



Developing Custom Connectors for the Microsoft Power Platform

Thursday, December 12, 2019

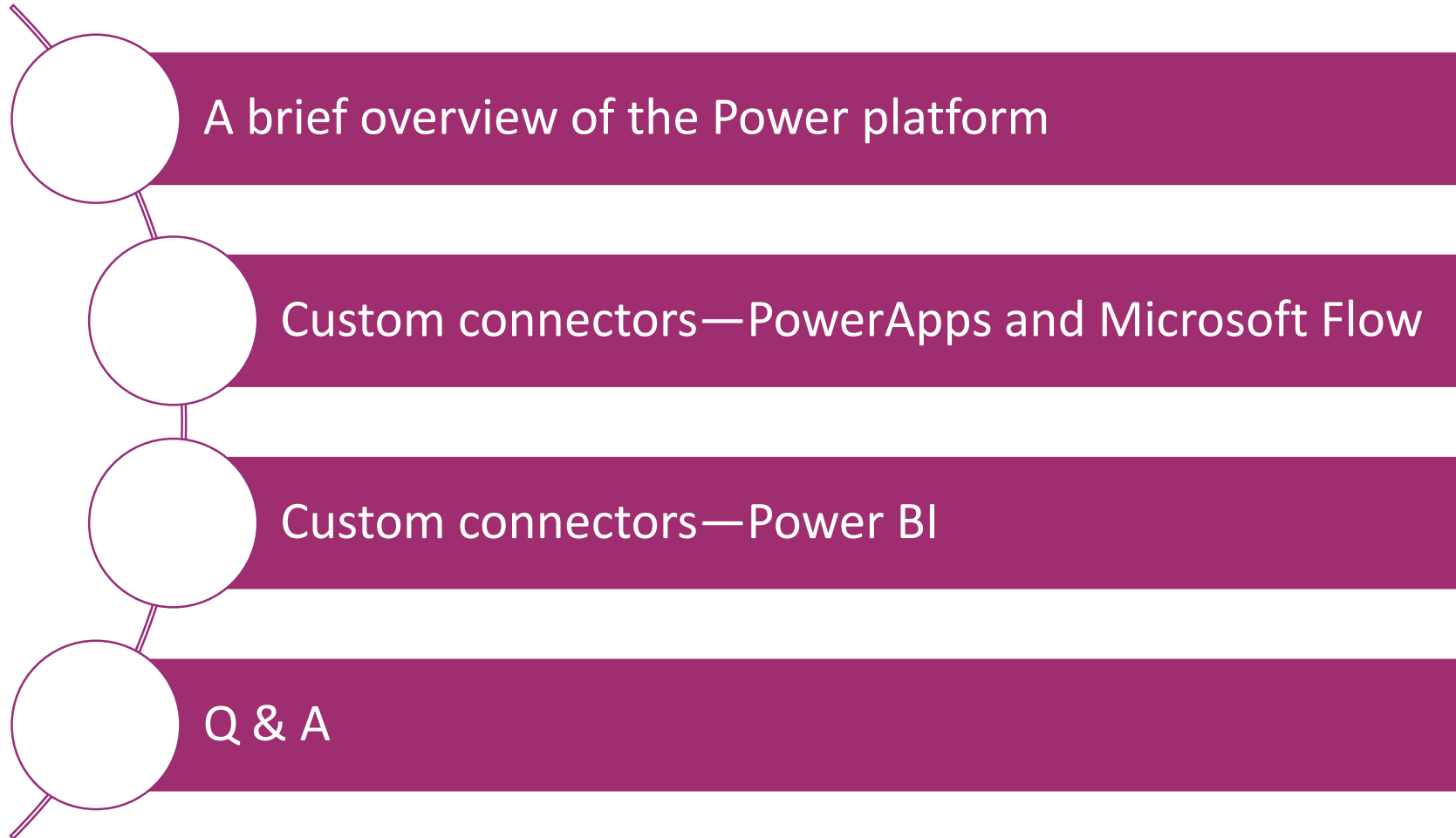
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- www.extranetusermanager.com
- Twitter @carsonpeter
- President Toronto SharePoint User Group



Agenda



**Poll – Which do
you use today?**



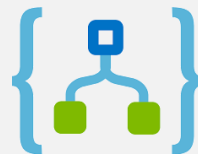
Office 365



Power Automate (Flow)



