

ACTION LOGGING CAN THE DATA API HELP?

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May 2020

FMP2dtm : VAT bridge software

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ACTION LOGGING

- What kinds of things?
 - Error – and then what?
 - Success
 - looping, long script
 - email send
 - file actions
 - GDPR actions
- Some in system logs... but need access to server
 - <http://honza.24usoftware.com/debugging-scripts-by-writing-to-event-log>

EMAIL

- **Errors**

- 1505,1506 –general SMTP failure, have a random quality
- you changed the password
- machine specific? OS updates, does it still work?

- **Success**

- but can you resend without re-running that report, and is it accurate any more?

GDPR

- **Access**

- who looked at a record who was not from HR?
- log preference change by employee/contact

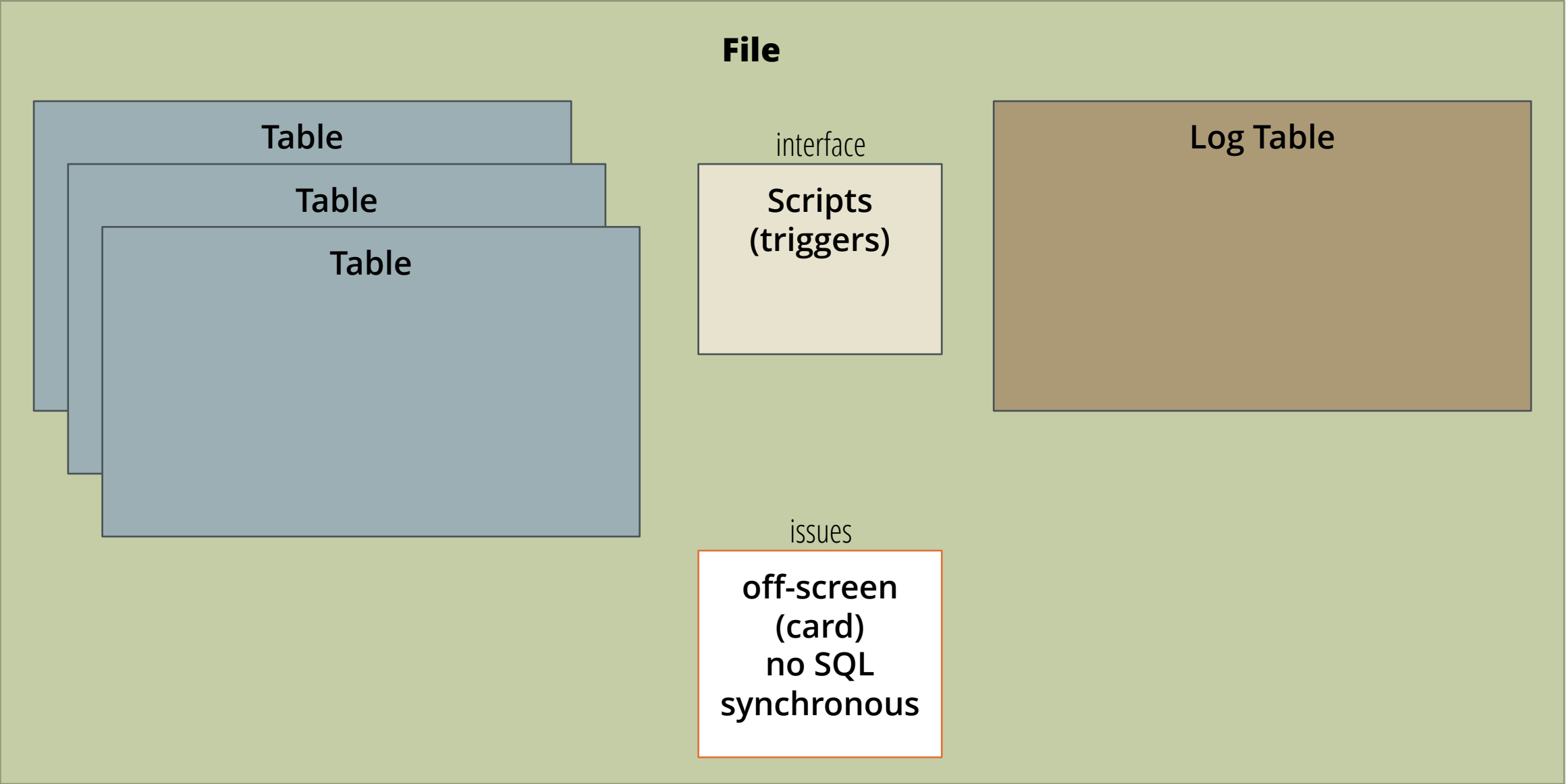
- **Download**

- who took a local copy of a file, and for what purpose?

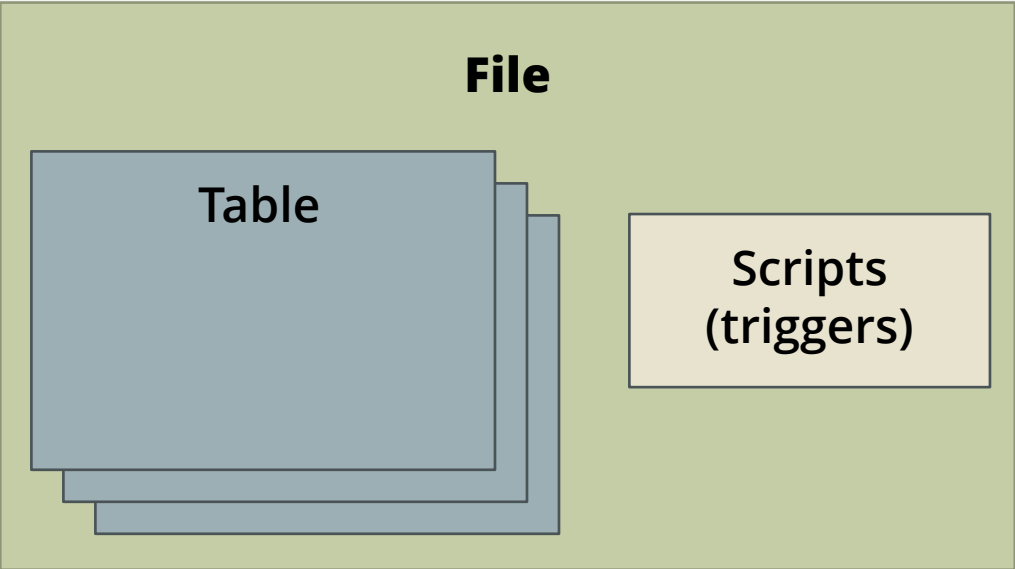
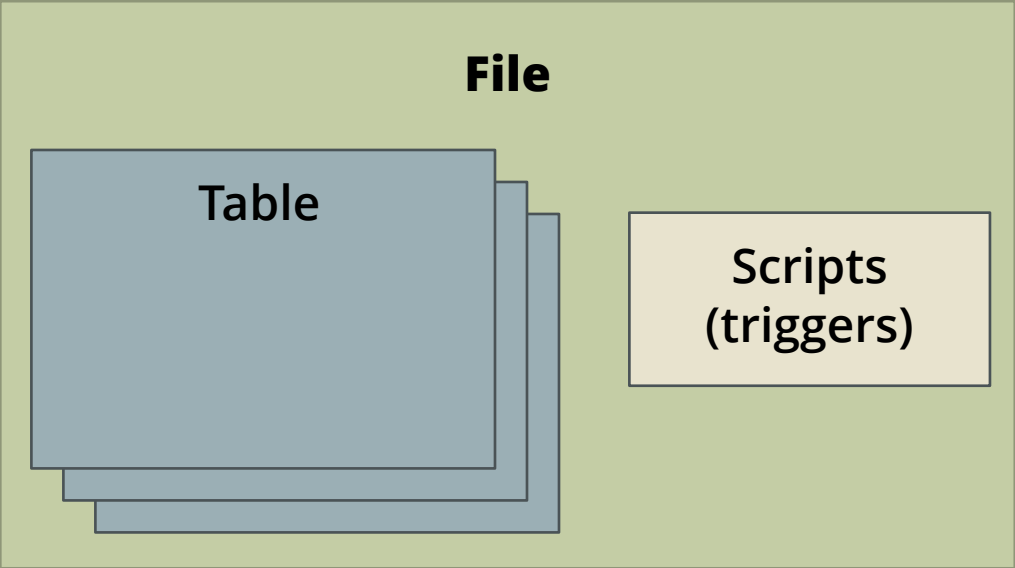
- **Deletion**

