Qlik Beyond Dashboards

Extending Qlik Capabilities

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LEAD WITH DATA

Qlik

“Qlik is far more than a data visualization tool.

Far more...”

In my first 2 years as a full-time Qlik developer, I delivered two large Qlik projects with one dashboard only

Maria Sandorova

As a non-Qlik developer I delivered my company's largest Qlik-based integration to date after only few months of Qlik experience

Tomas Janco

3 bottlenecks in data processing

in a large financial company UniCredit Leasing

data preparation & cleaning
from multiple systems

manual processes in monthly
accounting closure

many different systems
in customer rating processing

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we solved with Qlik

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inphinity emark

data preparation & cleaning
from multiple systems

Requirements:

9 different data sources

daily reload

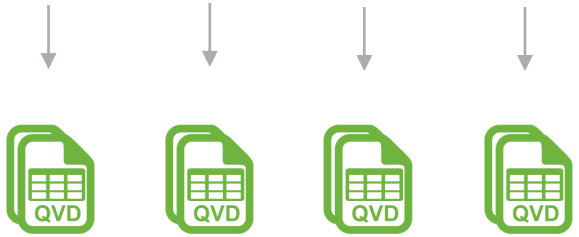
snapshots + data cleaning

self-service management

data lineage

AUTOMATION BY WRITE-BACK

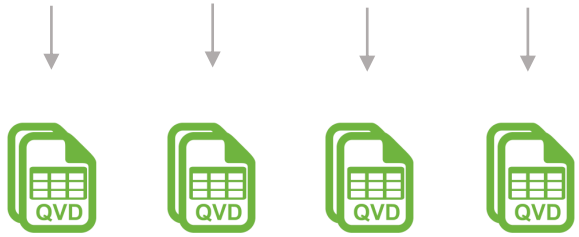
L1: raw data
(data as is)



relevant sources, tables, fields and rows

1:1 data from data source

L2: clean data
(transformations)



data consolidation, naming conventions

1:1 data from raw data

FORMS by inphinity

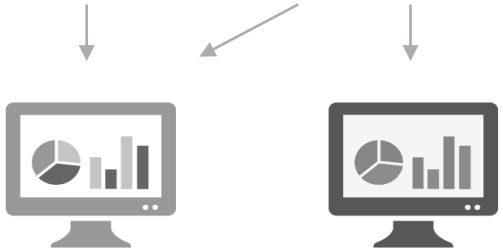
TRUSTED

L3: datamart

cross-table operations, advanced transformations

N:N from clean data

L4: apps



relevant domains, tables, fields and rows

1:1 from datamart

Qlik

AUTOMATION BY WRITE-BACK

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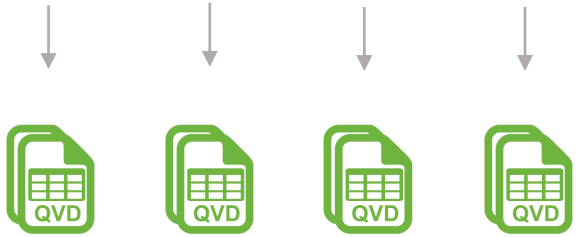

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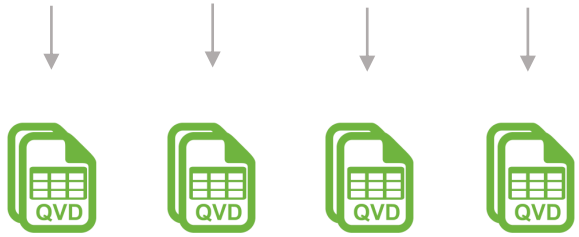

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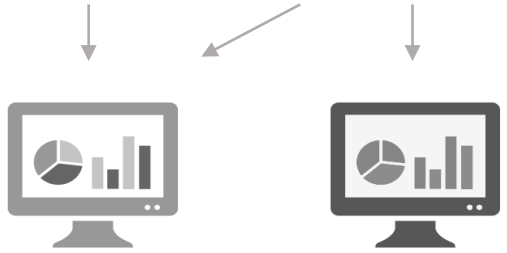
L4: apps