PowerApps



Azure Logic Apps

Dynamics 365

Office 365

Standalone apps

Data connectors



PowerApps



Power Automate

Common data service for apps



Power BI

Azure

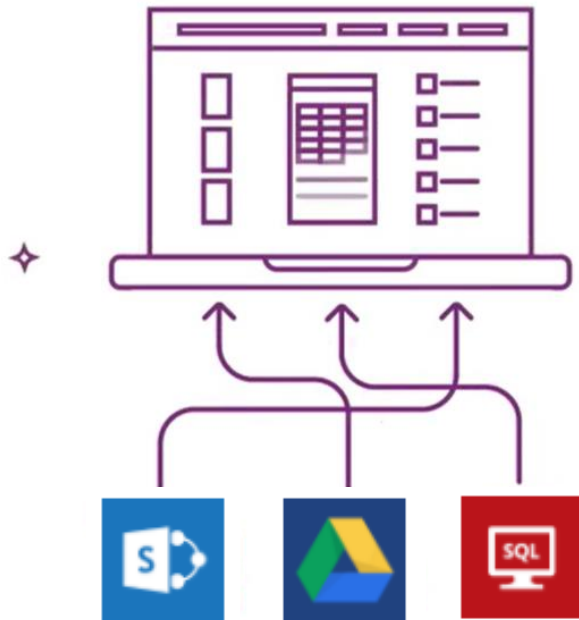
Microsoft Power platform

Custom connectors

Extending the data reach



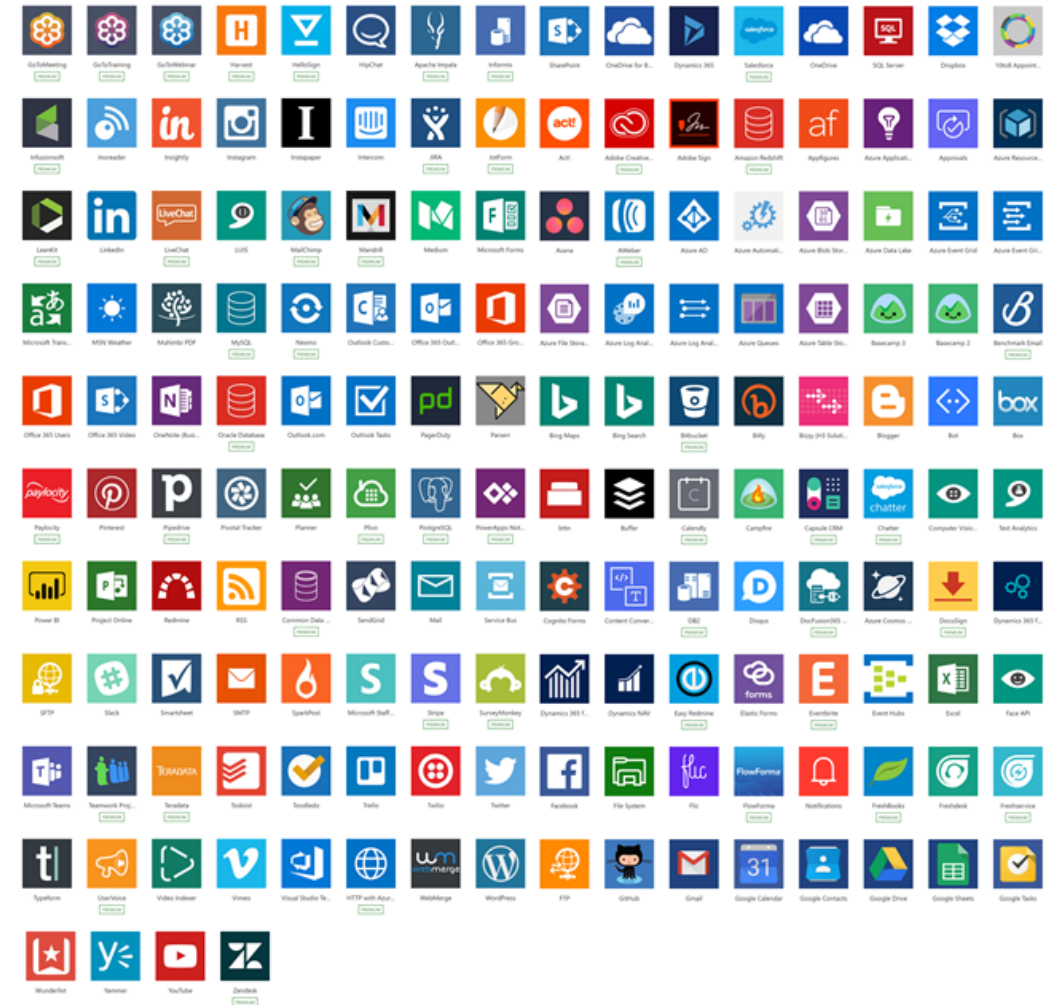
A connector is a wrapper around an “API” that allows the underlying service to talk to Power Automate and PowerApps



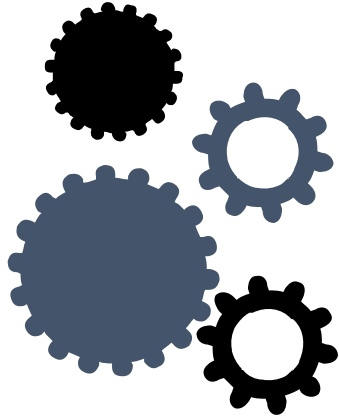
Cloud and on-premises connectivity

- With public connectors, built-in connectivity to over 200 cloud services, files, databases, web APIs, etc.
- <https://us.flow.microsoft.com/en-us/connectors/>
- Seamless hybrid connectivity to on-premises systems via the On-Premises Data Gateway
- Connect to the service with your own security credentials
- With custom connectors, you can extend the reach for your organization

Hundreds of connectors today



Why build a connector?



Enterprise developers

Looking for connectivity to a service we don't currently support
Need connectivity to a custom or internal service

