

# Introduction to the FileMaker Data API

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**FileMaker**  
**Devcon**  
**Scandinavia**

# Who am I?

## Steve Winter

- FileMaker, web application and software developer >20 years!
- Run Matatiro Solutions
- Regular DevCon speaker
- Active Open Source developer

**matatiro**solutions  
filemaker web development

# Introduction to the FileMaker Data API

## Expectation management

- This is a beginner session!
- That said, it will move quite quickly
- Demo file and code to replicate everything I do
- First presented at DevCon 2018

# Topics to cover

An introduction to REST

Where REST and CRUD meet

Our friendly Postman

Authentication and tokens

Configuring FileMaker Server and a FileMaker custom app

Interacting with other systems

# The end at the beginning

FileMaker based inventory management

WordPress based website

Want to be able to display product data, prices, availability etc on site

WordPress plugin is available for you to use

# Demo

# An introduction to REST

“

Representational State Transfer (REST) is an architectural style that defines a set of constraints and properties based on HTTP.

Web Services that conform to the REST architectural style, or RESTful web services, provide interoperability between computer systems on the Internet.

”

Wikipedia

# An introduction to REST

“

REST-compliant web services allow the requesting systems to access and manipulate **textual representations** of **web resources** by using a **uniform** and **predefined** set of **stateless** operations.

”

Wikipedia



# HTTP methods

## GET

“

The GET method requests a representation of the specified resource.

Requests using GET should only retrieve data and should have no other effect.

”

Wikipedia

# HTTP methods

## POST

“

The POST method requests that the server accept the entity enclosed in the request as a new subordinate of the web resource identified by the URI

”

Wikipedia

# HTTP methods

## PATCH

“

The PATCH method applies partial modifications to a resource.

”

Wikipedia

# HTTP methods

## DELETE

“

The DELETE method deletes the specified resource.

”

Wikipedia

# Resource URI and FileMaker

Begin with https://<server>, then

- **C** POST     /fmi/data/v1/databases/<database>/layouts/<layout>/records
- **R** GET       /fmi/data/v1/databases/<database>/layouts/<layout>/records/<?recordId>
- **U** PATCH    /fmi/data/v1/databases/<database>/layouts/<layout>/records/<recordId>
- **D** DELETE   /fmi/data/v1/databases/<database>/layouts/<layout>/records/<recordId>

# Demo

QuickTime PlayerFileEditViewWindowHelp

ITG01Demo (os-x-10.12.2-fms-17-release.shared)

<>50005000Total (Unsorted)

FindSortShare

Layout: Contact...ils | TabletView As:PreviewEdit Layout

<Contacts

Contact Detail

Photo

Title

FirstAlphonse

LastMailliard

COMPANY INFO

CompanyPhenix Label Co Inc

Job Title

Websitehttp://www.alphonsemailliard.

ADDRESS

Address 14730 N 16th St

Address 2

CityPhoenix

StateAZ

Postal Code85016

Country

CONTACT GROUP

Group

EMAIL

Workalphonse@mailliard.com

Personal

PHONE / FAX

Mobile

Office602-234-4986

Personal

Fax602-234-6955

NOTES

Postman

NewImportRunner

My Workspace

FileMaker Data API demo

Sign In

Create recordXGet single recordModify recordGet multiple recordsDelete record+...

FileMaker Data API demo

Create record

Examples (0)

POST

https://fms17.msdev.co.uk/fmi/data/v1/databases/ITG01Demo/layouts/ContactsAPI/records

Params

SendSave

AuthorizationHeaders (1)BodyPre-request ScriptTests

CookiesCode

form-datax-www-form-urlencodedrawbinaryJSON (application/json)

```
1 {
2   "fieldData": {
3     "Title": "Sir",
4     "First": "Fred",
5     "Last": "Spoon",
6     "Company": "FileMaker Inc",
7     "Job Title": "Chief Cook and Bottle Wash"
8   }
9 }
```

Response

Hit the Send button to get a response.

# A word of caution

The FileMaker Data API URLs use the internal recordID of a record

FileMaker recordIDs won't always refer to the same record

This makes the stateless part of REST **very** important



But what about security?

# Don't Panic

# But what about security?

1. You have to enable the FileMaker Data API on your server
2. You have to enable the fmrest extended privilege for at least one user
3. That user has to authenticate before they can use the API

# Enable FileMaker Data API

Demo

# FileMaker Server 17

## Admin Console Sign In

User Name
Password

Sign In

[Password Help](#)

[FileMaker, Inc.](#) | [Documentation](#) | [Support](#) | [Help](#)

