

# FileMaker and OData - A replacement for ODBC?

# About me



My family



My home  
Côteau-Station, Québec, Canada



# The global pandemic effect

# Direct Impact Solutions

- Technical lead
- Started with FileMaker 3/6
- More than 18 years working with the platform



# Direct Impact Solutions

- Founded in Laval, Quebec in 1996.
- Offices in Quebec, Ontario, United-States and France.
- #1 Platinum Claris partner in Canada, top 5 world-wide
- 40+ employees including 26 FileMaker Certified Developers

# Why this presentation on OData?

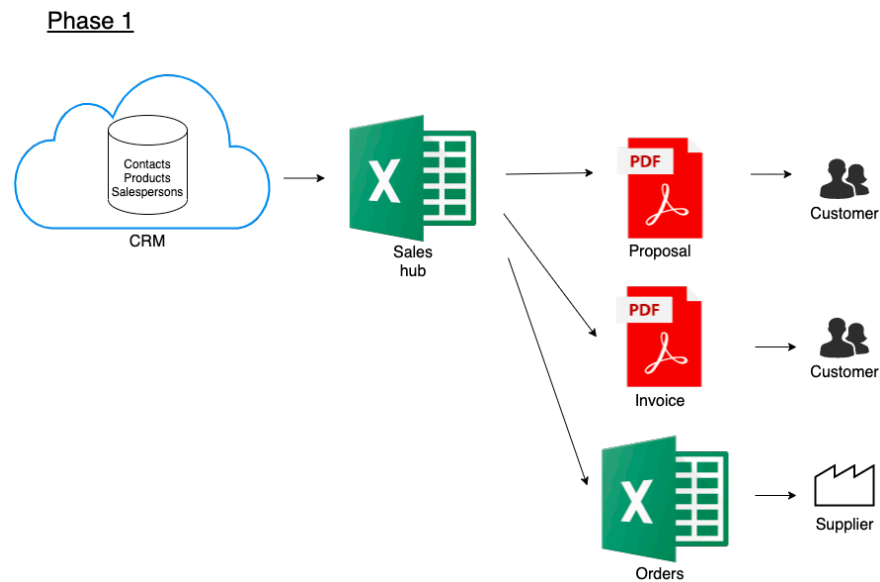
- The potential of OData sharing
- My exploration adventure in the OData world
- But still not an expert at OData ;)

# Part 1

The context

# The context

- A simple CRM to hold contacts, salespersons, products, etc.
- Integrate the CRM in their actual workflow





# The constraints

- Hosted in the cloud, FileMaker Cloud
- 5 office staff, on Windows. Variable number of salesperson, all working remotely
- Continue using an Excel file as a “hub” for other documents (proposal, invoice, order)
- Office365
- Limited budget, as always...

# The high level solution

- Hosted in the cloud, FileMaker Cloud
- 5 FileMaker users
- Variable external users
- Excel file/hub on Office365 OneDrive/Sharepoint
- How data would go from FileMaker to Excel is to be defined

# Part 2

Where do I begin?

# Where do I begin?

- List simple solutions:
  - ODBC sharing
  - OData sharing
  - ESS with MySQL



# 1<sup>st</sup> solution: ODBC

- Can FM Cloud support ODBC sharing?

The screenshot displays the FileMaker Cloud interface, specifically the 'Connectors' tab. The left sidebar lists three connector options: 'FileMaker Data API', 'OData', and 'External ODBC Data', with the latter being selected. The main content area is titled 'External ODBC Data' and includes a descriptive paragraph. Below this, there is a button to 'Add ODBC Data Source'. The 'New ODBC Data Source' section contains several input fields: 'Data Source Name', 'Select Driver' (a dropdown menu), 'Database', 'Server IP Address', and 'Port (number between 1 and 65535)' (a numeric spinner). At the bottom of this section are 'Save' and 'Cancel' buttons. The 'Authentication' section at the very bottom includes 'User Name' and 'Password' input fields, followed by a 'Test Connection' button.

# 1<sup>st</sup> solution: ODBC

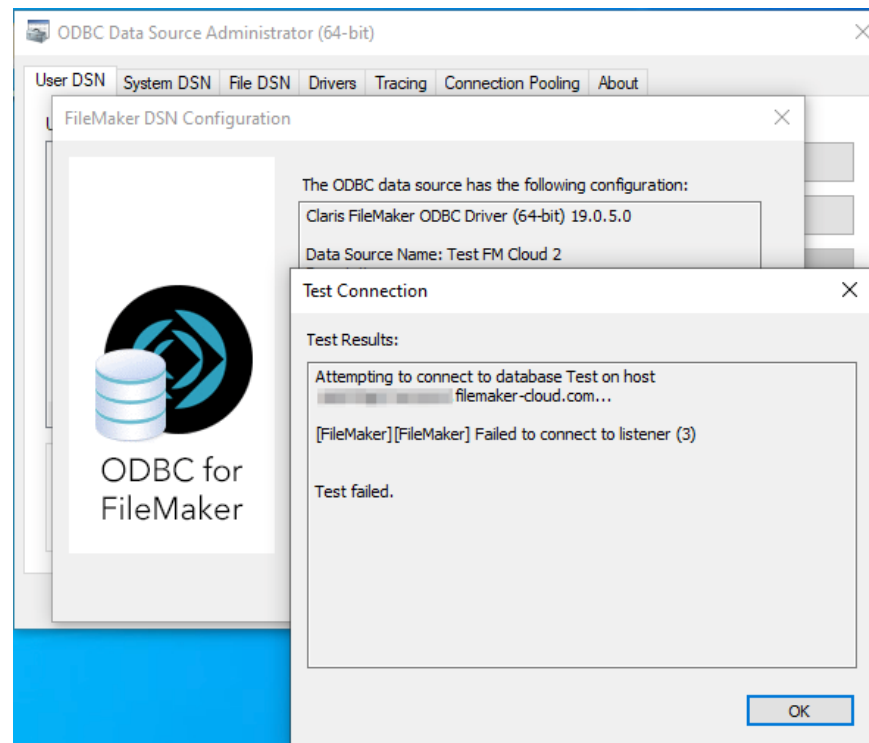
- Can FM Cloud support ODBC sharing?

FileMaker Cloud uses the following ports.

Number	Used by	Protocol/Purpose
80	FileMaker Cloud web server, Admin Console users, client users	HTTP
443	FileMaker Cloud web server, client users	HTTPS
5003	FileMaker Pro Advanced, FileMaker Go client users	Hosting databases
16000	Admin Console users	HTTPS

# 1<sup>st</sup> solution: ODBC

- Can FM Cloud support ODBC sharing unofficially?



# 1<sup>st</sup> solution: ODBC

- I killed my “happy solution”
- ODBC will not work



DISCLAIMER  
Nobody was killed  
during this  
process!  
“Happy solution”  
is not a person.



# Part 3

What is OData?

# What is OData?

- “OData (Open Data Protocol) is a [...] standard that defines a set of best practices for building and consuming RESTful APIs.”
- <https://www.odata.org/>
- Use a standard structure and methods to represent and work with data consumed or produced by OData applications.

# OData for FileMaker

- Similar to Data API
  - http request/response
  - JSON format
  - Read, modify, delete FileMaker data
  - Execute script

# OData for FileMaker

- Odata can do a little bit more
  - Payload in JSON or XML Atom
  - Update database schema
  - Does not require layout -> use TOC for the context
  - Can receive multiple requests in 1 call



# OData for FileMaker

- Available on FM Cloud 2 and FileMaker for Linux
- Not available on Windows
- Could replace ODBC sharing

# Request example

- To get the list of all tables in a file

Https://dis.filemaker-cloud.com/fmi/odata/v4/Test\_OData

Host name

Call the  
OData API

File name

# Other examples

- To get all records from a table

`https://dis.filemaker-cloud.com/fmi/odata/v4/Test_OData/Contacts`

Host name

Call the  
OData API

File name

Table name

- Append function keywords like \$filter and \$orderby

`[...]/fmi/odata/v4/Test_OData/Contacts?$filter=city%20eq%20'Laval'`

# Response example

```
{
  "@odata.context": "https://xyz.directimpacthosting.com/fmi/odata/v4/Test_0Data/$metadata#Contacts",
  "value": [
    {
      "@odata.id": "https://xyz.directimpacthosting.com/fmi/odata/v4/Test_0Data/Contacts('73895F3B-237F-48E0-BA50-BD2A618CD95F')",
      "@odata.editLink": "https://xyz.directimpacthosting.com/fmi/odata/v4/Test_0Data/Contacts('73895F3B-237F-48E0-BA50-BD2A618CD95F')",
      "First Name": "François",
      "Last Name": "Dubé",
      "Title": "Mr.",
      "Company": "Direct Impact Solutions",
      "Job Title": "Technical lead",
      "Website": "https://www.directimpactsolutions.com/",
      "Initial": "D",
      "PrimaryKey": "73895F3B-237F-48E0-BA50-BD2A618CD95F",
      "CreatedBy": "idi",
      "ModifiedBy": "idi",
      "CreationTimestamp": "2021-04-16T11:05:14Z",
      "ModificationTimestamp": "2021-06-02T09:26:39Z",
      "Address Line 2": null,
      "Address Line 1": "1650 Place de Lierre",
      "City": "Laval",
      "State": "Québec",
      "Postal Code": null,
      "Country": "Canada"
    },
    { },
    { }
  ]
}
```

# OData for FileMaker

FileMakerCloud

2021-05-13 15:55:02 UTC

DashboardDatabasesBackupsConfigurationConnectorsSubscription

Connectors

Connectors retrieve data, update data, or add features to hosted databases. Click the tabs below to specify configuration settings for connectors.

