

# DEVELOP YOUR FLOW AND POWERAPPS CUSTOM CONNECTORS



EXPERTS  
INSIDE





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## Patrick Lamber

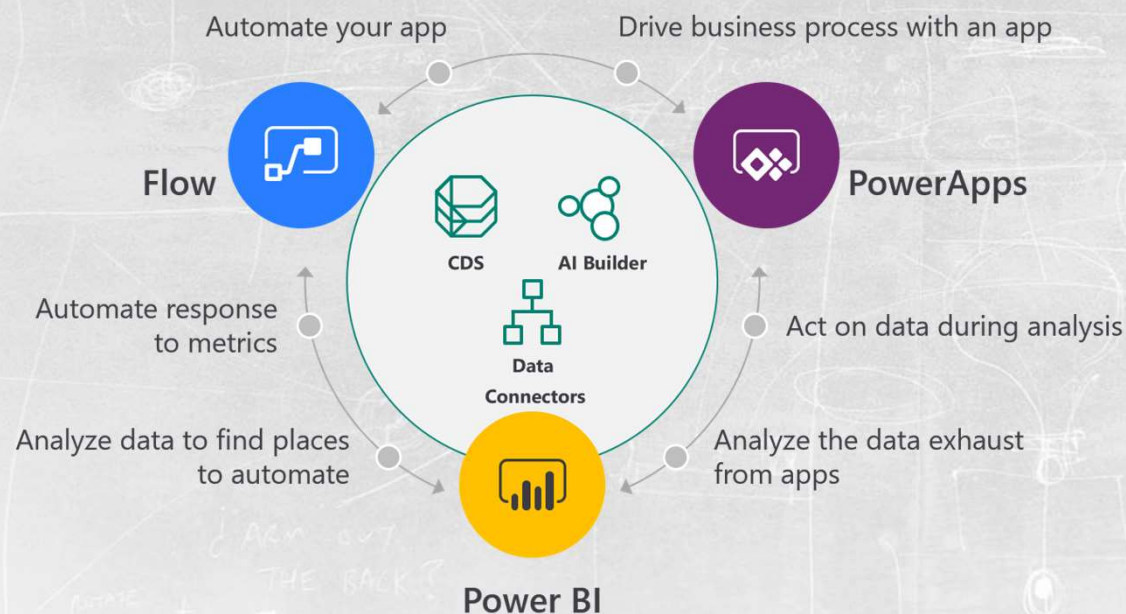
Microsoft 365 Collaboration Expert  
Hybrid IT (Development and IT Pro)

*"I focus on everything modern and fancy  
in Microsoft 365 collaboration services  
except mail and voice."*

