

Cross-platform TDM System at Swedish Handelsbanken

2018-12-04

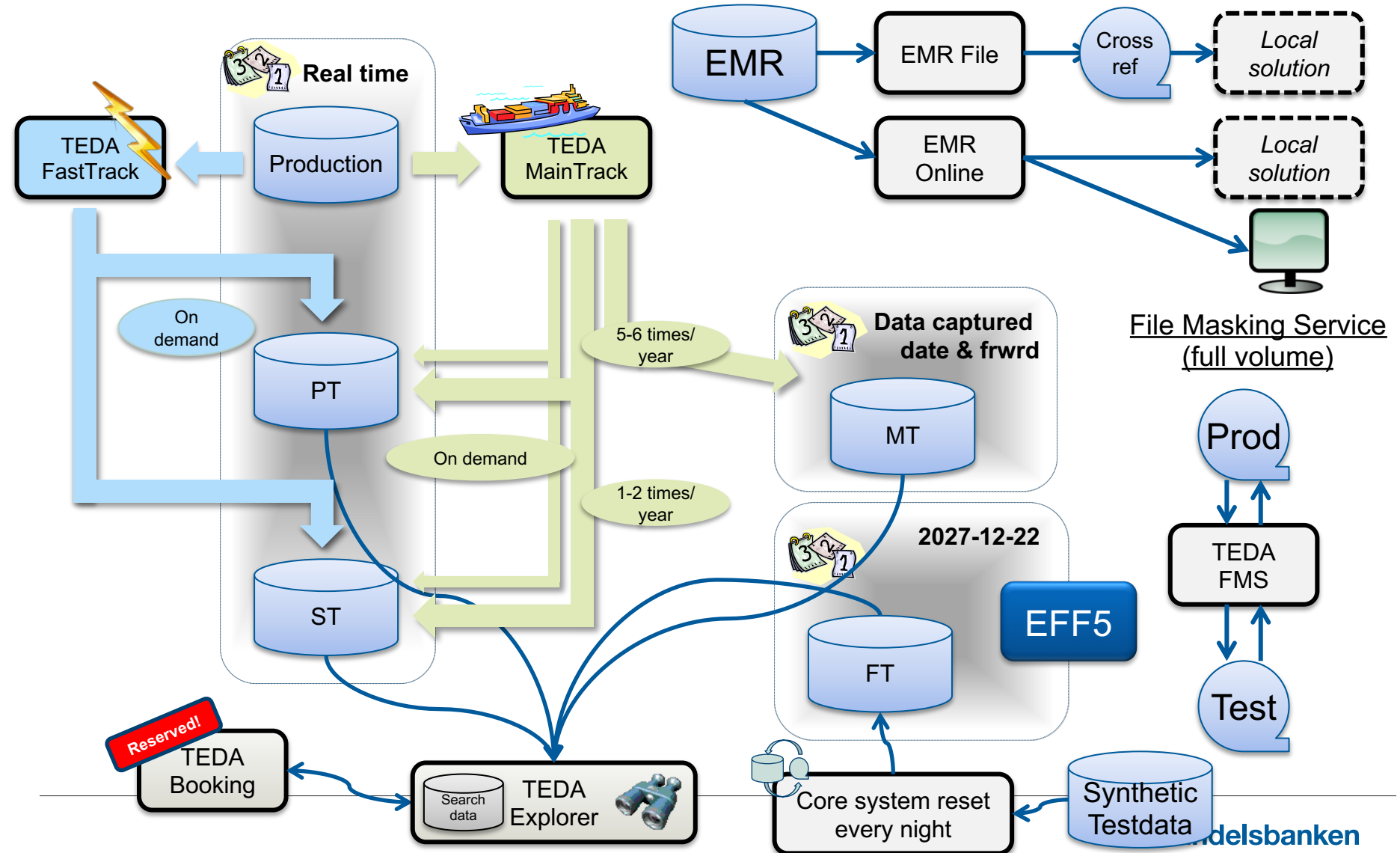
Per Wallqvist, Lauri Pietarinen

Pure Delivery / Handelsbanken

Test data services 2018

DB Masking Service (DB2&DL/1)
(subsetting)

Enterprise Masking Repository supporting
local masking services (full volume & part/single request)

