

BW RTR - PCM Predictive Credit Management (WBP)

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General presentation

Objective of the application

Provide predictive information on Credit Management.

- Define which payer is a priority based on its history and the due amount.

Tool Leader: David TONDA

IT leader of the application: Guillaume THEVENET

Name of project: PCM Predictive Credit Management

PMO Project: 6958 Big Data for Credit Management

Reporting Coordinator: David TONDA

Usage information

Number of users: tbd

Critical period: none

Geographical perimeter: worldwide

InfoArea:

- All objects are stored in FIAR infoarea: IA_FMCO_FIAR

◆ Accounts Receivable Accounting	IA_FMCO_FIAR
• ◆ Accounts Receivable Harmonisation Layer	IA_FMCO_FIAR_HARMONISATION
• ◆ Accounts Receivable Propagation Layer	IA_FMCO_FIAR_PROPAGATION
• ◆ Accounts Receivable Business Transfer Layer	IA_FMCO_FIAR_BUSINESS_TRANSF
• ◆ Accounts Receivable Reporting Layer	IA_FMCO_FIAR_REPORTING
• ◆ Accounts Receivable Virtual Layer	IA_FMCO_FIAR_VIRTUAL
• ◆ Accounts Receivable Corporate Layer	IA_FMCO_FIAR_CORPORATE
▶ 🏠 Predictive Credit Management Cat. Char	IOCC_FMCO_FIAR_PCM
▶ 🏠 Predictive Credit Management Cat. Key Figure	IOCK_FMCO_FIAR_PCM

Process chain Display Component:

- 134 - PROJECT - PCM
COMP_PCM
- | | |
|-----------------------|----------|
| 🏠 134 - PROJECT - PCM | COMP_PCM |
|-----------------------|----------|

History

In Mar 2020, the data flow was updated to [PCM 2.0](#)

In 2021, BW change the source system SDK_PCM (SQL) to BigQuery(#4749200)

In Feb 2023, Po2 project requires to segregate data of Eco/SCO, therefore, company master data file is modified to add C_AUTHMA(authorization scope) to the openhub OH_PCM_05

In Dec 2023, Po2 spin off project has the new credit controlling area (CCA) = SYEN. DTP of DBFIAR20 need to add CCA = SOLV and SYEN and master data of c_compcde and c_custid are need to add c_scope field in order to use to calculate interco in BQ

Roles & Access

Aligned on FIAR Roles & Access

Dataflow overview

The dataflow can be divided in 3 main steps:

1. check that no other run are in progress (a) and then extract data from BW to PCM
 - a. Extract master data in full mode to csv files through openhub
 - b. Load FIAR and CAMS data into specific DSO build for PCM project (DBFIAR20 and DBFIAR21),then extract to csv through openhub
 - c. Load the data from the file via Talend
2. treatment on PCM GCP
3. Load full with deletion DPFIAR13 from Big Query with new data source DTS_FI_PCM_01 by PC_FI_PCM_10. SQL server was replaced by Big Query

