

Exploring FileMaker Server Admin APIs

INT08

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Who am I?

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Areas of Involvement:

- WebDirect
- Custom Web Publishing with PHP/XML
- Admin Console
- Admin APIs

Agenda

FileMaker Server Management in 17

Admin API Overview

Admin API Structure

Admin API Execution

Demos

Integration with Admin APIs

Conclusion

FileMaker Server Management in 17

Admin Console

- Simple, interactive with improved UI and UX

Command Line

- Advanced and comprehensive set of configuration

Admin APIs (Trial)

- Advanced and critical set of configuration



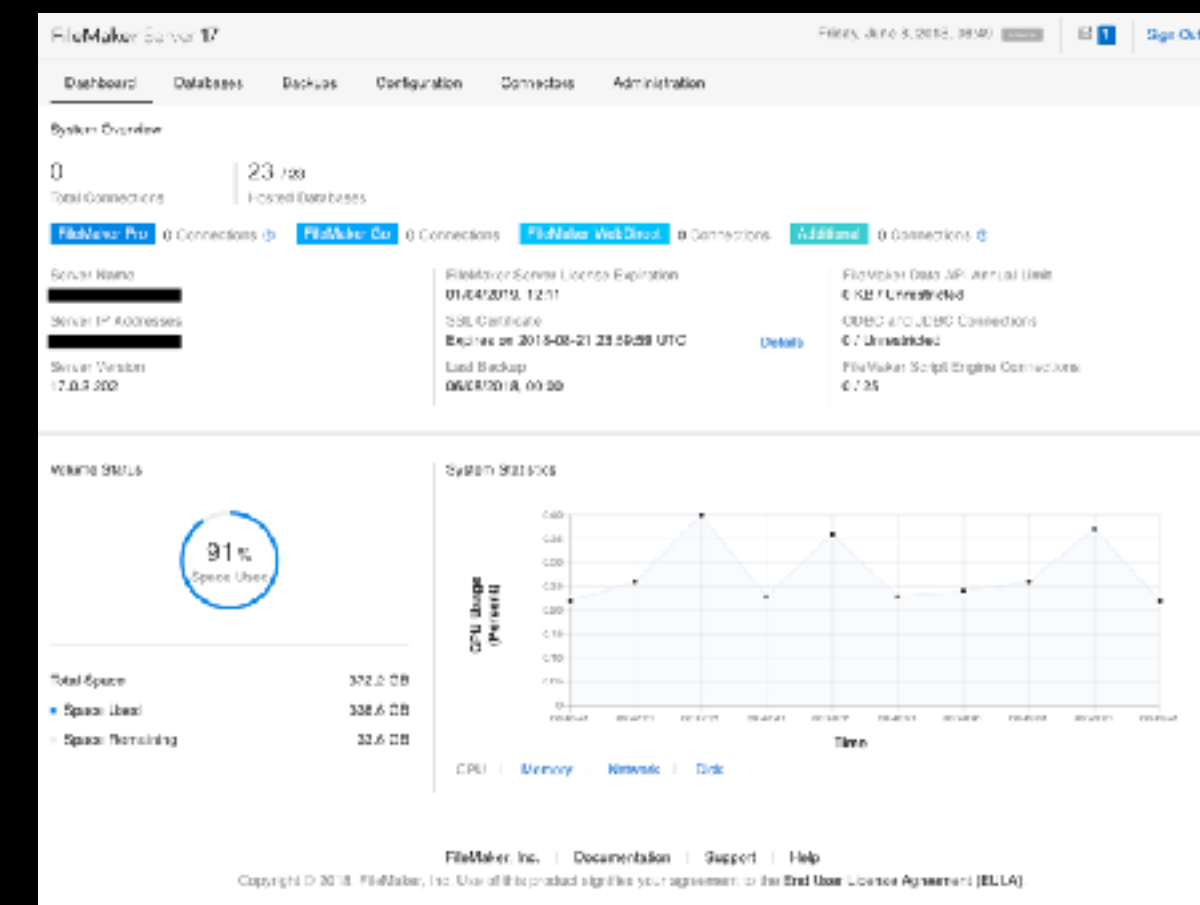
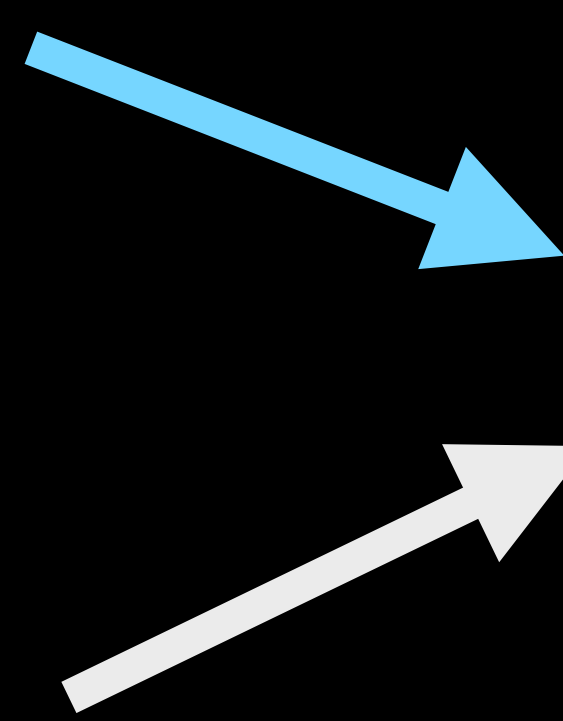
Admin API Overview