FileMaker Data API

OData

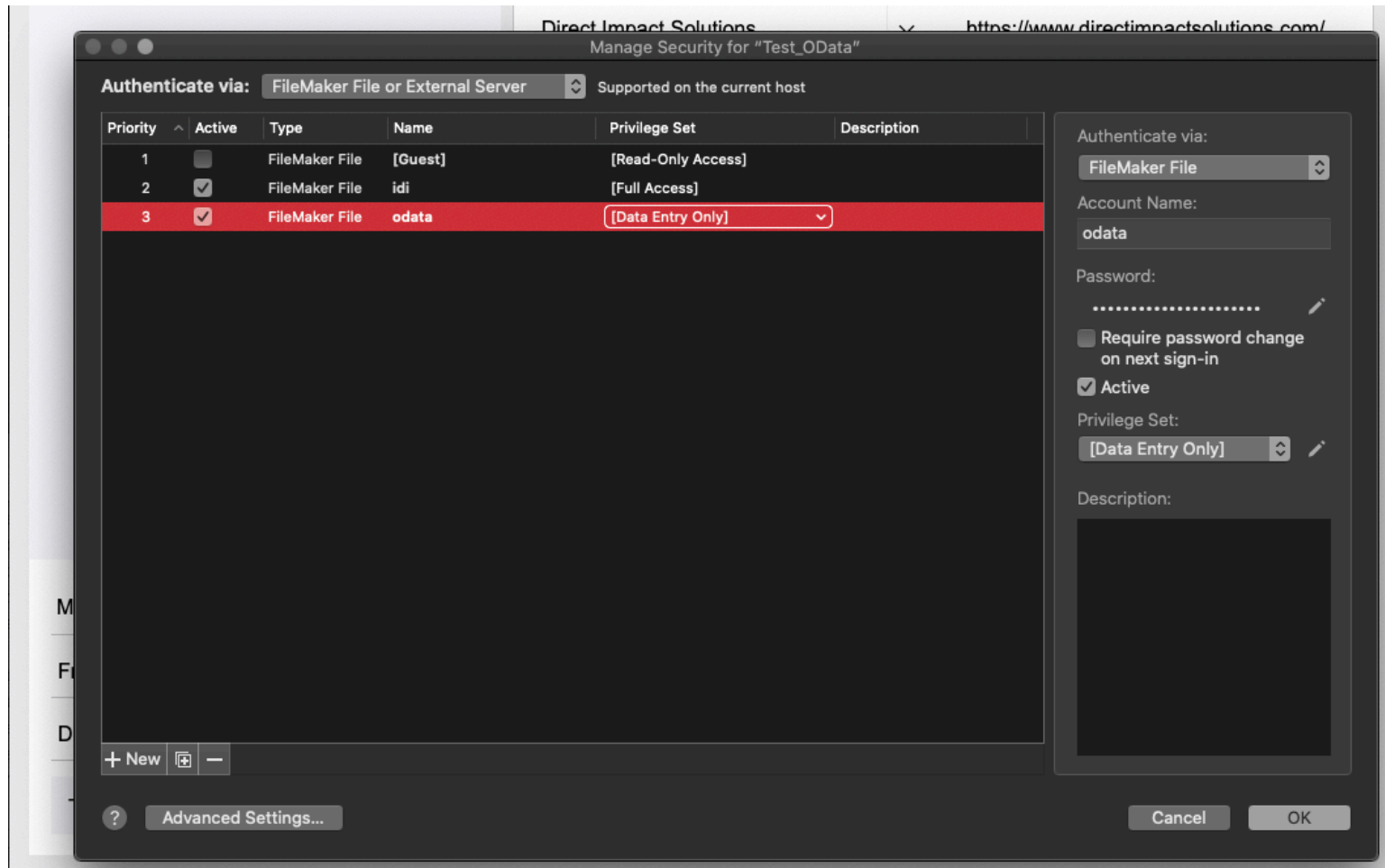
External ODBC Data

OData

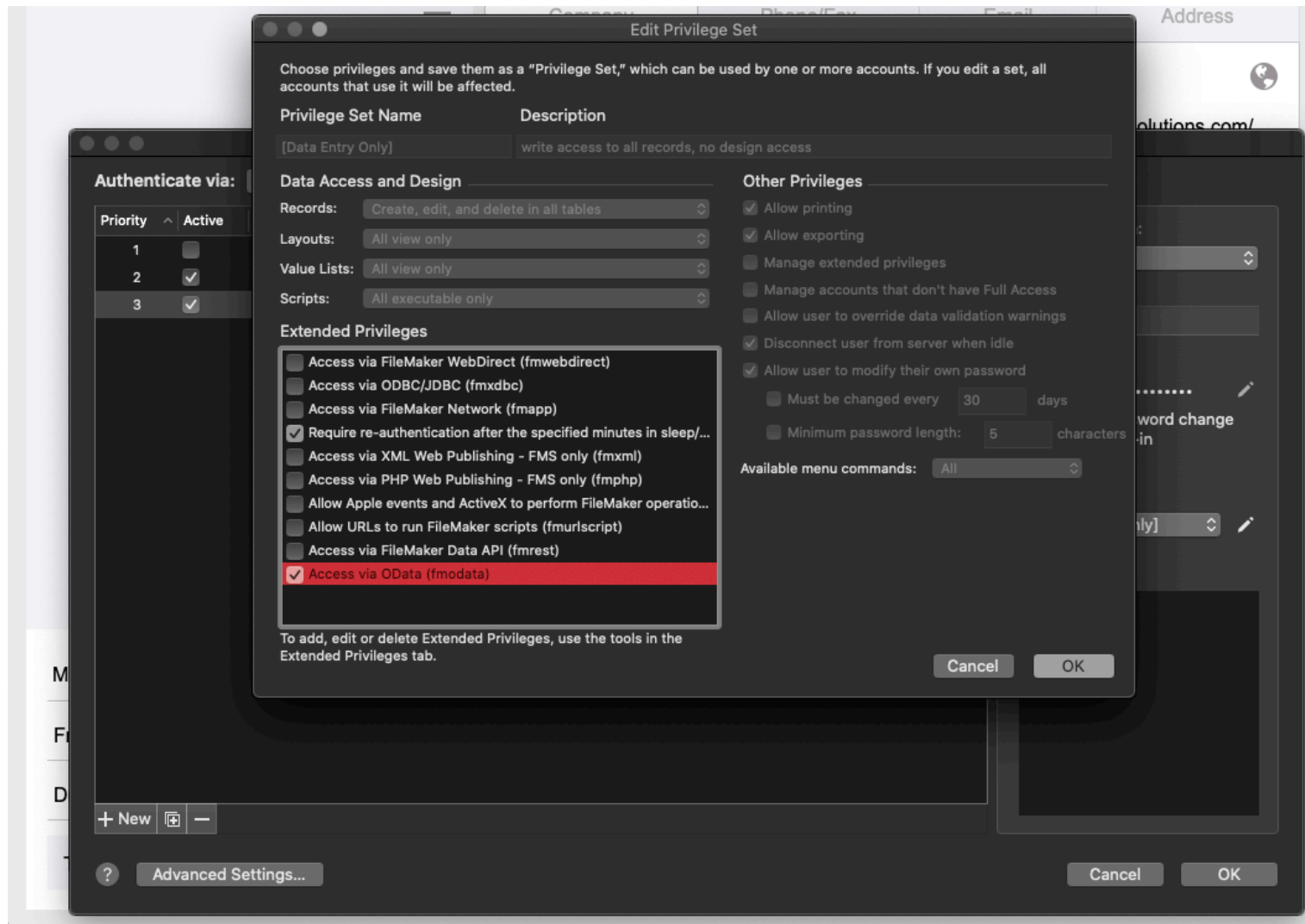
General Settings

OData	Enabled
Annual Limit ?	120 GB
Data Transmitted by This Host ?	376 KB
Total Data Transmitted by All Hosts ?	376 KB
Annual Reset Date	05/06/2022, 24:00

# OData for FileMaker



# OData for FileMaker



# Part 4

The ODBC replacement



# The ODBC replacement

AutoSave On Proposal\_Example1.xlsx - Saved - François Dubé

File Home Insert Page Layout Formulas Data Review View Help

Get Data From Text/CSV From Web From Table/Range Recent Sources Existing Connections Refresh Properties All Edit Links Queries & Connections Data Types Sort & Filter Filter Clear Reapply Advanced Text to Columns Flash Fill Remove Duplicates Validation Data Consolidate Relationships Manage Data Model What-If Analysis Forecast Sheet Group Ungroup Subtotal Outline