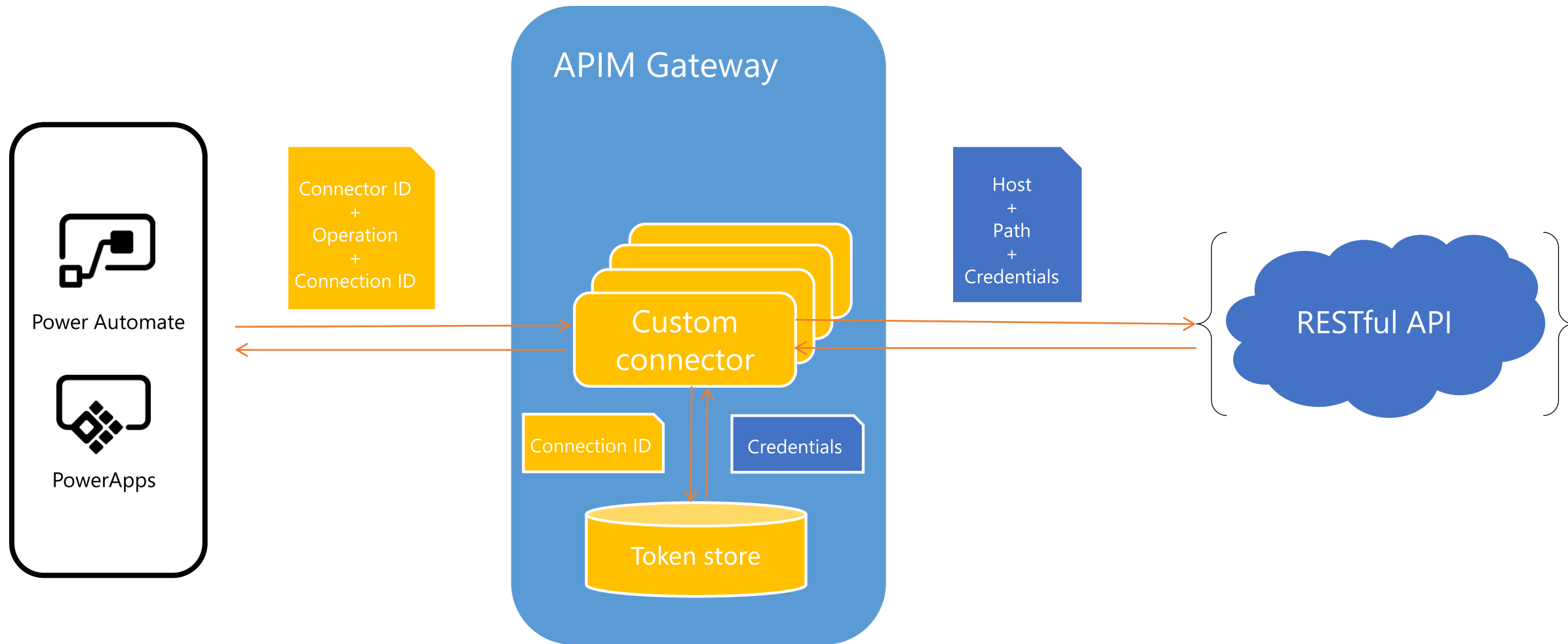


Partners and ISVs

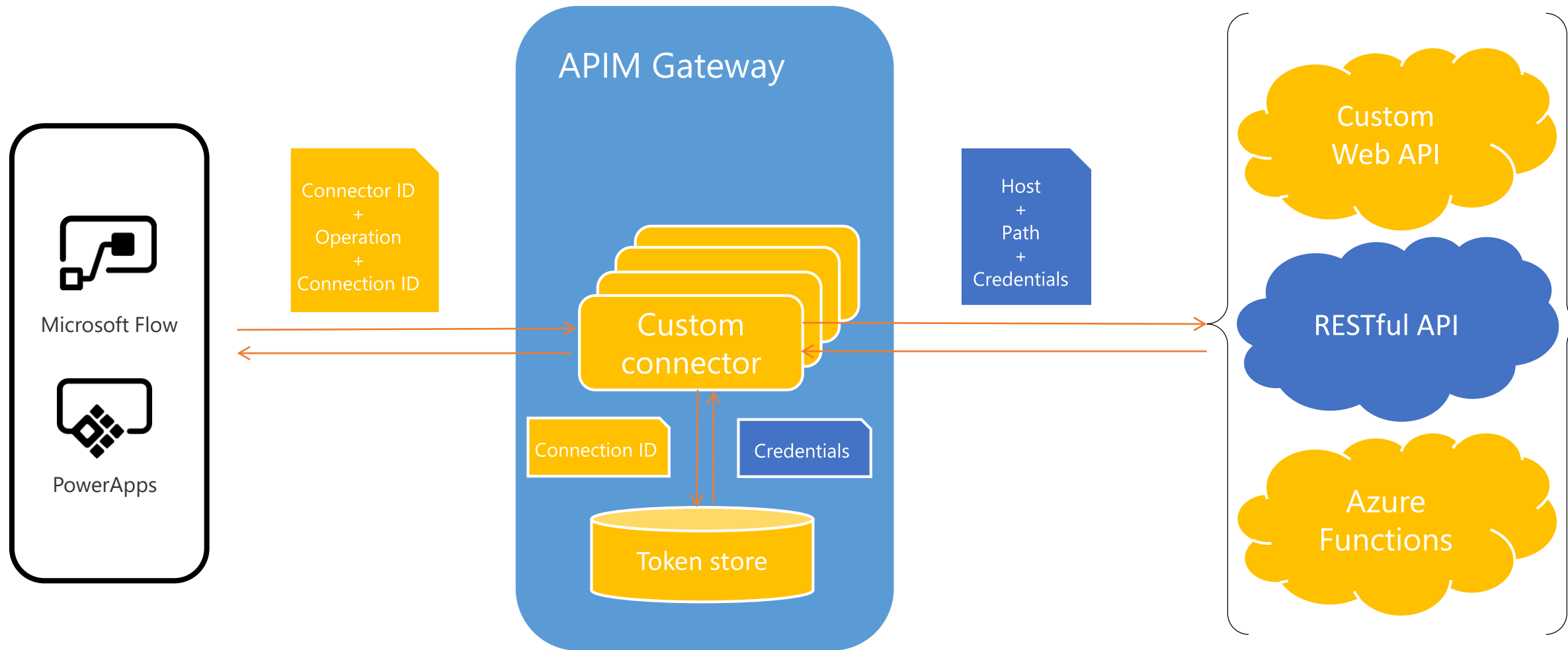
Expand the number of services you integrate with
Provide the extensibility your customers need
Increase exposure and adoption

