



IBM Software Group | Information Management

# Analysing CICS Transactions in a Mixed Environment

**Satish Tanna - IBM**  
**Jim Martin - Fundi Software**  
Thursday March 7, 2013



# Agenda

**Introduction**

**CICS PA Overview**

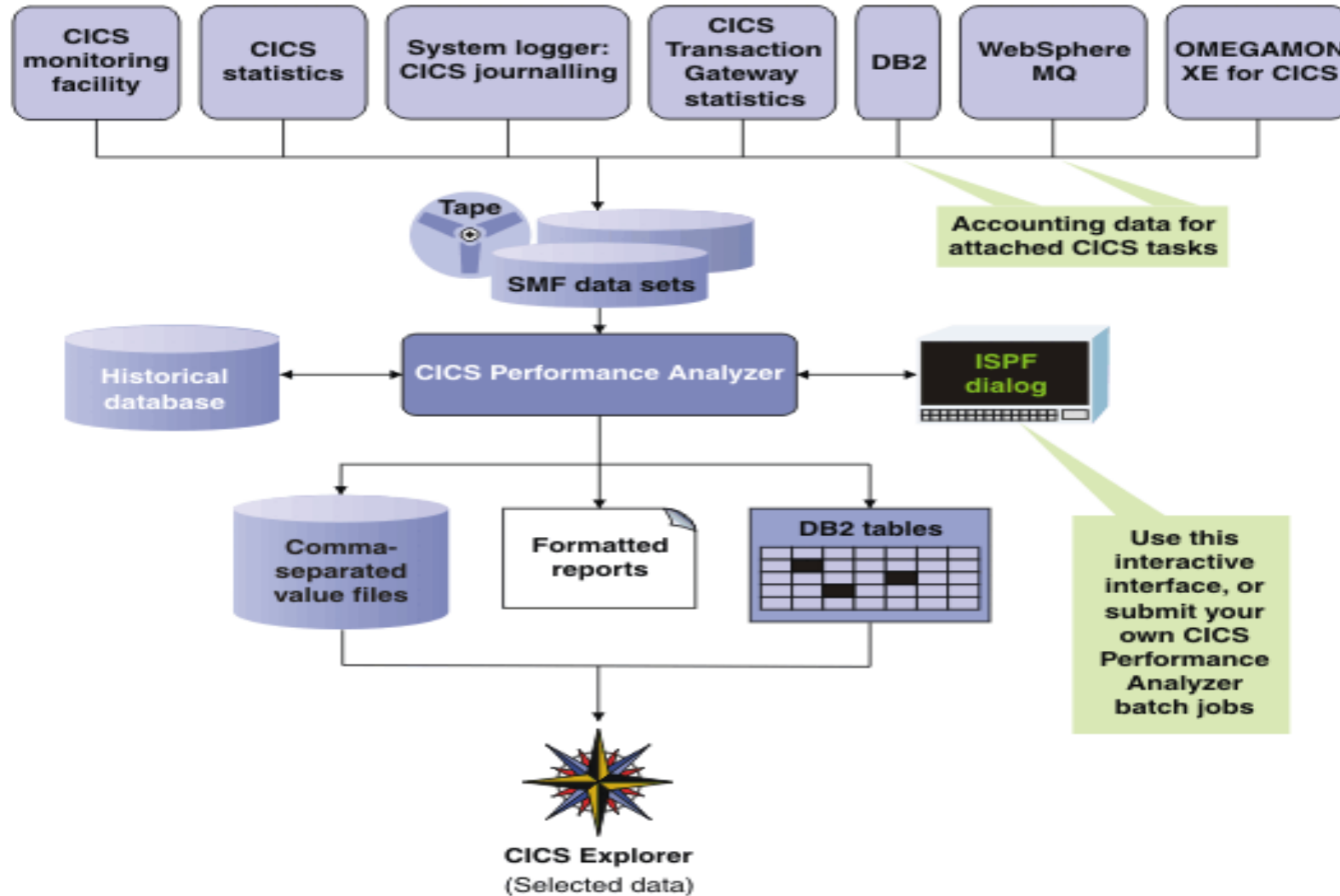
**Overview of the ISPF dialog**

**Scenario: CICS MRO problem**

**Summary**

# ■ CICS Performance Analyzer

# CICS PA Architecture



# CICS PA plug-in to the CICS Explorer

The screenshot displays the IBM CICS Explorer interface for a CICS PA environment. The main window shows a transaction summary table with columns for Start Date, Start time, Applid, Transa..., Task te..., Respon..., User Di..., User Di..., User C..., User C..., Total c..., Total ti..., Total e..., Total e..., Offloa..., Not eli..., Offloa..., Suspen..., Suspen..., Dispat..., and Dispat... The table lists transactions for Applid IYCYZC2G, including /FOR, PS2, DE1, and DE25.

Below the table, a detailed view for Transaction ID=DE1 is shown, including a bar chart for 'Transaction response time (average)'. The chart indicates an average response time of 0.665449 seconds, broken down into: Average Suspend time (0.661412 seconds, 99% of response time), Average Dispatch wait time (0.012758 seconds, 2% of suspend time, 2% of response time), Average User Dispatch time (0.004037 seconds, 1% of response time), and Average User CPU time (0.001538 seconds, 38% of dispatch time, 0% of response time).

Below the chart, 'Performance averages at a glance' are shown with several gauges for CICS Response time, Suspend time, CPU time, CICS TCB usage, Task Storage, and File Request activity.