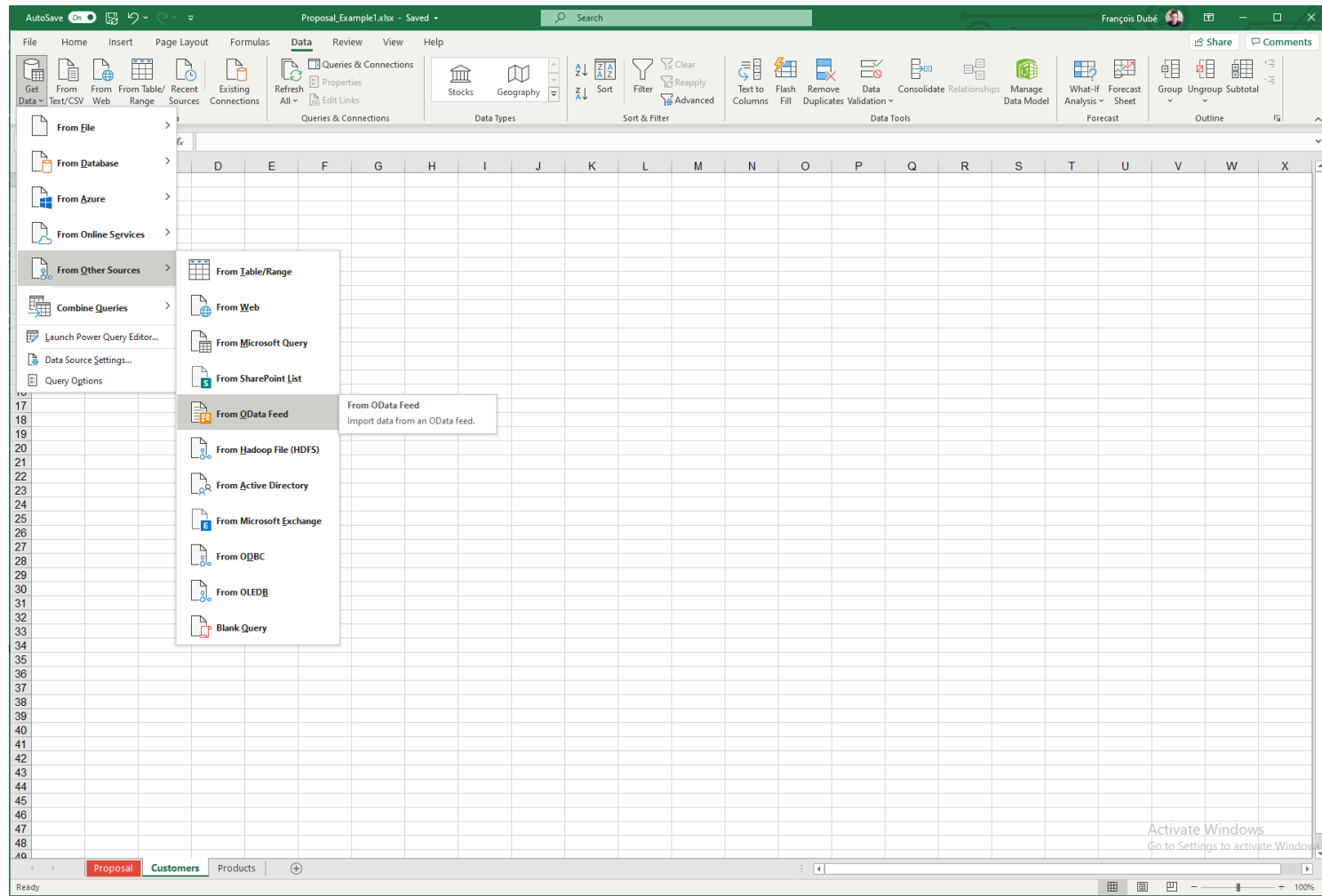
Enter Customer name in this cell

CUSTOMER	QUANTITY	DESCRIPTION	UNIT PRICE	AMOUNT
Enter Customer name in this cell	10	Item 1	\$165.00	\$1,650.00
ESTIMATE NO	21	Item 2	\$40.00	\$840.00
C-1234	5	Item 3	\$10.50	\$52.50
DATE	164	Item 4	\$2.75	\$451.00
2021-06-01	6	Item 5	\$12.00	\$72.00
ADDRESS	18	Item 6	\$5.50	\$99.00
Enter Customer street address in this cell	1	Item 7	\$25.00	\$25.00
CITY/STATE/ZIP				\$0.00
Enter Customer City, State, and Zip code in this				\$0.00
PHONE				\$0.00
Enter Customer phone number in this cell				\$0.00
E-MAIL				\$0.00
Enter Customer E-Mail address in this cell				\$0.00
SALESPERSON				\$0.00
Enter Salesperson in this cell				\$0.00
PROJECT				\$0.00
Enter Project name in this cell				\$0.00

Activate Windows  
Go to Settings to activate Windows

Ready

# The ODBC replacement



# The ODBC replacement



OData feed

☒ Basic ☐ Advanced

URL

https://[redacted].account.filemaker-cloud.com/fmi/odata/v4/Test\_OData

OK Cancel

# The ODBC replacement

OData feed


Anonymous

Windows

Basic

Web API

Organizational account

 <https://...account.filemaker-cloud.com/fmi/...>

User name

odata

Password

.....

Select which level to apply these settings to

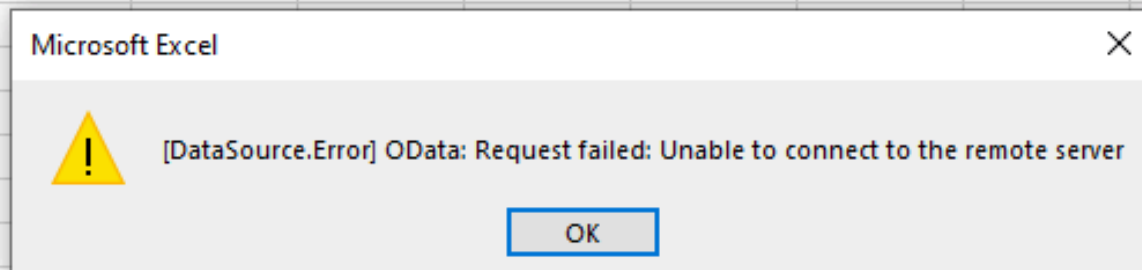
[https://...account.filemaker-cloud.com/fmi/odata/v4/Test\\_OData](https://...account.filemaker-cloud.com/fmi/odata/v4/Test_OData)

Back

Connect

Cancel

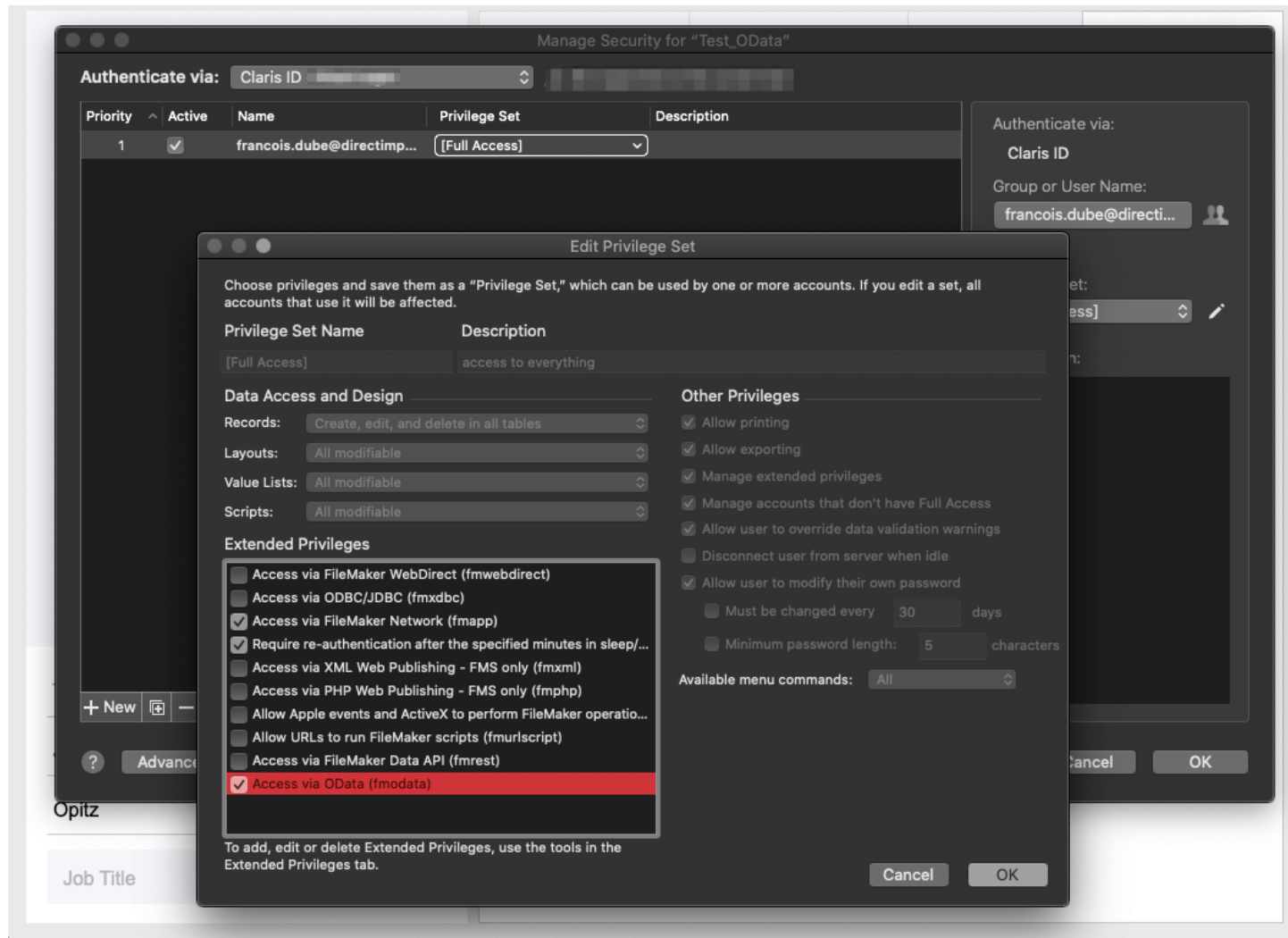
# The ODBC replacement



# OData and FMCloud

- FM Cloud doesn't use basic auth to authenticate to OData API
- You need your Claris ID, but that's only the 1st requirement
- 2nd step is to get a token through Amazon Cognito
- The token is only valid for 1 hour
- FileMaker Server for Linux use basic auth with regular user accounts

# OData and FM Cloud



# OData and FM Cloud

- <https://help.claris.com/en/customer-console-help/content/create-fmid-token.html>

Clarix Customer Console Help

You are here: [Advanced tasks](#) > Using Clarix ID for external authentication



## Using Clarix ID for external authentication

If you want to use the FileMaker Data API, FileMaker Admin API, or OData API with FileMaker Cloud, you must authenticate using your Clarix ID account (not an external IdP account). FileMaker Cloud uses Amazon Cognito for external authentication.