APIs for managing your FileMaker Server

Complement to FileMaker Admin Console and Command Line

TRIAL

{api}



Admin API Overview - Functionality



Create/Edit/Run Schedules



Manage Database Files



Change Server Settings



Disconnect Clients

Admin API Overview

Protocol

- Only supported through HTTPS

Sessions

- maximum of 5 Admin API sessions

Session Token

- 15 minute idle timeout

Admin API Overview

Asynchronous

- All database operations expect list databases
- Disconnect client
- Run schedule
- Configure PHP technology if enabling/disabling or changing to use FileMaker PHP

Synchronous Operations

- All other APIs

Admin API Overview - Admin vs Data APIs

Admin APIs (Trial)

- Uses root admin account for authentication
- Performs FileMaker Server administration operations
- RESTful-based using HTTPS
- Requests processed through node.js process shared with Admin Console on master FMS machine
- Own request/response formats and error handling

Data APIs

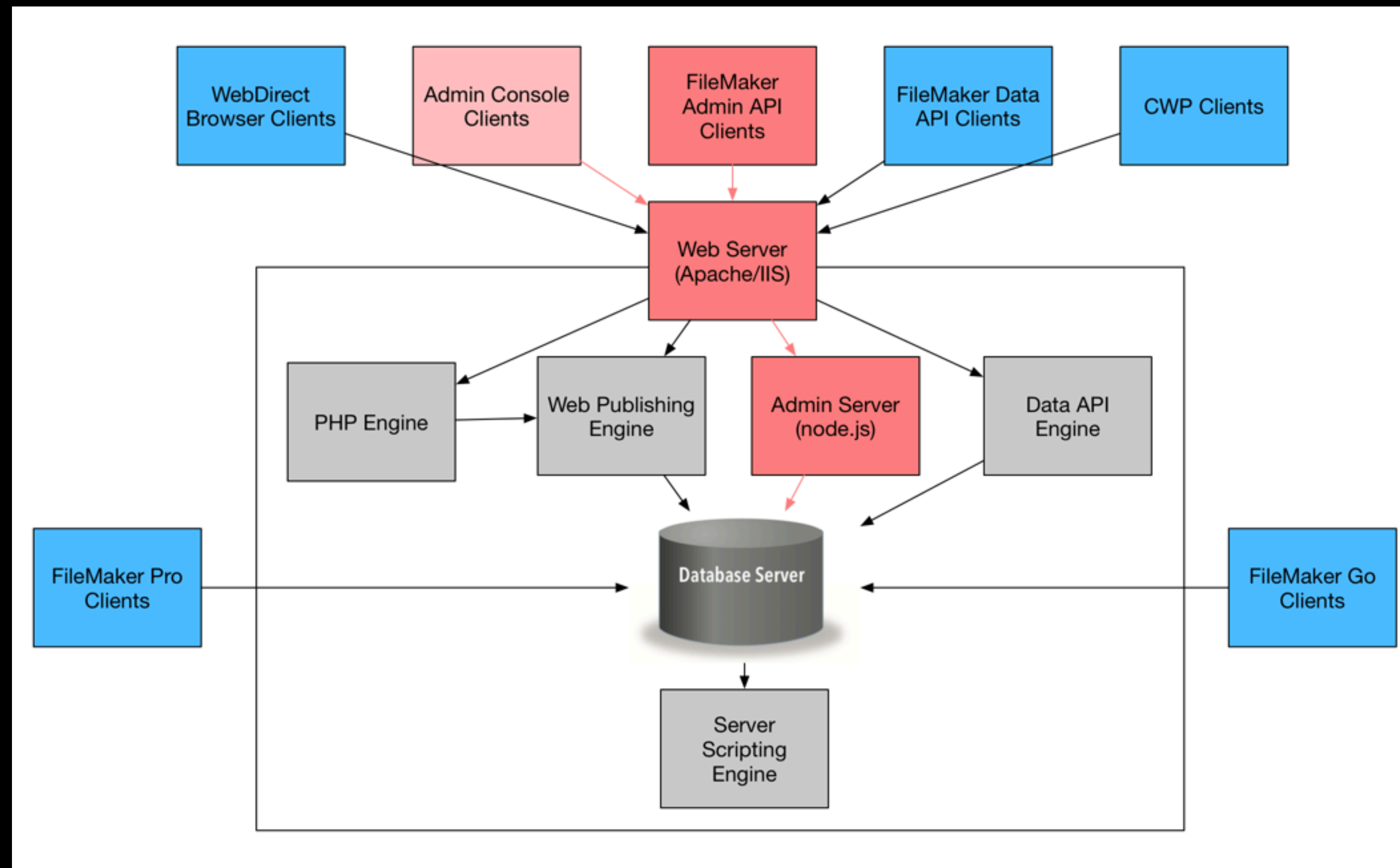
- Uses database solution accounts for authentication
- Performs database solution operations
- RESTful-based using HTTPS
- Requests processed through separate node.js and C++ process on master FMS machine
- Own request/response formats and error handling