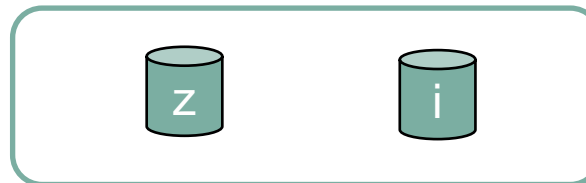
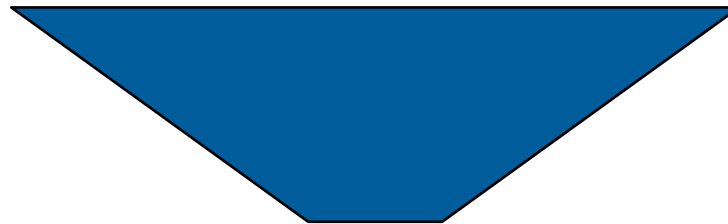
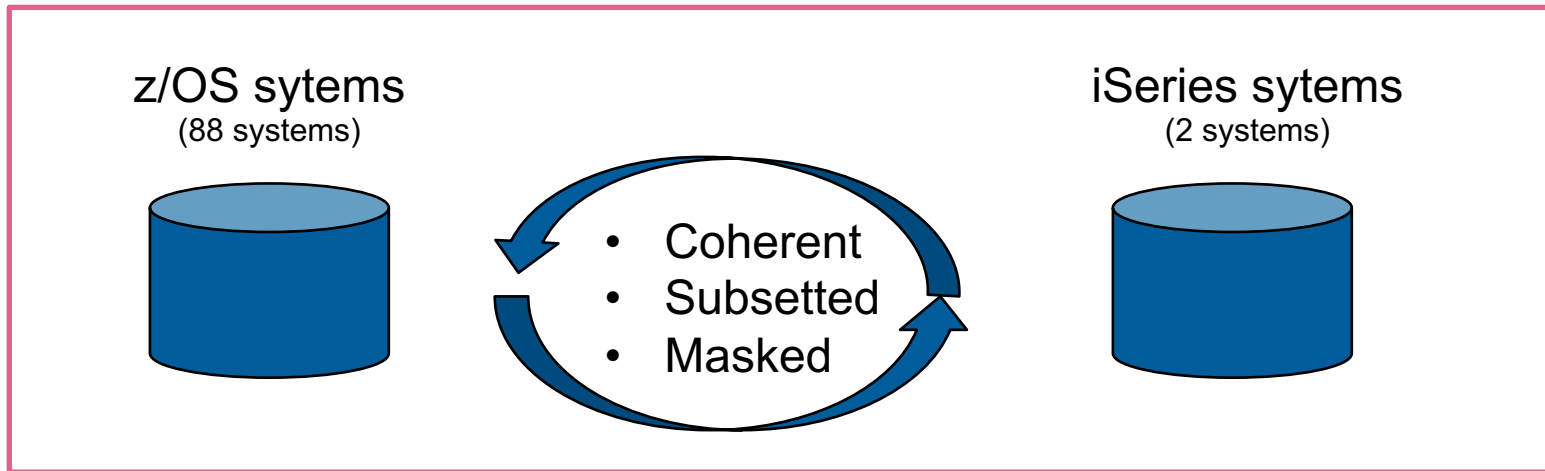


Statistics

- Number of system: **90**
- Tables: **1648**
- Columns: **3845**
- Keytypes: **102**
- Run type: Main Track < **1** day
Fast track < **5-15** min