Amazon Cognito manages users through *user pools*, which provide services such as sign-in, authentication with identity providers, user directory and profile management, and security monitoring. (See [Amazon Cognito User Pools](#).)

### To authenticate using Clarix ID:

1. Retrieve values for the UserPoolId and ClientId parameters.

Amazon Cognito requires a UserPoolId and a ClientId to authenticate users. FileMaker Cloud provides the following endpoint:

<https://www.ifmcloud.com/endpoint/userpool/2.2.0.my.clarix.com.json>

The endpoint returns the following results:

```
{
  "errcode": "0k",
  "errmsg": null,
  "data": {
    "Region": "us-west-2",
    "UserPool_ID": "us-west-2_NqkuZcXQY",
    "Client_ID": "4l9rvl4mv5es1eep1qe97cautn",
    "API_Host": "api-cloud-platform.ifmcloud.com",
    "FCC_Host": "console.filemaker-cloud.com"
  },
  "csrid": null
}
```

**Note** The returned Region and API\_Host values are not used for authentication.

2. Use the Amazon Cognito Identity SDK for JavaScript to authenticate a user through Amazon Cognito. (See [Amazon Cognito Identity SDK for JavaScript](#).) Use the example below in your JavaScript code to retrieve values for the Clarix ID token (Clarix\_ID\_token) and the Clarix ID refresh token (Clarix\_ID\_refresh\_token). The Clarix ID token is used for authentication when you use the FileMaker Data API, FileMaker Admin API, or OData API, and is valid for one hour. The Clarix ID refresh token allows scripts to continue running after the Clarix ID token expires, and is valid for one year.

### Example

In this example:

- the UserPool\_ID and Client\_ID values from above are used
- for username and password, enter the Clarix ID user name and password

Example code:

```
var authenticationData = {
  Username : 'username',
  Password : 'password',
};
var authenticationDetails = new
AmazonCognitoIdentity.AuthenticationDetails(authenticationData);
var poolData = { UserPoolId : 'us-west-2_NqkuZcXQY',
  ClientId : '4l9rvl4mv5es1eep1qe97cautn'
};
var userPool = new AmazonCognitoIdentity.CognitoUserPool(poolData);
var userData = {
  Username : 'username',
  Pool : userPool
};
var cognitoUser = new AmazonCognitoIdentity.CognitoUser(userData);
cognitoUser.authenticateUser(authenticationDetails, {
  onSuccess: function (result) {
    var Cognito_access_token = result.getAccessToken().getJwtToken();
    var Clarix_ID_token = result.idToken.jwtToken;
```



# OData and FM Cloud

- <https://www.soliantconsulting.com/blog/data-api-filemaker-cloud/>

Be prepared: it is a complex multi-step process

# OData and FM Cloud

The screenshot shows a VS Code editor window titled 'users.js — FileMakerID\_token-master'. The Explorer sidebar on the left displays the project structure:

- FILEMAKERID\_TOKEN-MASTER
  - bin
  - JS www
  - node\_modules
  - public / stylesheets
  - # style.css
  - routes
    - JS index.js
    - JS users.js
  - views
    - error.pug
    - index.pug
    - layout.pug
  - .gitattributes
  - .gitignore
  - JS app.js
  - JS config.js
  - LICENSE
  - package-lock.json
  - package.json
  - README.md

The main editor displays the 'users.js' file with the following code:

```
66 user:user,  
67 tokens:callbackTokens,  
68 error:error  
69 };  
70 res.send(response);  
71 },  
72 onFailure: function(err) {  
73   console.log(err);  
74   error = err;  
75   response = {  
76     user:user,  
77     tokens:',  
78     error:error  
79   };  
80   res.send(response);  
81 },  
82 mfaRequired: function(codeDeliveryDetails) {  
83   console.log('MFA required');  
84   error = 'MFA required';  
85   response = {  
86     user:user,  
87     tokens:',  
88     error:error  
89   };  
90   res.send(response);  
91 }  
92 });
```

The terminal at the bottom shows the output of a POST request to /users:

```
{  
  "errcode": "Ok",  
  "errmsg": null,  
  "data": {  
    "Region": "us-west-2",  
    "UserPool_ID": "us-west-2_NqkuZcXQY",  
    "Client_ID": "",  
    "API_Host": "api-cloud-platform.ifmcloud.com",  
    "FCC_Host": "console.filemaker-cloud.com"  
  },  
  "csrid": null  
}  
success  
POST /users 200 2347.007 ms - 4488
```

The status bar at the bottom indicates the file is in JavaScript mode, using UTF-8 encoding and LF line endings.

# OData and FM Cloud

[illegible]

# OData and FM Cloud

## Security

### Password

[Change your password...](#)

### Account Recovery [?](#)

[Regenerate recovery code...](#)

### Two-Step Verification

Add a phone number for extra security.

[Turn on two-step verification...](#)

# OData and FM Cloud

OData feed


Anonymous

Windows

Basic

Web API

Organizational account

 https://.account.filemaker-cloud.com/fmi/...