Connectors in-depth

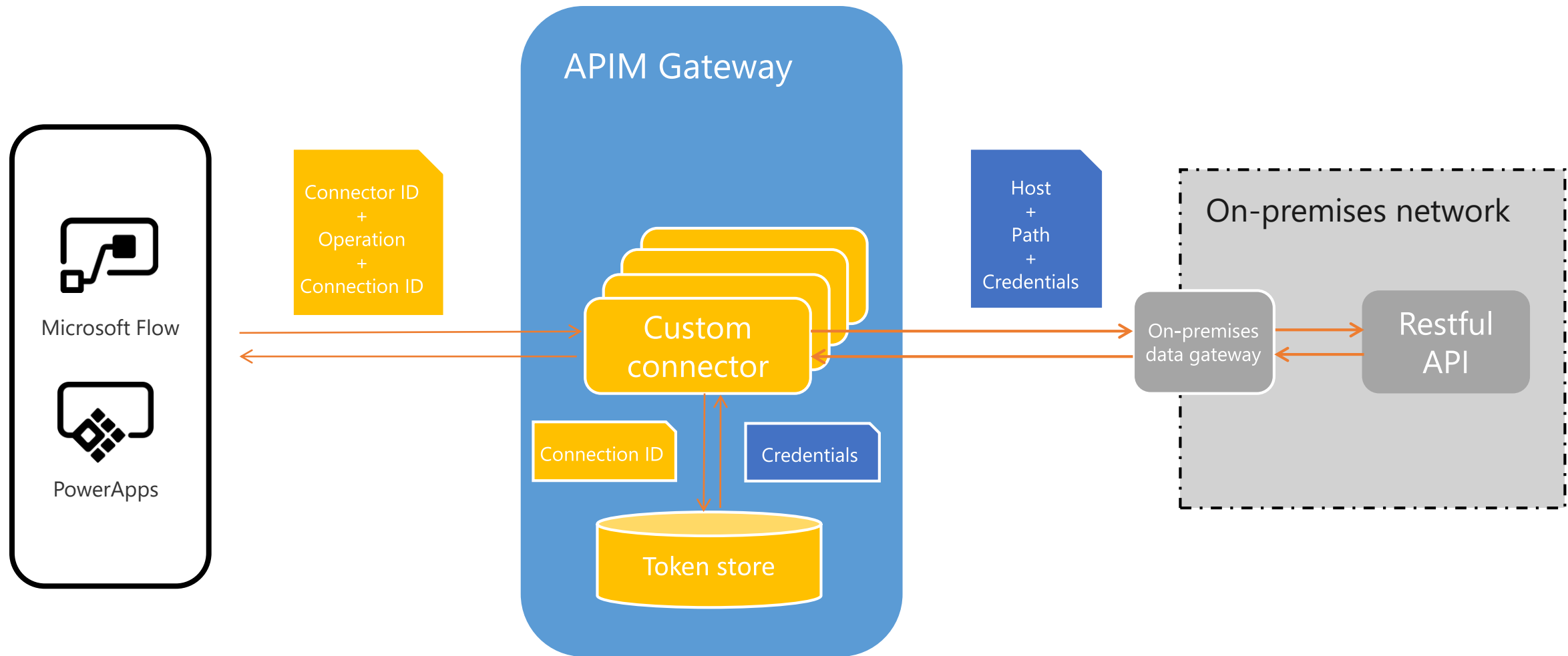
Connector architecture



Connector (more options)



Connector (on-premises)



Developing your custom connector

Understand the API for the service

Start from scratch, an OpenAPI definition or a Postman collection

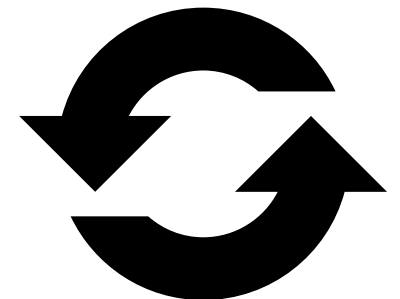
Set up the authentication used by the API

- Anonymous
- Basic (Username + Password)
- API Key
- OAUTH 2.0 (Cloud only)—including Azure AD
- Windows (On-premises only)

Define the operations for your connector

- Import the request and response from a sample payload

Save and test your connector in Flow and PowerApps



Custom Connector Demo

- **Built on the Yelp Fusion API**
 - www.yelp.com/developers/documentation/v3
1. **Create a Yelp login**
 2. **Create a Yelp app**
 3. **Experiment with Postman and business search**
 4. **Create the Yelp custom connector in Flow**
 5. **Create a Flow using the custom connector**
 6. **Create a Yelp PowerApp**

Step by steps available at www.extranetusermanager.com/resources/articles/developing-custom-connectors-for-the-microsoft-power-platform

Finishing up your connector

Improving your custom connector

Add descriptions and friendly names

Help your users understand the operation

Define more operations

For every POST, there's typically one or more GETs

For Flow:

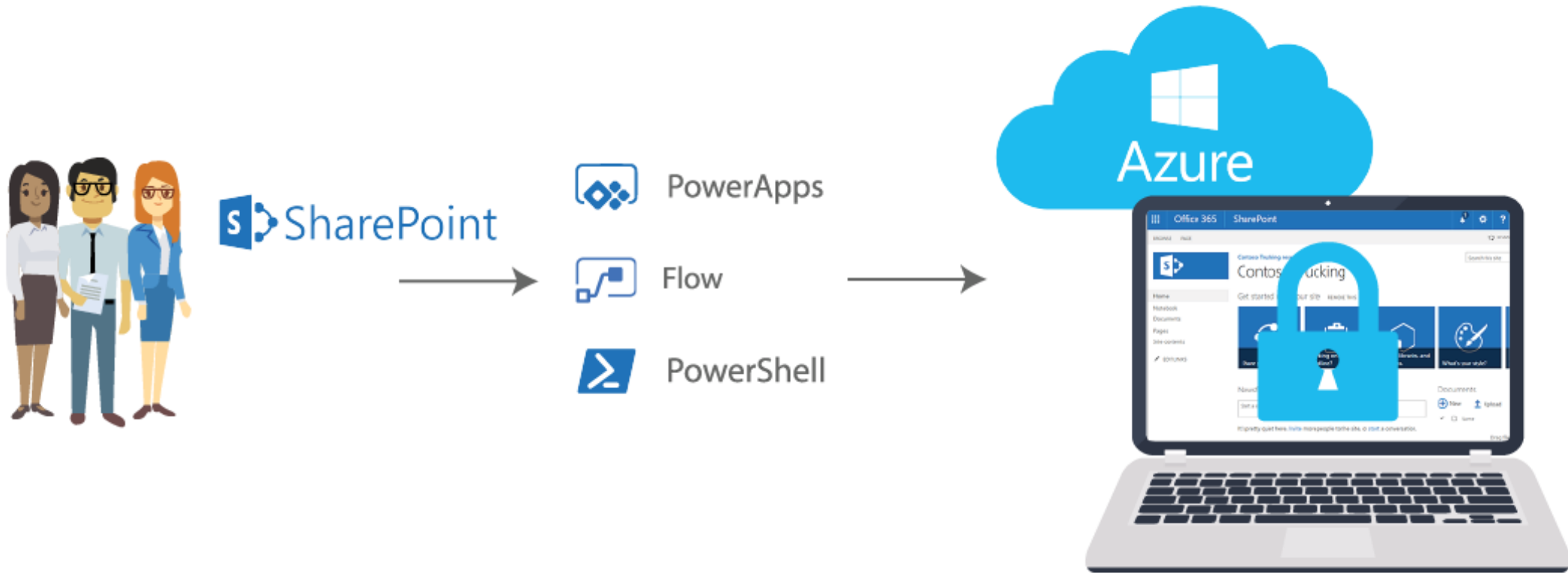
Use Dynamic Values and Dynamic Schema

Provide a better experience for users in the designer

Add triggers

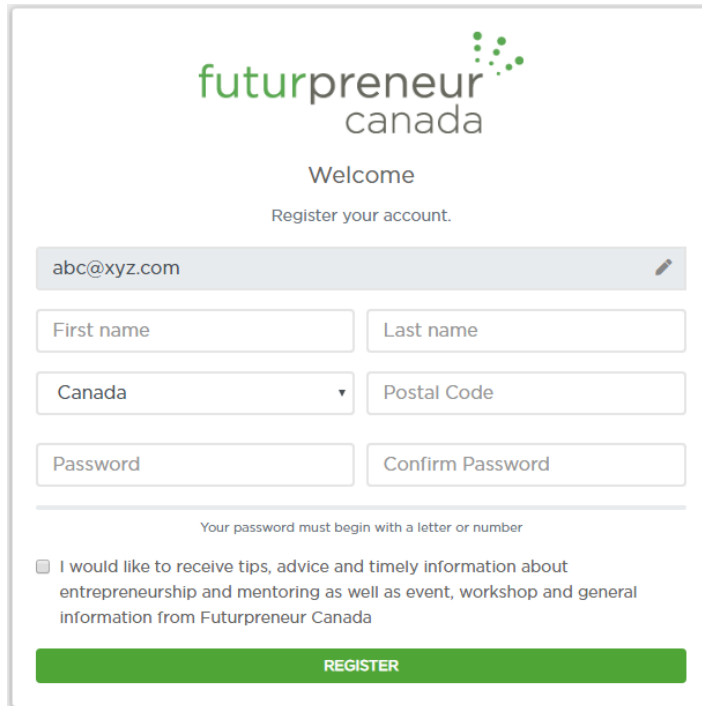
Using webhook or polling

Site Provisioning

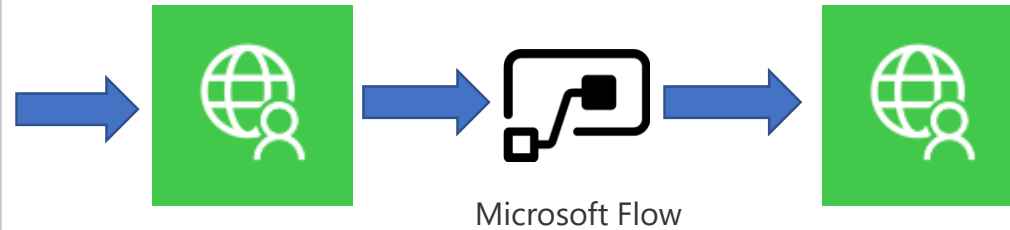


HTTP Triggers (WebHooks)

ExtranetUserManager



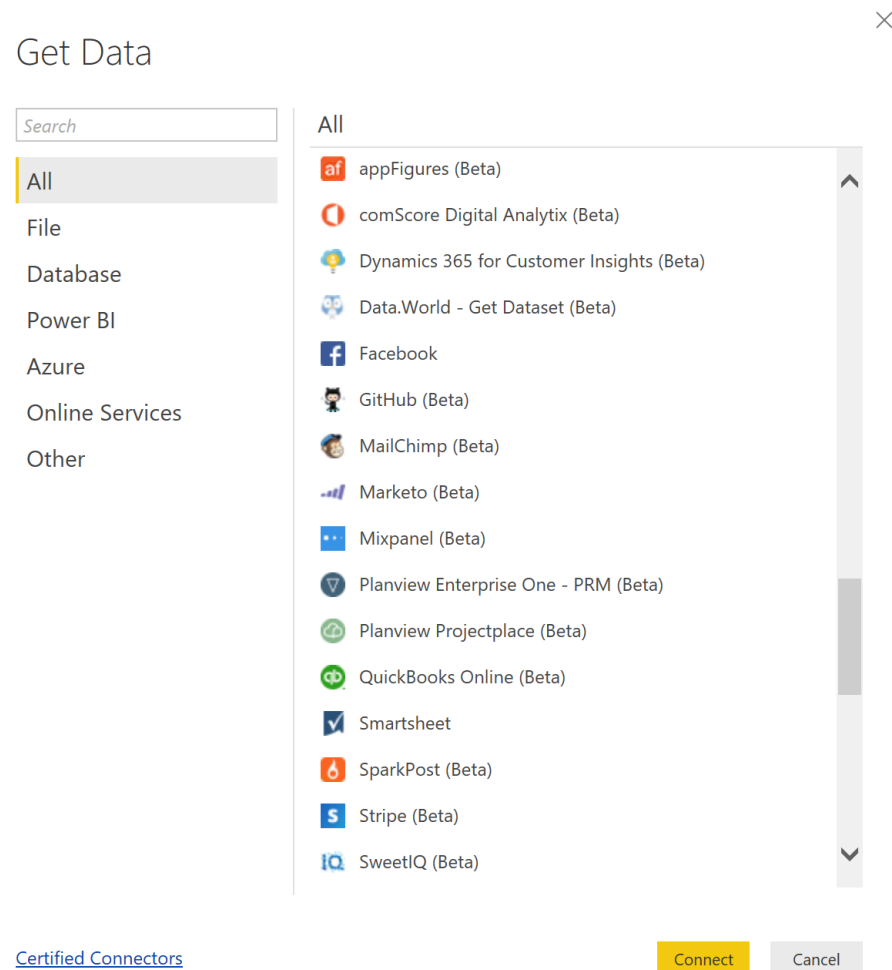
The screenshot shows the registration page for futurpreneur canada. The page includes the logo, a welcome message, and a registration form with fields for email, first name, last name, country (Canada), postal code, password, and confirm password. A green REGISTER button is at the bottom.