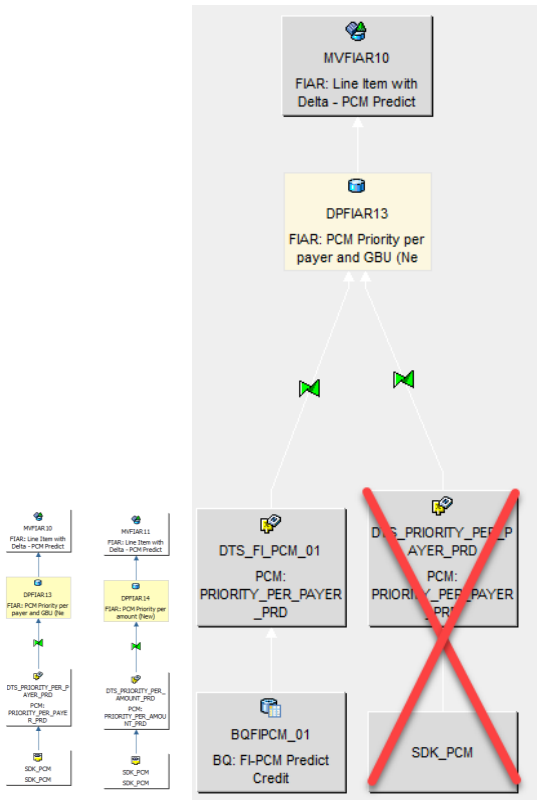
Big Query to BW

DPFIAR13 data loading

Data source DTS_FI_PCM_01 get from remote source GBQ_Predict_Credit and get from table core_perimeter_future_bw (GCP project predict-credit-mgt-v2-prod)

DataSource	<input type="text" value="DTS_FI_PCM_01"/>
Source System	<input type="text" value="BQFIPCM_01"/> BQ: FI-PCM Predict Credit
Version	<input type="text" value="Active"/> Compare with...
Active Version	Executable = Edited Version
General Info. <u>Extraction</u> Proposal Fields Preview	
Delta Process	<input type="text" value="Delta Only Via Full Upload (DSO or InfoPackage Selection)"/>
Direct Access	<input type="text" value="Allowed; Data Replication Only Without PSA"/>
Realtime	<input type="text" value="Real-Time Data Acquisition Is Not Supported"/>
Adapter	<input type="text" value="Extraction from SAP HANA"/> Properties
SAP HANA Connection Type	<input type="text" value="SAP HANA Smart Data Access"/>
SDA Adapter	<input type="text" value="GBQAdapter"/>
Remote Source	<input type="text" value="GBQ_Predict_Credit"/>
Path Prefix	<input type="text"/>
Path Suffix	<input type="text"/>
Table/View	<input type="text" value="core_perimeter_future_bw"/> Properties
SAP HANA Objects	
Real-Time Replication	<input type="checkbox"/> Remote Subscription Type UPSERT Manage
	<input type="checkbox"/> Remote Subscription Type INSERT Manage
Static Filter (SQL)	<input type="text"/>
Data Format	<input type="text" value="Already Binary"/>