Key

Blabc8GvB6nKyXfCghMK9P1PTkku3500UQ

Select which level to apply these settings to

https://.account.filemaker-cloud.com/fmi/odata/v4/Test\_OData

Back

Connect

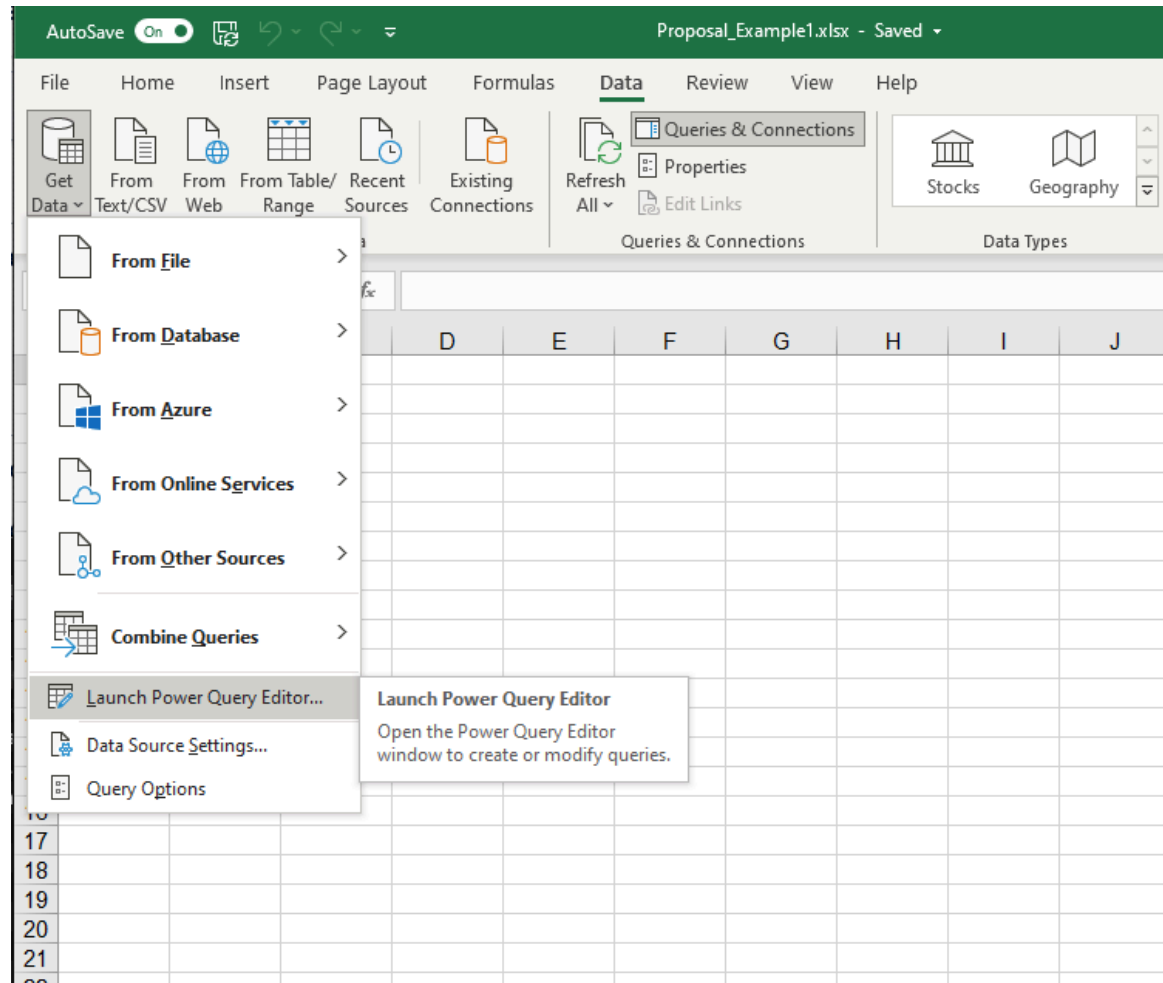
Cancel

# OData and FM Cloud

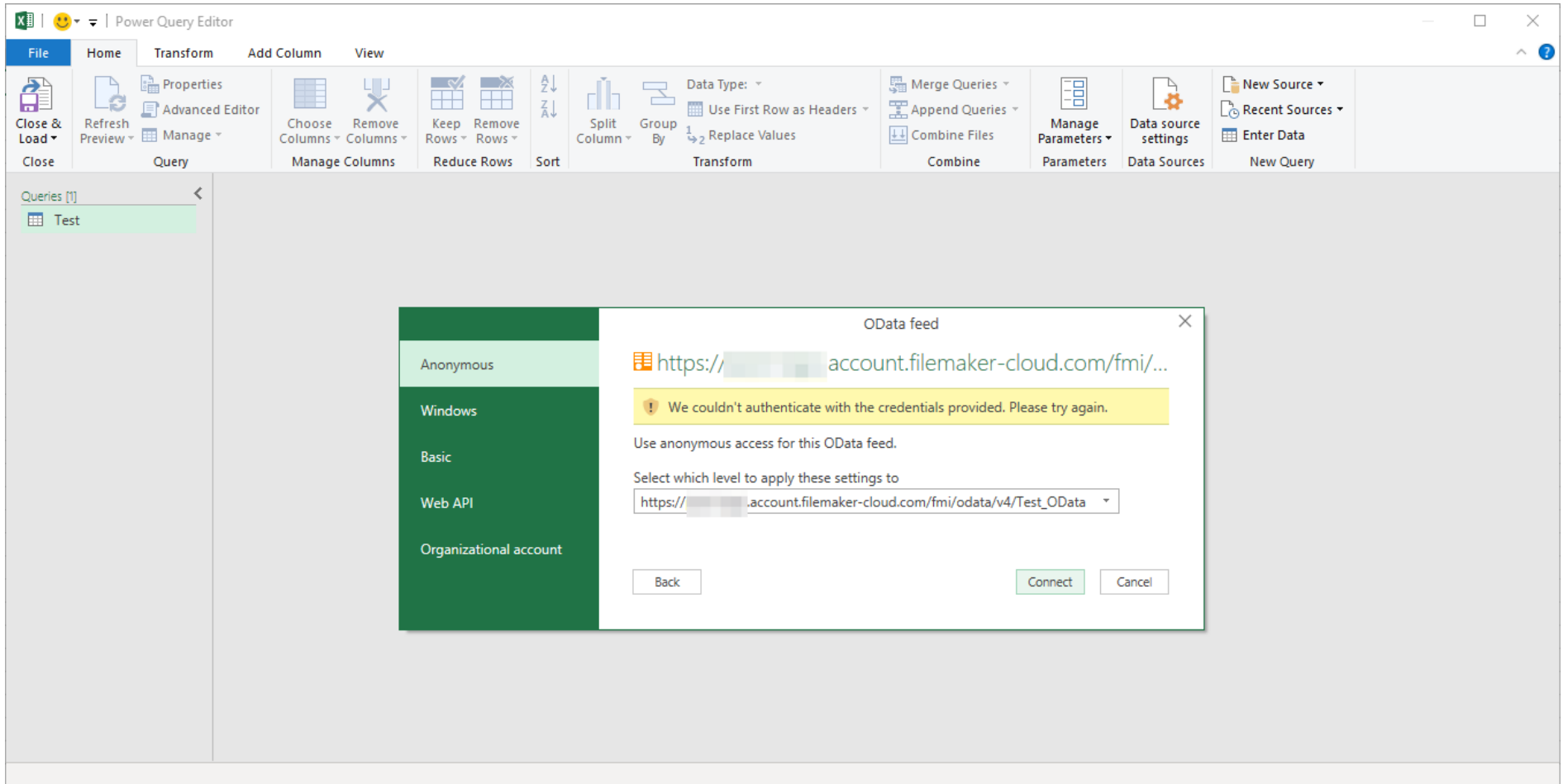
The screenshot shows a configuration window titled "OData feed" with a close button (X) in the top right corner. On the left is a dark green sidebar with five menu items: "Anonymous", "Windows", "Basic", "Web API" (which is highlighted in a lighter green), and "Organizational account". The main area of the window contains the following elements:

- A URL field with a document icon on the left and the text: `https://[redacted].account.filemaker-cloud.com/fmi/...`
- A yellow error banner with a warning icon and the text: "An API key value wasn't specified".
- A label "Key" above a text input field containing the value: `eyJraWQiOiIyYScEpvaERiWjJiTGZsXC9CXX`.
- At the bottom right, there are two buttons: "Save" (highlighted in light green) and "Cancel".