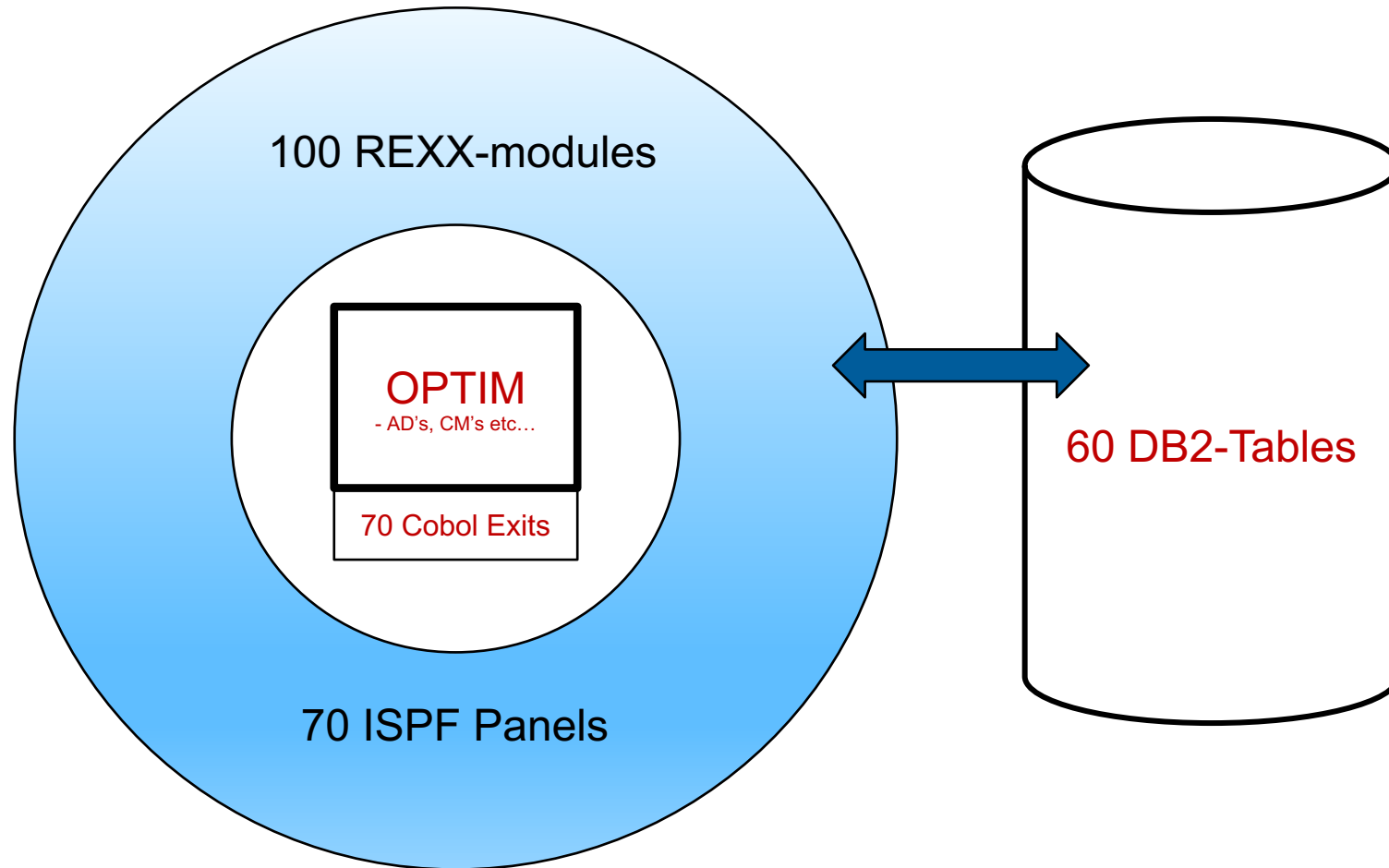
Cross platform TDM system

Production environment



Non production environment

TEDA on z/OS – a "Wrapper" around Optim



TEDA - Core Concepts

Data block :

A set of systems to be included in extract

- There are about 20 different data blocks in regular use
- Data block 'MAXI' consists of 60 systems and 130 separate extracts

Key type:

A type of value used to drive an extract or that has to be unidentified (e.g. account number)

