DataWarehouse

REDi – ETL Information

DataWarehouse

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Version History

Version	Author	Section Name	Description of Changes
1.00 April 14 2016	Kirsty McKay	N/a	First Draft
1.01 April 14 2016	Kirsty McKay	N/a	Added numbers to diagram to aide tracing subjects in doc
1.02 April 19 2016	Kirsty McKay	N/a	Update MCH/BD
1.03 April 21 2016	Kirsty McKay	N/a	Web svc added

Supporting Documents/References

Version	Document	Link

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Information

- Product: Data Warehouse
- Server: REDIHYDATA
- Component List:
    - Database (Sybase IQ)
    - ETL call out Database (SQL)
    - ETL call out Database (Oracle via Infoprimer)

Introduction

The Data Warehouse is the system behind the ReDi product. This data directly feeds all the tables/views needed for the ReDi system, via various ETL methods, this document aims to call out the different ETL processes.

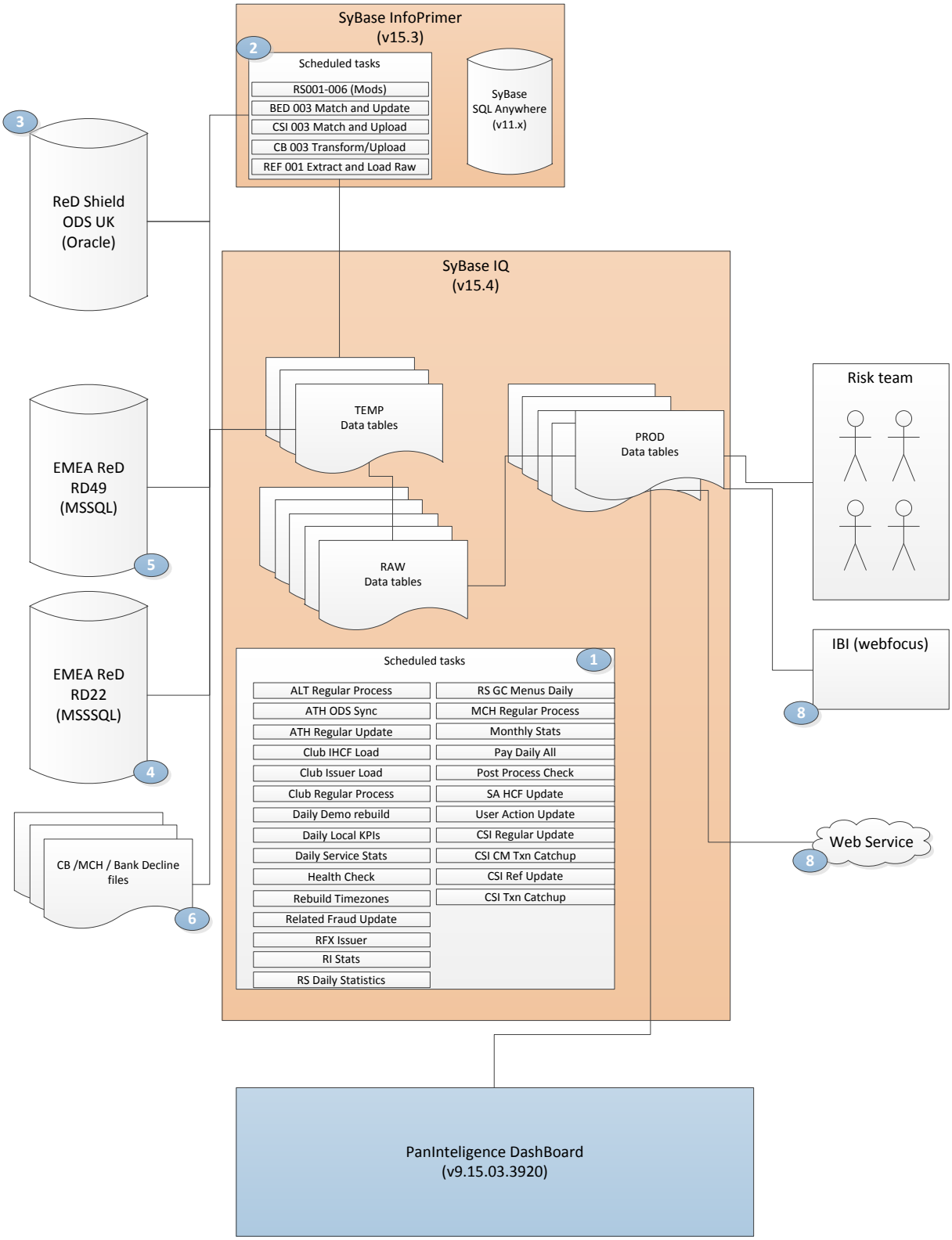
Intended Audience

It is assumed that this will be enough information for the Hadoop Migration team to be fully understand all the ETL components for this system.