Report to get back from BigQuery after calculate by Data Science

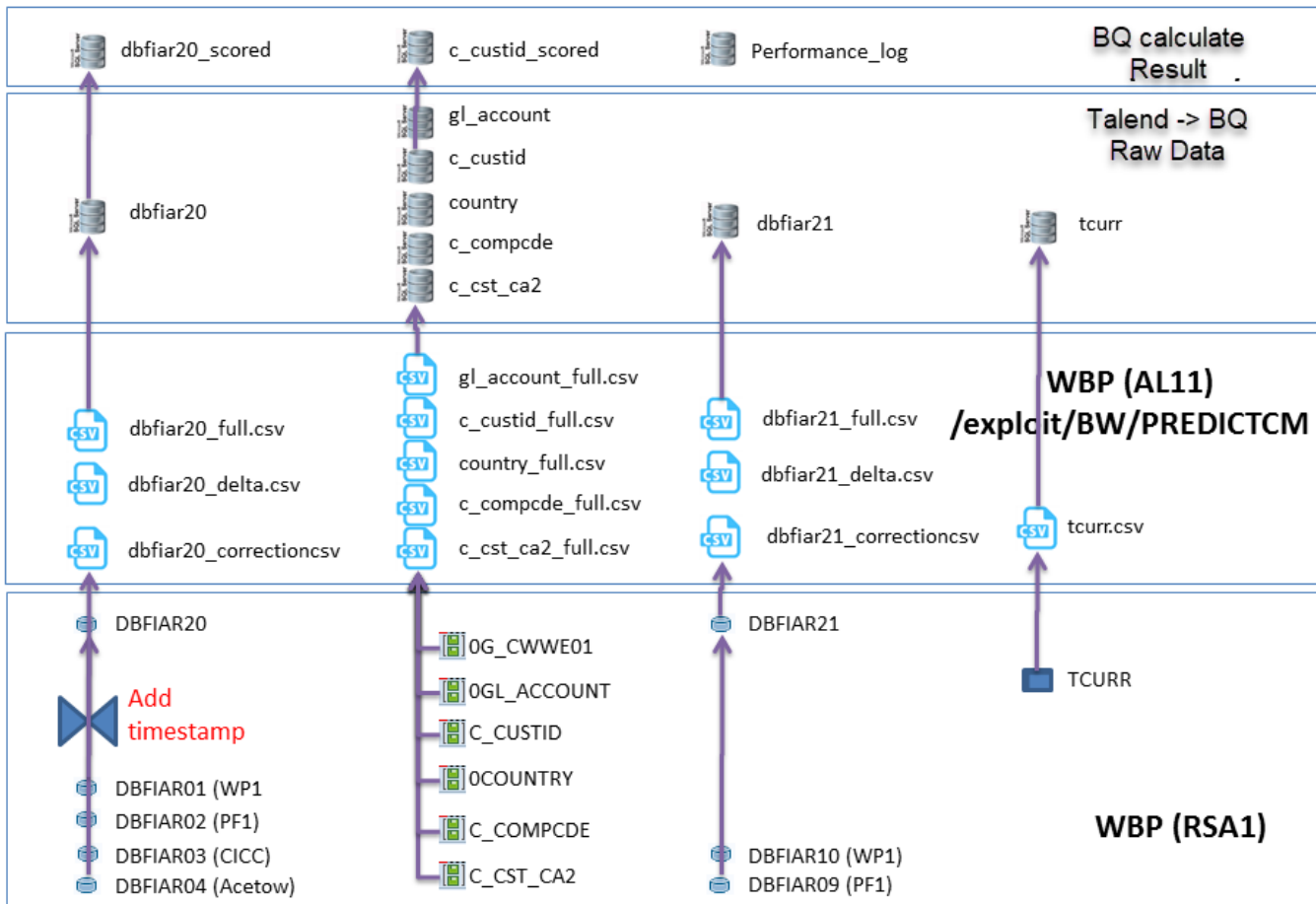


With new version 2.0, BW get only 3 key figures

PRED_NOT_PIM K_PFNPI
 PROBA_NOT_PIM K_PPNPI
 AMOUNT_EUR 0DEB_CRE_LC

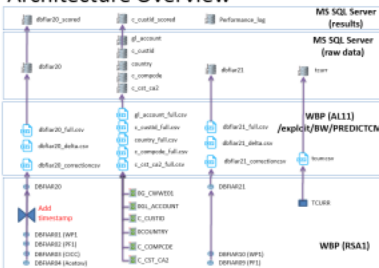
Note: DPFAR14 is obsolete

Architecture Overview



Obsolete

Architecture Overview



SQL server was replaced by Big Query and after files are generate, they will be loaded by Talend by Data Engineering team

Functional and Technical rules on Workbench + Reporting

Rules & Explanations

The whole process can be summarized has follow:

- Extraction of BW data (master and transactional data) in flat files (csv with "|" separator)
- copy and loading of these file into a SQL database
- Calculation of predictive information on SQL side to produce two table which define Priority per Amount & Priority per Payer
- Loading of these data in BW to be used on standard reporting

Openhub

Updated on 12 Mar 2021: 18 Openhub (2 Transactional and 16 Master data)