- what records and related records were deleted?
 - use that to restore or to expunge when restoring from backup

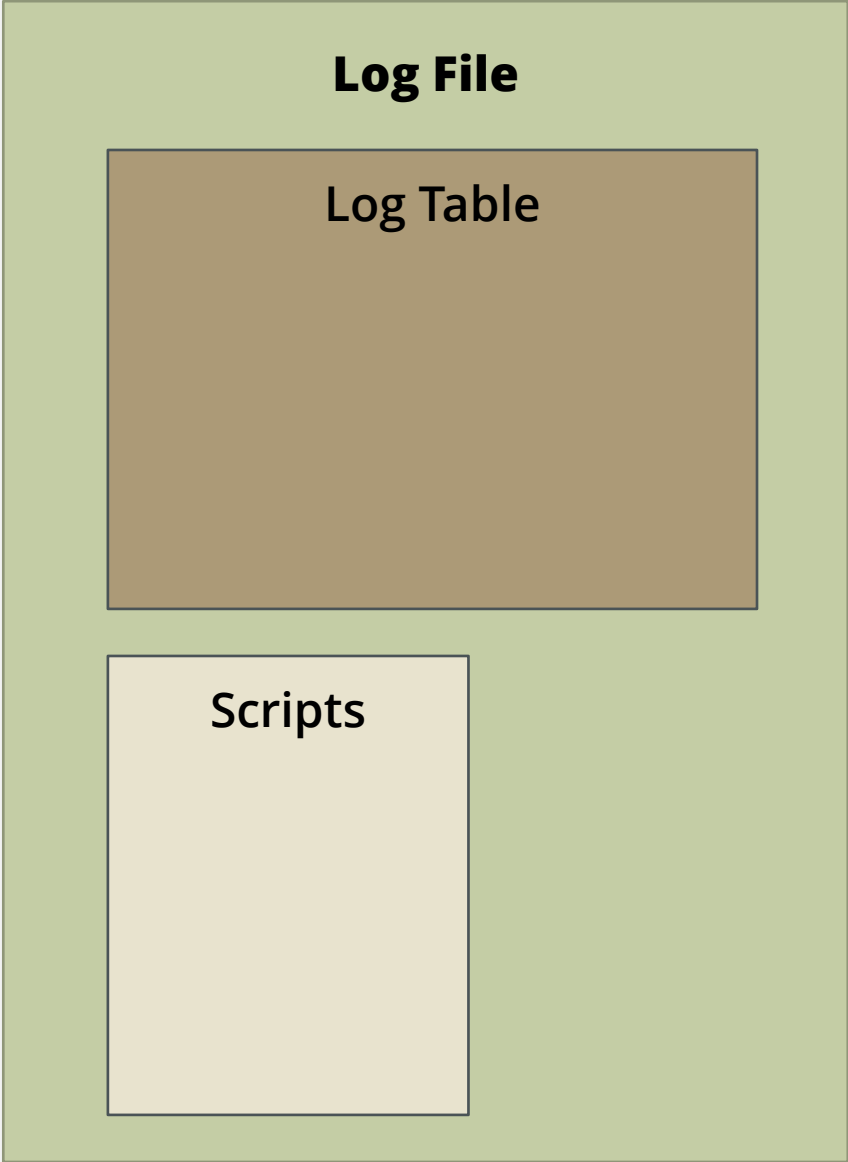
STARTING POINT



MULTI-FILE SYSTEM



issues



INSPIRATION

- What exactly?
 - Idea from ModularFileMaker.org – Dan Smith (2015)
 - <http://www.modularfilemaker.org/module/logger/>
 - theLogLevel 1..5 (1=crisis, 2=error, 3=log, 4=debug, 5=loop)
 - JSON packet of information about the system
 - CF used own JSON functions
- Who was doing what & where, what was to be expected, what was actual, what error codes were generated