Qlik

relevant sources, tables, fields and rows

time savings

single source of truth

full changelog

documentation and additional information

responsibility and categories

Forms by inphinity

cross-table operations, advanced transformations

N:N from clean data

relevant domains, tables, fields and rows

1:1 from datamart

Solution

Iterative improvement & optimization

11 subroutines

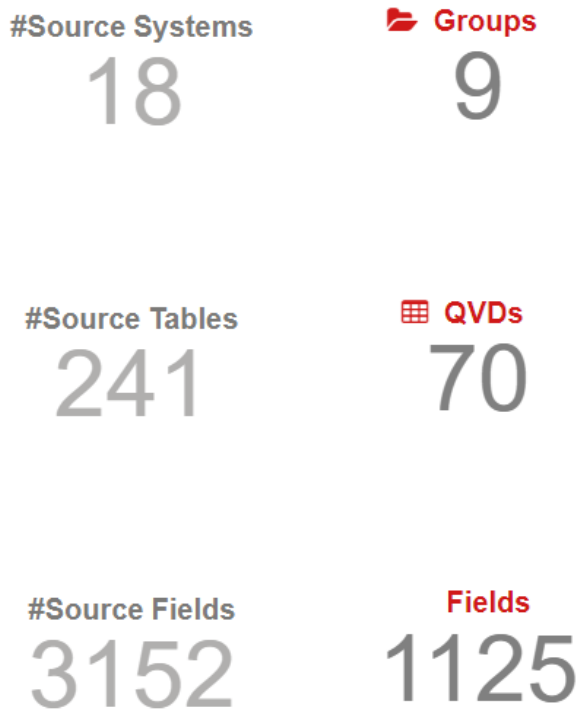
L1: 1 200 rows of script

L2: 500 rows of script

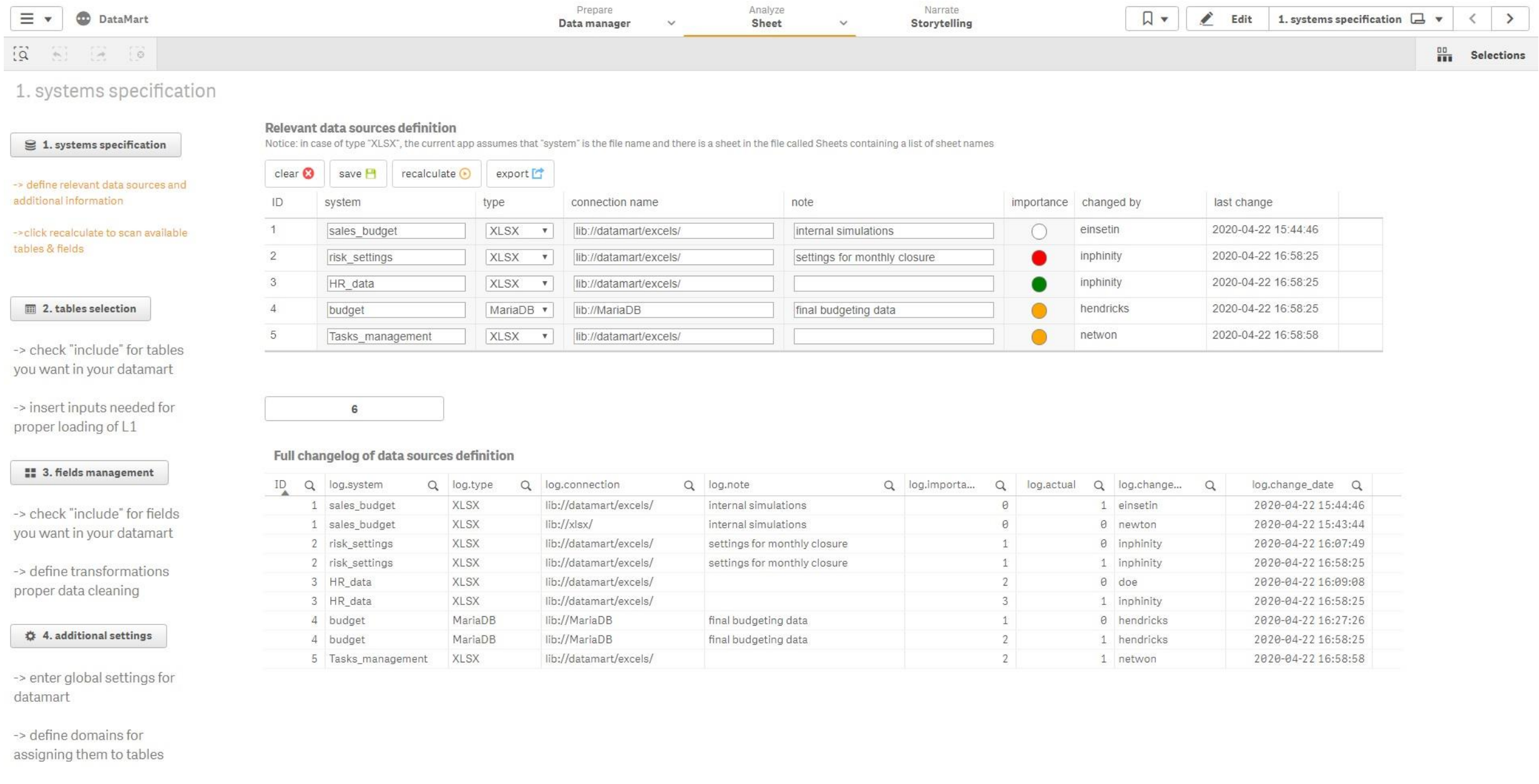
9 data sources, 150 tables, 2 000 fields

Loaded every day for almost 3 years up to now

...still used



App available here: inphinity.xyz/qw2020



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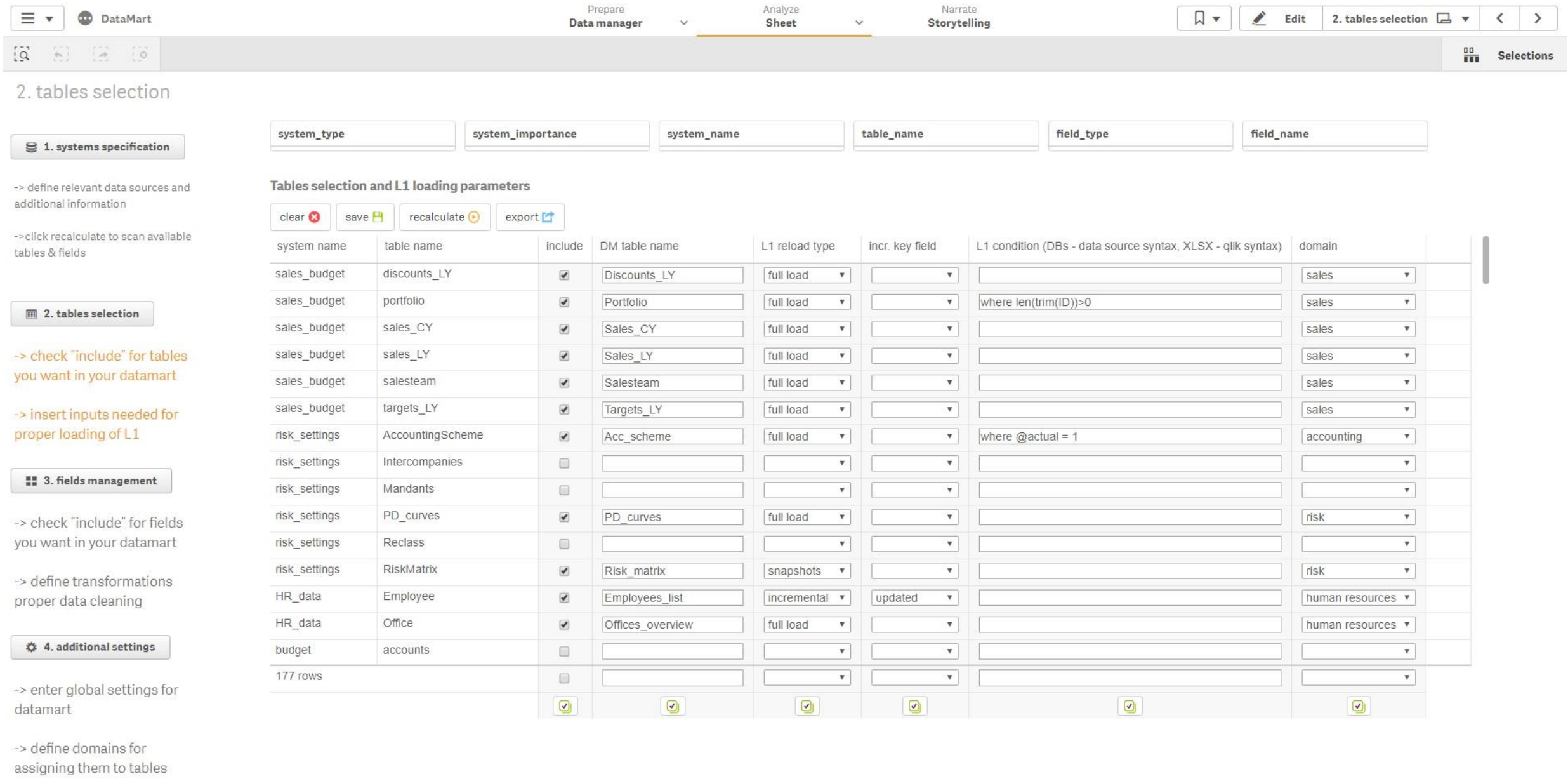