Admin API Overview - Server vs Cloud

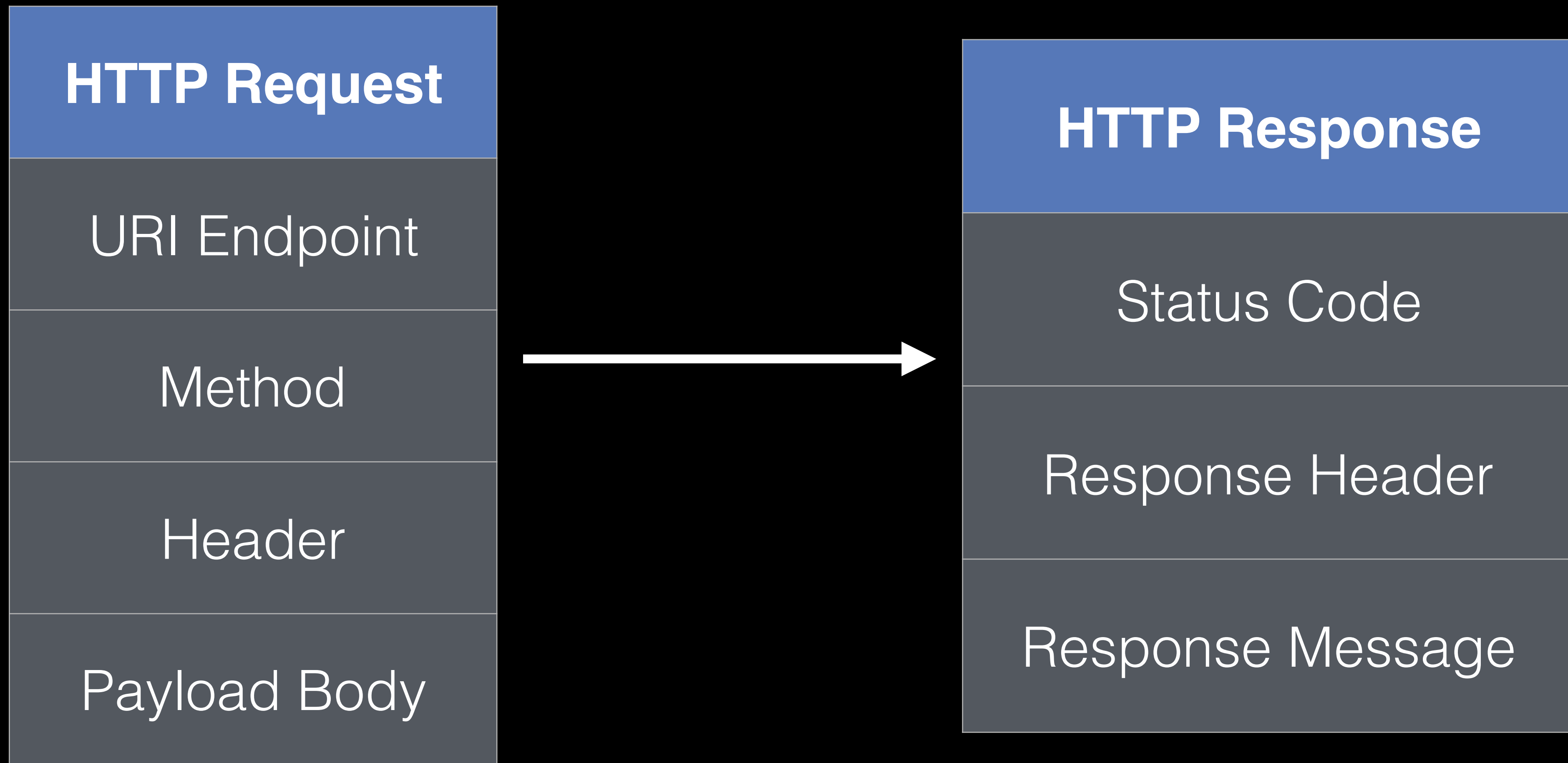
Server vs Cloud Admin APIs (Trial)