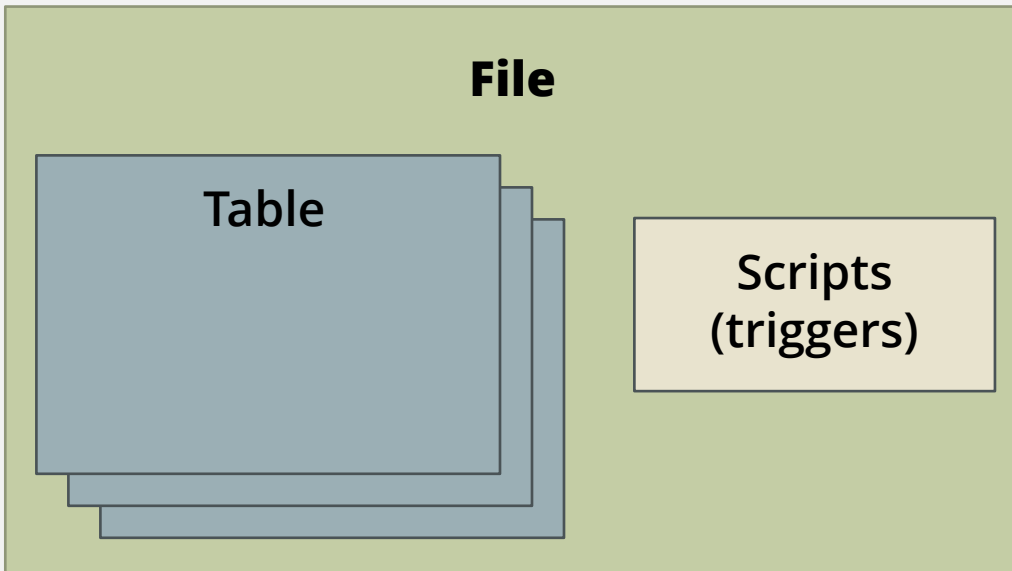
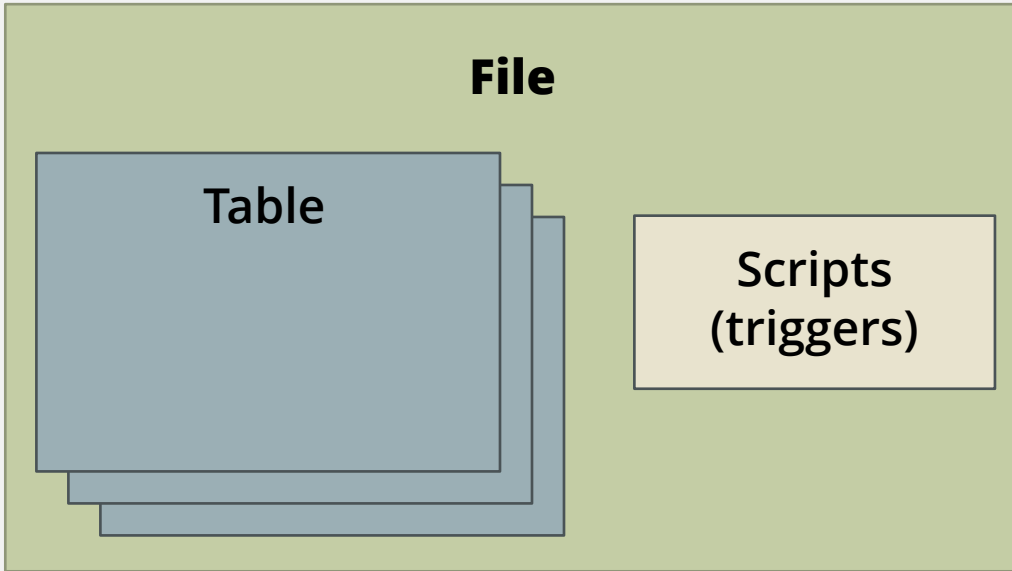
HOOK AFTER LOG?