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# Data usage

Included in your server license

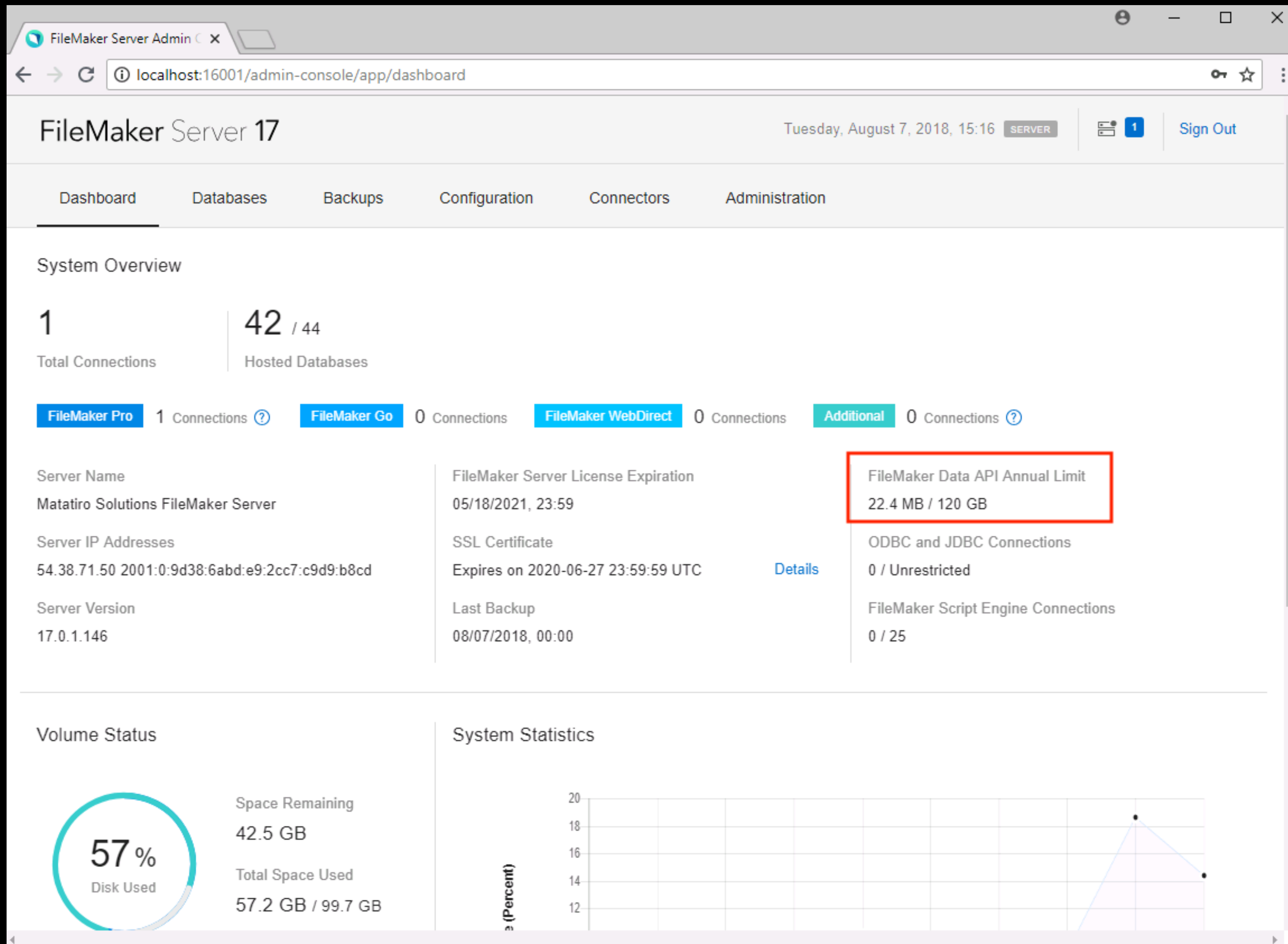
Number of users x 2Gb per month x 12 months = annual allowance

3 users x 2Gb per month x 12 = 72Gb

Outbound traffic only

Aggregated across all users, not just those who use the FileMaker Data API. Error 953 when exceeded.