- Both uses root admin account for authentication
- Both performs FileMaker Server administration operations
- Both are RESTful-based using HTTPS
- Requests processed through node.js process shared with Admin Console on Server master machine or Cloud instance
- Request/response formats differ slightly
- Validation of request differ slightly
- Using 0 as the id to perform actions on all is only supported in Cloud
- Cloud only includes a subset of all APIs, including schedules API

Admin API Overview - Architecture



Admin API Structure



Admin API Structure - Request Method

Action to be performed on resource

CRUD Operation	HTTP Request Method
Read	GET
Create	POST
Replace	PUT
Update	PATCH
Delete	DELETE

Admin API Structure - Request Payload

JSON Format: Key-value pairs surrounded by curly braces

Strict parameter value types

Config PHP API Example (Request Payload):

```
{  
  "enabled": true,  
  "useFileMakerPhp": true,  
  "characterEncoding": "UTF-8",  
  "dataPreValidation": false,  
  "errorMessageLanguage": "en"  
}
```

Admin API Structure - Response Code

HTTP Status Code
200 - Success
400 - Bad Request
401 - Unauthorized
404 - Not Found
477 - FileMaker Error
500 - Internal Server Error
503 - Server Unavailable

Admin API Structure - Response Payload

POST /fmi/admin/api/v1/user/login

Success: HTTP Status Code 200

```
{  
  "result": 0,  
  "token": "eyJhbGciOiJIUzI1Ni..."  
}
```

ERROR: HTTP Status Code 401

```
{  
  "result": 212,  
  "errorMessage": "Invalid  
user account and/or password"  
}
```

Admin API Structure - HTTP Request

Request Line	PATCH /fmi/admin/api/v1/php/config HTTP/1.1
Header	Host: www.mydomain.com Authorization: Bearer eyJhbGciOiJIUzI1NiIsInR...
	Content-Type: application/json <other header paramaters>
Blank Line	
Payload (Body)	{ "enabled": true, "useFileMakerPhp": true }

