



Power Platform

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Power Platform
COMMUNITY CONFERENCE

Mastering Code in Custom Connectors

George Doubinski

Power Platform enabler, undisciplined runner
I create, I run, and I talk. A lot.

- **Community**

- MVP since CRM 3.0
- <https://crmtipoftheday.com>
- <https://crm.audio>

- **Open Source**

- <https://github.com/alexacrm>
- <https://github.com/georged>

- **Get in touch**

- <https://linkedin.com/in/georgedoubinski>
- george@alexacrm.com
- [@georgedude](#)



Troy Taylor

Senior Power Platform Consultant, Hitachi Solutions America

Pennsylvania, United States

Business Applications MVP

Independent Publisher Connector Project Coordinator & Publisher

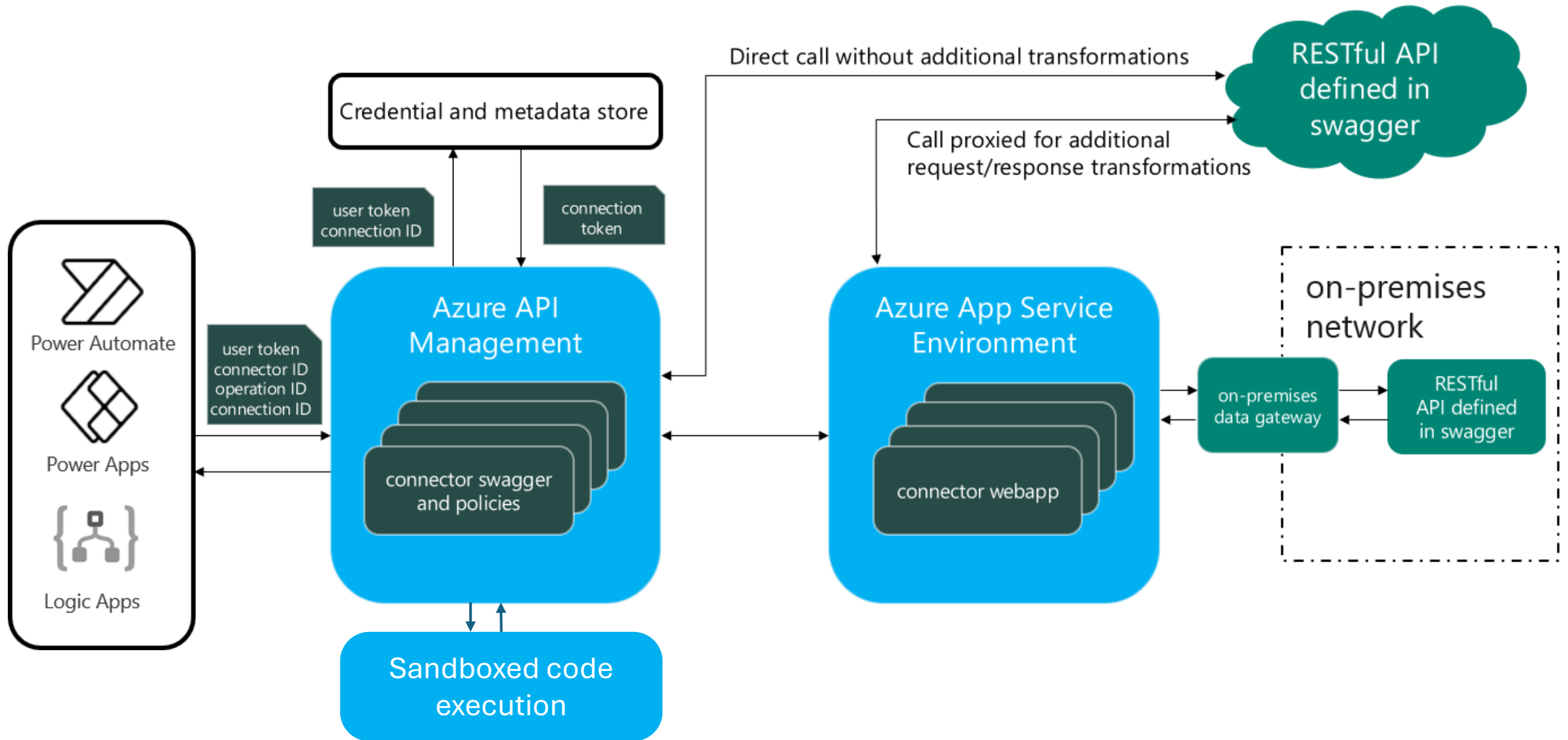
199 Independent Publisher Connectors



Agenda

- Custom connectors architecture
- Custom code in connectors
 - JSON, YAML, and C# walk into a bar
- Serviceless connectors
 - REST takes a rest