### Contact

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# MICROSOFT POWER PLATFORM

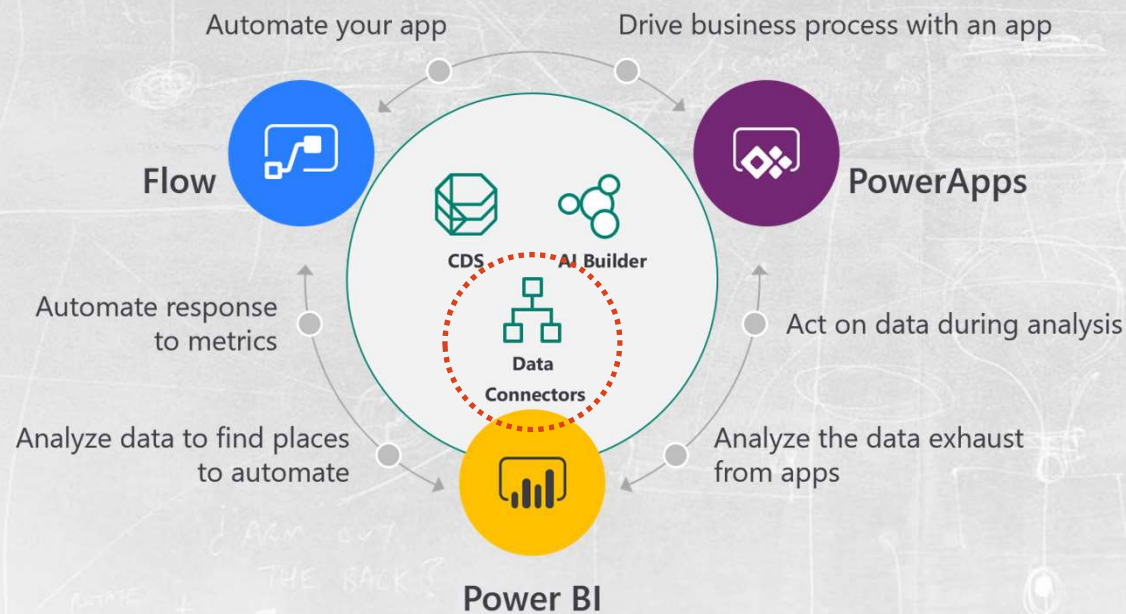


## Scenarios

- Individual/Team Productivity Applications
- Dynamics 365 Applications
- Apps from AppSource
- SharePoint, Outlook, Teams, and Excel
- Mission-critical line of business applications



# DATA CONNECTORS



## What are connectors?

- API wrappers
- Communicate between Flow, PowerApps and the custom API
- More than 200+ connectors available
- Custom Connectors

# COOKING YOUR CONNECTOR – KEY INGREDIENTS

## Core setup and infrastructure

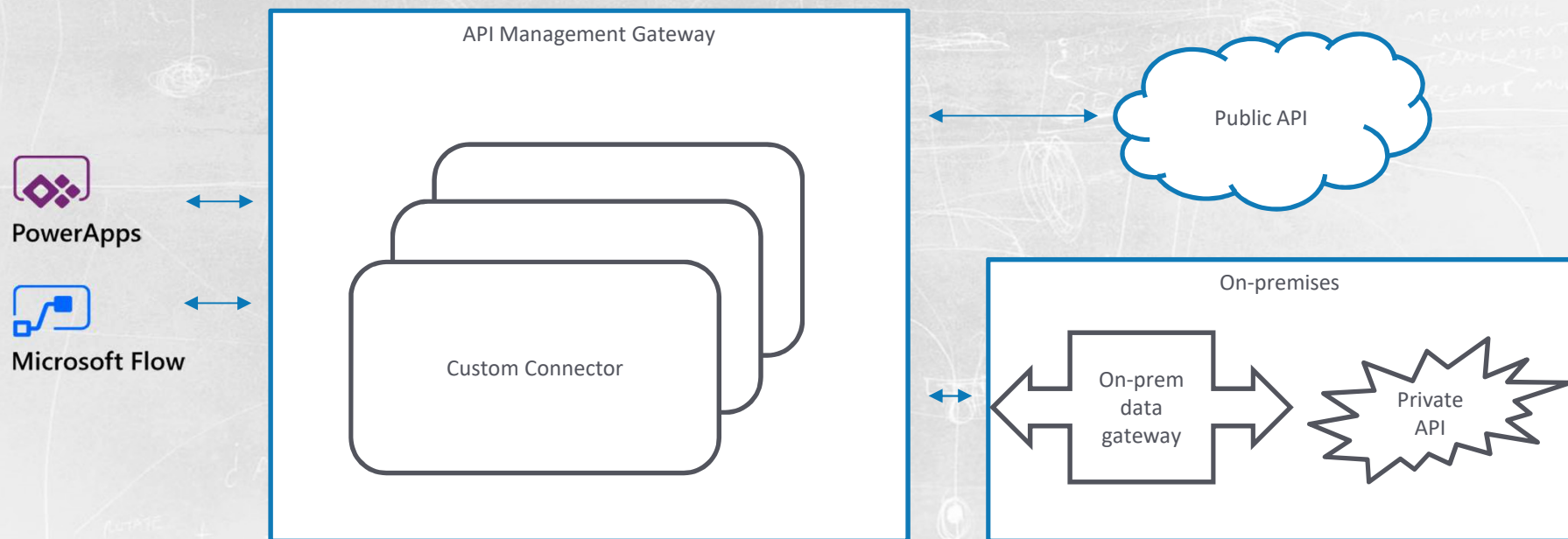
- REST or SOAP API
- Hosted in the cloud or on-premises
- Anonymous or secured