Admin API Structure - HTTP Response

Status Line HTTP/1.1 200 OK

Header

Date: Wed, 8 Aug 2018 19:23:41 GMT

Server: Apache/2.4.28 (Unix) LibreSSL/2.2.7

Content-Type: application/json; charset=utf-8

Content-Length: 754

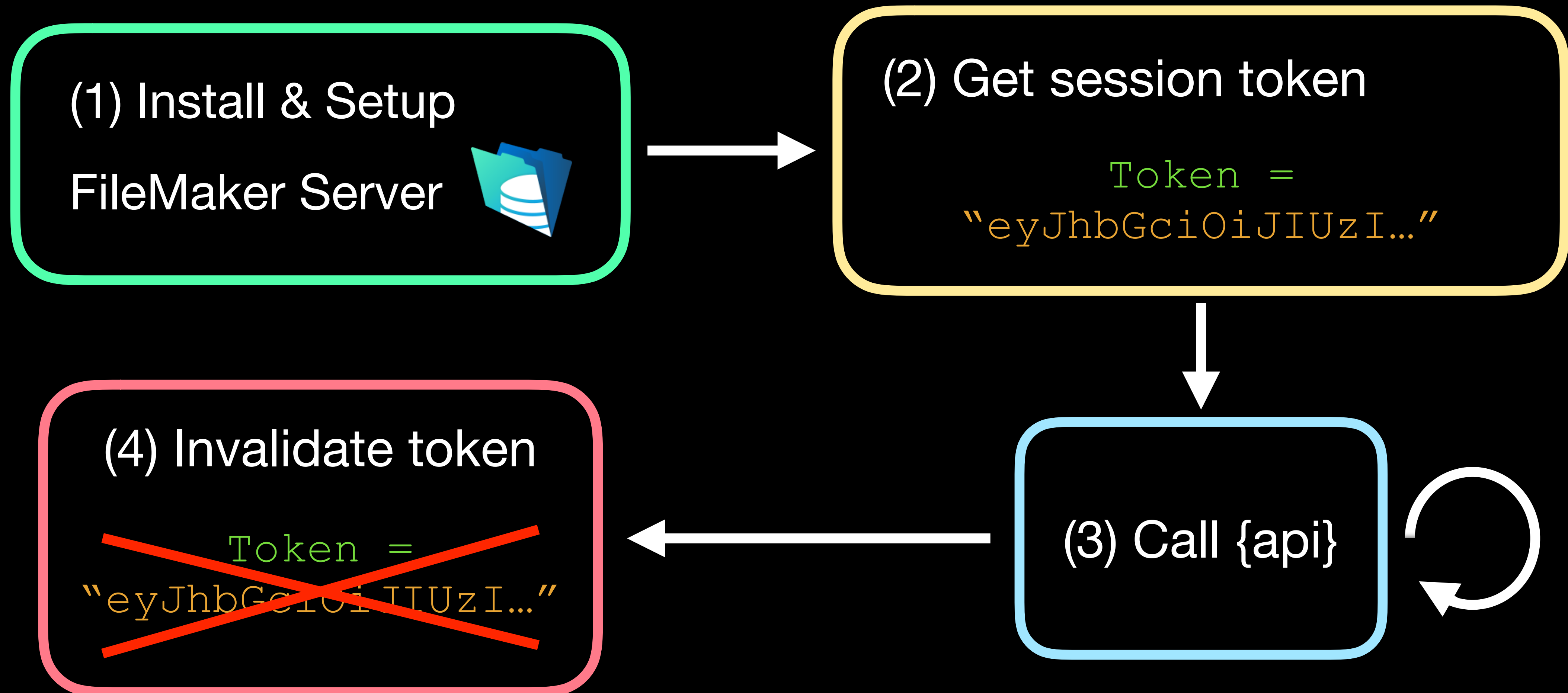
<other header parameters>

Blank Line

Response
Message Body

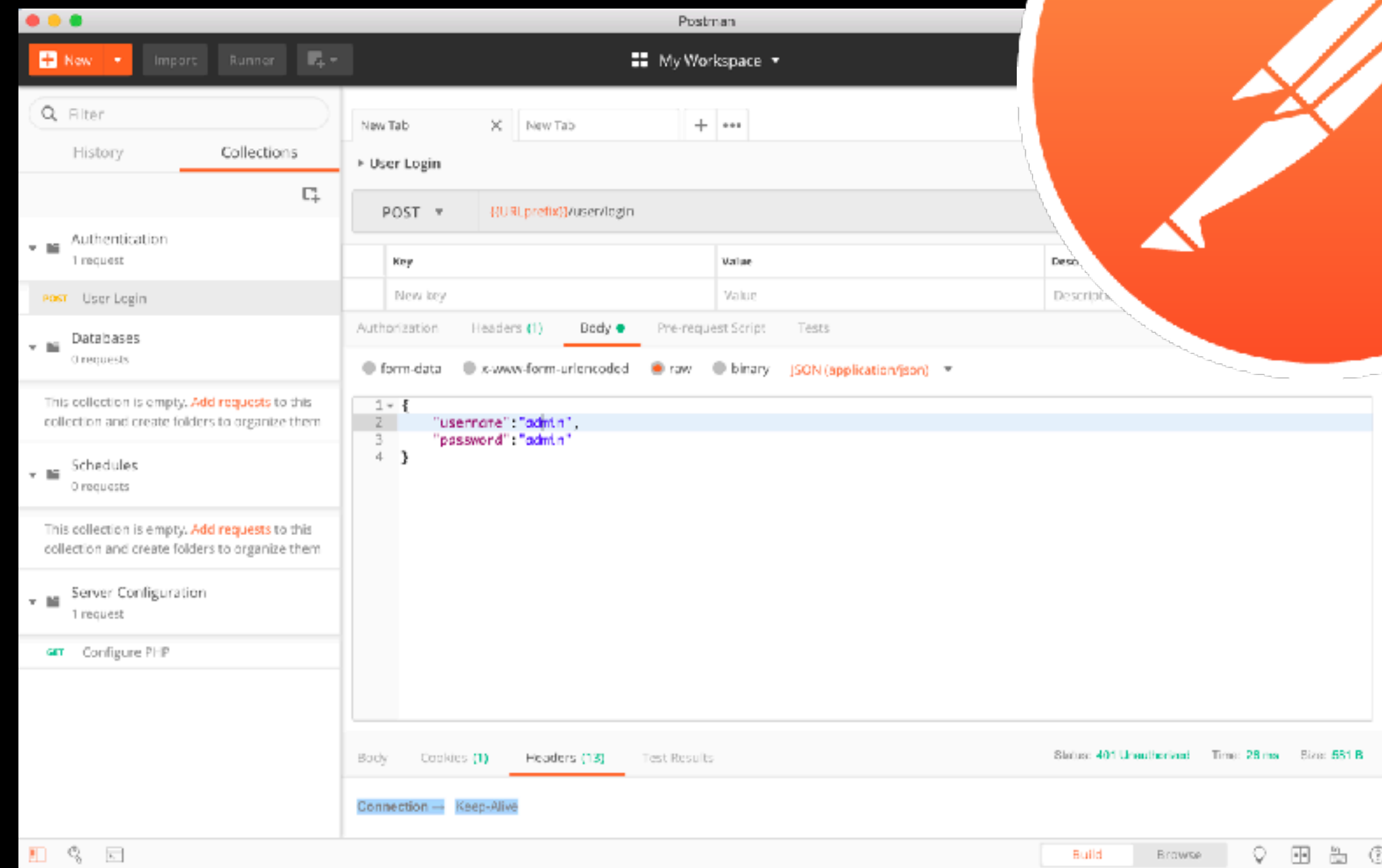
```
{  
  "result": 0,  
}
```


Admin API Execution



Admin API Execution

Postman Demo



Admin API Execution

Scripting Demo



Integration with Admin APIs

Connor Brock

Customer Success Engineer at FileMaker, Inc.

Admin API Integration Demo

Resources

FileMaker API Doc

`https://<servername>/fmi/admin/apidoc`

`<installation path>/FileMaker Server/Documentation/Admin API Documentation/index.html`

FileMaker Cloud 17 Admin API Guide (Only use as reference)

`https://fmhelp.filemaker.com/cloud/17/en/adminapi`

FileMaker Error Codes

`https://fmhelp.filemaker.com/help/17/fmp/en/index.html#page/FMP_Help/error-codes.html`

Conclusion

Admin APIs are powerful and flexible

- can be integrated with any tool that supports HTTP requests
- allows automation of common admin tasks
- allows for easy management of multiple servers
- allows for your own custom admin console GUI

Admin APIs are a game changer!!!

NOTE: With power comes responsibility. Make sure to use the right tool for the right job.



Session Updates

This session WILL have updates.

www.filemaker.com/devcon/speaker_updates

(This is also listed in DevCon2Go)

Thank You!

Please remember to fill out the session evaluation at:
www.filemaker.com/devcon/evaluations