# OData and FM Cloud

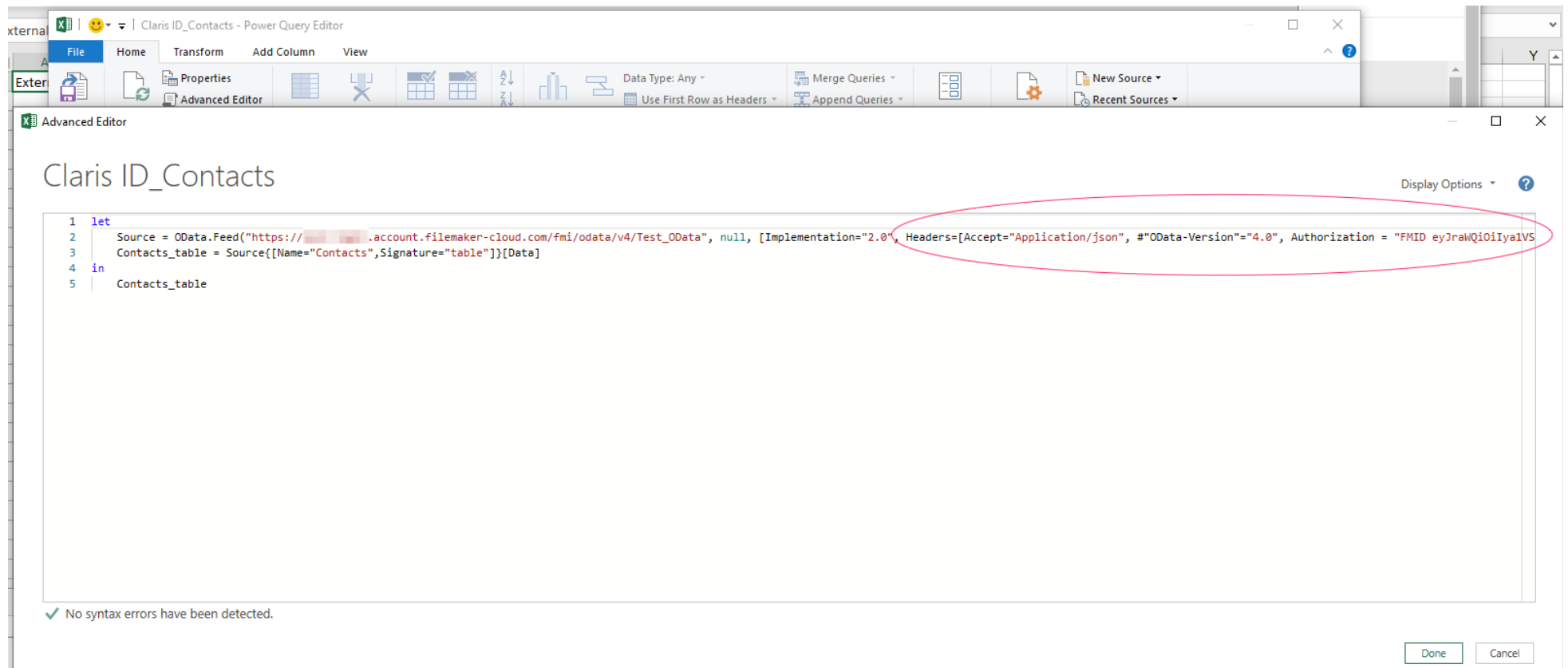


# OData and FM Cloud

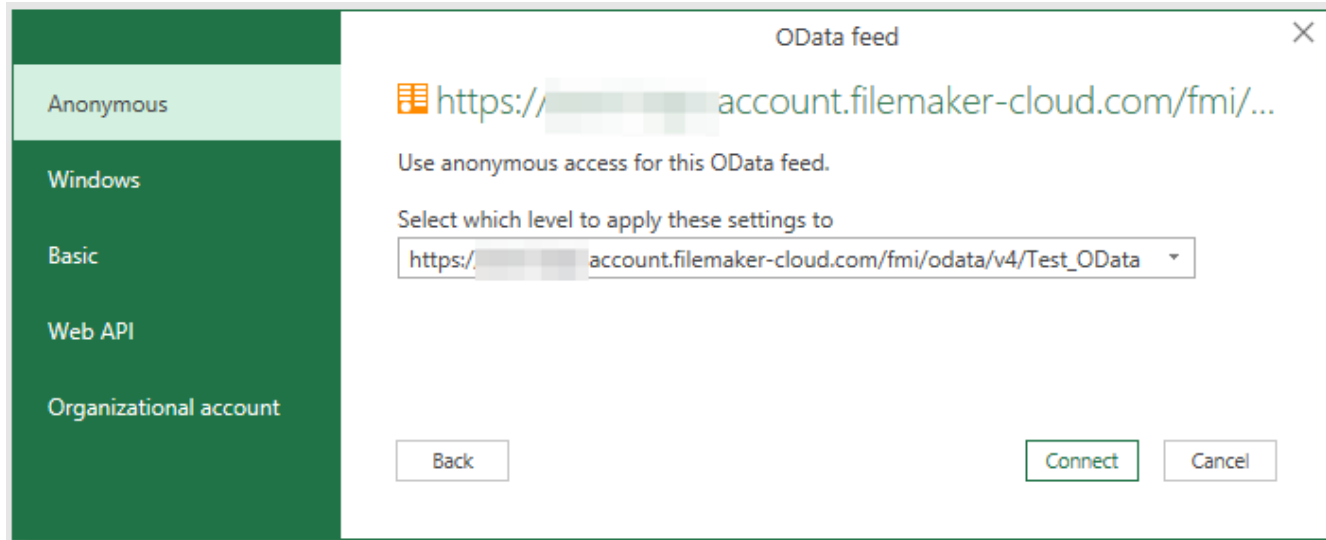




# OData and FM Cloud



# OData and FM Cloud



# OData and FM Cloud

The screenshot displays the Power Query Editor interface for a query named 'ClarID\_Contacts'. The ribbon at the top includes tabs for File, Home, Transform, Add Column, and View. The Transform tab is active, showing options like Merge Queries, Append Queries, Combine Files, Manage Parameters, Data source settings, New Source, Recent Sources, Enter Data, and New Query. The main area shows a table with 21 rows and 6 columns: First Name, Last Name, Photo, Title, Company, and Job. The data is sourced from a table named 'Contacts' with the signature 'table'. The 'Query Settings' pane on the right shows the query name 'ClarID\_Contacts' and a list of applied steps: Source and Navigation. The status bar at the bottom indicates '22 COLUMNS, 199+ ROWS' and 'Column profiling based on top 1000 rows'. A watermark 'PREVIEW DOWNLOADED ON TUESDAY' is visible in the bottom right corner.

	First Name	Last Name	Photo	Title	Company	Job
1	François	Dubé	Binary	Mr.	Direct Impact Solutions	Tech
2	Francoise	Rautenstrauch	Binary		null	Riebesell, H F Jr
3	Kendra	Loud	Binary		null	Deloitte & Touche
4	Lourdes	Bauswell	Binary		null	Oklahoma Neon Inc
5	Hannah	Edmison	Binary		null	M B A Paint Stores
6	Tom	Loeza	Binary		null	Sheraton Shreveport Hotel
7	Queenie	Kramarczyk	Binary		null	Goeman Wood Products Inc
8	Hui	Portaro	Binary		null	A Storage Inn Of Gloucester
9	Josefa	Opitz	Binary		null	Norman Gale Isuzu
10	Lea	Steinhaus	Binary		null	James, Christopher Esq
11	Paola	Vielma	Binary		null	Congress Title
12	Hortencia	Bresser	Binary		null	Batavia Chamber Of Commerce
13	Leanna	Tijerina	Binary		null	Stephenson Land Surveying
14	Danilo	Pride	Binary		null	Harry L Adams Incorporated
15	Huey	Marcille	Binary		null	Southern Idaho Pipe & Stl Corp
16	Apolonia	Warne	Binary		null	Kitchen People
17	Chandra	Lagos	Binary		null	Meredith Realty Group Inc
18	Crissy	Pacholec	Binary		null	Cgi Systems Inc
19	Gianna	Branin	Binary		null	All Brevard Cert Apprsls Inc
20	Valentin	Billa	Binary		null	General Color Co Inc
21						

# Part 5

D.... it won't work.... or it will?

# D.... it won't work.... or it will?

- I lost the focus, not a viable solution
  - Not simple to put in place
  - Not simple for the end user
- Don't really like the 3rd solution
- Can FileMaker Server for Linux come to the rescue?

D.... it won't work.... or it will?

OData feed


Anonymous

Windows

Basic

Web API

Organizational account

 https://[redacted].directimpackhosting.com/...

User name

odata

Password

.....

Save Cancel

# D.... it won't work.... or it will?

Navigator

☐ Select multiple items

Display Options

- <https://fms19-dev-ubuntu.directimpackhosting...>
- Addresses
- Contacts**
- Email Addresses
- Phone Numbers
- Product

Contacts

First Name	Last Name	Photo	Title	Company	Job Title	Website
François	Dubé	Binary	Mr.	Direct Impact Solutions	Technical lead	<a href="https://www.directimpactsolu">https://www.directimpactsolu</a>
Francoise	Rautenstrauch	Binary	null	Riebesell, H F Jr	null	<a href="http://www.riebesellhfjr.com">http://www.riebesellhfjr.com</a>
Kendra	Loud	Binary	null	Deloitte & Touche	null	<a href="http://www.deloittetouche.co">http://www.deloittetouche.co</a>
Lourdes	Bauswell	Binary	null	Oklahoma Neon Inc	null	<a href="http://www.oklahomaneoninc">http://www.oklahomaneoninc</a>
Hannah	Edmison	Binary	null	M B A Paint Stores	null	<a href="http://www.mbapaintstores.co">http://www.mbapaintstores.co</a>
Tom	Loeza	Binary	null	Sheraton Shreveport Hotel	null	<a href="http://www.sheratonshrevecp">http://www.sheratonshrevecp</a>
Queenie	Kramarczyk	Binary	null	Goeman Wood Products Inc	null	<a href="http://www.goemanwoodpro">http://www.goemanwoodpro</a>
Hui	Portaro	Binary	null	A Storage Inn Of Gloucester	null	<a href="http://www.astorageinnofglou">http://www.astorageinnofglou</a>
Josefa	Opitz	Binary	null	Norman Gale Isuzu	null	<a href="http://www.normangaleisuzu">http://www.normangaleisuzu</a>
Lea	Steinhaus	Binary	null	James, Christopher Esq	null	<a href="http://www.jameschristophe">http://www.jameschristophe</a>
Paola	Vielma	Binary	null	Congress Title	null	<a href="http://www.congresstitle.com">http://www.congresstitle.com</a>
Hortencia	Bresser	Binary	null	Batavia Chamber Of Commerce	null	<a href="http://www.bataviachambero">http://www.bataviachambero</a>
Leanna	Tijerina	Binary	null	Stephenson Land Surveying	null	<a href="http://www.stephensonlandsu">http://www.stephensonlandsu</a>
Danilo	Pride	Binary	null	Harry L Adams Incorporated	null	<a href="http://www.harryladamsincor">http://www.harryladamsincor</a>
Huey	Marcille	Binary	null	Southern Idaho Pipe & Stl Corp	null	<a href="http://www.southernidahopip">http://www.southernidahopip</a>
Apolonia	Warne	Binary	null	Kitchen People	null	<a href="http://www.kitchenpeople.co">http://www.kitchenpeople.co</a>
Chandra	Lagos	Binary	null	Meredith Realty Group Inc	null	<a href="http://www.meredithrealtygr">http://www.meredithrealtygr</a>
Crissy	Pacholec	Binary	null	Cgi Systems Inc	null	<a href="http://www.cgisystemsinc.co">http://www.cgisystemsinc.co</a>
Gianna	Branin	Binary	null	All Brevard Cert Apprsls Inc	null	<a href="http://www.allbrevardcertapp">http://www.allbrevardcertapp</a>
Valentin	Billa	Binary	null	General Color Co Inc	null	<a href="http://www.generalcolorcoinc">http://www.generalcolorcoinc</a>
Ilona	Dudash	Binary	null	Adams Balcom & Larose Pc	null	<a href="http://www.adamsbalcomlaro">http://www.adamsbalcomlaro</a>
Willard	Lablanc	Binary	null	Mershon Metal Specialties Inc	null	<a href="http://www.mershonmetalspe">http://www.mershonmetalspe</a>

The data in the preview has been truncated due to size limits.