Overall System

Below is a pictorial representation of the system overview.

Diagram 1



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ReD Data Warehouse – IQ Events (Number 1 on Diagram 1)

Below is the list of the Scheduled Events in Sybase IQ that need to run as per each of the Schedule.

The administration Jobs are not included as part of this document.

IQ Event Name (trigger)	Description	Schedule	IQ Procedures Called	Data Source
ALT_REGULAR_PROCESS	ReDi Alerting	Hourly (48)	ALT_Full_Process()	Internal
ATH_ODS_SYNC	ToF upload to ReDShield/Oracle	10mins (00)	Code in event	Internal
ATH_REGULAR_UPDATE	Updates TOF data for upload	Hourly (52)	ATH_VALUES_UPDATE	Internal
CLUB_IHCF_LOAD	Loads UK Hot Card data	Hourly (44)	CLUB_LOAD_IHCF_ALERTS	SQL Server: RD49
CLUB_ISSUER_LOAD	Loads Discover Alerts data	Hourly (41)	CLUB_ISSUER_LOAD	Oracle : ODSUK1
CLUB_REGULAR_PROCESS	RFX Club Data Generation	Hourly (52)	CLUB_DO_ALL	Internal
CSI_CM_TXN_CATCHUP	Handles when CM before RS	2Hourly (50 odd)	CSIDATA_99_CATCHUP	Internal
CSI_REF_UPDATE	Picks up CSI/Case Mgr refdata	Daily (0300)	CSIREF_ALL_DAILY	Oracle : ODSUK1
CSI_REGULAR_UPDATE	Case Manager data update	20mins (00)	CSIDATA_ALL_STEPS	Oracle : ODSUK1
CSI_TXN_CATCHUP	Catch up for CSI if before RS	Daily (0622)	CSI_TXN_CATCHUP	Internal
DAILY_DEMO_REBUILD	Generates DEMOJD CM data	Daily (0707)	DEMO_REBUILD_CASE_MANAGER	Internal

DAILY_LOCAL_KPIS	Generates Local KPI data Generates Local Lists data	Daily (0710)	LOCAL_KPIS_ALL_STEPS LOCAL_LISTS_ALL_STEPS	Internal
DAILY_SERVICE_STATS	Generates internal daily stats	Daily (0715)	DailyServiceStats	Internal
HEALTH_CHECK	Generates health check data	5mins (00)	HEALTH_CHECK_DATA	Internal
MCH_REGULAR_PROCESS	Merchant Monitoring update	Hourly (43)	MCH_Full_Process	Internal
MONTHLY_STATS	Monthly Stats update	Daily (0845)	RS_MONTH_SUMM	Internal
PAY_DAILY_ALL	R1G/CEX/RTR process	Daily (0715)	PAY_DAILY_ALL	SQL Server : RD49
POSTPROC_CHECK	Summaries post MODS load	15sec (00)	RS_PostProc_Check	Internal
REBUILD_TIME_ZONES	Clock Change process	Manually Sched	Ref_Update_TimeZones	Internal
RELATED_FRAUD_UPDATE	Updated RelFraud info on txns	Daily (0502)	RELATED_FRAUD_ALL	Internal
RI_STATS_FULL_UPDATE	RI River Island Updates	Hourly (10)	RI_STATS_FULL_UPDATE	Internal
RFX_ISSUER	RFX Issuer Date Generation	Hourly (27)	ISS_REGULAR_UPDATE	Internal
RS_DAILY_STATISTICS	Generates internal daily stats	Daily (0630)	RS_Daily_ALL_STEPS	Internal
RS_GC_MENUS_DAILY	Create GC specific menus	Daily (0050)	GC_MENUS_DAILY_REBUILD	Internal
SA_HCF_UPDATE	Loads SA HCF data	Hourly (38)	SAHCF_LOAD_NEW_ALERTS	SQL Server : RD49
USER_ACTION_UPDATE	Picks up ReDi update requests	5sec (00)	USER_ACTION_UPDATES	Internal

ALT_REGULAR_PROCESS

ReDi Alerting: scans the alerting table for processes that have run on the system for internal alerting purposes.