- 5 – long process has finished
- 4 – what happens in the middle
- 3 – FM error code will tell you what you need
- 2 – this is enough to notify people
- 1 – this is really serious and someone needs to get out of bed and fix it
 - Prowl, Slack, SMS, email , phone? all of the above
 - with an FMP URL to get straight to the record

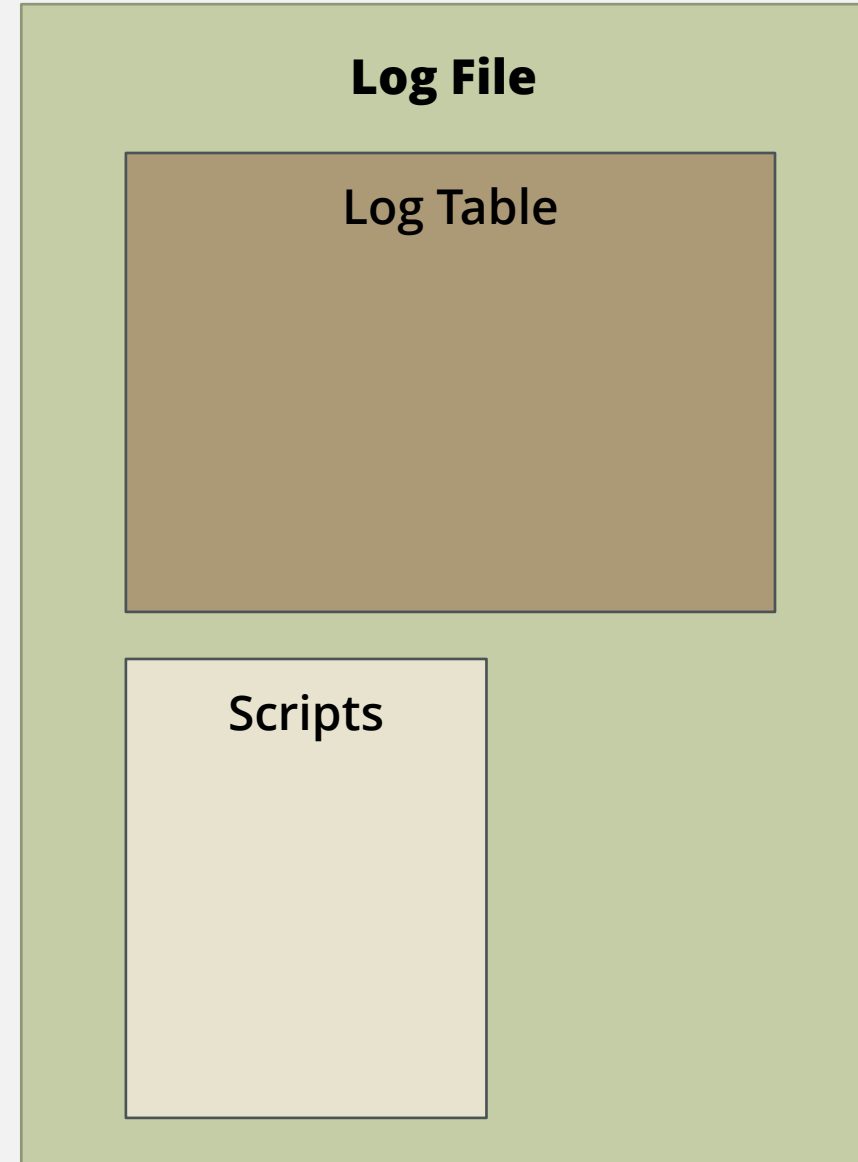
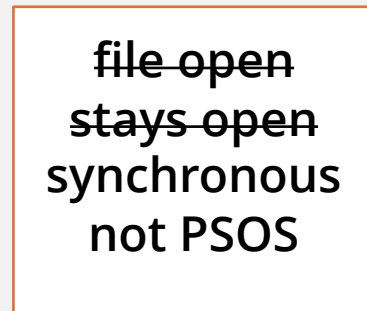
DEVELOPMENT

