



Microsoft Ignite The Tour

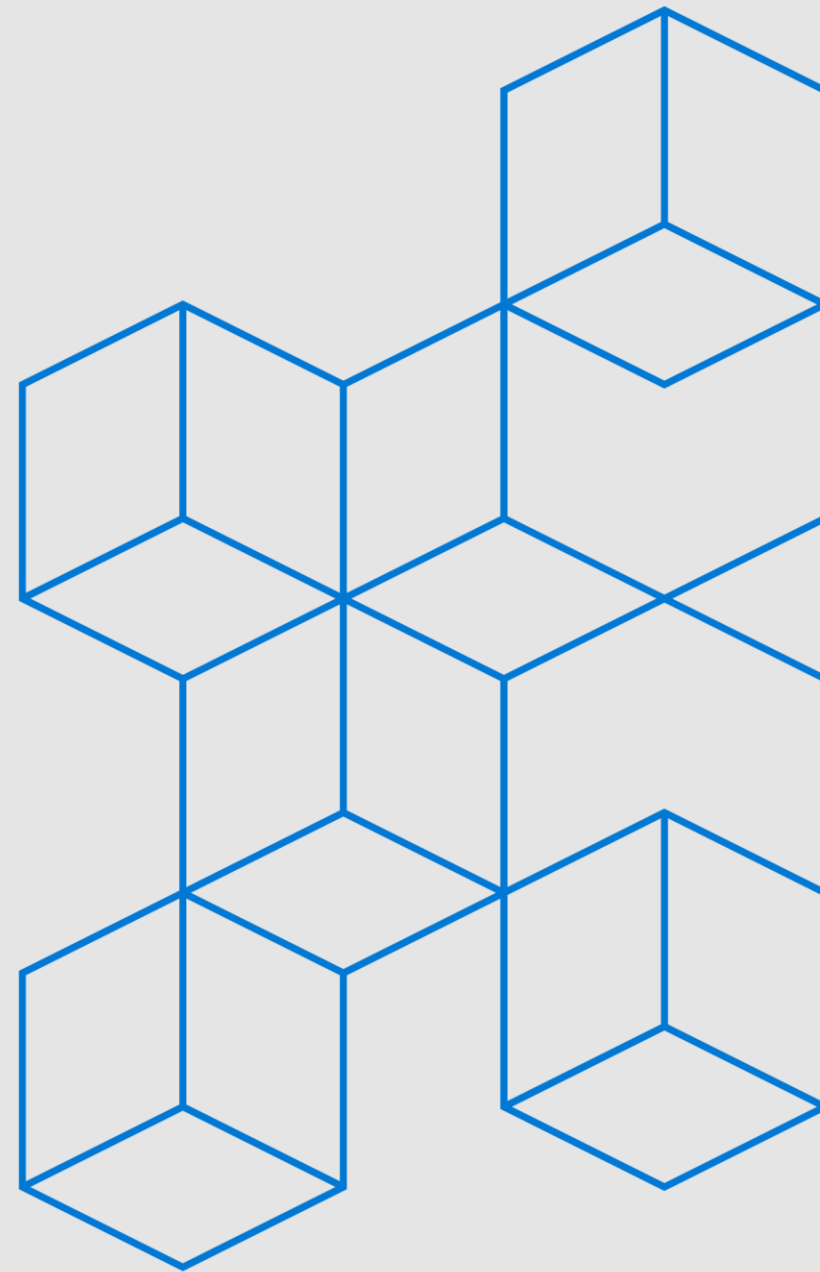
Learn. Explore. Connect.