Select Related Tables

Load Transform Data Cancel

# D.... it won't work.... or it will?

AutoSave On Proposal\_Example1.xlsx - Saved

File Home Insert Page Layout Formulas Data Review View Help Table Design Query

Table Name: Contacts

Table Design

Table Style Options

Table Styles

	A	B	C	D	E	F	G	H	I	J	K	L	M
	First Name	Last Name	Title	Company	Job Title	Website	Initial	PrimaryKey	CreatedBy	ModifiedBy	CreationTimestamp	ModificationTimestamp	Address Line
1	François	Dubé	Mr.	Direct Impact Solutions	Technical lead	https://www.directimpactsolutions.com/	D	73895F3B-237F-48E0-BA5D-BD2A618CD95F	idi	idi	4/16/2021 11:05	6/1/2021 16:14	
2	Francoise	Rautenstrauch		Riebesell, H F Jr		http://www.neibesellhfr.com	R	414012DB-2D3B-42E5-8509-5148DF5F7697	idi	idi	6/1/2021 16:16	6/1/2021 16:16	
3	Kendra	Loud		Deloitte & Touche		http://www.deloittetouche.com	L	293BEC09-881A-4704-8C02-E5C5A72A09EA	idi	idi	6/1/2021 16:16	6/1/2021 16:16	
4	Lourdes	Bauswell		Oklahoma Neon Inc		http://www.oklahomanoninc.com	B	16B578C9-1458-4A48-ACA3-C9C9F249B0AF	idi	idi	6/1/2021 16:16	6/1/2021 16:16	
5	Hannah	Edmison		M B A Paint Stores		http://www.mbapaintstores.com	E	FCB05A63-65C6-4224-A154-BE30526D8143	idi	idi	6/1/2021 16:16	6/1/2021 16:16	
6	Tom	Loeza		Sheraton Shreveport Hotel		http://www.sheratonshreveporthotel.com	L	2CF9C097-E03B-4193-A919-A89754CC0D10	idi	idi	6/1/2021 16:16	6/1/2021 16:16	
7	Queenie	Kramarczyk		Goeman Wood Products Inc		http://www.goemanwoodproductsinc.com	K	544FA813-D010-4CAE-AF73-362A105715DE	idi	idi	6/1/2021 16:16	6/1/2021 16:16	
8	Hui	Portaro		A Storage Inn Of Gloucester		http://www.astorageinnofgloucester.com	P	8C757676-CBBB-49ED-B401-1C80680C65AB	idi	idi	6/1/2021 16:16	6/1/2021 16:16	
9	Josefa	Opitz		Norman Gale Isuzu		http://www.normangaleisuzu.com	O	73B4FB83-251E-41FE-8603-6902140F5CB6	idi	idi	6/1/2021 16:16	6/1/2021 16:16	
10	Lea	Steinhaus		James, Christopher		http://www.jameschristopher.com	S	39A9E680-A992-4644-B866-...	idi	idi	6/1/2021 16:16	6/1/2021 16:16	

Proposal Contacts Customers Products



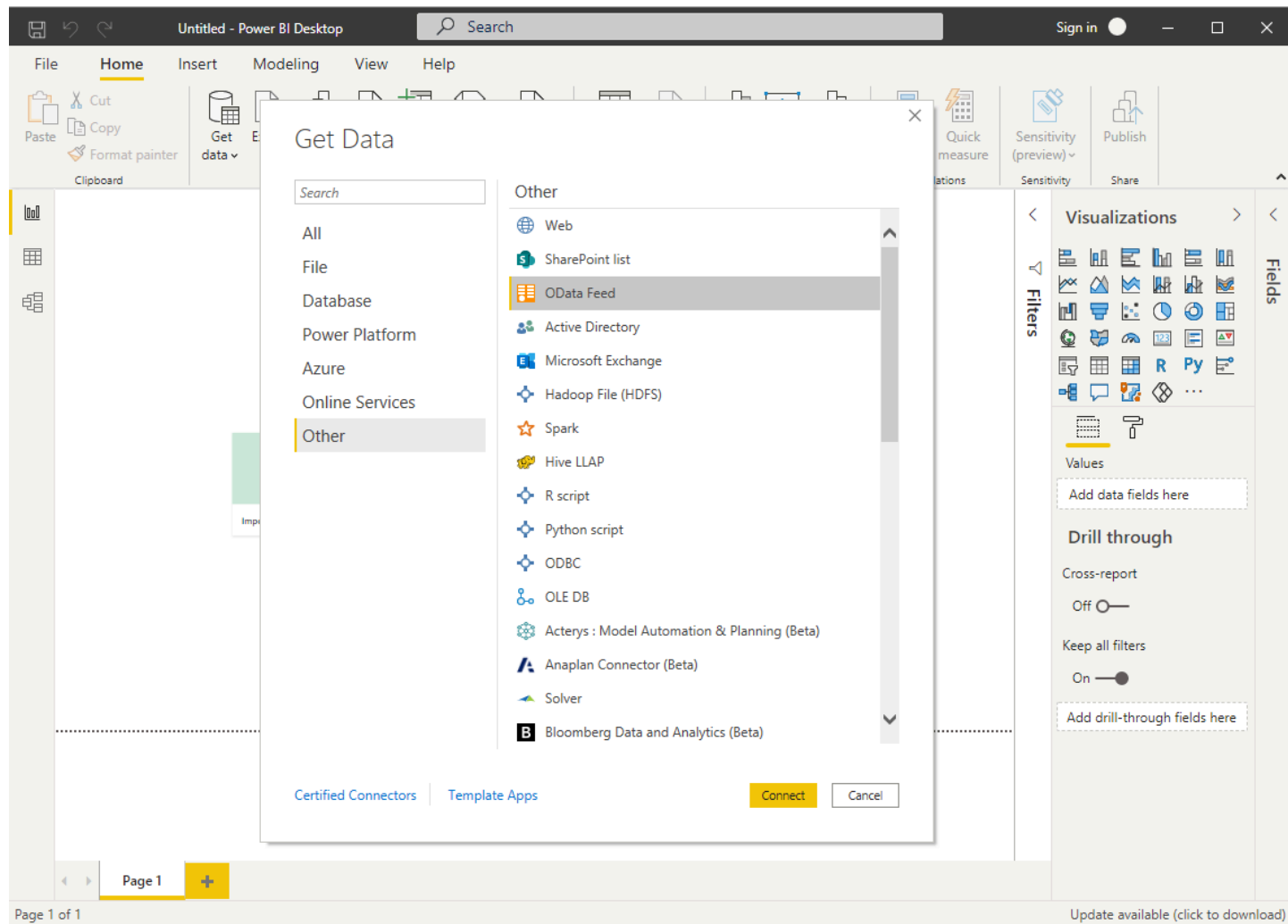
## To summarize

- Works on Windows version of Excel to create the connection and refresh the data, and partially on Excel Online
- Does not work on Mac
- Works with FileMaker Server for Linux with basic authentication (using a local FileMaker account)
- Does not work with FileMaker Cloud because of the authentication type (Claris ID)

# Part 6

Let's continue to explore

# Microsoft Power BI



# Microsoft Power BI

The screenshot displays the Microsoft Power BI Desktop interface. The top ribbon includes 'File', 'Home', 'Help', and 'Table tools'. The 'Table tools' ribbon is active, showing options like 'Mark as date table', 'Manage relationships', 'New measure', 'Quick measure column', 'New table', and 'New table'. The main view shows a table named 'Contacts' with 501 rows. The table has columns: First Name, Last Name, Title, Company, Job Title, Website, Initial, and PrimaryKey. The right sidebar shows the 'Fields' pane with a search bar and a list of fields including Address Line 1, Address Line 2, City, Company, Country, CreatedBy, CreationTimestamp, First Name, Initial, Job Title, Last Name, ModificationTimestamp, ModifiedBy, Postal Code, PrimaryKey, State, Title, and Website. The bottom status bar indicates 'Table: Contacts (501 rows)' and 'Update available (click to download)'.

First Name	Last Name	Title	Company	Job Title	Website	Initial	PrimaryKey
Francoise	Rautenstrauch		Riebesell, H F Jr		http://www.riebesellhfjr.com	R	414012DB-2D3B-42E5-85
Lourdes	Bauswell		Oklahoma Neon Inc		http://www.oklahomaneoninc.com	B	16B578C9-1458-4A48-AC
Josefa	Opitz		Norman Gale Isuzu		http://www.normangaleisuzu.com	O	73B4FB83-251E-41FE-86C
Lea	Steinhaus		James, Christopher Esq		http://www.jameschristopheresq.com	S	39A9E680-A992-4644-B8
Paola	Vielma		Congress Title		http://www.congresstitle.com	V	2593BFBD-6AD6-4490-B3
Leanna	Tijerina		Stephenson Land Surveying		http://www.stephensonlandsurveying.com	T	C3416A19-9666-4130-9B
Chandra	Lagos		Meredith Realty Group Inc		http://www.meredithrealtygroupinc.com	L	347127F4-3387-44DC-A8
Crissy	Pacholec		Cgi Systems Inc		http://www.cgisystemsinc.com	P	0BAB6908-4B92-4822-A5
Laurena	Begin		Barry, Anthony S Esq		http://www.barryanthonyesesq.com	B	203FAD76-6574-4B37-B4
Elise	Michelle		Thurman, William T Esq		http://www.thurmanwilliamtesq.com	M	00FCD136-4508-47BF-BD
Kimberely	Rabuse		Carey, Paul D Esq		http://www.careypauldesq.com	R	A11DC383-9DE7-4D6E-8E
Andree	Christmann		Easton Cooperative Bank		http://www.eastoncooperativebank.com	C	C8DAB8A0-069F-41A7-82
Felton	Yafuso		Penkava, Robert Md		http://www.penkavarobertmd.com	Y	921645CE-66AD-4C73-A6
Nohemi	Leko		Bohne, Karl W Jr		http://www.bohnekariwjr.com	L	EA2C89AA-6779-4ACD-B0
Matthew	Armacost		Livingston & Schneider Pc		http://www.livingstonschneiderpc.com	A	F6DC5078-17A5-4DB3-83
Iesha	Wardle		Honker Cut Marine		http://www.honkercutmarine.com	W	A647E330-8DC6-427D-99
Jame	Mastro		Janney Montgomery Scott Inc		http://www.janneymontgomeryscottinc.com	M	F391ADB3-64C4-4F26-96
Jillian	Hallstone		Global Securities Info Inc		http://www.globalsecuritiesinfoinc.com	H	2350ACA5-2252-4B7B-8C
Emmett	Mcshaw		Yaffa, Michael Esq		http://www.yaffamichaelsesq.com	M	8AD13B68-7687-488F-AC
Maxima	Brzowski		B Js Body Shop		http://www.bjsbodyshop.com	B	5228CE34-3417-4435-B1
Salina	Knavel		Schiller & Osbourn		http://www.schillerosbourn.com	K	0D72F80E-8782-45CE-BD
Amalia	Wolfgang		Knutson, Becky S Esq		http://www.knutsonbeckysesq.com	W	C070639B-1632-4AB0-B2
Felix	Tuttenrow		Corinth Dry Cleaners		http://www.corinthdrycleaners.com	T	EAA02A8-52CE-49C7-A3
Lang	Heuring		Hill Realty Property Mgmt		http://www.hillrealtypropertymgmt.com	H	CACE3D48-2E92-493B-84
Rashad	Menino		World Sign Associates		http://www.worldsignassociates.com	M	0D7224E9-3599-4D82-B4
Callie	Neikirk		Shields, Sheridn Cpa		http://www.shieldssheridncpa.com	N	22A11AE9-D9DF-4030-93
Coral	Helmcamp		Heoco Inc		http://www.heocoinc.com	H	F932F9C7-FD8E-4EC6-B3