ExtranetUserManager

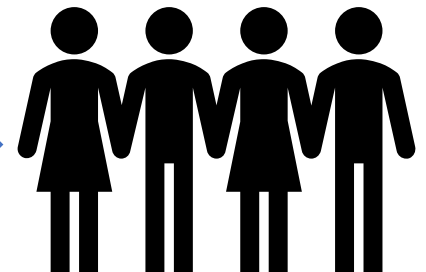
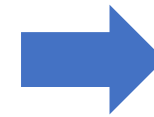
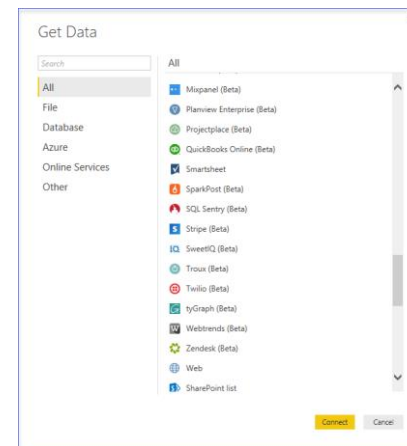
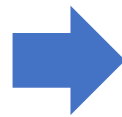
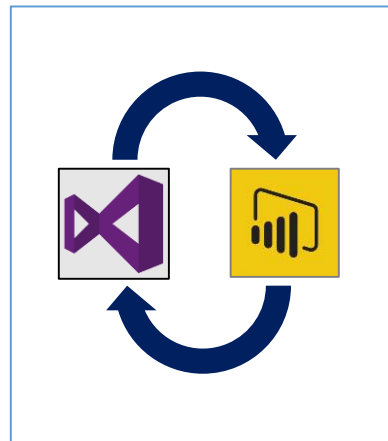
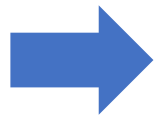
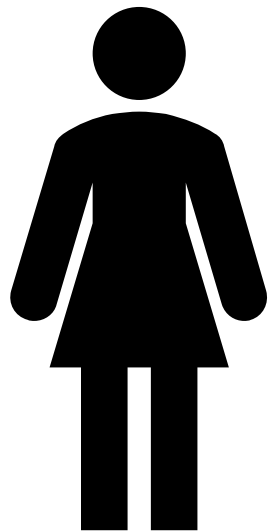
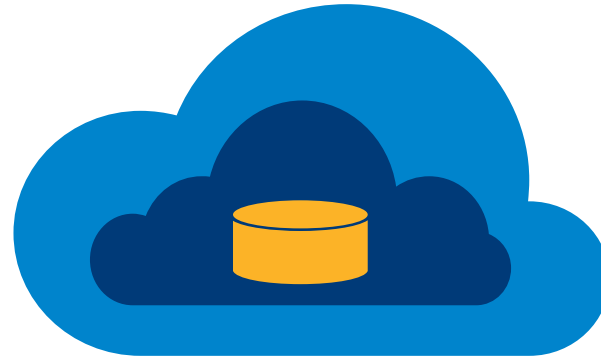
Power BI custom connectors

What can you do with a custom connector?



- Add new data sources to Power BI
- Create an analyst friendly view for a REST API or internal source
- Implement custom OAuth v2 authentication flows
- Use as building blocks for Power BI Apps and content packs
- Enable Direct Query for an ODBC based data source
- Impress your friends

How it works



Steps

Develop the connector using the Power Query SDK for Visual Studio



Test in Power BI Desktop



Test refresh using the on-premises Data Gateway



Share with your users

Getting started

Landing page: <https://docs.microsoft.com/en-us/power-query/>

Github repo: <https://github.com/Microsoft/DataConnectors>

Visual Studio 2017 or 2015

Download the Power Query SDK from the [Visual Studio Extension Marketplace](#)

Create a new data connector project

Copy to [Documents]\Power BI Desktop\Custom Connectors

Presentation samples available at: <https://github.com/mattmasson/PowerQuery/>

Today

SDK for Visual Studio

Experience targeted towards connectors for Power BI

Custom connectors supported in:

- Power BI Desktop
- Power BI On-Premises Data Gateway—Personal and Enterprise modes