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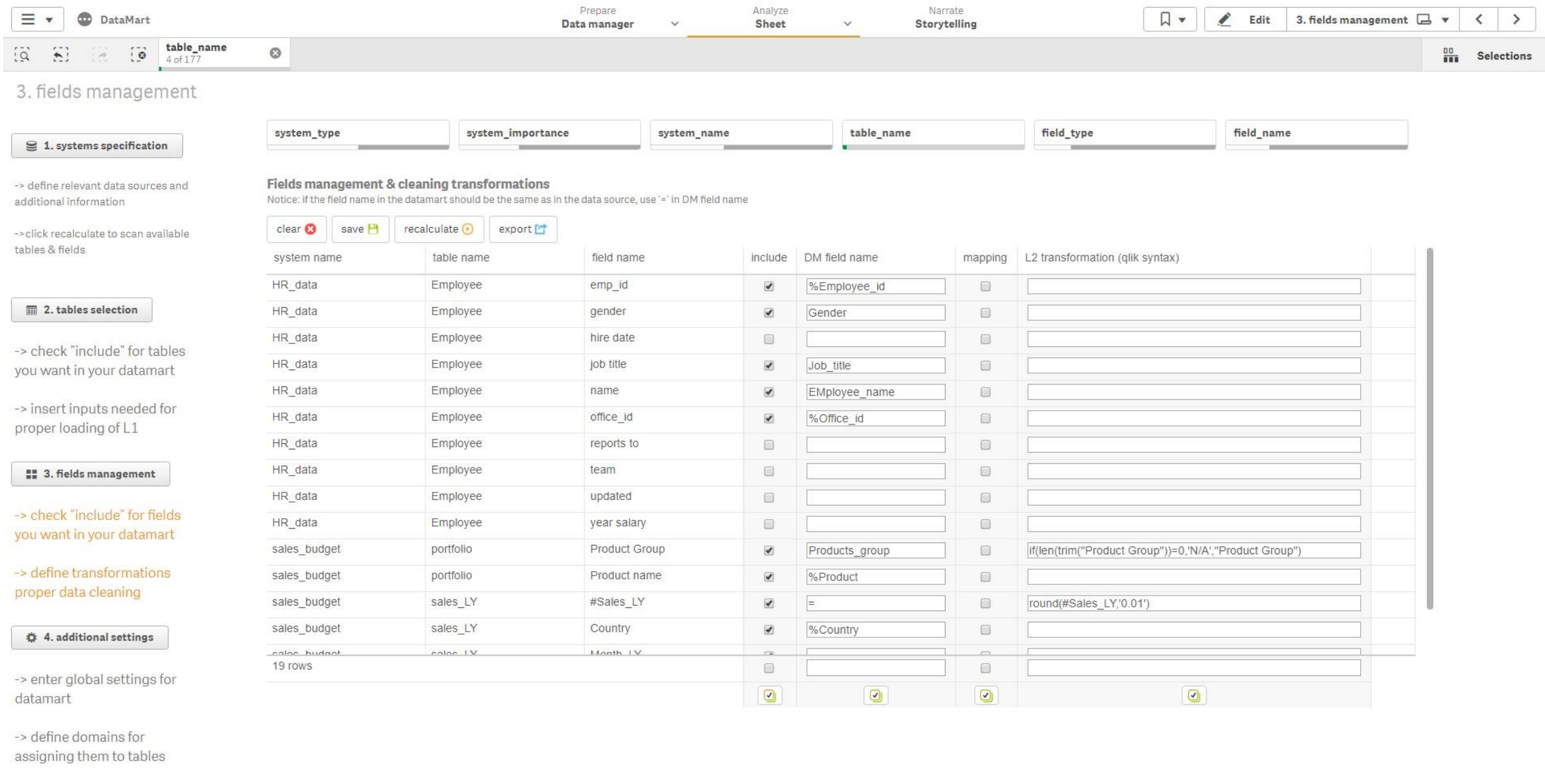

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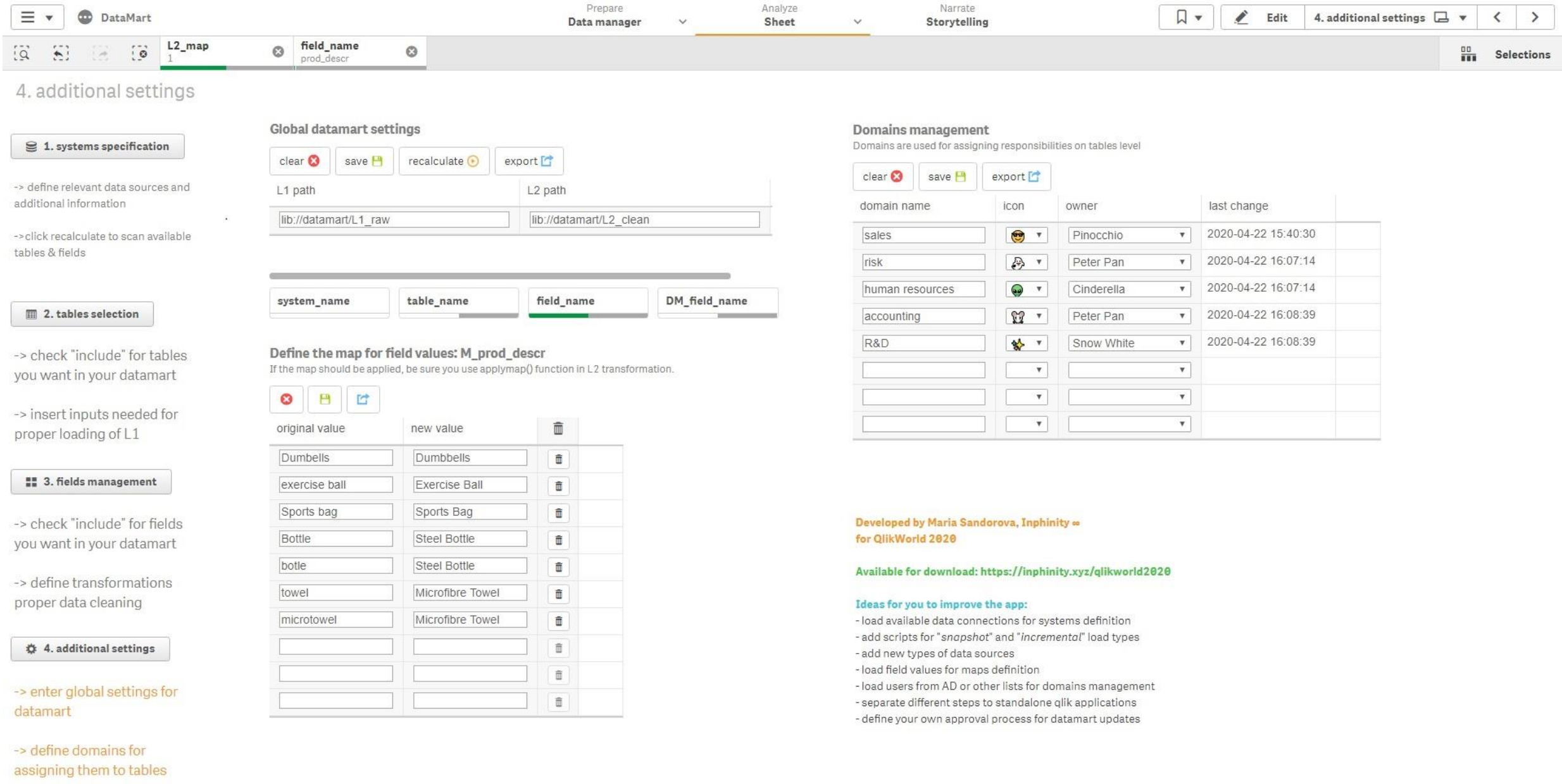