Table: Contacts (501 rows)

Update available (click to download)

# Tableau

The screenshot shows the Tableau Public web interface. The left sidebar is dark blue with a 'Connect' section. It lists 'To a File' options (Microsoft Excel, Text file, JSON file, PDF file, Spatial file, Statistical file) and 'To a Server' options (OData, More...). At the bottom of the sidebar, it says 'Save locally. Work with big data. Connect to more data sources.' and has an 'Upgrade Now' button. The main area is titled 'Open' and has a link 'Open from Tableau Public'. A modal dialog titled 'OData' is open in the center. It contains fields for 'Server' (https://[redacted].directimpackhosting.com/fmi/odata/v4/Test\_OData/), 'Authentication' (Username and Password), 'Username' (OData), and 'Password' (masked with dots). A 'Sign In' button is at the bottom right of the dialog. The right sidebar is light gray with a 'Discover' section. It lists 'How-to Videos' (Overview, Intro to the Interface, Chart Types, Dashboard, More how-to videos...) and a 'VIZ OF THE DAY' section featuring 'Disney Movies Income' with a chart. At the bottom, there is a 'Resources' section with links to a blog, sample data sets, live training, and current status.

Tableau Public - Book1

## Connect

To a File

- Microsoft Excel
- Text file
- JSON file
- PDF file
- Spatial file
- Statistical file

To a Server

- OData
- More...

Save locally. Work with big data.  
Connect to more data sources.

Upgrade Now

## Open

Open from Tableau Public

### OData

Server  
https://[redacted].directimpackhosting.com/fmi/odata/v4/Test\_OData/

Authentication  
Username and Password

Username  
OData

Password  
\*\*\*\*\*

Sign In

## Discover

How-to Videos

- Overview
- Intro to the Interface
- Chart Types
- Dashboard
- More how-to videos...

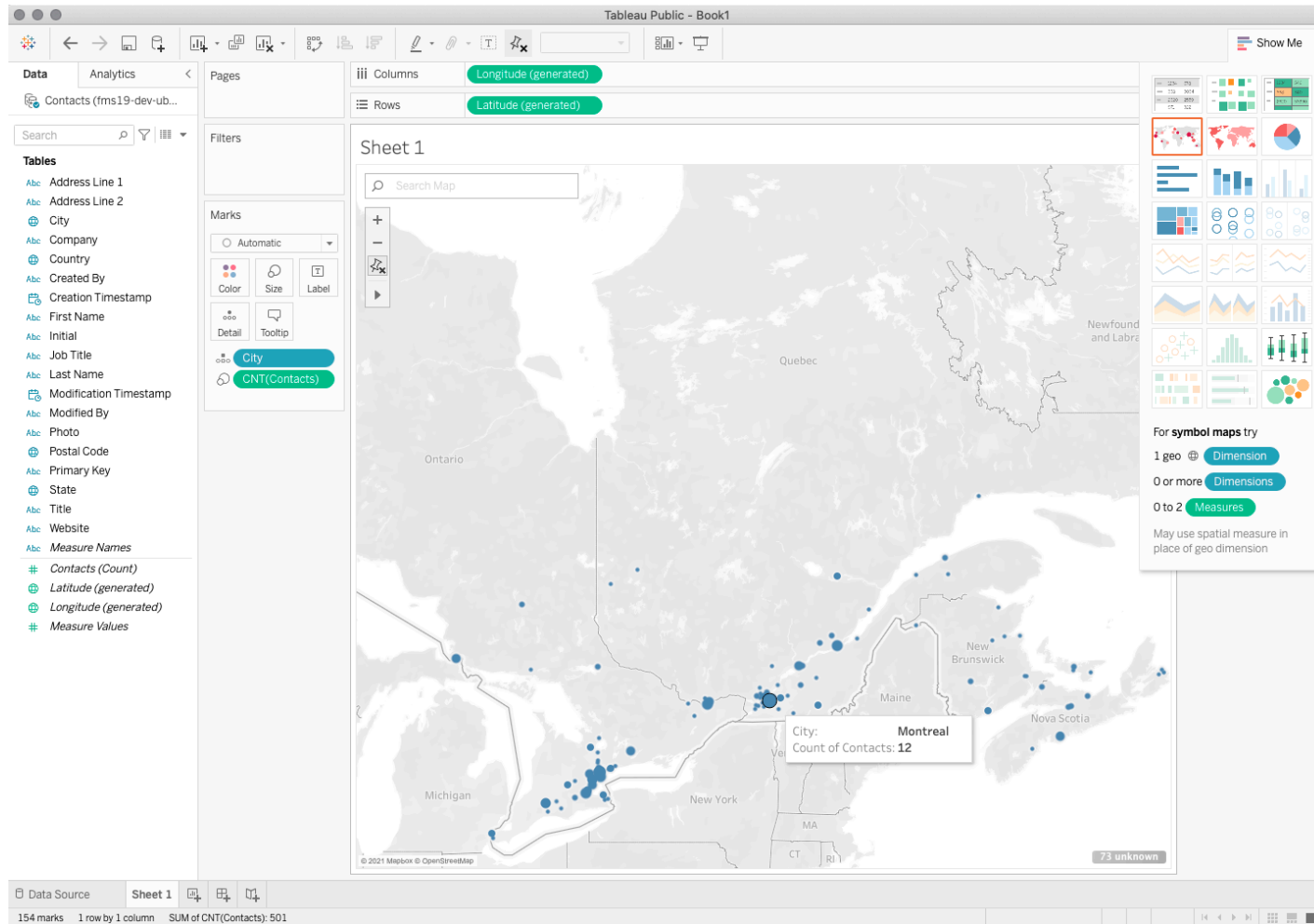
VIZ OF THE DAY

Disney Movies Income →

Resources

- Blog - Get insights faster with Explain Data
- Sample Data Sets
- Live Training
- Current Status

# Tableau



# Microsoft Power Automate

The screenshot displays the Microsoft Power Automate interface for configuring and testing the FileMaker OData connector. The top navigation bar includes the Power Automate logo, a search bar, and user information. The left sidebar shows the navigation menu with options like Accueil, Éléments d'action, Mes flux, Créer, Modèles, Connecteurs, Données, Contrôler, AI Builder, Process Advisor, Solutions, and Formation.

The main workspace is titled "FileMaker OData" and shows the "4. Test" step in the workflow. The "Opérations (2)" section lists two operations: "1. GetDatabases" (selected) and "2. GetContacts". The "GetDatabases" operation is being tested, and the results are displayed in the "Réponse" tab.

The response details show the following structure:

```
{
  "content-length": "803",
  "content-type": "application/json;charset=utf-8",
  "date": "Thu, 03 Jun 2021 11:43:20 GMT",
  "odata-version": "4.0",
  "strict-transport-security": "max-age=31536000; includeSubDomains; preload",
  "Corps": {
    "@odata.context": "https://directimpacthosting.com/fmi/odata/v4/Test_OData/$",
    "value": [
      {
        "name": "Addresses",
        "kind": "EntitySet",
        "url": "https://directimpacthosting.com/fmi/odata/v4/Test_OData/Addresses"
      },
      {
        "name": "Contacts",
        "kind": "EntitySet",
        "url": "https://directimpacthosting.com/fmi/odata/v4/Test_OData/Contacts"
      },
      {
        "name": "Email Addresses",
        "kind": "EntitySet"
      }
    ]
  }
}
```

The "Validation de schéma" section at the bottom indicates "Validation effectuée".

# The conclusion

- OData with Basic Auth on FMS Linux -> Yes!
- Maybe we should wait for FMS on Ubuntu
- Can we replace ODBC with OData? Yes, but still limited





Thank you!