Toronto, Ontario





Developing custom connectors for the Microsoft Power platform



Agenda

A brief overview of the Power platform

Custom connectors—PowerApps and Microsoft Flow

Custom connectors—Power BI

Q & A

Dynamics 365

Office 365

Standalone apps

Data connectors



Power BI



PowerApps

Common data service for apps



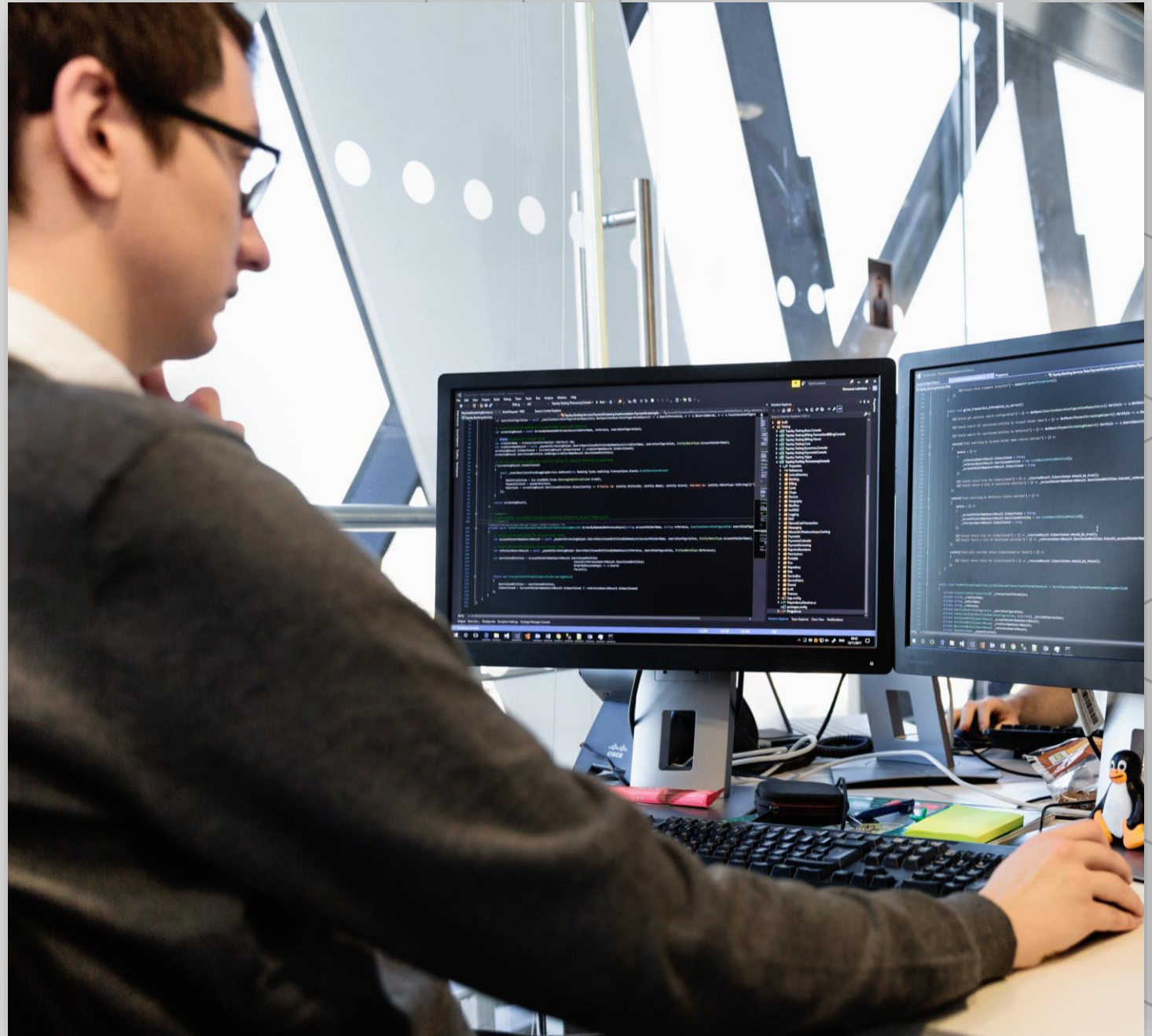
Microsoft Flow

Azure

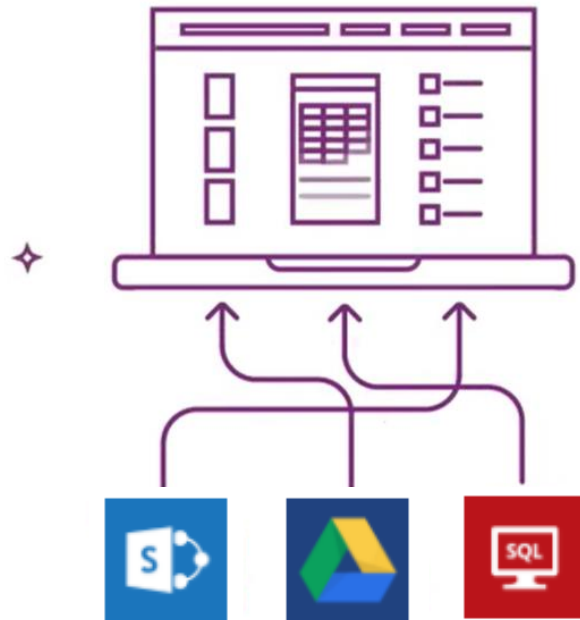
Microsoft Power platform

Custom connectors

Extending the data reach



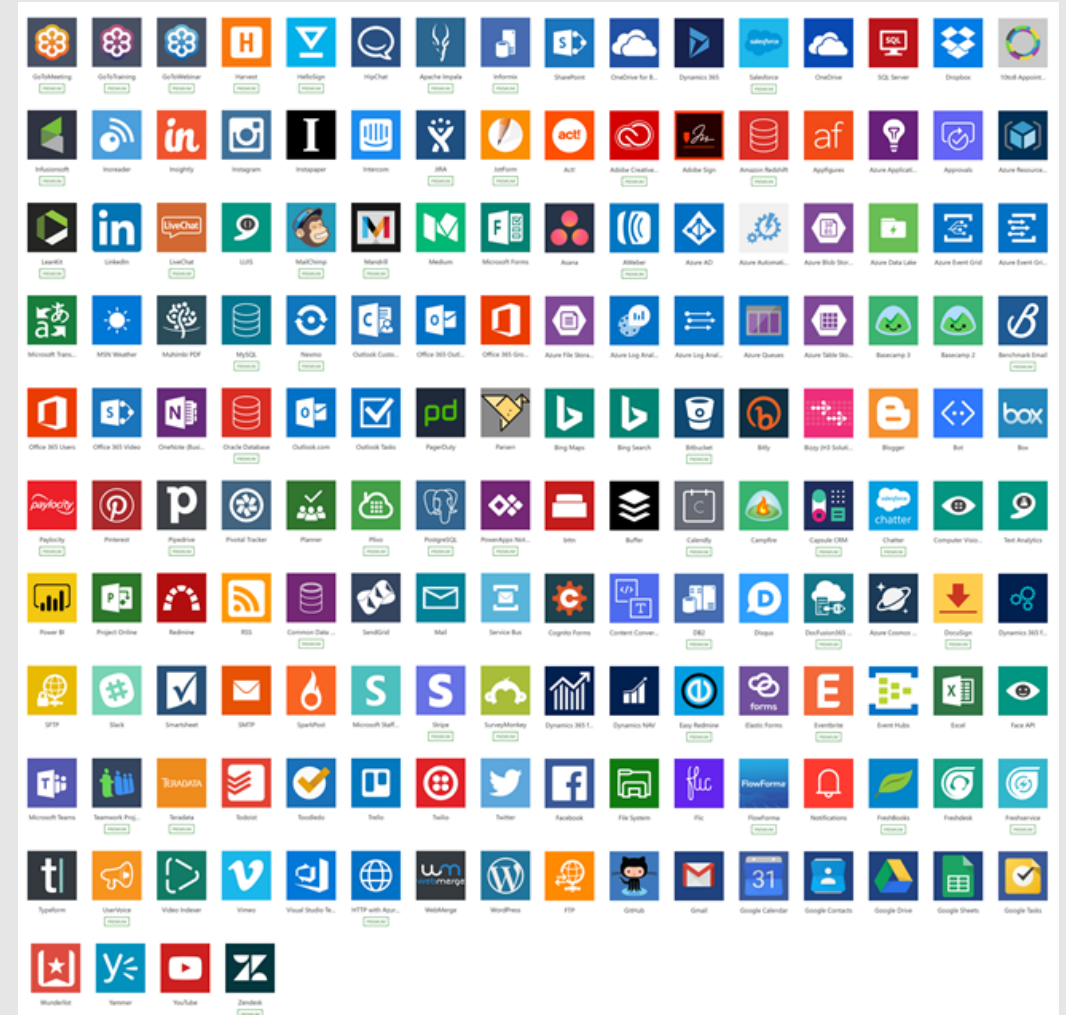