ALT_REULAR_PROCESS is an IQ job that in turn calls the ALT_FULL_PROCESS procedure.

ALT_FULL_PROCESS

Calls the following sub procedures

RBI_LOG_BATCH_START
ALT_00_RebuildAlerts
MODS.ALT_01_Prepare
MODS.ALT_10_Generate
MODS.ALT_80_Transform
MODS.ALT_92_CheckAlerts
MODS.ALT_94_FormatMeasure1
MODS.ALT_95_FormatMeasure2
MODS.ALT_96_FormatMeasureCheck
MODS.ALT_98_CreateAlerts
MODS.ALT_99_Upload
RBI_LOG_BATCH_END
RBI_LOG_COMPLETE

ATH_ODS_SYNC

ToF Updates: scans data incoming to RS_TRANS_MASTER for updating ToF based on control table of clients and data elements and updates to Oracle. Directly coded out of Event.

ATH_ODS_SYNC is an IQ job that has code directly entered into job steps.

ATH_REGULAR_UPDATE

ToF Updates: scans data incoming to Trans master for updating ToF based on control table of clients and data elements and updates locally. Directly coded out of Event.

ATH_VALUES_UPDATE is an IQ job that in turn calls the ATH_VALUES_UPDATE procedure.

CLUB_IHCF_LOAD (Number 4 to 1 on Diagram 1)

Collects HCF data from SQL server (prepared by SQL jobs on server independently to this).

CLUB_HCF_LOAD is an IQ job that calls CLUB_LOAD_IHCF_ALERTS procedure.

CLUB_ISSUER_LOAD

CLUB_ISSUER_LOAD is an IQ job that calls CLUB_LOAD_ISSUER_ALERTS procedure.

CLUB_REGULAR_PROCES

CLUB_REGULAR_PROCESS calls procedure CLUB_LOAD_ISSUER_ALERTS

CSI_CM_TXN_CATCHUP

CSI_CM_TXN_CATCHUP calls procedure CSIDATA_99_CATCHUP

CSI_REF_UPDATE

CSI_REF_UPDATE calls procedure CSIREF_ALL_DAILY

CSI_REGULAR_UPDATE

CSI_REGULAR_UPDATE calls procedure CSIREF_ALL_DAILY

CSI_TXN_CATCHUP

CSI_TXN_CATCHUP calls procedure CSI_TXN_CATCHUP

DAILY_DEMO_REBUILD

DAILY_DEMO_REBUILD calls procedure DEMO_REBUILD_CASE_MANAGER

DAILY_LOCAL_KPIS

DAILY_LOCAL_KPIS calls procedures

LOCAL_KPIS_ALL_STEPS
LOCAL_LISTS_ALL_STEPS

DAILY_SERVICE_STATS

DAILY_SERVICE_STATS calls procedure DailyServiceStats

HEALTH_CHECK

HEALTH_CHECK calls procedure HEALTH_CHECK_DATA

MCH_REGULAR_PROCESS

MCH_REGULAR_PROCESS calls procedure MCH_Full_Process which in turn calls the following procedures:

MODS.MCH_00_RebuildAlerts
MODS.MCH_01_Prepare
MODS.MCH_02_SuppressFlags
MODS.MCH_10_Generate
MODS.MCH_75_NewMerchantActivation
MODS.MCH_80_Transforms
MODS.MCH_90_CalcChecks
MODS.MCH_92_CheckAlerts
MODS.MCH_94_FormatMeasure1
MODS.MCH_95_FormatMeasure2
MODS.MCH_96_FormatMeasureCheck

MODS.MCH_98_Alerts
MODS.MCH_99_Upload
MODS.MCH_MERCHANT_MENULISTS

MONTHLY_STATS

MONTHLY_STATS calls procedure RS_MONTH_SUMM

PAY_DAILY_ALL (Number 5 to 1 on Diagram 1)

Collects payment, r1g and settlement info data from SQL server (prepared by SQL jobs on server independently to this).

PAY_DAILY_ALL calls procedure PAY_DAILY_ALL.