Custom connectors architecture



Custom code use cases

- Outbound
- Transformation
- Code only (serviceless)

Before the code rush

- Can it be *reasonably* implemented in Power Automate?
- Are certified connectors available?
 - Beware of dependencies
- Can it be done with policies?
- Would a custom web api be better / quicker / more maintainable?
- Is it even possible with the code?

Demo

Let it be light

Outbound use cases

- Transforming parameters (from url to header)
- Redirect to a different endpoint / service
- 2 services (discovery)
 - Service: service.url.com
 - Instance name: cave
 - Instance url: cave.service.url.com
 - Instance API: opensesame.service.url.com
- Simplify maker interface

Transformation use cases

- Augmenting data
- Combining output of multiple service requests
- Simplify complex input/output

Code only use cases

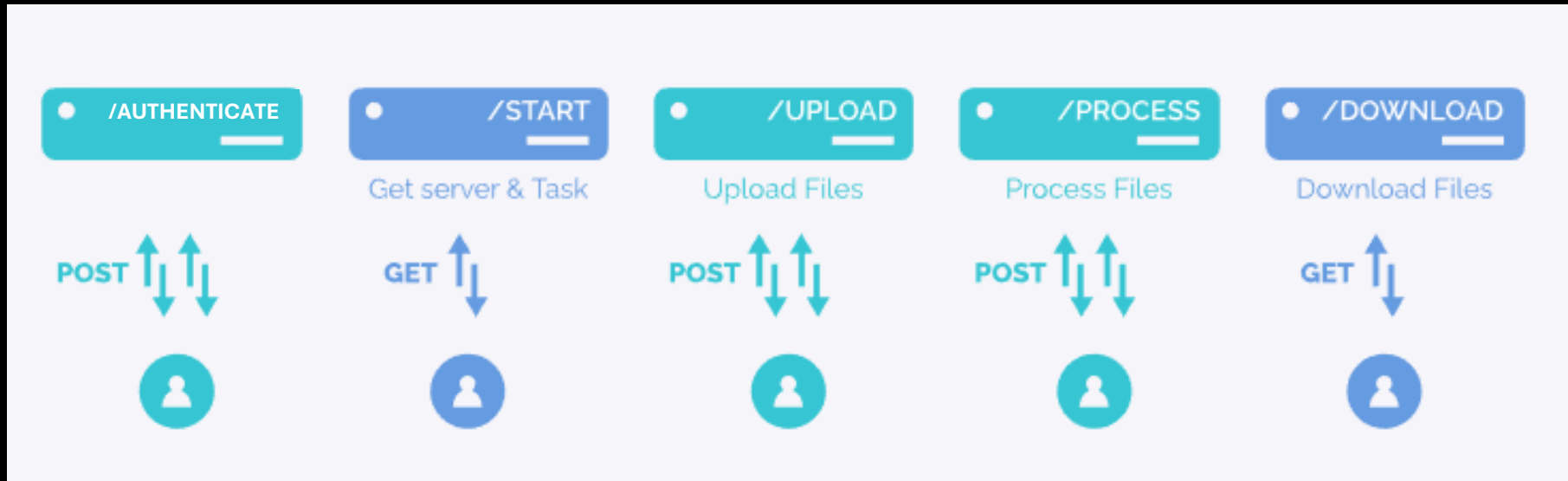
- Run your own code
- With parameters
- Use your imagination