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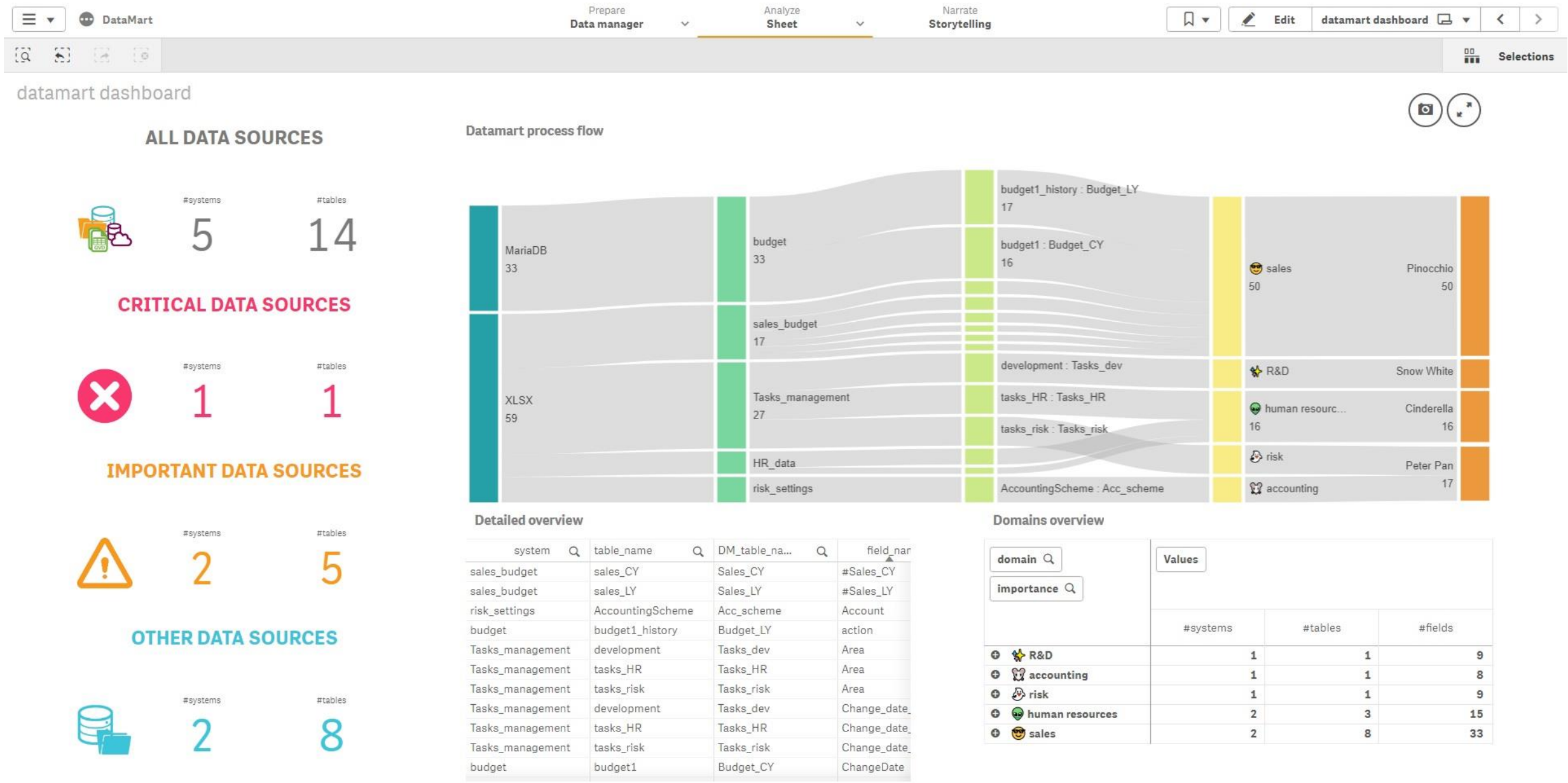


manual processes in monthly accounting closure

Requirements:

single source of truth

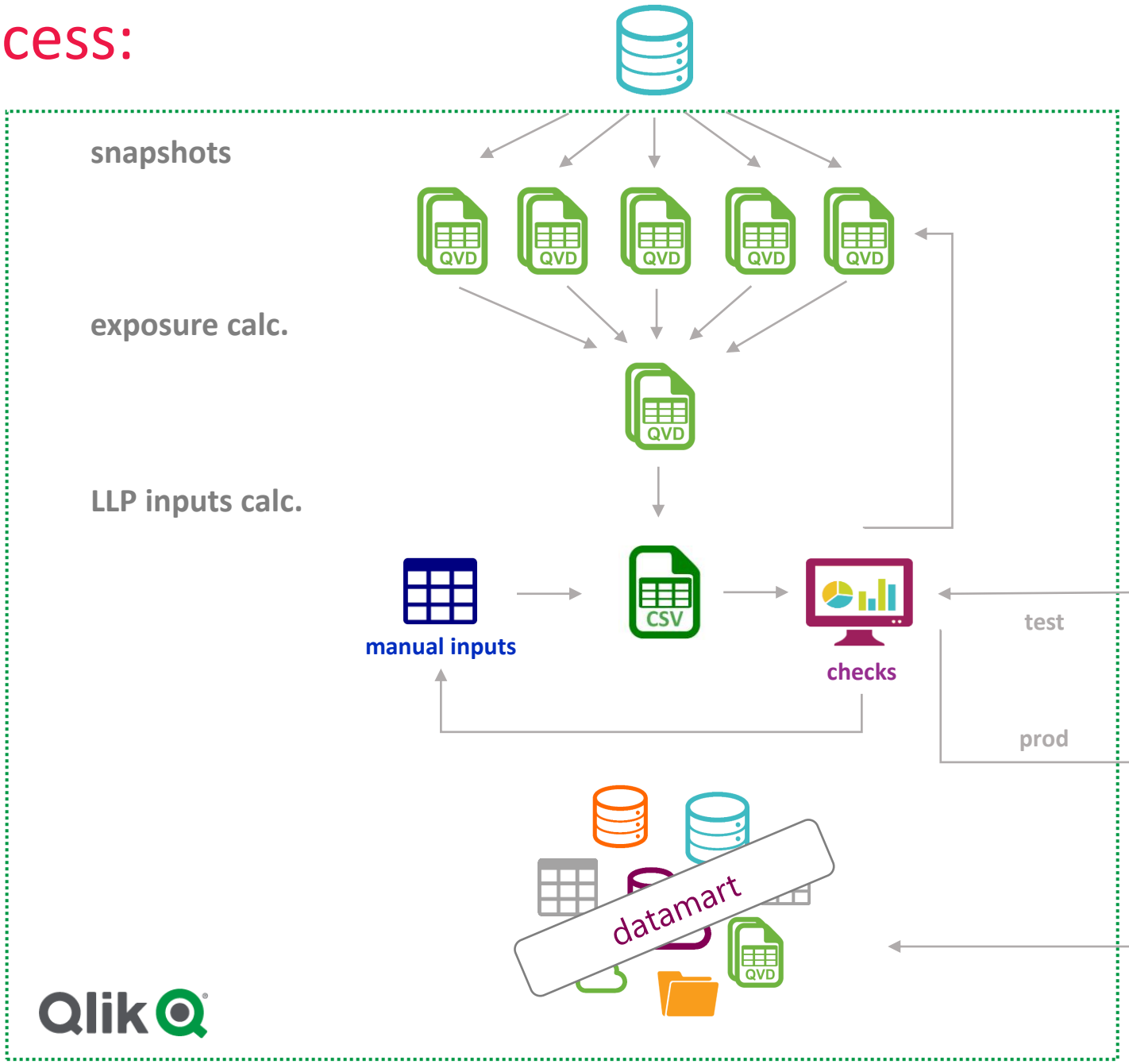
automated process across 3 departments

avoid many excel files in processing

self-service management

master data storage: datamart QVDs

Process:



manually triggered

snapshots for different

companies in different times

manually triggered preprocessing

for each company & aggregation

3 different runs:

risk precalculations

testing closure

prod closure

Challenge

3 departments coordination

minimum apps

time efficiency

manually triggered steps

complex calculations

sending data to external DB

Solution

QS apps in one common stream

the very same apps with parameters

processing status (+Qlik Alerting)

Reload Task Button (for free) reload BUTTON & STATUS

more than a thousand rows of script

bulk insert app with a control (pre)run

set errormode = 0

Accounting Closure Management

Welcome Inphinity in Accounting Closure App,
Today is 4/21/2020.
Please set parameters and click on Reload.

General settings

Extract date (DD.MM.YYYY)
No data after the date will be used

05.05.2020

Load type
Please select a load type

Risk precalculation
- Risk precalculation
- Controlling closure run

Data storage

Based on your settings generated data will be stored here:

E:\data\risk\QVDs\05052020

1. Snapshots

Company

Company 1 | Keep | Smiling | All

Start

Last reload: 4/21/2020, 8:55:46 AM
Status: Success

2. Exposure calculation

Data about different companies will be concatenated. Please run this step after all companies have been snapshotted.

Calculate

Reloading.

3. LLP inputs

The specific dataset for LLP calculation will be generated and stored into an XML file.

Generate

Last reload: 9/5/2019, 1:11:12 PM
Status: Failed

4. Import to external calculator

Database type

TEST | PROD

Import

Status: Never started

many different systems
in customer rating processing

Requirements:

less than 1 hour response time

user interface: JIRA

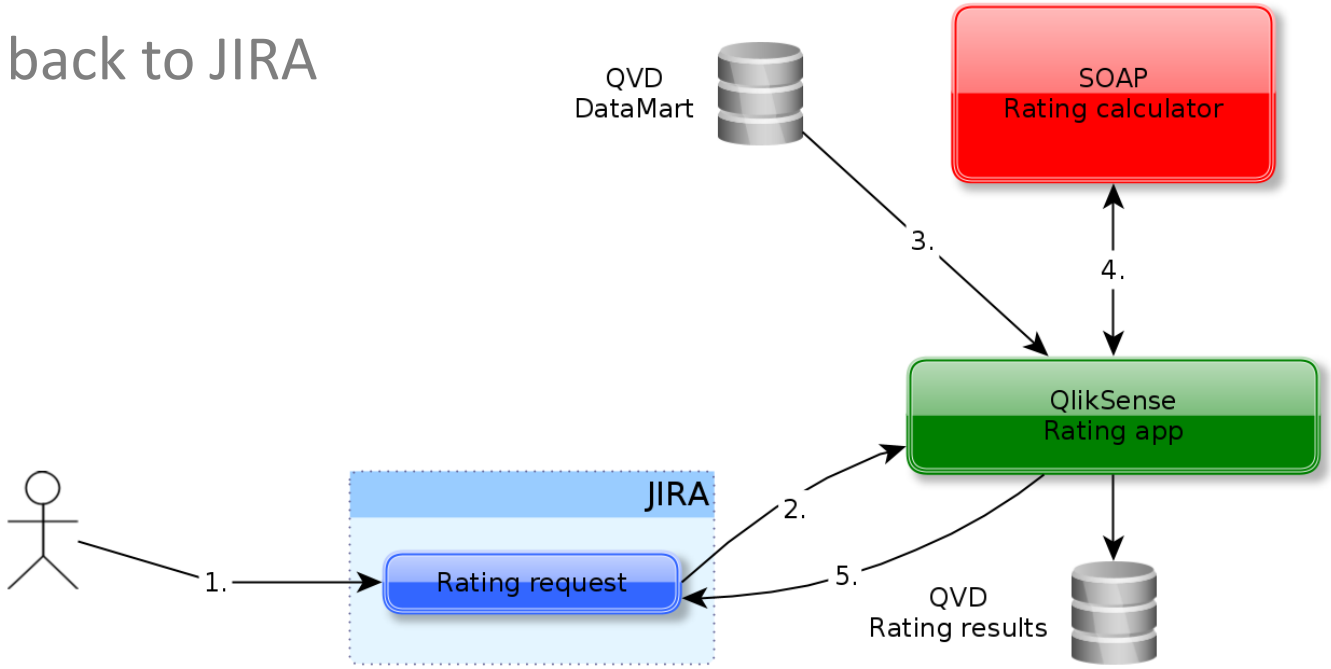
2 different rating calculators: SOAP services