- Once we got JSON functions natively:
 - rewrote the CF to use FM versions
 - tweaked what was reported
- Developed it into a system with multiple requirements
 - added logging for server SMTP emails (success log)
 - added file actions with a version-controlled doc store
 - added GDPR actions – for downloading local copy of HR file

CARD WINDOWS AS INTERFACE



issues



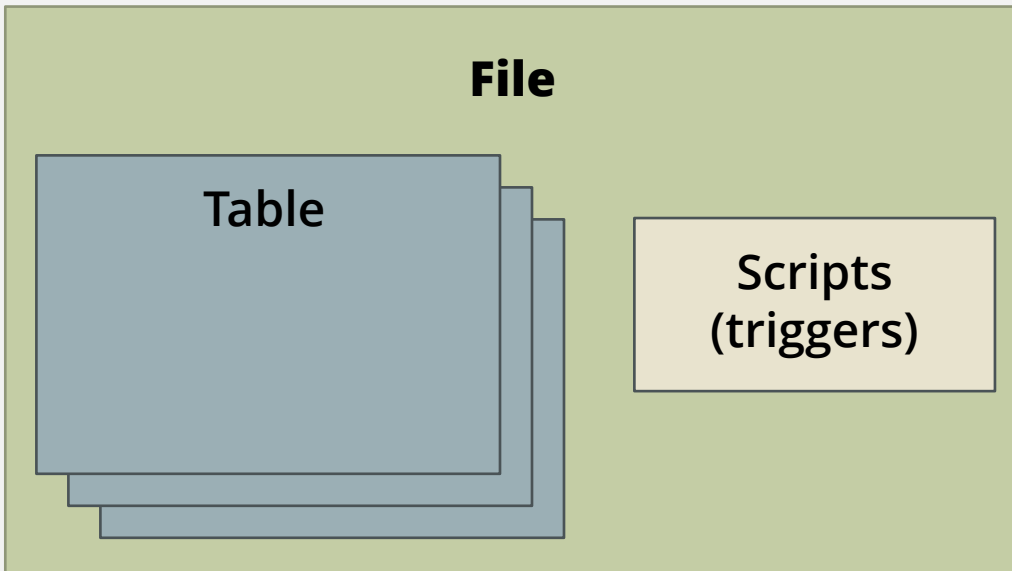
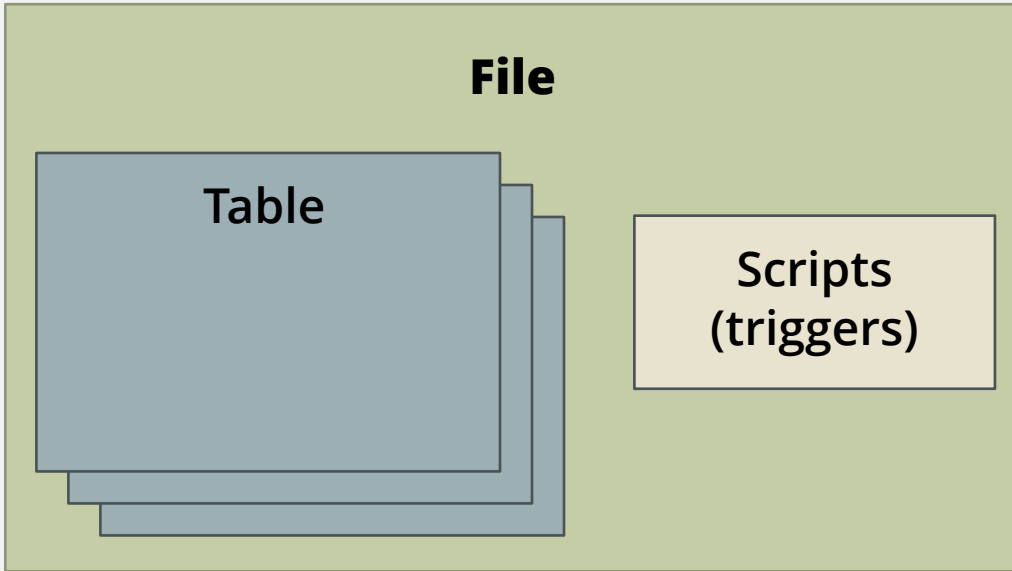
IMPROVEMENTS TO PROCESS