A **connector** is a wrapper around an “API” that allows the underlying service to talk to **Microsoft Flow** and **PowerApps**



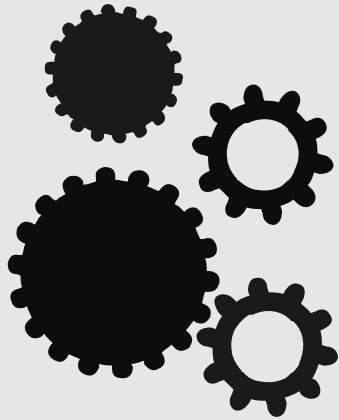
Cloud and on-premises connectivity

- With public connectors, built-in connectivity to over 200 cloud services, files, databases, web APIs, etc.
- 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

200+ 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

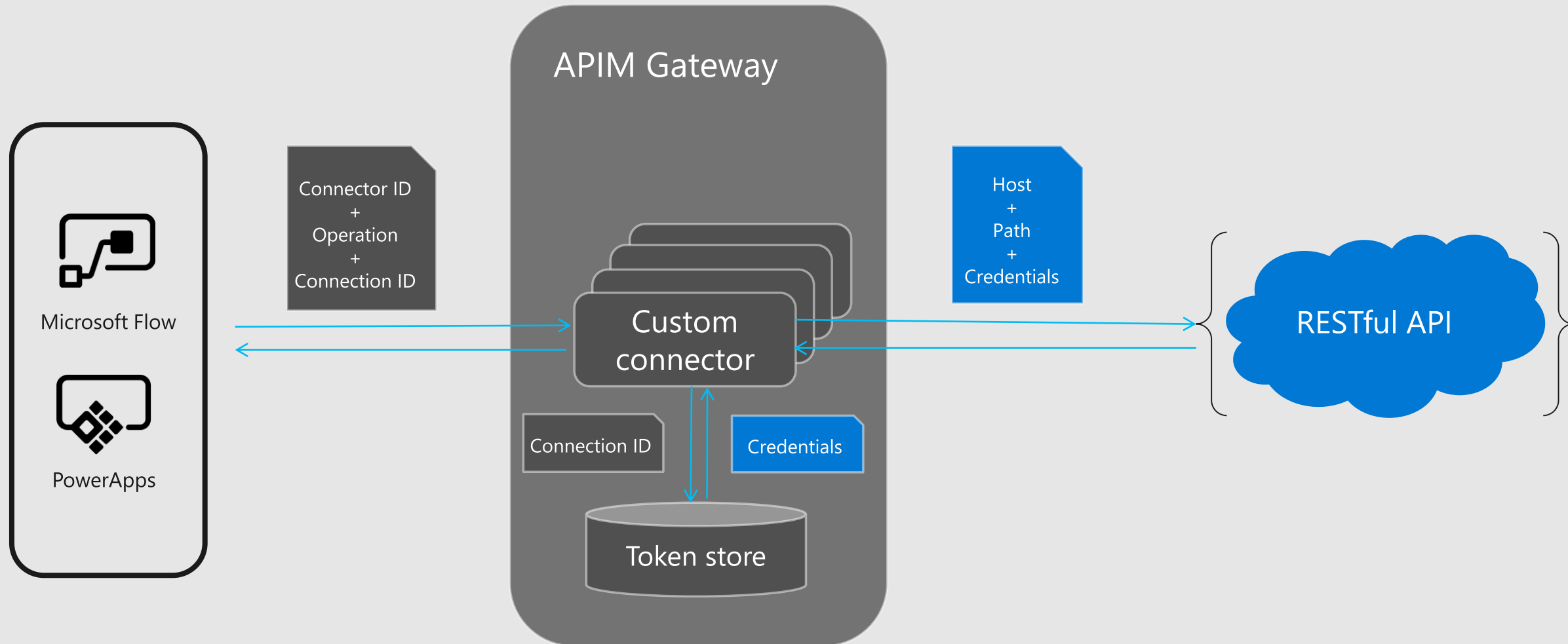
Expand the number of services you integrate with
Provide the extensibility your customers need
Increase exposure and adoption