full changelog

master data source: Datamart QVDs

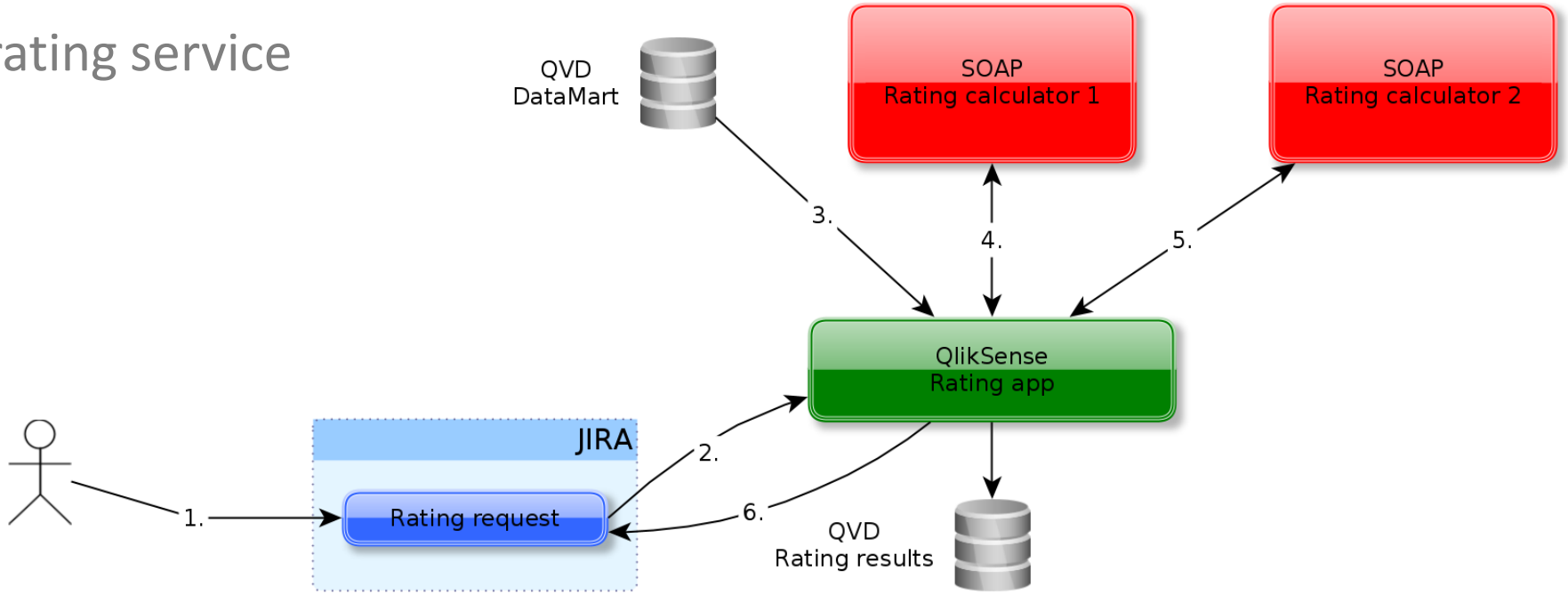
Request:

- write results back to JIRA



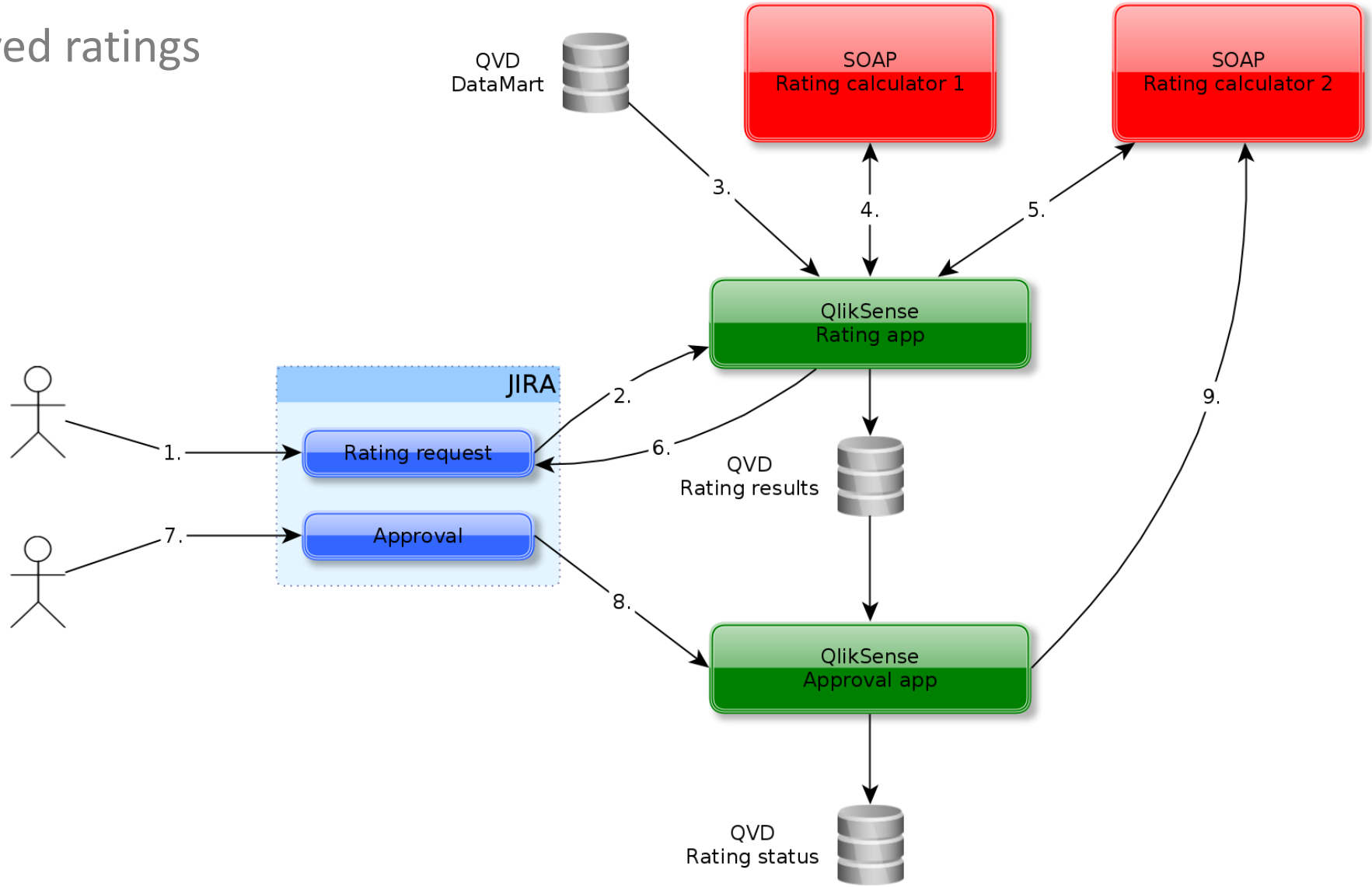
Request:

- add second rating service

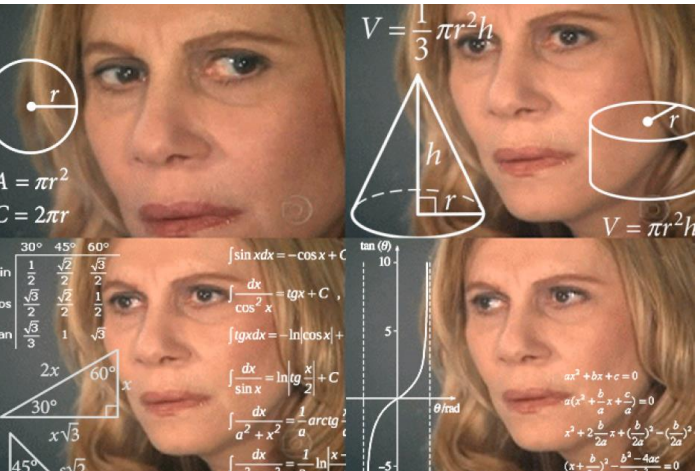


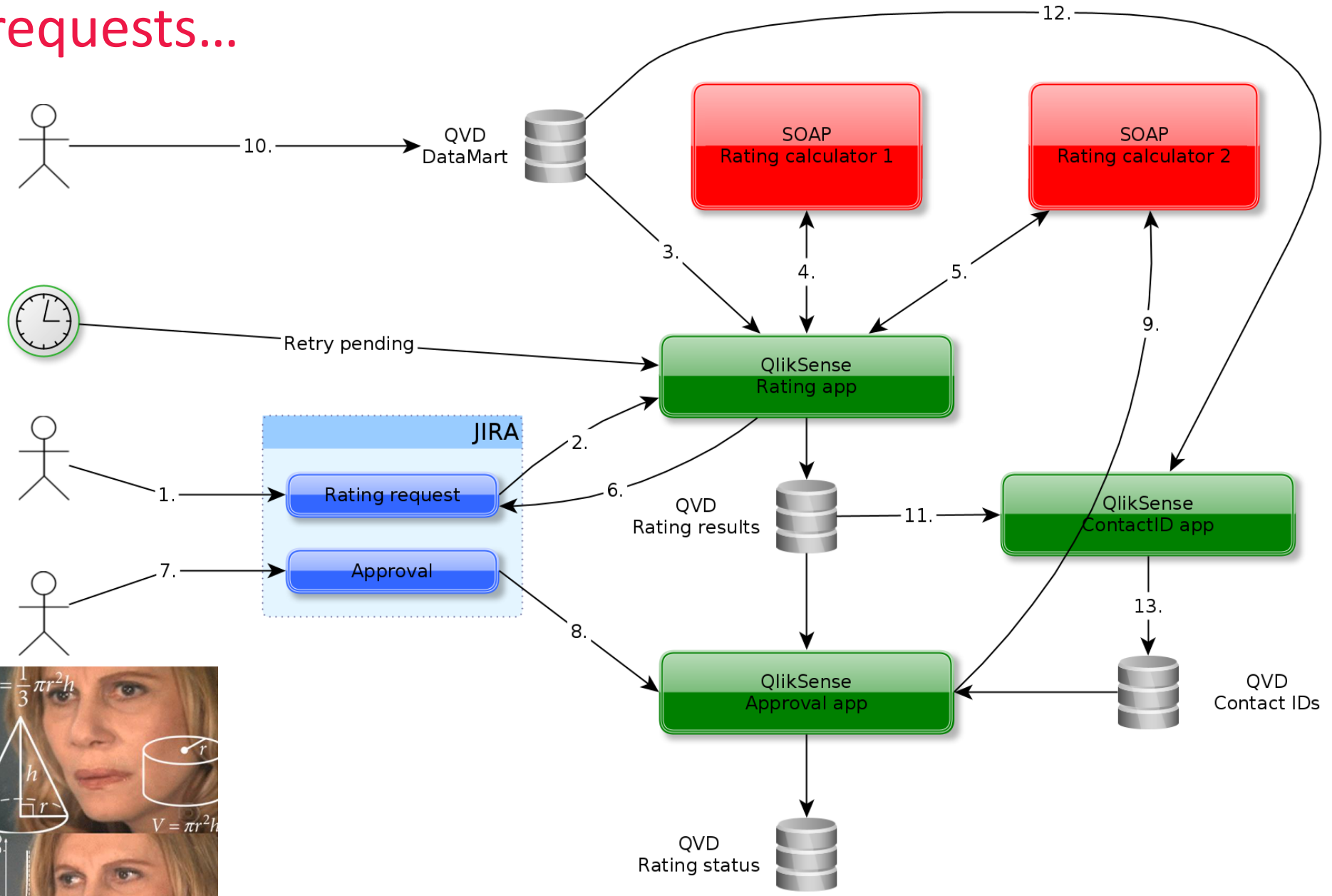
Request:

- store approved ratings



More requests…





Master data

- ordinary boring stuff
- LOADs, MAPPING LOADs, JOINs, GROUP BYs etc...
- 5 QVDs, 40 fields, 250 LOC

Approval workflow – wait for approval

- calculated ratings are stored in input QVD by the first app
- approval status stored in output QVD by second app
- all pending requests are re-read from JIRA for approval status
- all approved but not yet processed are stored

Avoids write conflicts between apps

- reading from JIRA

  → REST connector can do fine

- writing back to JIRA - HTTP PUT

  → custom HTTP connector, 1000 Java LOC

```
SELECT * FROM HTTP {
  "url": "$(vJiraURL)/rest/api/2/issue/$(vIssueId)",
  "method": "PUT",
  "timeout": 30000,
  "httpProxy": "10.10.10.1:8080",
  "data": "{\"fields\":{\"customfield_11901\": \"$(vPD)\", \"customfield_11902\": \"$(vRating)\",
  "headers": {
     "Content-type": "application/json",
     "Authorization": "Basic $(vHttpAuthToken)"
  },
  "ignoreSSL": true
};
```

