

A decorative horizontal bar consisting of a solid dark blue top section, a middle section with a fine, light blue horizontal line pattern, and a solid light grey bottom section.

Adabas – client-side monitoring & accounting

Mhairi Benest JPMorgan UK

Products at JPMorganChase

- **Adabas v7.4.4**
- **System Coordinator v7.4.2**
- **SAF security v7.4.2**
- **Fastpath v7.4.2**
- **Vista v7.4.2**
- **Parallel Services v7.4.2**
- **Natural v4.2.3**
- **Entire Network v5.9.1**
- **Predict v4.5.1**
- **Review 4.3.2**

Production volumes at JPMorganChase

- **15.2 billion production commands per week**
- **12.4 billion commands through Adabas**
- **2.8 billion optimized by Fastpath**
- **32 production databases across 3 lpars**
- **250,000 batch jobs using Adabas each week**
- **25 million CICS transactions each week**
- **167 non-production databases across 3 lpars**

How BOX fits into our environment

DBOX plugs into System Coordinator

- **in clients**
- **in the daemon**

... in the same way as Fastpath, Vista, Transaction Manager do

Software AG have implemented DBOX into the product layer as product “BOX”

- **so although it is not an official product...**
- **...it is no longer built as a customization**

DBOX fundamentals (user profiling)

We have over 1200 “environments” (these relate to Vista profiles, i.e. translation rules) defined across 6 lpars with Vista in production, QA and development.

DBOX uses a vsam repository to acquire user profile information. This profile identifies the set of Vista translation rules to be used (called a “profile” in Vista 7.4).

A user is able to change from one set of Vista translation rules to another at runtime dynamically according to business function. DBOX interfaces with Vista to alter the current set of translation rules as the user moves from function to function. In CICS this may be influenced by transaction id and/or various menu choices within the business systems layer.

JPMC's user profile repository maintenance

```
----- USERID REPOSITORY MAINTENANCE -----
OPTION ==>                                     SCROLL= PAGE

REPOSITORY   = USERID      DATASET = SYSDSNS.REPOS.PREPUSER
CURRENT RECORD = HDB0025

Standard scrolling is available.
Enter "END" to change this record else enter "CANCEL"

-----
006 "T" LEVEL SWITCH ENVIRONMENT 3 : SAT
036 "T" LEVEL SWITCH ENVIRONMENT 8 :   SAT
002 "S" CICS SWITCH FLAG (A/P)    :
007 "S" LEVEL SWITCH ENVIRONMENT 3 : ECS
037 "S" LEVEL SWITCH ENVIRONMENT 8 :   SBS
003 "U" CICS SWITCH FLAG (A/P)    :
008 "U" LEVEL SWITCH ENVIRONMENT 3 : SAU
038 "U" LEVEL SWITCH ENVIRONMENT 8 :   SAU
004 "P" CICS SWITCH FLAG (A/P)    :
009 "P" LEVEL SWITCH ENVIRONMENT 3 : SAP
039 "P" LEVEL SWITCH ENVIRONMENT 8 :
```

“Level” (etc) separates production, test, etc

Vista translation rule identification (Vista Profile identity)

DBOX reporting and accounting

During runtime DBOX accumulates:

- total commands
- file usage list

For:

- CICS transaction id
- Batch job step
- TSO session

And chargeback recording in:

- CMF records for CICS
- SMF records for Batch
- SMF records for TSO

And:

- COR daemon for Batch

DBOX accounting: COR daemon audit report for batch

- **Command statistics of batch jobs are written at jobstep end (orabend)**
- **To DD OUTPUT1 in the coordinator daemon throughout the week.**
- **In parallel to DD OUTPUT2 dataset (a GDG for historical purposes)**
- **And, to SMF for chargeback purposes (as already described).**
- **We use the number of commands as part of the JPMC chargeback process**

DBOX: Audit report entry (in the COR daemon)

```
Menu Utilities Compilers Help
-----
BROWSE  SYSDSNA.ADACOORA.LOG.G0004V00      Line 00060700 Col 001 080
Command ==>                               Scroll ==> CSR
*****
*
* JOBID          STEPNUM  JOBSTEP   PROCSTEP  PGM NAME  TIME STAMP
* PORZ089 (JOB44231)  2      IU8900   IU8900   NAT23BA   2007.127 - 09:45:04
* CMD OPT = 000000000
* BLACKBOX ACCESS - LOGONID = PBATRNY   TASKID = PORZ089   ENVIRONMENT = BLP
*                  - ELAPSED = 000006.84 SECS  COMMANDS = 00120391
*
*          LOGICAL      PHYSICAL      ACCESS ALLOWED
*          DBID  FILE      DBID  FILE      READ  UPDATE  DELETE
*
*          00080 00247    00080 00247    YES
*          00080 00246    00080 00246    YES  YES
*          00080 00249    00080 00249    YES
*          00040 00022    00040 00022    YES
*          00041 00185    00042 00103    YES
*          00041 00138    00042 00115    YES
*
*****
*****
```