Building our first connector

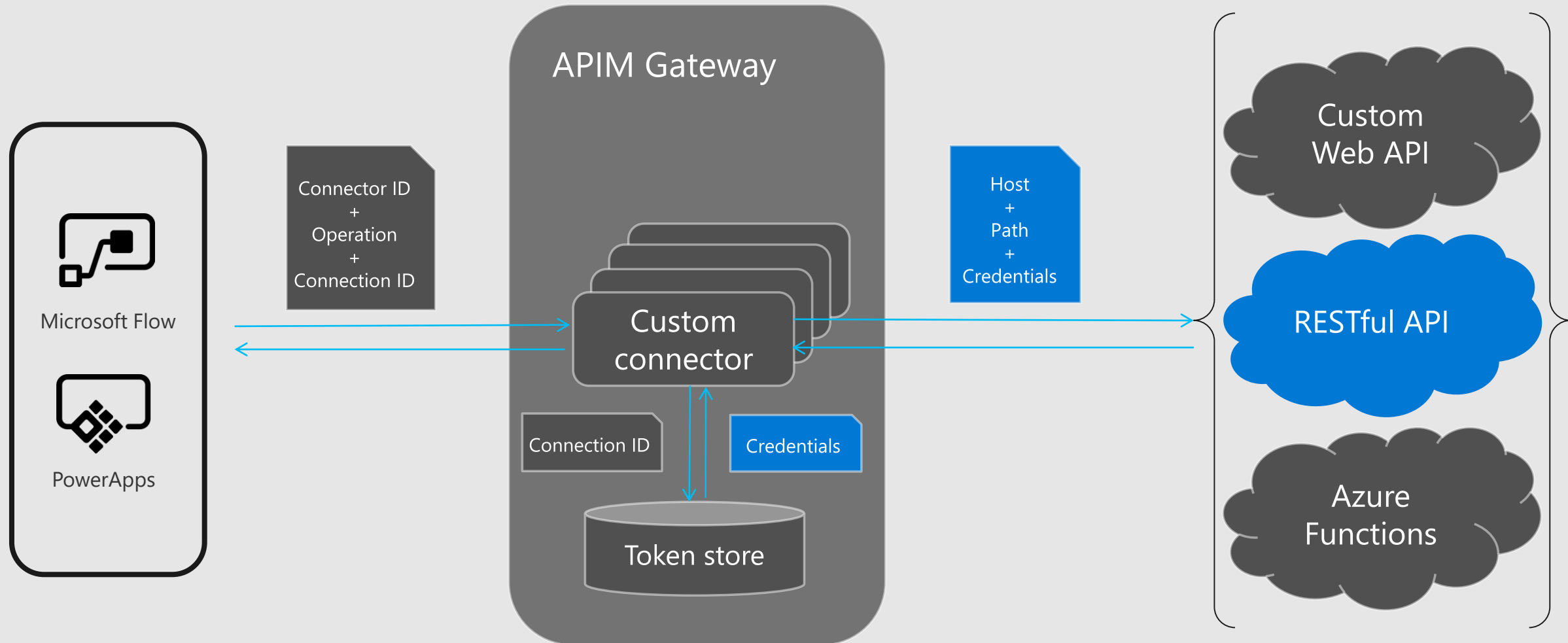
A quick demo

Connectors in-depth

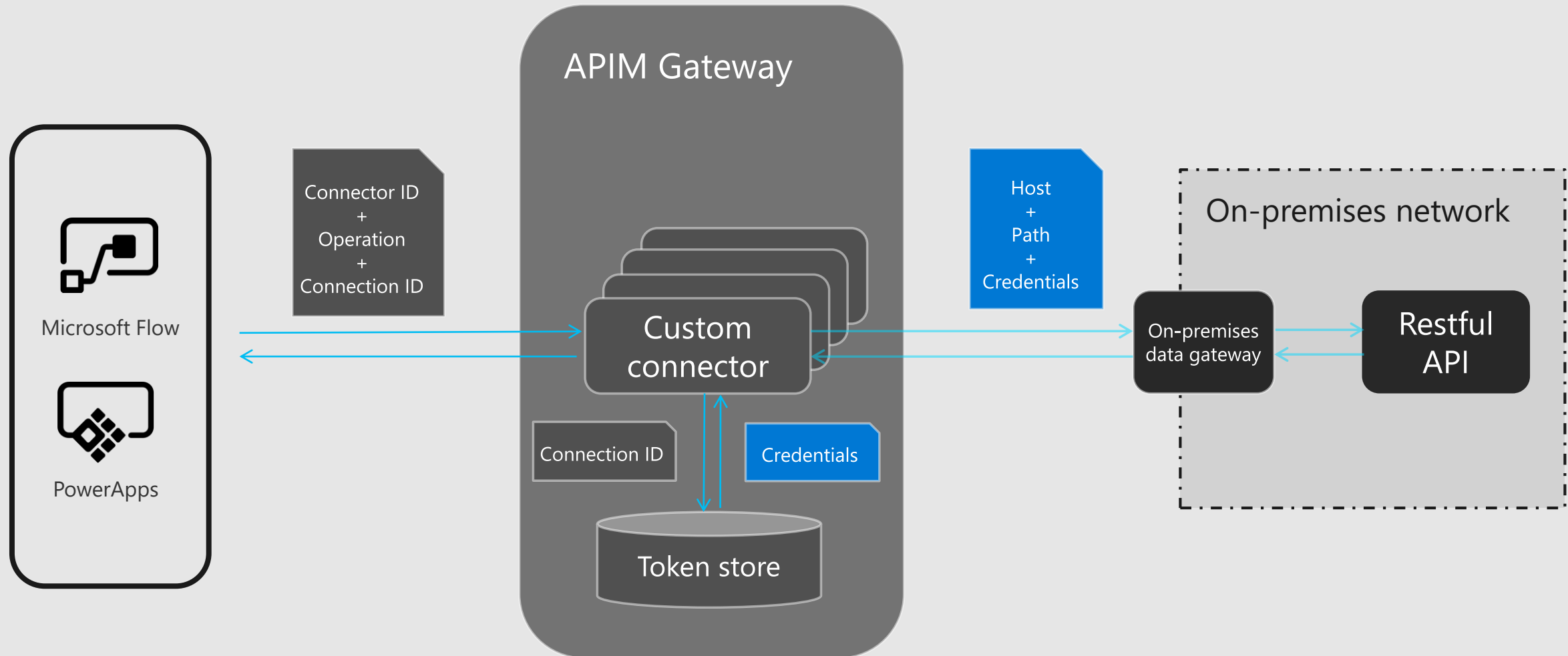
Connector architecture



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

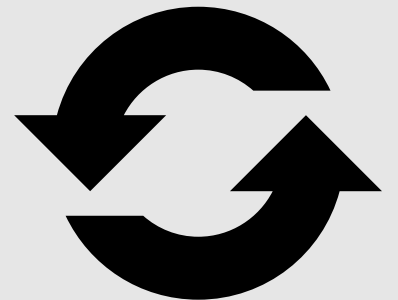