Open Hub	Open Hub Name	Source of Open Hub	Process Chain	Filename	Detail of file
OH_PCM_04	PCM: DBFIAR20	DBFIAR20 (replace by v2)	PG_FL_PCM_04	dbfiar20_delta.csv	FIAR: Line Item with Delta - PCM - All

					systems
OH_PCM_21	PCMV2: DBFIAR20	DBFIAR20	PC_FL_PCM_V2	dbfiar20_delta.csv	FIAR: Line Item with Delta - PCM - All systems
OH_PCM_02	PCM: GL_ACCOUNT	ATTRIBUTES 0GL_ACCOUNT	PC_FL_PCM_01	gl_account_full.csv	Attribute of GL account
OH_PCM_03	PCM: C_CUSTID	ATTRIBUTES C_CUSTID	PC_FL_PCM_01	c_custid_full.csv	Attribute of Customer
OH_PCM_04	PCM: COUNTRY	ATTRIBUTES 0COUNTRY	PC_FL_PCM_01	country_full.csv	Attribute of Country
OH_PCM_05	PCM: C_COMPCDE	ATTRIBUTES C_COMPCDE	PC_FL_PCM_01	c_compcde_full.csv	Attribute of Company
OH_PCM_06	PCM: C_CST_CA2	ATTRIBUTES C_CST_CA2	PC_FL_PCM_01	c_cst_ca2_full.csv	Attribute of Customer credit control area
OH_PCM_07	PCM: TCURR	DTS_TCURR	PC_FL_PCM_01	tcrr_full.csv	Attribute of Currency
OH_PCM_08	PCM: DBFIAR21	DBFIAR21	PC_FL_PCM_01	dbfiar21_delta.csv	FIAR: Credit blocked - PCM - All systems
OH_PCM_09	PCM: G_CWWE01	ATTRIBUTES 0G_CWWE01	PC_FL_PCM_01	g_cwwe01_full.csv	Attribute of sub activity (IECRA)
OH_PCM_10	PCM: 0CLM_CLSP Texts	TEXTS 0CSM_USER	PC_FL_PCM_01	0CLM_CLSP_TEXT.csv	Text of Collection specialist
OH_PCM_11	PCM: C_COMPCDE Texts	TEXTS C_COMPCDE	PC_FL_PCM_01	c_compcde_text.csv	Text of Company
OH_PCM_12	PCM: C_SALEMP Texts	TEXTS C_SALEMP	PC_FL_PCM_01	c_salemp_text.csv	Text of Sales employee
OH_PCM_13	PCM: C_PMNTTRM Texts	TEXTS C_PMNTTRM	PC_FL_PCM_01	C_PMNTTRM_TEXT.csv	Text of payment term
OH_PCM_14	PCM: CPFCTR1_2 Texts	TEXTS CPFCTR1_2	PC_FL_PCM_01	CPFCTR1_2_TEXT.csv	Text of GBU
OH_PCM_15	PCM: CPFCTR2_2 Texts	TEXTS C_FACUBU	PC_FL_PCM_01	CPFCTR2_2_TEXT.csv	Text of BFC group of activity
OH_PCM_16	PCM: 0G_CWWE01 Texts	TEXTS 0G_CWWE01	PC_FL_PCM_01	0G_CWWE01_TEXT.csv	Text of sub activity (IECRA)
OH_PCM_17	PCM: C_PM_MTHD Texts	TEXTS C_PM_MTHD	PC_FL_PCM_01	C_PM_MTHD_TEXT.csv	Text of payment method
OH_PCM_18	PCM: 0REPR_GROUP Texts	TEXTS 0REPR_GROUP	PC_FL_PCM_01	0REPR_GROUP_TEXT.csv	Text of credit management representatives group

All master data openhub are loaded in full mode. All extract data from master data except the TCURR one which is connected to a datasource.

All transactional data openhub are loaded in delta mode. (remark delta is not possible with multiprovider).

All openhub use a "|" separator because some field already contain ";" in the value and openhub doesn't encapsulate data.