Lookup-tables

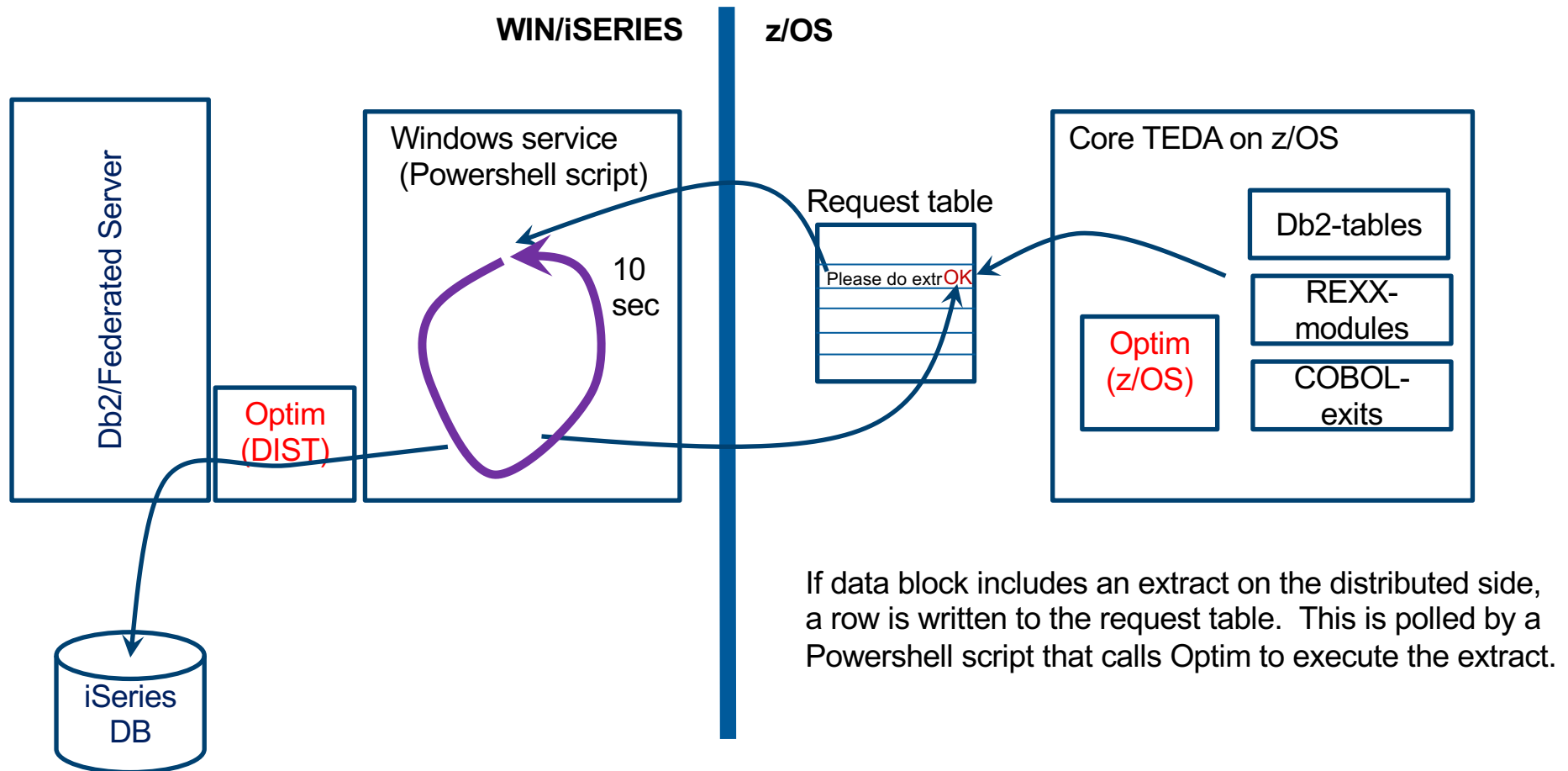
- Created for each key type

Order:

An individual extract/convert job

- Can consist of several hundred individual Optim extracts/converts

Optim LUW and Optim z/OS – Cross Platform



Example TEDA - TDM system

* * * TEDA create new Order
COMMAND ==>

Enter required field

Datablock	==> inla	INLA, POOL, etc...
Från miljö	==> ft	ST, FT, IT, MT, L1, PT
Kommentar	==> TESTAR	INSERT/DIST
Famnyc1.alla?	==> N	(Y/N)
Steg	==> 2	0=Bara framnyckling 1=EXTR 2=EXTR,AVID 3=Bara Extract utan framnyckling 4=Import best. från prod

Customernumber: Kommentar:

---> 13000013	--->
--->	--->

Example TEDA - Orders

```
* * * TEDA Orders * * *                               Row 1 from 200
COMMAND ===>                                           SCROLL ===>
HALF

N Keys          I Info          R Omstart      OP REXX-Trace P Parametrar
S Optim Steps   T Körningens steg IF Insert från OT SQL -Trace L Log-rader

V      Nr  Från Type      Start          User      Block      FR TO      Status
-----
-----
n_ 12768      -  MAINTRK  2018-12-03-14.01  LAPI02    INLA        FT NA      FRAMNYCK
__ 12767      -  MAINTRK  2018-12-02-14.40  LAPI02    DIST        FT NA      SLUT
__ 12766      -  MAINTRK  2018-12-02-14.38  LAPI02    DIST        FT NA      FEL
__ 56396      -  FASTTRK  2018-11-30-16.22  NIAN02    ASEK        PR NA      FTEXP
__ 12765      -  PREJOB   2018-11-30-15.57  ANWE42    N/A         NA NA      SLUT
__ 12764  56395  ISRTFROM  2018-11-30-14.05  JAEK03    KEMI        PR ST      SLUT
__ 12763      -  PREJOB   2018-11-30-14.03  JAEK03    N/A         NA NA      SLUT
__ 12762  56394  ISRTFROM  2018-11-30-13.06  NIAN02    LIV         PR PT      SLUT
```

Example TEDA - Keys

* * * TEDA (12768) 2-keys för 13000013 * * Row 54 from 134
COMMAND ==> SCROLL ==> HALF