Set up the authentication used by the API

- 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



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

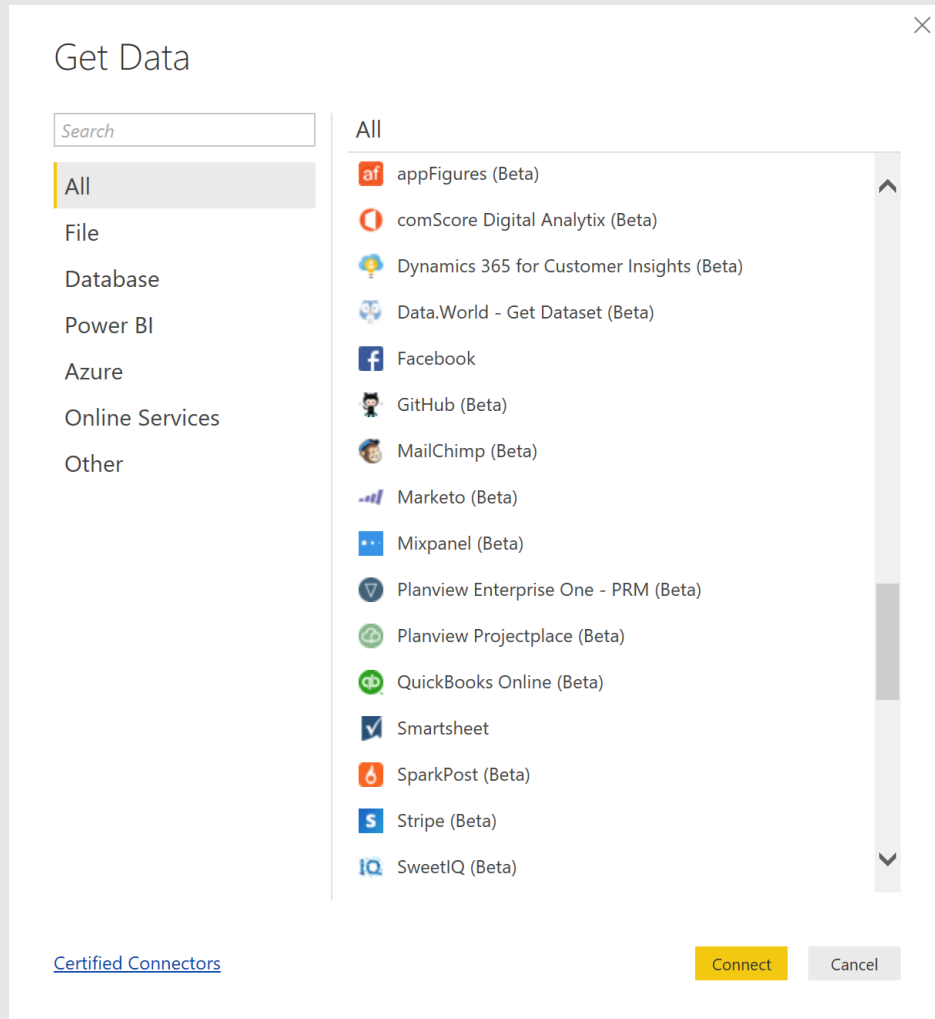
Provide a better experience for users in the designer