POSTPROC_CHECK

POSTPROC_CHECK calls procedure RS_PostProc_Check which in turn calls the following procedure:

RS_PostProc_AllSteps

REBUILD_TIME_ZONES

No longer used.

RELATED_FRAUD_UPDATE

RELATED_FRAUD_UPDATE calls procedure RELATED_FRAUD_ALL which sub calls the following procedures:

MODS.RBI_LOG_BATCH_START
MODS.RELATED_FRAUD_CLIENT
MODS.RELATED_FRAUD_SUBCLIENT
MODS.RBI_LOG_BATCH_END

RI_STATS_FULL_UPDATE

RI_STATS_FULL_UPDATE calls procedure RI_STATS_FULL_UPDATE which sub calls the following procedures:

MODS.RBI_LOG_START
MODS.RI_STATS_01_BASE
MODS.RI_STATS_02_BUILD
MODS.RI_STATS_03_UPLOAD
MODS.RI_STATS_03A_CHALLENGES
MODS.RI_STATS_04_TOPTENS
MODS.RI_STATS_05_DATES
MODS.RBI_LOG_COMPLETE

RFX_ISSUER

RFX_ISSUER calls procedure ISS_REGULAR_UPDATE

RS_DAILY_STATISTICS

RS_DAILY_STATISTICS calls procedure RSDaily_ALL_STEPS which sub calls the following procedures:

MODS.RSDaily_001_Create_ReD_Client_Stats
MODS.RSDaily_002_Create_ReD_SubClient_Stats
MODS.RSDaily_003_Create_ReD_REDALL_Stats
MODS.RSDaily_004_FormatBaseStats
MODS.RSDaily_005_CreateOutputStats
MODS.RSDaily_010_CreateCustSets

RS_GC_MENUS_DAILY

RS_GC_MENUS_DAILY calls procedure GC_MENUS_DAILY_REBUILD

SA_HCF_UPDATE (Number 4 to 1 on Diagram 1)

Collects SA (South African) HCF data from SQL server (prepared by SQL jobs on server independently to this).

SA_HCF_UPDATE calls procedure SAHCF_LOAD_NEW_ALERTS

USER_ACTION_UPDATE

Forms part of the web service call see web services section.

USER_ACTION_UPDATE calls procedure USER_ACTION_UPDATE

ReD Data Warehouse – IP Jobs (Number 2 on Diagram 1)

Below is the list of the Scheduled Events in Sybase IP need to run as per each of the Schedule.

IP Project Name	Description	Schedule	IQ Procedures Called	Data Source
RS 001 – RS 006 (MODS)	Main MODS load	2 mins (01)	RS_Pass_1_Tranform_Gen RS_Pass_2_Tranform_Client RS_Pass_3_Tranform_Rules RS_Pass_4_Upload_Gen (Internal IP for TM/TD updates) RS_900_Post_Processing	Oracle: ODSUK1
BED 002 Match and Upload	Back End data handler (dispositions, chargebacks, overrides)	Hourly (00)	BED_FULL_LOAD	Oracle: ODSUK1
CSI 003 Match and Upload	CSI data handler (not CM)	Hourly (03)	CSI_IP_FULL_LOAD	Oracle: ODSUK1
CB 003 Transform and Upload CB	Chargebacks load	Daily (0530)	CB_PASS_PREPARE CB_PASS2_MATCH CB_PASS3_TRANSFORM CB_PASS4_UPLOAD	Oracle: ODSUK1
REF 001 Extract and Load RAW	Reference data load and ReDi menu regeneration	Daily (0130)	REF_DAILY_CLIENT_UPDATES	Oracle : ODSUK1

Sybase IQ Info Primer (IP) Jobs

RS 001 – RS 006 (MODS) (Number 3 on Diagram 1)

Handles main RS data load from Oracle system. Data is gathered per machine over a source table stored in Oracle.

Job on Info primer:

Job Step: RS 000 Trans Job

Master Job in Sybase IP that calls the RS sub jobs below.

Job Step: RS 001 Prep Export

IP RS oracle to execute procedure which loops over each server in a control table.

Job calls to Oracle: EXPORT.prepare_tables

Once prepped the data is stored locally on RS Oracle for the IP to map.

Job Step: RS 002 Extract and Load RAW

Now we're ready to take the data into the Sybase db.