Direct Query over ODBC based connectors

Certification program available

Future

Trusted connectors

Improved support for Function Libraries

Office Store integration

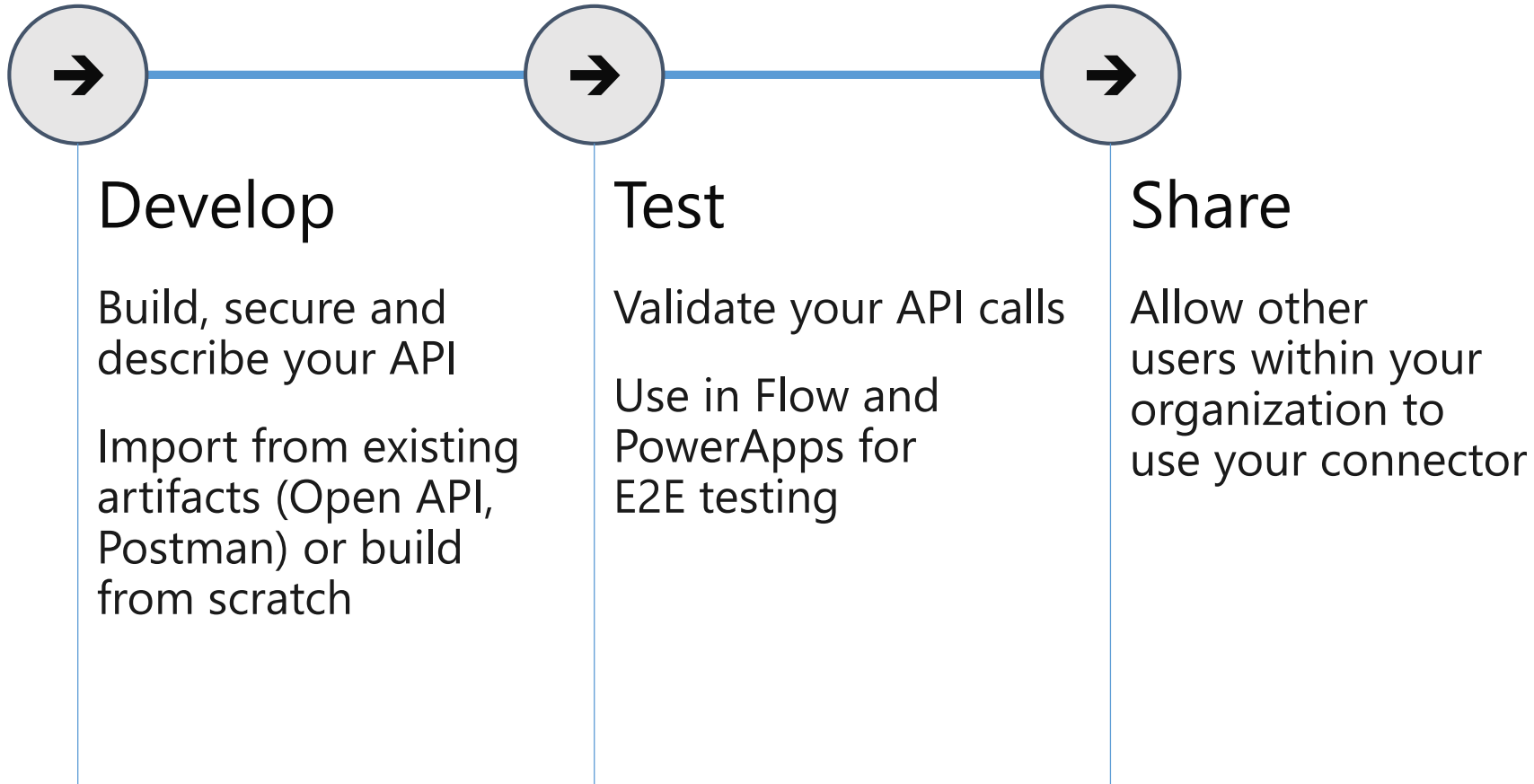
Support in Excel, Power Query Online, Report Server, others...