CMD: F - Filter för text

Sekv	Type	Value	Unidentified	Source >
132	KONTONR	296128368	960001611	G01A02/KTONR_BOKF_RTA_AVG/40332
134	KONTONR	115147438	960029621	G01A21/FRÅN_KONTONUMMER/9797414
90	KONTONR	224844938	960030131	M18G02/DEPÅNR/199932069
100	KONTONR	973293071	960031111	M18G02/DEPÅNR/518826899
101	KONTONR	973597461	960031391	M18G02/DEPÅNR/519136659
102	KONTONR	973727101	960031421	M18G02/DEPÅNR/519254279
91	KONTONR	401913961	960028021	M18G02/DEPÅNR/519789199
103	KONTONR	974600911	960032371	M18G02/DEPÅNR/519820649
99	KONTONR	962616621	960030921	M18G02/DEPÅNR/899017479
81	KONTONR	973293071	960031111	N17A02/ARIDFRX/1001973293071
2	PERSONNR	196210059959	196210050099	A65A31/IPSECIPTP/QUAL/SW/SE/201
98	PERSONNR	196210059959	196210050099	M18H02/DEPÅNR/199932069
6	PERSONNR	196210059959	196210050099	Q25A11/TECKNAS_AV_PERSORG/49905

Example TEDA - jobs

```

* * * TEDA Optim-steps för 12768. * * * Row 1 from 138
COMMAND ==> SCROLL ==> HALF

A ASUM R Report B Browse C Browse CNTL-fil I Info T Table stat (vid Insert)
----- Statistik -----
V  Nr Typ  AD                      Start    Tab      OK      Err Fl Min Cpu  Stat
-----
-   1 SE   1 TEDA.POOL.A30          14.01.42  35      747      -      0  0.37   0
-   2 AV   1                      14.02.51  35      713     34      0  0.27   0
r   3 SE   2 TEDA.INLA.A01        14.01.45  74     5078     -      0  0.64   0
-   4 AV   2                      14.02.54  74     5077     1      0  0.50   0
-  17 SE  105 TEDA.KULA.A20        14.01.49  10         0      -      0  0.16   0
-  18 AV  105                      14.02.56  10         0      0      0  0.11   0
-  19 SE  106 TEDA.KULA.A04          -         -         -      -      -      - PASS
-  20 AV  106                      -         -         -      -      -      - PASS
-  21 SE  107 TEDA.KULA.A04        14.01.50   6         0      -      0  0.15   0
-  22 AV  107                      14.02.57   6         0      0      0  0.10   0
-  23 SE  115 TEDA.KULA.A24          -         -         -      -      -      - PASS

```

Example TEDA - Report

```
BROWSE      TEDA.FT.UTDATA.B12768.T003.E2.PSDFRPRT   Line 0000000000 Col 001 080
Command ==>                                         Scroll ==> HALF
***** Top of Data *****

                        EXTRACT Process Report

Extract File           : TEDA.FT.UTDATA.B12768.T003.E2.XF
Access Definition      : TEDA.INLA.A01
Created by             : Job Z53XMAIN, using SQLID LAPI02 on DB2 Subsystem DB2T
Time Started           : 2018-12-03 14.01.45
Time Finished          : 2018-12-03 14.01.48

File Compression Impact :
Extract File
  Compression is not available on BASIC or LARGE format datasets.

Total Number of Extract Tables           : 75
Total Number of Extracted Rows           : 5115
Total Number of First Pass Start Table Rows : 37
```

Optim experiences

Extract is ROCK SOLID!

- Scalable (both in amount of tables and amount of rows)
- Reliable
- Flexible

Convert is a bit limited in functionality

- Lookup –function is left wanting, could have easily been extened by Princeton/IBM but had not been for some reason ☹
- On z/OS the COBOL-exit is our "get out of jail" –card
- On dist there is LUA which is limited (no DB access) and only can be used with the Optim Designer interface (which we do not use)
- We are looking into creating a C-language exit that would work as a wrapper for a DB2 SQL/PL – procedure call ("get out of jail" for the distributed version!)

We also find that z/OS Optim is much stabler than the distributed version

Next step

- Build general exit wrapper that support other languages
- Generate all Optim definition (AD, CM, RL etc)
- Manage Optim definitions in GIT
- Oracle, SQL Server

Wrap up

- Coherent data is very hard ...
....but is very powerfull when testing end-to-en
- Don't use Optim as is, Automate
- Your client needs to think of the long-term
- DB2 Federation server works very well
- Functionality differs between z/OS and WIN version of Optim