Can purchase additional data if necessary



# Enable the fmrest extended permission

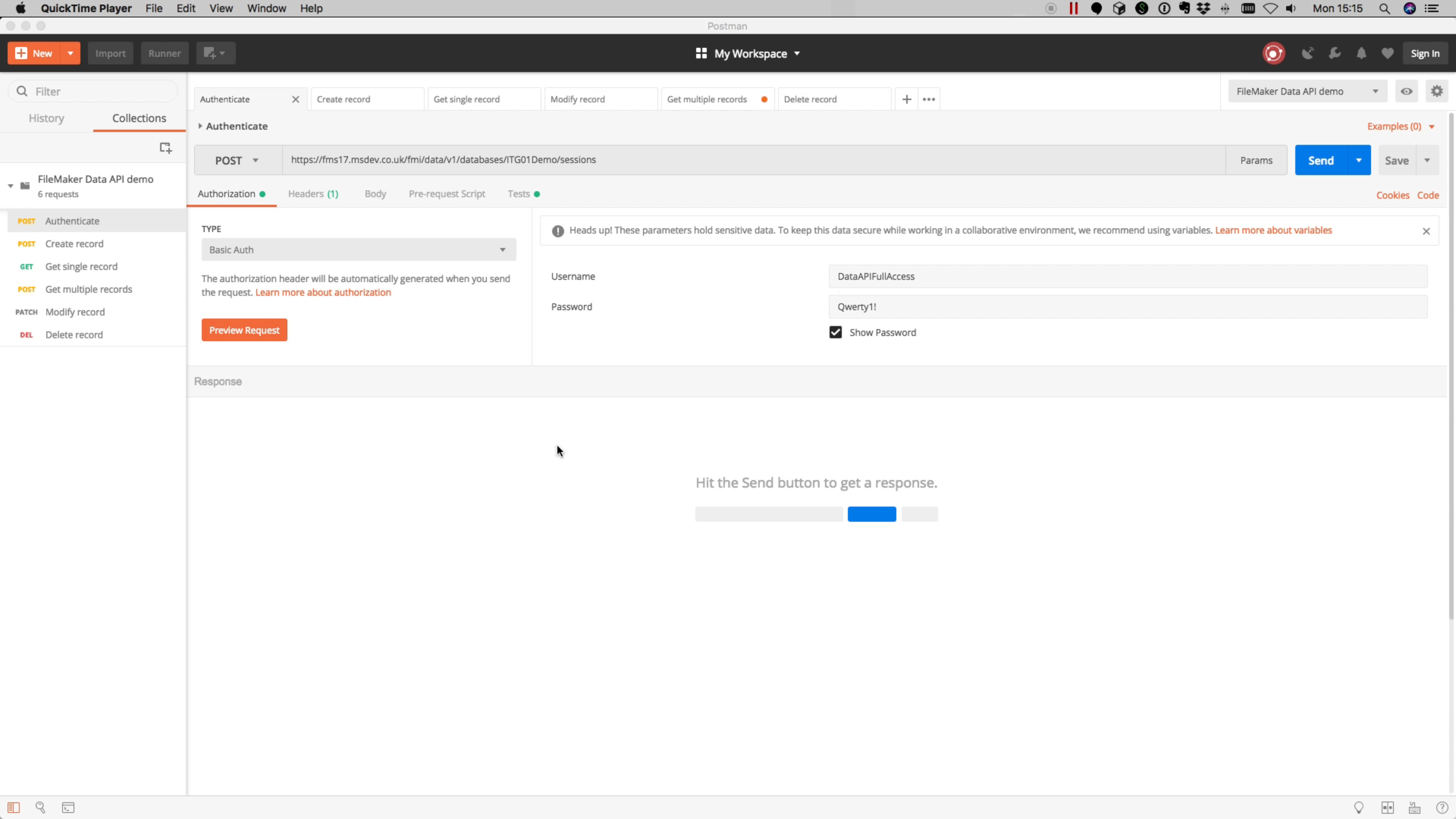
Demo





# That user has to authenticate

Demo



# Putting it all together

We know what REST is

Our server is ready

Our app file is ready

We have a user with the right credentials

Let us go forth and connect with the world!

# Connecting WordPress

Demo

# Using FileMaker Go to connect

Demo

# What else can we do

Call scripts

Upload container content

Logout

Fetch ValueLists (since v18)

Gather other metadata (since v18)

# Connecting from JavaScript

Demo

# Upload container content

Demo



# FileMaker Data API documentation

`https://<server>/fmi/data/apidoc`

The screenshot displays the FileMaker Data API (1.0.0) documentation page. The browser address bar shows the URL `fms-18.msdev.co.uk/fmi/data/apidoc/`. The page layout includes a sidebar on the left with the FileMaker logo and a search bar. The sidebar contains a list of navigation links: metadata, auth, records, scripts, container, and globals, each with a right-pointing chevron. Below the sidebar, it states "Documentation Powered by ReDoc". The main content area features the title "FileMaker Data API (1.0.0)" and a subtitle "The FileMaker Data API". Below this, the word "metadata" is displayed in a large, bold font. The "Product info" section describes the API as "Retrieves information about the FileMaker Server or FileMaker Cloud host" and lists "PATH PARAMETERS". The right-hand panel shows a GET request to `/fmi/data/{version}/productInfo` with a dropdown arrow. Below this, the "Response samples" section shows a status code of 200.

# Integration resources

## Lots of 'packages' to help make things easier

- See: <https://community.filemaker.com/docs/DOC-9197>
- FileMaker: examples in the demo files for this session
- JavaScript: see the resources for this session
- PHP: by Mark Denyse, <https://github.com/driftwoodinteractive/fmPDA>
- .NET: by Wim Decorte, [https://github.com/wimdecorte/FMdotNet\\_\\_DataAPI](https://github.com/wimdecorte/FMdotNet__DataAPI)
- Python: by David Hamann, <https://github.com/davidhamann/python-fmrest>
- node.js:
  - feathers: by Todd Geist, <https://github.com/geistinteractive/feathers-filemaker>
- WordPress: see resources from this session
- NativeScript: see resources from this session

# Questions?

# Session Materials

<https://bit.ly/fds-dapi>



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