Add triggers

Using webhook or polling

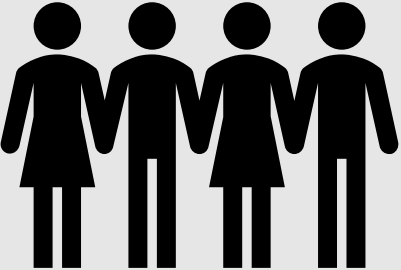
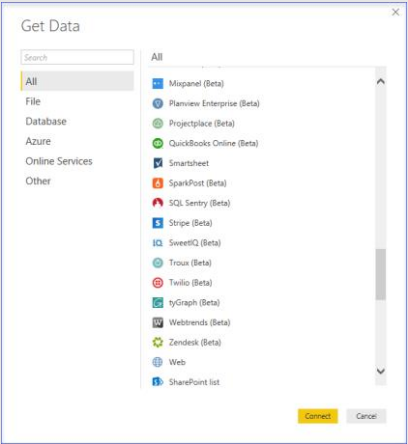
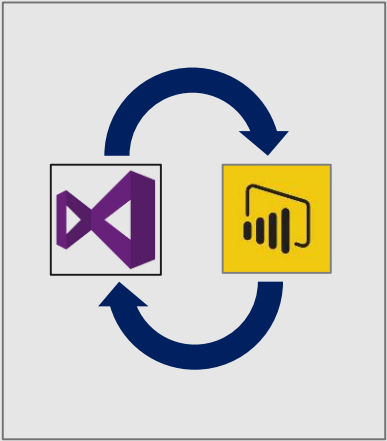
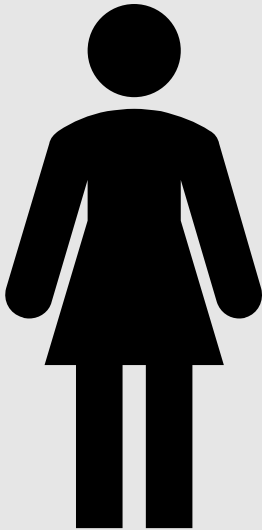
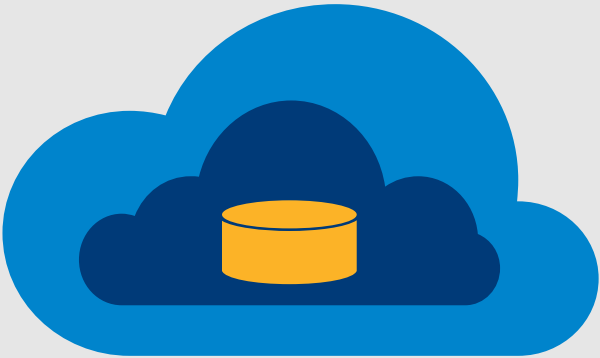
Power BI custom connectors