- running on demand

  → NodeJS webhhook listener triggers reload via API

SOAP Rating calculators

SOAP is XML over HTTP

- XML generating

```
[T_DSS_Request]:
LOAD
  FirstValue([Request ID]) as [Request ID],
 Concat(
    '<'&XMLName&'>'&
    Replace(Replace(Replace(Replace(Replace(Value,'&', '&amp;'),'...
    &'</'&XMLName&'>'
  ,'') as Request
RESIDENT T_DSS_DataTable
WHERE [Request ID] = $(vIssueId) AND NOT(IsNull(XMLName));
```

- Custom authentication mechanism

  → just another SOAP call

- Access via network proxy

  → custom HTTP connector

- XML parsing

```
LOAD
    $(vIssueId) as [Request ID],
    responseBody as DSSReason,
    TextBetween(responseBody, 'PD value="', '"') as PD,
    TextBetween(responseBody, 'Model value="', '"') as Model,
    TextBetween(responseBody, 'Rating value="', '"') as Rating,
    TextBetween(responseBody, 'reasonCode>','</') as DSSReasonCode,
    TextBetween(responseBody, 'returnCode>','</') as DSSReturnCode,
    TextBetween(responseBody, 'reasonText>','</') as DSSMessage,
    Now() as DSSTime,
    '$(vDSSRequest)' as DSSRequest,
    1 as @DSS_Loaded
  ;
```

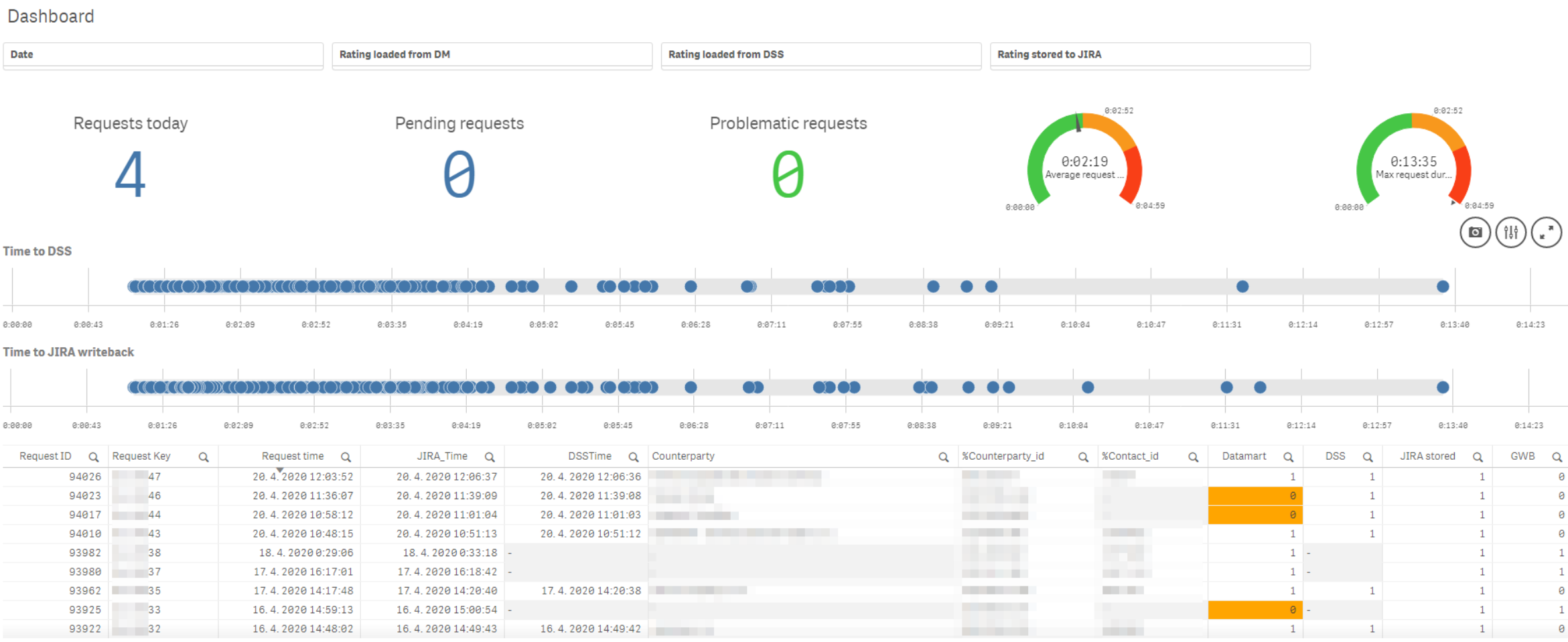
Fine tuning

Early exit

```
IF '$(vEnableEarlyExit)' = '1' THEN
  RequestCountCheck:
  LOAD Count(DISTINCT [Request ID]) as RequestCount
  RESIDENT R_JIRA_MasterTable
  WHERE NOT ISNULL([__KEY_issues]);

  Let vRequestCount = Peek('RequestCount');
  TRACE >> Request count: $(vRequestCount) <<;

  IF Peek('RequestCount') = 0 THEN
      DROP TABLE RequestCountCheck;
      DROP TABLE R_JIRA_MasterTable;
      [T_Results_Buffer]:
      NOCONCATENATE LOAD * FROM [lib://$(vQVD)/JIRA_Results.qvd] (qvd);
      TRACE >> No request to process - ABORT <<;
      Exit Script;
  END IF;

  DROP TABLE RequestCountCheck;
 END IF;
```

Fine tuning

Status dashboard



Request ID	Request Key	Request time	JIRA_Time	DSSTime	Counterparty	%Counterparty_id	%Contact_id	Datamart	DSS	JIRA stored	GWB
94026	47	20. 4. 2020 12:03:52	20. 4. 2020 12:06:37	20. 4. 2020 12:06:36				1	1	1	0
94023	46	20. 4. 2020 11:36:07	20. 4. 2020 11:39:09	20. 4. 2020 11:39:08				0	1	1	0
94017	44	20. 4. 2020 10:58:12	20. 4. 2020 11:01:04	20. 4. 2020 11:01:03				0	1	1	0
94010	43	20. 4. 2020 10:48:15	20. 4. 2020 10:51:13	20. 4. 2020 10:51:12				1	1	1	0
93982	38	18. 4. 2020 0:29:06	18. 4. 2020 0:33:18	-				1	-	1	1
93980	37	17. 4. 2020 16:17:01	17. 4. 2020 16:18:42	-				1	-	1	1
93962	35	17. 4. 2020 14:17:48	17. 4. 2020 14:20:40	17. 4. 2020 14:20:38				1	1	1	0
93925	33	16. 4. 2020 14:59:13	16. 4. 2020 15:00:54	-				0	-	1	1
93922	32	16. 4. 2020 14:48:02	16. 4. 2020 14:49:43	16. 4. 2020 14:49:42				1	1	1	0

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