From Oracle tables:

Oracle table	SybaseIQ Table
TRANS_MASTER_EXPORT	MODS.RAW_RS_TRANS_MASTER
TRANS_DETAIL	MODS.RAW_RS_TRANS_DETAIL
TRANS_DVE_DETAIL	MODS.RAW_RS_TRANS_DVE_DETAIL
TRANS_TSW_DETAIL	MODS.RAW_RS_TRANS_TSW_DETAIL
RULE_DETAILS	MODS.RAW_RS_TRANS_TSW_DETAIL

To see what is transformed by column:

To be added.

Job Step: RS 003 Transform

Sybase IP:

RS_Pass_1_Tranform_Gen
    Calls Sybase IQ : MODS.RS_PASS1_TransformGen
RS_Pass_2_Tranform_Client
    Calls Sybase IQ : MODS.RS_PASS2_TransformClient
RS_Pass_3_Tranform_Rules

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Call Sybase IQ: MODS.RS_PASS3_TransformRules

Job Step: RS 004 Upload Trans

Takes data in temp RAW tables and inserts them into Master tables on Sybase.

Direct in Sybase IQ IP:

Cleanup RAW duplicates

RS_501_Upload_TRANS_MASTER

RS_502_Upload_TRANS_DETAIL

RS_503_Upload_RULE_HITS

Job Step: RS 005 Rule Updates

RS_Pass_4_Upload_Gen
Calls Sybase IQ: MODS.RS_PASS4_UploadRules

Job Step: RS 006 Post Processing

RS_900_Post_Processing
Calls Sybase IQ: MODS.RS_900_PostProcessing

Job Step: RS 007 update MODS export control

Calls Oracle to update the export control table.

EXPORT.update_control

Job Step: RS 008 Staged Updates

RS_990_StagedUpdates

Calls Sybase IQ: MODS.RS_990_StagedUpdates

BED 002 Main and upload

Job on Infoprimer:

BED 000 Backend MODS data load

Master Job in Sybase IP that calls the RS sub jobs below.

Job Step: BED 001 Prep Export

Job calls to Oracle: EXPORT.prepare_bedata_tables

Once prepped the data is stored locally on RS Oracle for the IP to map.

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Job Step: BED 002 Prep Export and Load RAW

Now we're ready to take the data into the Sybase db.

From Oracle tables:

Oracle table	SybaseIQ Table
BED_CB_EXPORT	MODS.RAW_BED_CB
BED_CHALL_EXPORT	MODS.RAW_BED_CHALL
BED_OVER_EXPORT	MODS.RAW_OVER
BED_MASTER_EXPORT	MODS.RAW_BED_MASTER

To see what is transformed by column:

To be added.

Job Step: BED 003 Match and Upload

Call Sybase IP's :

MODS.BED_FULL_LOAD

Job Step: BED 004 Update MODS export control

Job calls to Oracle: EXPORT.update_bedata_control

CSI 003 Match and Upload

Job on Infoprimer:

CSI 000 data load

Master Job in Sybase IP that calls the RS sub jobs below.

Job Step: CSI 001 Prep Export

Job calls to Oracle: EXPORT.prepare_csi_tables

Job Step: CSI 002 Extract and Load

Now we're ready to take the data into the Sybase db.

From Oracle tables:

Oracle table	SybaseIQ Table
CS_QUEUE_EXPORT	MODS.RAW_CSI_CASE_MANAGER
CS_ORDER_EXPORT	MODS.RAW_CSI_ORDER_STATUS

To see what is transformed by column:

To be added.

Job Step: CSI 003 Match and Upload

Call Sybase IP's :

MODS.CSI_IP_FULL_LOAD

Job Step: CSI 004 Update MODS export control

Job calls to Oracle: EXPORT.update_csi_control

REF 001 Extract and Load RAW

Job on Infoprimer:

REF 000 Data load

Master Job in Sybase IP that calls the RS sub jobs below.

Job Step: REF 001 Extract and Load RAW

Calls IP script direct in job to oracle Job calls to Oracle: SDB.COP_MASTER

Now we're ready to take the data into the Sybase db.

From Oracle table (via script above):

Oracle table	SybaseIQ Table
COP_MASTER	MODS.RAW_RBI_REF_CLIENT

To see what is transformed by column:

To be added.

Job Step: REF 002 Update Production

Calls IP script : GetTableLocks

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Call Sybase IP's :

MODS.REF_DAILY_CLIENT_UPDATES

CB 003 Transform and Upload CB

Job on Infoprimer:

CB 000 Chargeback load

Master Job in Sybase IP that calls the RS sub jobs below.