All openhub use logical file name defined through FILE transaction. All files are stored in the following folder

Directory: /exploit/BW/PREDICTCM

Data loadings

Info providers and objects loaded

PC_FI_PCM_07 (Main PC)-modify by ticket 5915436

PC_FI_PCM_01 Generate 18 files from Open Hub by job RSPROCESS weekday at 10:00 AM CET

~~PC_FI_PCM_11 Same as PC_FI_PCM_01 just in case 01 can't generate files completely~~

PC_FI_PCM_10 Delete DSO then load data to DPFIAR13 from BigQuery ~~and DPFIAR14 from SDK_PCM~~ job RSPROCESS weekday at 11:00 AM CET

PC_FI_PCM_V2 generate 1 file:/exploit/BW/PREDICTCM/V2/dbfiar20_<DATE>_<TIME>_delta.csv from Open Hub by job RSPROCESS 3 times(7am, 1pm , 7pm CET) per weekday

Target folder

Logical path	Z_PREDICTCM	
Name	Folder for Big Data Credit Mgt	
Syntax group	UNIX	Unix compatible
Physical path	/exploit/BW/PREDICTCM/<FILENAME>	

Loading frequency

PC_FI_PCM_01 load by job RSPROCESS workday at 10:00 AM CET

PC_FI_PCM_10 load by job RSPROCESS workday at 11:00 AM CET

PC_FI_PCM_V2 load by job RSPROCESS workday at 7am, 1pm , 7pm CET

Schedule by PC at 7 AM and schedule by program on job name BI_PROCESS_TRIGGER_1PM and BI_PROCESS_TRIGGER_7PM

Average performance

Key Figure	Estimation
~ Average Process Chain Runtime	
~ Average nb of rows loaded per load	
~ Total nb of rows loaded (if full)	
~ Average Runtime for 10k lines	

Record Keeping

DSO are loaded with full historical data but we only send today - 3 years to SQL server.

Reporting

Queries End User Documentation

Main queries

Main functionalities

Broadcast

All Credit Management broadcasts (and associated PCs) were deactivated on Business demand

Maintenance

Known bugs

Recurring procedure

If the service account: bqtobw@predict-credit-mgt-v2-dev.iam.gserviceaccount.com in Google Cloud Platform is expired, then the configuration of remote source: GBQ_Predict_Credit in BW/HANA should be adapted accordingly.

1. Copy the new JSON file to the folder defined in `gbqadapter_prod.properties` on dp agent server (acew1dhcahca1)
2. Change the `KeyFilePath` to the folder of the new JSON file (JSON file provide by DataOps team: dataops@solvay.com)

Remote source in BW configuration is not required to change.

Source Name:	Adapter Name:
GBQ_Predict_Credit	GBQAdapter

Type filter	
Property name	Value
▼ Connection Parameters	
Property File *	E:\GBQ_PREDICT_CREDIT\PROD\gbqadapter_prod.properties
Data Catalog *	predict-credit-mgt-v2-prod
Dataset ID *	working
Help *	Make sure to enter the Project and Authentication info in /usr/sap/dpagentwbd/adapters/gbqadapterhr.properties file

The properties file in dp agent server is required to change if the project name or the location to keep the JSON file is changed.

The new JSON file must be the same as the detail in the properties file at `KeyFilePath`

Network > acew1dhcahca1 > GBQ_PREDICT_CREDIT > PREPROD

```
gbqadapter_preprod.properties - Notepad
File Edit Format View Help
#Project
#Project=<google billing project name>
Project=predict-credit-mgt-v2-dev
# Driver: The location where the Simba JDBC driver is located.
#Driver=<full file path of the Bigquery JDBC driver locaton>
Driver=E:/GBQ_PREDICT_CREDIT/DEV/lib/simba4.1
# OAuth Mechanism
# Email: For Service Authentication, this is a required setting. It is your GENERATED serv
#Email=<email associated with the sevice account>
Email=bqtobw@predict-credit-mgt-v2-dev.iam.gserviceaccount.com
# KeyFile Path: For Service Authentication, this is a required setting. This is the path
#KeyFilePath=<keyfile for the service account>
KeyFilePath=E:/GBQ_PREDICT_CREDIT/PREPROD/cert/predict-credit-mgt-v2-dev-bqtobw.json
```

Planned Evolution