- PSOS?
 - load for new user session, kill the server if logging at levels 4/5?
 - no report of whether it worked? no good if you don't know
- Card windows
 - relationship built at time of first need \$\$file.log
 - can't change location until restart
 - can be invisible to user, and file can close itself

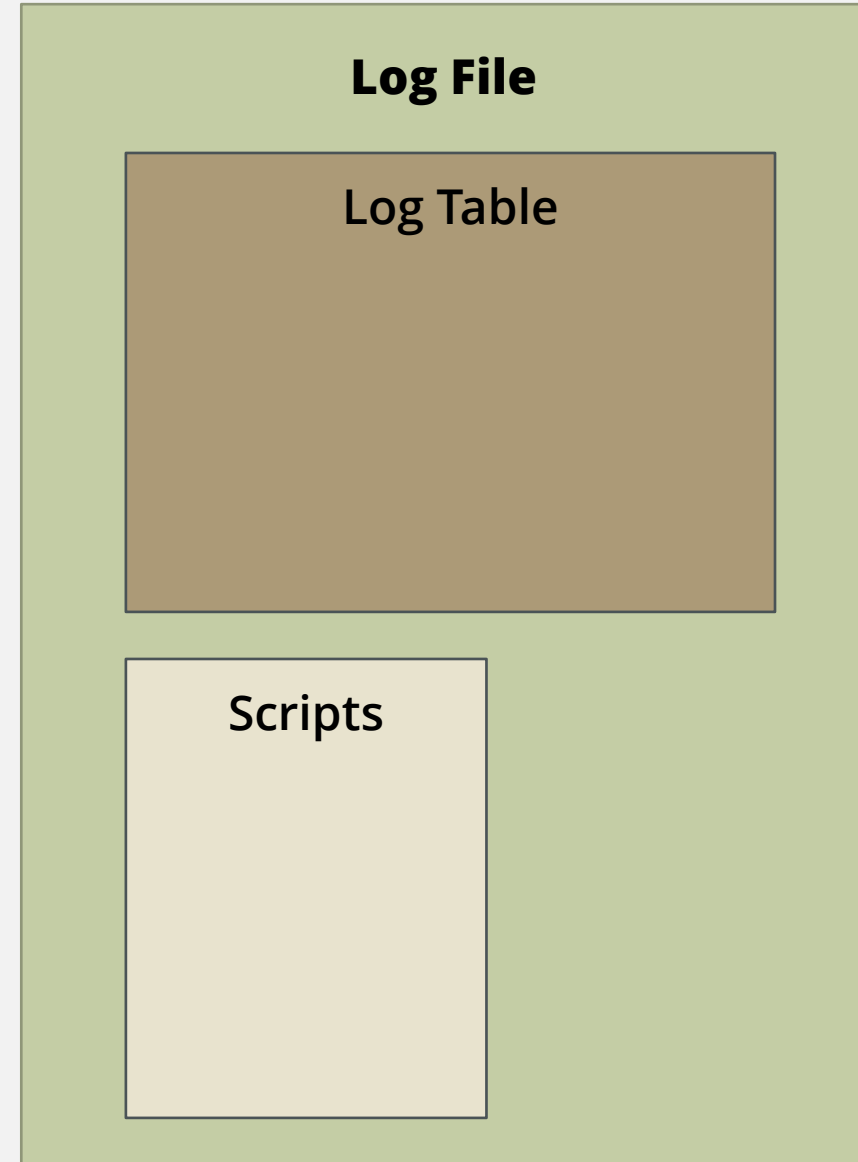
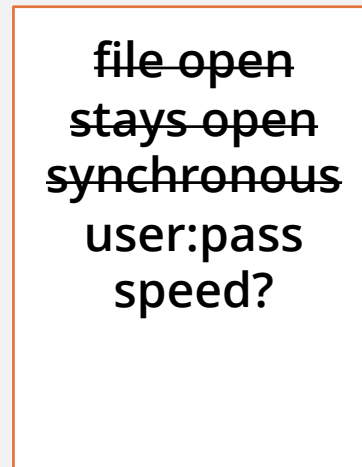
CREATE A NEW RECORD