Original versus actual files from Vista translation runtime

Total commands

DBOX monitoring basics

LPAR-wide monitoring of Adabas client-side activity for:

- **userid**
- **file usage list (original and actual)**
- **Vista rules identity (profile),**
- **access-level (read /update/delete)**

For:

- **CICS,**
- **Batch,**
- **TSO**

Basic real-time monitoring display

```
DBOX v742 SYSTEM ----- USER DISPLAY ----- Row 1 of 10
COMMAND===>

Logonid - PBATRX           Switching Level - P
Taskname - PNPBN223       Entry level - .
Env.     - BLP

      Logical          Physical          Access Allowed
      Dbid  File       Dbid  File       Read  Update  Delete
00080  00247  00080  00247  YES
00080  00246  00080  00246  YES  YES
00080  00249  00080  00249  YES
00040  00022  00040  00022  YES
00040  00039  00040  00039  YES
00040  00034  00040  00034  YES
00047  00040  00047  00105  YES
00047  00042  00047  00107  YES
00040  00183  00040  00183  YES
00047  00106  00047  00106  YES
***** Bottom of data *****
```

**Original versus actual files
from Vista translation runtime**

Access level

DBOX real-time monitoring: advanced

Non-invasive CQ real-time activity monitoring with alerts:

- All in-flight command activity to all database targets
- Alerts for excessive command duration via auto-operations
... issues DHQA then DUQE for additional problem determination information at the time of alert

“Non-invasive” monitoring:

- Client-side exposes in-flight activity details to DBOX inside the COR daemon
- Additional Alerter started-task provides alert services
- This approach avoids interference inside Adabas nucleus so monitor/alert services are not consumed by Adabas problems
- NOTE: Review, APAS, etc live inside Adabas so suffer at the same time as Adabas

DBOX monitor: Normal real-time activity

```
DBOX v742 SYSTEM----- ACTIVE TASK TABLE DISPLAY ----- Row 1 of 8
COMMAND===> _

Table of ACTIVE Blackbox tasks waiting on ADABAS response
ENTER - refresh this display      END - return to master menu

                               (secs)
Logonid  Jobname  Tran  Type  Dbid  File  Cmd  Prog  Line  Wait time
PBALGCS  PRRH255      BATCH 00044 00106 L3   SERN980 2520 000000.47
AGSC063  P5CICT11    KMGK  CICS  00043 00000 RC   RT0458 2703 000000.00
AGSN168  P5CICT11    KLA3  CICS  00044 00030 L3   SEEN301 2408 000000.00
AGSS847  P5CICT11    KMUM  CICS  00081 00016 L3   GT3120N2 1090 000000.00
AGSU172  P5CICT11    KLDI  CICS  00044 00030 L3   KA1500 4765 000000.01
PBACICZ  PGCICT11    GTF3  CICS  00081 00016 A1   GT0260N0 3440 000000.09
PBACICZ  PGCICT11    GIS3  CICS  00044 00000 RC   GT4420N3 2975 000000.00
PBACICZ  PGCICT11    KN13  CICS  00044 00144 A1   GT0280N7 3525 000000.01
***** Bottom of data *****
```

LPAR-wide view of all in-flight Adabas commands....even through Net-Work.

With, details of command type, program etc.