Download public file action in a connector with security (OAuth, Bearer) example

```
1 using System.Web;
2
3 public class Script : ScriptBase
4 {
5     public override async Task<HttpResponseMessage> ExecuteAsync()
6     {
7         // Get the query string parameters
8         var queryString = this.Context.Request.RequestUri.Query;
9         var queryParams = System.Web.HttpUtility.ParseQueryString(queryString);
10
11         // Get the value of the fileURL query string parameter
12         var fileUrl = queryParams["fileURL"];
13
14         // Set the fileURL as the full URL of this.Context
15         this.Context.Request.RequestUri = new Uri(fileUrl);
16
17         var response = await this.Context.SendAsync(this.Context.Request, this.CancellationToken).ConfigureAwait(false);
18         return response;
19     }
20 }
```

iLoveAPI Example

- API uses five operations to exchange public key for a token, get server, upload file, process file, and download file



Demo

iLoveAPI

Code only use cases

- Encryption
- Parse CSV
- Regex
- Decoding / encoding
- Parsers
- Date manipulations
- Excel date conversion
- Prettify JSON (e.g. for emails)
- Aggregates
- Complex math

Know the rules

- 5 seconds rule
- 1 MB size
- Only listed namespaces are supported
- One script per connector
- Logging and test in manual deploy
- Do NOT create Http client
 - Will be blocked
 - Use `this.Context.SendAsync`
- No data from private endpoints for `Context.SendAsync`
- No on-premises gateway support





Demo

Serviceless

How to use

- Balance number of connectors with functionality
- Use logging
 - Support for trace captures is coming. Allegedly.
- Be ready for cryptic errors

Future

- <https://github.com/georged/code-connectors>
- Assemble only required functions
-  Build environment
-  Test framework

References

- [https://learn.microsoft.com/ connectors/custom-connectors/write-code](https://learn.microsoft.com/connectors/custom-connectors/write-code)
- <https://github.com/microsoft/PowerPlatformConnectors/>



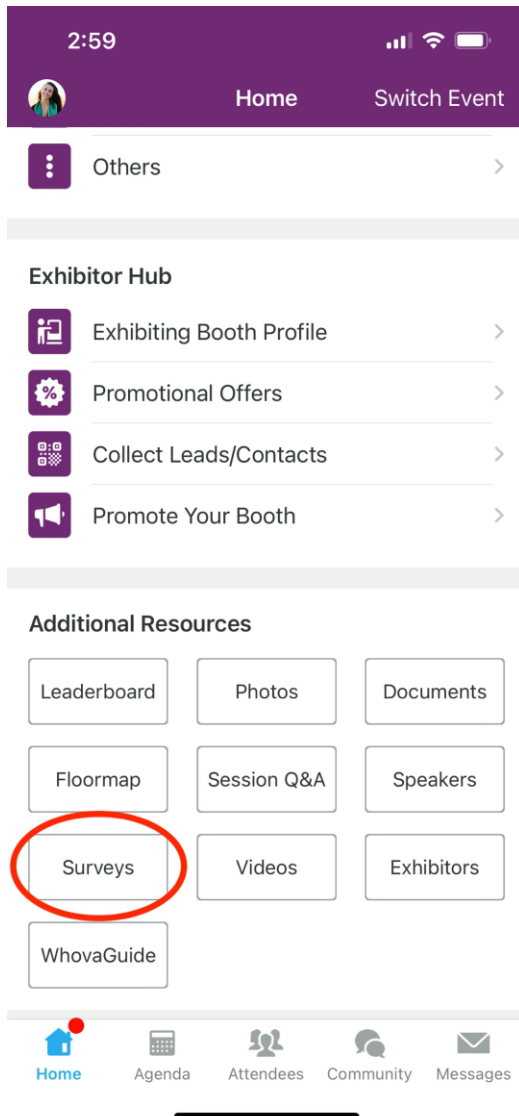
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Contact us

George Doubinski



Troy Taylor