- From menu (N)
- A script (New Record)
- Magic portal with create relationship
- Import data
- ODBC/ JDBC
- ~~CWP/ XML Gateway~~
- ~~SQL plugin~~
- DataAPI

DATA API AS INTERFACE



issues



CAN THE DATA API HELP?

- Not just about pulling data from...
- PUSH
 - Can add by 'Create Record' method
 - fieldData, script, script.prerequisite, script.presort
 - synchronous
 - Can create by script (with parameter)
 - URL limits of 30,000 characters
 - that script can... run a script
 - asynchronous?

CAN THE DATA API HELP?

- Can create by pushing
 - URL limits of 30,000 characters
 - that script can... run a script
 - `/fmi/data/vLatest/databases/{database}/layouts/{layout}/script/{scriptName}?script.param={url.encoded}`
- Just run the script in the first place, with `script.param`
 - from then on it's like PSOS
 - could call back to the originating file to pull data back

DATA API LIMITS?

- ONLY measuring data OUT. NOT in.
- Three calls
 - 640, 504, 540 bytes = 1684
 - 2GB = 2147483648 * 12 = 25769803776
 - $15302733 / 365 / 24 / 60 == 29.11$
- If you have a system generating an error that needs logging every two seconds (EACH user) every day of the year, you have different problems!

AWS ALTERNATIVE - TRACE LOGGING

- Find the video and demo from Jesse Barnum
 - <https://www.360works.com/article-detail/#?id=391>
- Kinesis
 - ingest data at a vast rate of knots △
 - store digest every n seconds into S3 bucket as GZIP △
- Athena
 - SQL query on the text (generates table in Hadoop) △
 - save result in S3 (SELECT * FROM table) – download △
- FileMaker to analyse

CONCEPT

- Length (\$script.param) > 30,000??
- create record in attachments table?
 - TextEncode(\$it) = container data == a file
 - send file/layout/recordID -> get back session-based URL
 - `https://server.com/Streaming_SSL/MainDB/SESSIONTOKEN?RCType=EmbeddedRCFileProcessor`
 - need a file-type field on the layout too so you can rename it
 - `Base64Decode (Base64EncodeRFC (the::file) ; $filename)`
- Process data then? delete attachment record?

VALIDATE TOKEN

- GET

- `https://your.server//fmi/data/vLatest/validateSession`
- Authorization: Bearer 1411fe6a3bd0bfe8a37e.....

```
{ "response": {},  
  "messages": [ {  
    "code": "0",  
    "message": "OK"  
  } ] } -- 503B (not 640 for Metadata)
```

or 525B "code": "952","message": "Invalid FileMaker Data API token (*)"

DATA API

- Server 18.0.3 –tokens expire 15mins after creation regardless of last use >> update to 18.0.4
- DataAPI works on committed record
- ExecuteSQL does or does not, depending on if PSOS
- While function
 - can only get 1 repetition of field on layout
- Watch this space for 19

DEMO

- Gather record, user, system data to log as {param}
- 'Login' to LogFile, grab token
- 'Execute Script' endpoint with {token} and {param}
- Script in log file creates new record
 - Optional do a call back to pull container data, or notify...
- 'Log out' {token}