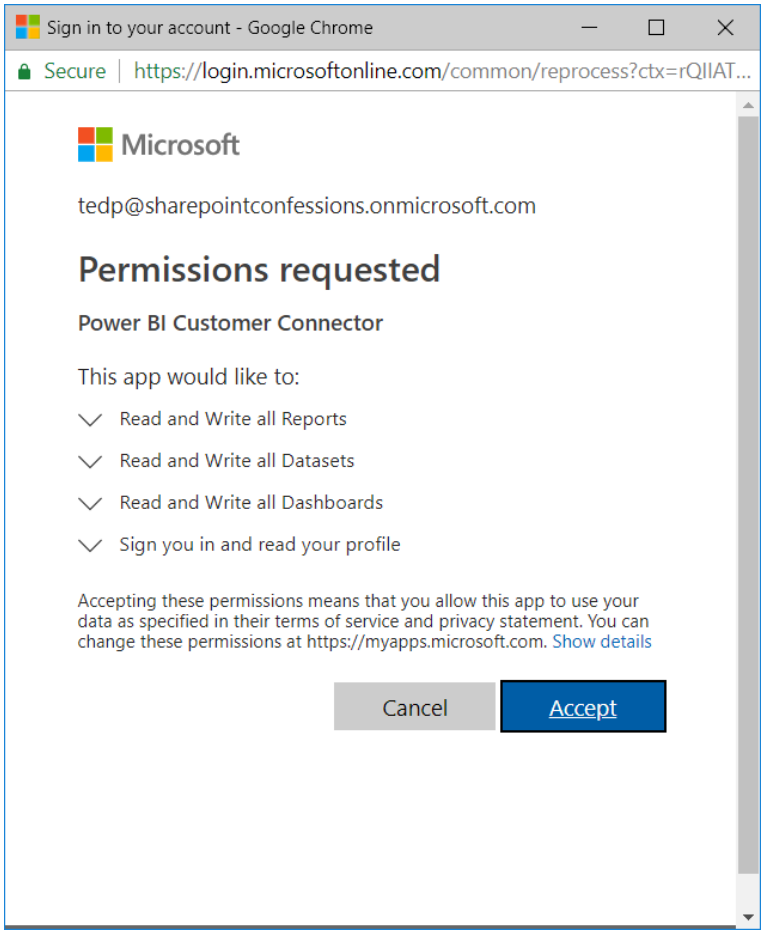


RefreshDataset

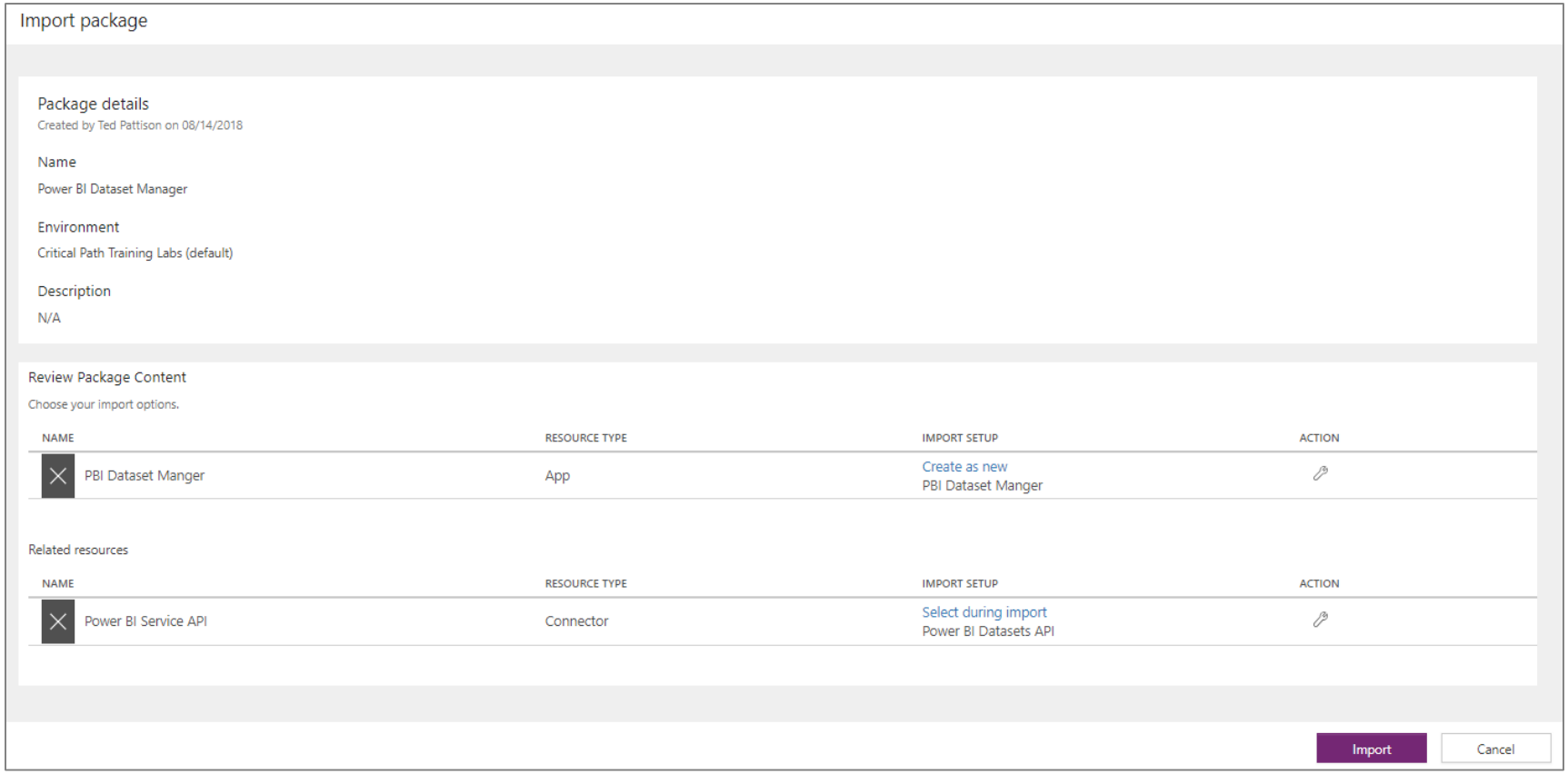


Creating a New Connection





Importing Apps that use Custom Connections



Summary

- ✓ Calling External Services using HTTP Actions
- ✓ Executing Child Flows from a Parent Flow
- ✓ Creating and Testing Custom Connector
- ✓ Configuring a Custom Connector to use OAuth