## Operations

- **Action** – determine operation a user can perform
- **Trigger** – Read data from your connector and trigger an event
- **Policies** – change the behavior of actions and triggers



# ARCHITECTURE



DEMO



*A custom connector in action*





## BUILD AND SECURE

*Create your custom API  
Secure it or keep it anonymous*

## DESCRIBE AND DEFINE

*Describe the connector and how to access your custom API*

## USE

*Use the connector in Flow or PowerApps and access your data*

## SHARE

*Share your connector with individuals, organization, or the rest of the world*



## BUILD AND SECURE

### BUILD

- *REST API for Microsoft Flow and PowerApps*
- *SOAP API supported by Logic Apps*
- *Host in Azure or other services in public*
- *Host on-premises and use the on-premises data gateway to avoid complex access scenarios*

### SECURE

- *Generic OAuth 2.0*
- *Dedicated OAuth 2.0 for specific service (AAD, Dropbox, Github, Salesforce)*
- *Basic authentication*
- *API Key*
- *Windows-based authentication with on-premises data gateway*
- *No authentication*

Build and  
Secure

Describe  
and Define

Use

Share

## DESCRIBE AND DEFINE

### DESCRIBE

- Choose the connector name carefully (no renames)
- Add descriptions and friendly names
- Add triggers (webhook or polling)
- Get sample payloads to help you define the custom connectors

### DEFINE

- An OpenAPI definition (aka Swagger file)
- Create from Azure Service
- A Postman collection
- Start from scratch using the custom connector portal (Microsoft Flow and PowerApps only)

Build and  
Secure

Describe  
and Define

Use

Share

# DEMO



*Create a custom connector*  
*Secure a custom connector*

Build and  
Secure

Describe  
and Define

Use

Share



## TEST AND USE

### TEST

- *Use Azure Remote Debugging*
- *Ngrok to tunnel a connection to your environment (paid subscription recommended)*

### USE

- *The connector is immediately visible to owners through Flow or PowerApps after publishing*
- *Changes might take a couple of minutes to propagate*

Build and  
Secure

Describe  
and Define

Use

Share

## SHARE (OPTIONAL)

### SHARE

- *Owner is the creator only at the beginning*
- *Share with individual users or the whole organization*
- *No formal process*
- *Free plan (only one connector)*

### CERTIFY

- *Share it with the rest of the world*
- *Submit for Microsoft Certification*

Build and  
Secure

Describe  
and Define

Use

Share

# DEMO



*Debugging and sharing your custom connector*

Build and  
Secure

Describe  
and Define

Use

Share



## LONG-RUNNING OPERATIONS IN FLOW

- Calls to Flow require an immediate response
- Long-term actions can be processed in a job-style pattern

### Procedure

- Return an HTTP 202 with the retry-after header
- Flow will try to access your endpoint after the retry-after time
- Repeat the process until you are completed
- Once done reply with an HTTP 200

# TRIGGERS

- Polling – recurring call on your API
- Webhook – trigger an endpoint

## Procedure for Webhooks

- Provide endpoint for Webhook registration, listing, and deletion
- Flow or Logic apps will call the Webhook for creations or changes
- Trigger the endpoint when the event is happening
- Good sample: <https://github.com/weng5e/flow-connector-trigger>

## RESOURCES

- **PowerPlatform** -  
<https://powerplatform.microsoft.com/en-us/>
- **Custom Connectors Overview** -  
<https://docs.microsoft.com/en-us/connectors/custom-connectors/>
- **GitHub Samples** -  
<https://github.com/plamber/powerplatformcustomconnectors>
- **Microsoft GitHub Samples** -  
<https://github.com/microsoft/PowerPlatformConnectors>





THANK YOU

FAQ