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

Demo

Power BI Custom Connectors

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

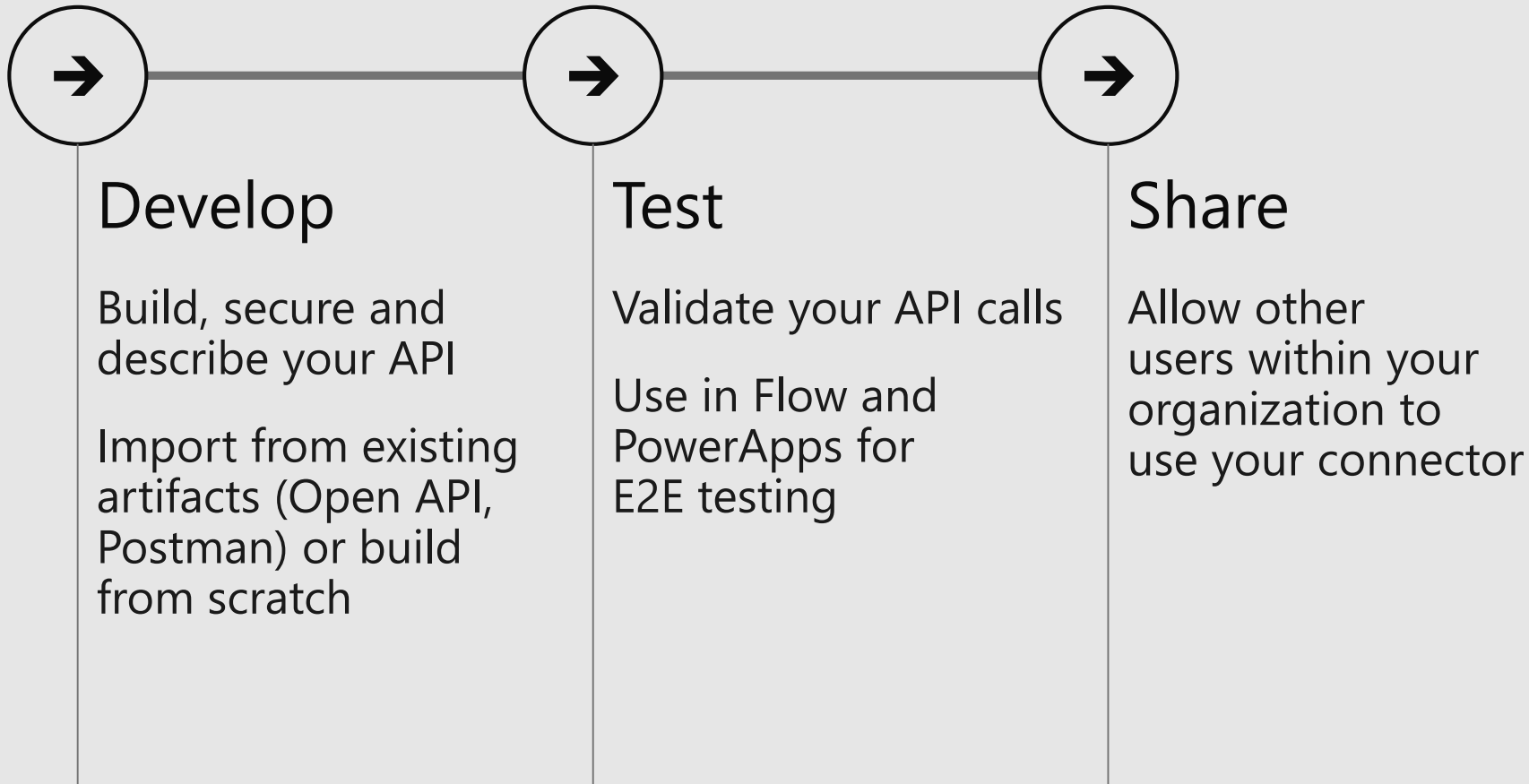
Support in Excel, Power Query Online, Report Server, others...