Interoperability with Microsoft Flow and PowerApps

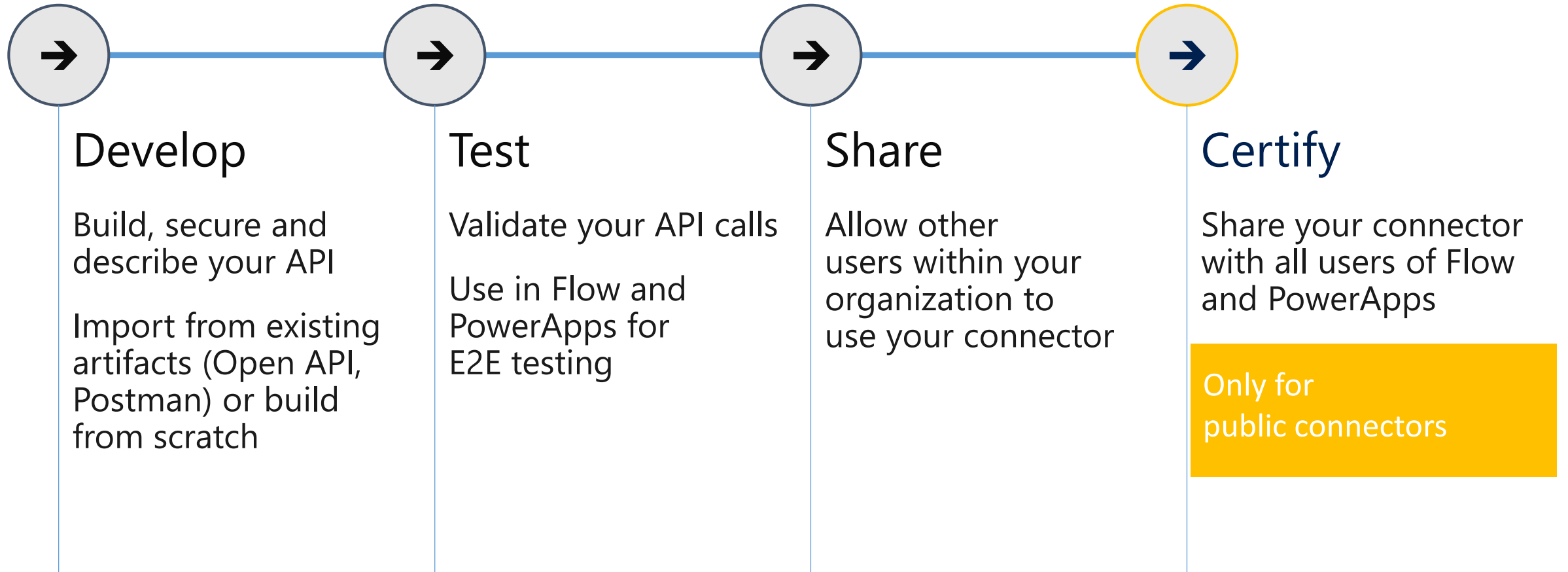
Power Query SDK for VS Code

From custom connector to connector

Building a custom connector



Building a custom connector



Certifying your connector

Certified connectors

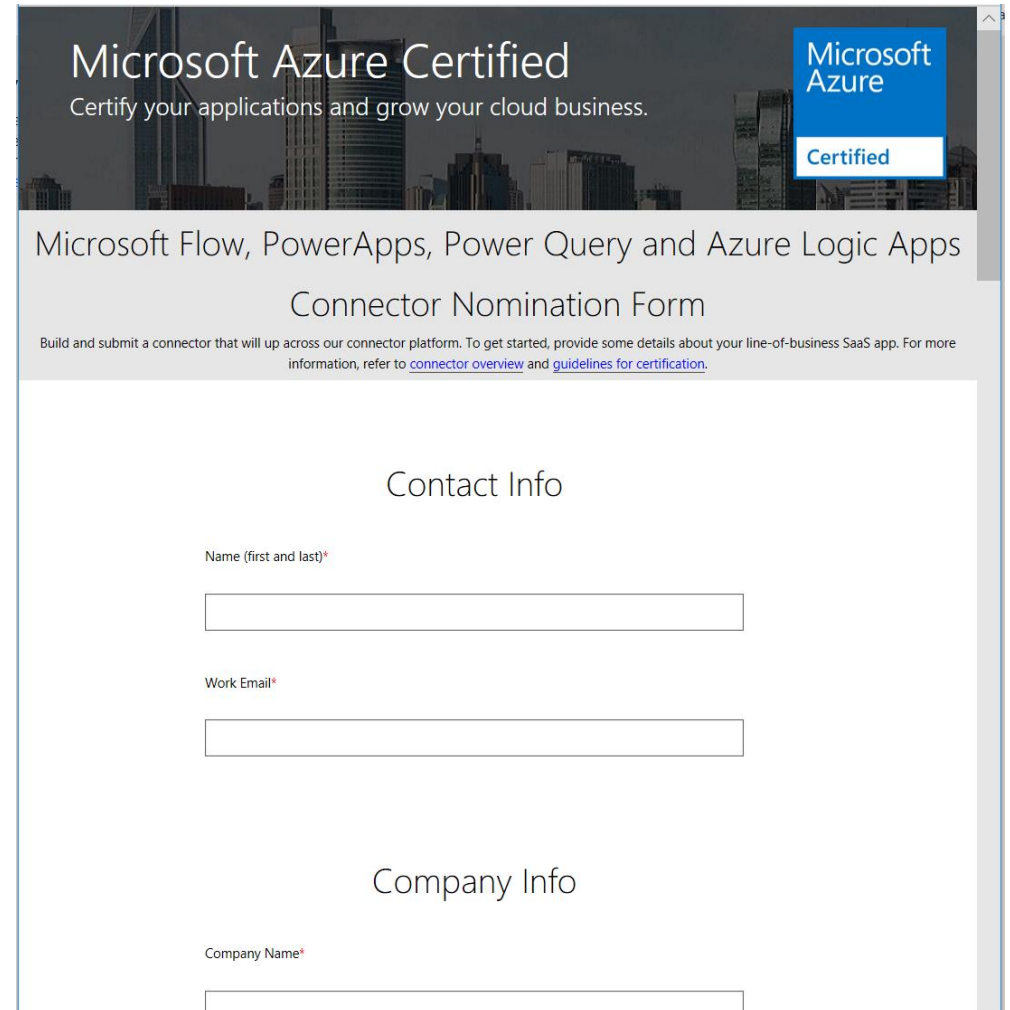
Developed and maintained by you
Certified and deployed by Microsoft

Benefits of certification

Increase exposure and adoption of your service
Provide the extensibility your customer needs
Expand the number of services you integrate with
A single connector for PowerApps, Flow
and Logic Apps

Building and certifying your connector

Takes just a few weeks (days)
Start small and invest/update as necessary



The screenshot shows the Microsoft Azure Certified Connector Nomination Form. At the top, it says "Microsoft Azure Certified" with the tagline "Certify your applications and grow your cloud business." and the Microsoft Azure Certified logo. Below this, it lists "Microsoft Flow, PowerApps, Power Query and Azure Logic Apps" and the title "Connector Nomination Form". A sub-header reads: "Build and submit a connector that will up across our connector platform. To get started, provide some details about your line-of-business SaaS app. For more information, refer to [connector overview](#) and [guidelines for certification](#)." The form is divided into two sections: "Contact Info" and "Company Info". Under "Contact Info", there are two input fields: "Name (first and last)*" and "Work Email*", both with asterisks indicating they are required. Under "Company Info", there is one input field: "Company Name*", also with an asterisk. The form is presented in a clean, white layout with a light gray background for the header and sub-header.


Links

- www.extranetusermanager.com/resources/articles/developing-custom-connectors-for-the-microsoft-power-platform
- www.yelp.com/developers/documentation/v3
- www.getpostman.com
- <https://flow.microsoft.com>
- <https://powerapps.microsoft.com>
- <https://powerbi.microsoft.com>



<http://eum.co/resources/events>

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December 9 - 13, 2019
Chicago, IL

[Event Website](#)

Session	Date Time	Location	Presentation
WRK505 - Developing Custom Connectors and HTML Forms for the Microsoft Power Platform Workshop	Tuesday 9:00 AM - 12:30 PM	Room 103A	Presentation Part One Presentation Part Two
OFF105 - Office 365 External Sharing	Wednesday 4:20 - 5:30 PM	Room 105A	Presentation
AZR202 - Developing Custom Connectors and HTML Forms for the Microsoft Power Platform	Thursday 1:20 - 2:30 PM	Room 103D	Presentation
AZR304 - Provisioning and Templating Automation for Modern Sites, Office 365 Groups, and Teams	Friday 2:20 - 3:30 PM	Room 103D	

Thank you!

Questions?