DBOX monitoring: Alert in progress situation

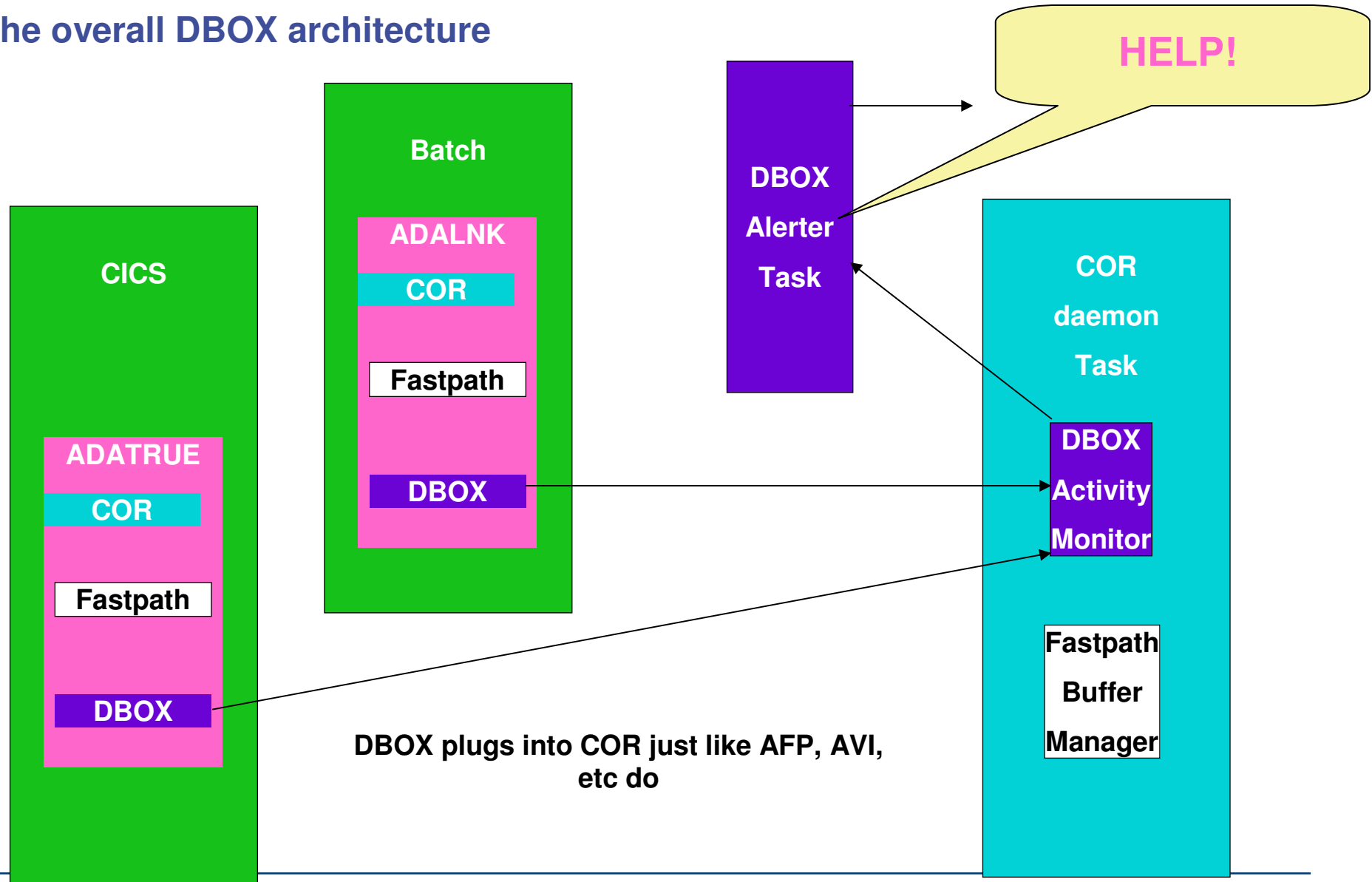
TIME	LOGONID	JOBNAME	TRAN	CMD	DBID	FILE	PROGRAM	LINE	WAITTIME
12:42:22	PBACICZ	P9CICT11	F05A	L4	00043	00008	FT0007	7596	00030.70
12:42:22	APD5333	P9CICT11	JLCS	L4	00043	00209	FT4662N6	6385	00056.81
12:42:22	PBACICZ	PACICT11	F27B	L4	00043	00021	ADABAS	0000	00033.95
12:42:22	APD5175	P9CICT11	JLGB	S4	00043	00027	FTGN300	3110	00053.72
12:42:22	APD1297	P9CICT11	JLCF	S4	00043	00027	FTGN371	5240	00063.01
12:42:22	APD2350	P9CICT11	JLCB	L4	00043	00027	FTGN351	6520	00045.63
12:42:22	AGSA738	P9CICT11	JLPI	S4	00043	00071	FT3247	1120	00038.92
12:42:22	APD2334	P9CICT11	JLPE	L4	00043	00027	FTUN861	40	00020.82
12:42:22	APD2330	P9CICT11	JLPE	L4	00043	00027	FTUN861	40	00040.58

**WAIT threshold excesses cause monitor detail to OUTPUT2 GDG
And DHQA,DUQE is issued to relevant database**

DBOX summary

- **Identifies the user profile from the repository**
- **Accounts for all Adabas activity from the client-side viewpoint**
- **Monitors all current activity from outside of Adabas for resilience**
- **Alerts for all threshold excesses providing automated DBA information for problem determination (at the time of alert)**

The overall DBOX architecture



Questions?