Interoperability with Microsoft Flow and PowerApps

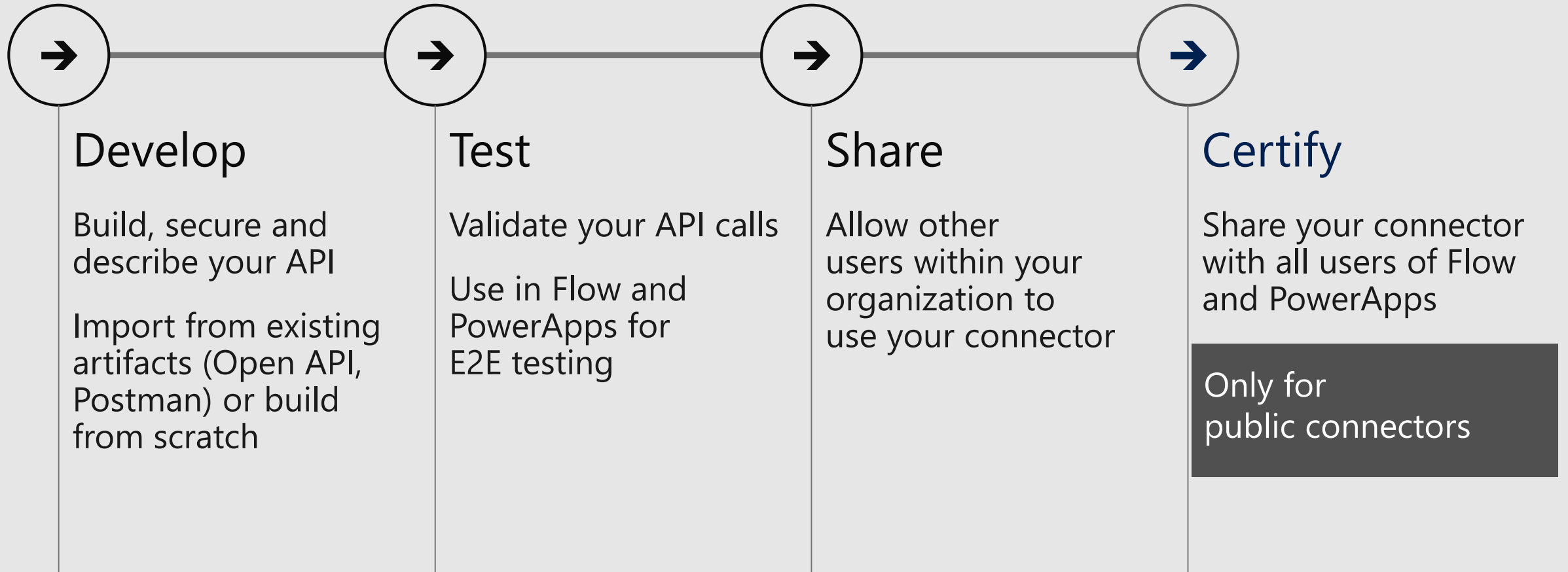
Power Query SDK for VS Code

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

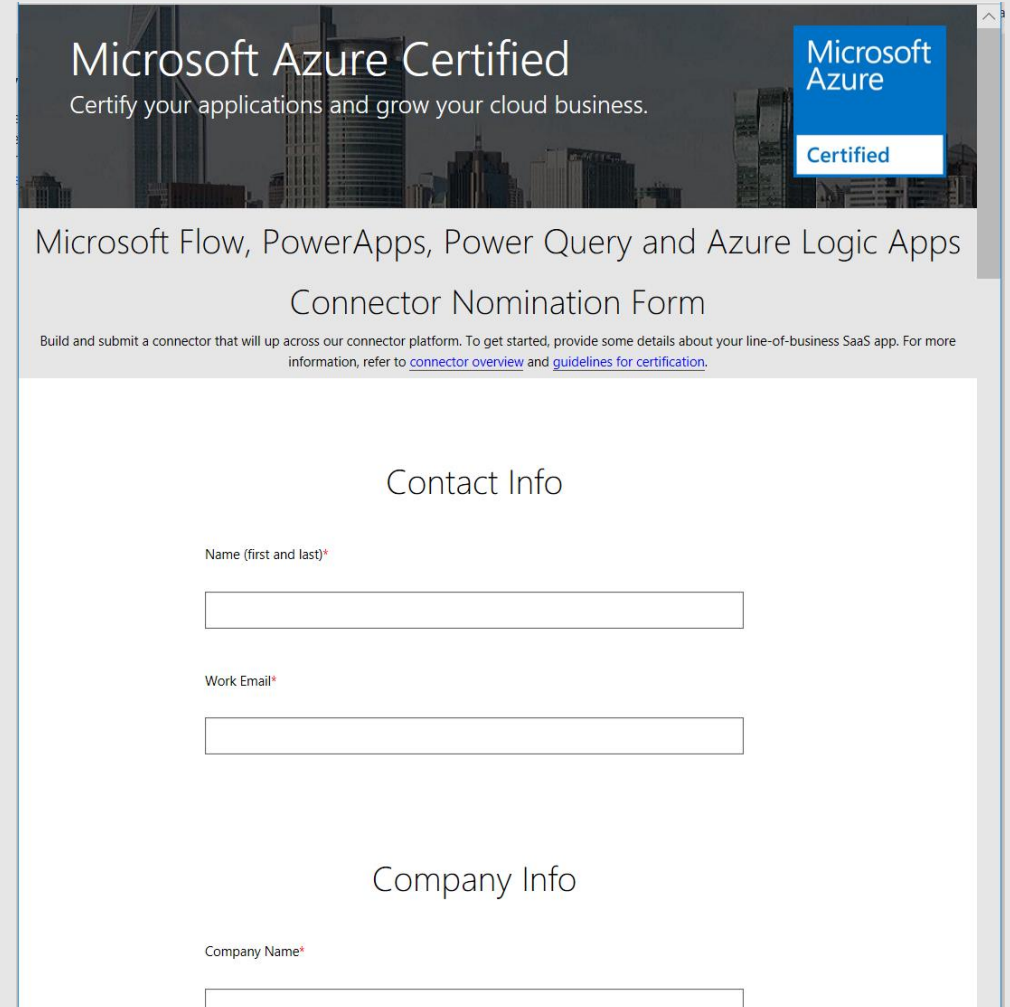
Expand the number of services you integrate with

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' banner at the top, followed by the text 'Certify your applications and grow your cloud business.' and a 'Microsoft Azure Certified' logo. Below this is the title 'Microsoft Flow, PowerApps, Power Query and Azure Logic Apps 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'. The 'Contact Info' section contains two input fields: 'Name (first and last)*' and 'Work Email*'. The 'Company Info' section contains one input field: 'Company Name*'. All input fields are currently empty.

Microsoft Azure Certified
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Microsoft Azure
Certified

Microsoft Flow, PowerApps, Power Query and Azure Logic Apps
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Contact Info

Name (first and last)*

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Company Name*

What's next?

Richer documentation and guides

Open source development

Policy templates to further customize your connector

Unified connector development—take your connector to Power BI

Q&A