Job Step: CB 001 Prep Export

Job calls to Oracle: EXPORT.prepare_cb_data_tables

Job Step: CB 002 Extract and Load RAW

Now we're ready to take the data into the Sybase db.

From Oracle tables:

Oracle table	SybaseIQ Table
CB_DATA_EXPORT	MODS.RAW_CB_MASTER_DATA

To see what is transformed by column:

To be added.

Job Step: CB 003 Transform

CB_PASS1_PREPARE

Calls Sybase IQ : MODS.RS_PASS1_TransformGen

CB_PASS2_Match

Calls Sybase IQ : MODS.CB_PASS2_MATCH

CB_PASS3_TRANSFORM

Calls Sybase IQ : MODS.CB_PASS3_TRANSFORM

Job Step: CB 004 Upload Chargebacks

CB_PASS4_UPLOAD

Calls Sybase IQ : MODS.CB_PASS4_UPLOAD

Job Step: CB 005 Update MODS export control

Job calls to Oracle: EXPORT.update_cb_data_control

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Chargebacks

Pre-formatted csv files are loaded directly manually on the system. This loading does not form part of this procedure.

Called procedures for the chargeback process are:

- CB2_01_CustomLoad_VSC.sql
- CB2_02_CustomLoad_IDTGV.sql
- CB2_03_CustomLoad_Jetstar.sql
- CB2_11_CustomLoad_Ethoca.sql
- CB2_12_CustomLoad_NationalExpress.sql
- CB2_13_CustomLoad_O2.sql
- CB2_14_CustomLoad_BOCS.sql
- CB2_15_CustomLoad_Virgin.sql
- CB2_16_CustomLoad_SNCF.sql
- CB2_17_CustomLoad_SignetCatchup.sql
- CB2_21_CustomLoad_AirCaraibes.sql
- CB2_22_TSYS.sql
- CB2_31_CustomLoad_H3G.sql
- CB2_32_CustomLoad_TescoHansen.sql
- CB2_33_CustomLoad_Cathay.sql
- CB2_34_CustomLoad_SingaporeAirlines.sql
- CB2_35_CustomLoad_Saudi.sql
- CB2_36_CustomLoad_Wolseley.sql
- CB2_37_CustomLoad_EVODCS.sql
- CB2_38_CustomLoad_BQ.sql
- CB2_40_CustomLoad_NordstromCards.sql
- CB2_41_CustomLoad_Petco.sql
- CB2_51_CustomLoad_Nexway.sql
- CB2_61_GenericTransactionId_LycatelOther.sql
- CB2_62_GenericTransactionId_IKEAUS.sql
- CB2_63_GenericTransactionId_LycatelUS.sql
- CB2_64_GenericTransactionId_CitrusPay.sql
- CB2_68_GenericTransactionId_SubClient.sql
- CB2_69_GenericTransactionId_Client.sql
- CB2_72_BlueSnap.sql
- CB2_72_GenericOID_Follett.sql
- CB2_73_CustomLoad_AmericanEagle.sql
- CB2_TESCO_PAYG.sql

Location to be added.

Once the client CB files are processed by above procedures, the following two procedures are run to update the system:

- CB2_80_Upload.sql
- CB2_90_Export.sql

MCH (Number 6 on Diagram 1)

Pre-formatted csv files are loaded directly manually on the system. This loading does not form part of this procedure.

Called procedures for the MCH process are:

MCH_REFDATA_LOAD loads an outputted file, verifies against Ref data and loads.

Bank Declines (Number 6 on Diagram 1)

File directly from client is loaded daily. Currently on one client.

Called procedures for the chargeback process are:

RS_AUTHDEC_UPDATES

Web Focus (ibi -Risk Data lookup system) (Number 7 on Diagram 1)

Process provides an interface between the pan intelligence Dashboard and the DB back end. It receives an HTTP message and takes the information and executes a stored procedure on Sybase:

MODS.USER_ACTION_UPDATE

Web Service Alert Updates (Number 8 on Diagram 1)

To be added.

Glossary

ToF – Time on

RS – ReD Shield

TM/TD – RS_TRANS_MASTER and RS_TARNS_DETAILS tables in ReDi

BED – back end data

CSI – Customer Services Interface

CB – Charge back

CM – Case manager

IP – Info Primer (Sybase IQ ETL)

HCF – Hot Card File

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