The bottom section of the interface shows an 'Alerts' table with columns for Alert description, Start..., Start ti..., Applid, MVS ID, Resour..., Resour..., Actual, Thresho..., Type, Version..., Interv..., and Interv... The table lists several alerts, including 'Transaction dumps requested', 'DB2 pool threads (% of limit)', 'DB2 pool thread waits', 'Maximum tasks reached', 'Transaction dumpcode taken', 'LSRPOOL string waits', and 'Enqueues waited in ENQ pool - loca'.



# Suspend time details in the CICS PA plug-in

Start Date=2010-12-10, Start time=12.25.00, Applid=IYDZEJ02, Transaction ID=DE21

Performance averages at a glance

Suspend time detail (averages)  
487 transaction(s): 0.023934 average suspend time per transaction.

Suspend time component	Time (avg)	Count (avg)	%Suspend ...	%Relative
Suspend time	0.023934	5	-	-
I/O wait time	0.007912		33%	33%
Transient data I/O wait time	0.001666	1	7%	21%
Journal I/O wait time	0.003085	0	13%	39%
File wait time	0.003162	2	13%	40%
Other wait time	0.008576		36%	36%
First dispatch delay time	0.008533	1	36%	100%
Local enqueue delay time	0.000043	0	-	-
Uncaptured wait time	0.007446		31%	31%

Restrict tree nodes to those applicable to visible chart.  
 Exclude zero or indeterminate values in tree

# CICS PA: Cross-System Work Report – Default

V5R1M0 CICS Performance Analyzer  
Cross-System Work

CROS0001 Printed at 12:09:28 1/24/2012 Data from 11:10:51 2/04/2011 to 08:10:28 2/16/2011 Page 3

Tran	Userid	SC	TranType	Term	LUName	Request Type	Program	Fcty T/Name	Conn Name	NETName	UOW Seq	APPLID	R Task T	Stop Time	Response Time	A B
ABRW	BRENNER	TP	U	S23D	IGCS23D	AP:	DFHÚABRW	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	61 T	11:13:20.275	.0080	
CSMI	CBAKER	TO	UM	R11	IYK2Z1V1	FS:F---	DFHMIRS	T/R11	CJB1	GBIBMIYA.IGCS23D	1	IYK2Z1V3	57 T	11:13:20.274	.0044	
ABRW	BRENNER	TP	U	S23D	IGCS23D	AP:	DFHÚABRW	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	62 T	11:13:21.332	.0064	
CSMI	CBAKER	TO	UM	R11	IYK2Z1V1	FS:F---	DFHMIRS	T/R11	CJB1	GBIBMIYA.IGCS23D	1	IYK2Z1V3	58 T	11:13:21.331	.0039	
CEDA	BRENNER	TO	U	S23D	IGCS23D	AP:	DFHEDAP	T/S23D		GBIBMIYA.IGCS23D	3	IYK2Z1V1	72 T	11:16:28.284	1.1025	
CEDA	BRENNER	TO	U	S23D	IGCS23D	AP:	DFHEDAP	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	72 C	11:16:27.181	3.0046	
CEDA	BRENNER	TO	U	S23D	IGCS23D	AP:	DFHEDAP	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	72 C	11:16:24.177	2.2127	
CEDA	BRENNER	TO	U	S23D	IGCS23D	AP:	DFHEDAP	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	72 C	11:16:21.964	46.5125	
CEDA	BRENNER	TO	U	S23D	IGCS23D	AP:	DFHEDAP	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	72 C	11:15:35.451	.6794	
CEMT	BRENNER	TO	U	S23D	IGCS23D	AP:	DFHEMTP	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	140 T	11:21:24.062	51.3442	
CEMT	BRENNER	TO	U	S23D	IGCS23D	AP:	DFHEMTP	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	140 C	11:20:32.718	8.3481	
CEMT	BRENNER	TO	U	S23D	IGCS23D	AP:	DFHEMTP	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	140 C	11:20:24.370	.0042	
CEMT	BRENNER	TO	U	S23D	IGCS23D	AP:	DFHEMTP	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	174 T	11:21:28.662	1.1930	
CEMT	BRENNER	TO	U	S23D	IGCS23D	AP:	DFHEMTP	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	174 C	11:21:27.469	.0041	
RMST	BRENNER	TO	U	S23D	IGCS23D	TR:CJB3		T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	178 T	11:22:38.447	48.9210	
STAT	CBAKER	TO	U	R11	IYK2Z1V1	AP:	DFH0STAT	S/S23D	CJB1	GBIBMIYA.IGCS23D	1	IYK2Z1V3	349 T	11:22:38.433	66.7720	
RMST	BRENNER	TO	U	S23D	IGCS23D	TR:CJB3		T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	178 C	11:21:49.526	10.0524	
RMST	BRENNER	TO	U	S23D	IGCS23D	TR:CJB3		T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	178 C	11:21:39.473	7.8027	
RMST	BRENNER	TO	U	S23D	IGCS23D	TR:CJB3		T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	178 C	11:21:31.671	.0110	
STAT	BRENNER	TO	U	S23D	IGCS23D	AP:	DFH0STAT	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	195 T	11:22:52.663	2.0203	
STAT	BRENNER	TO	U	S23D	IGCS23D	AP:	DFH0STAT	T/S23D		GBIBMIYA.IGCS23D	1	IYK2Z1V1	195 C	11:22:50.642	8.9745	

# CICS PA: Transaction Tracking list report

--  
V5R1M0

CICS Performance Analyzer  
Transaction Tracking List

TTLS0001 Printed at 12:03:45 3/15/2011 Data from 17:07:03 3/07/2011 Page 9

OTran	OUserid	OAPPLID	OTaskNo	OStart Time	OOrigin	OFcty	OTCPIPSr	OCLi6Adr	OCLIPORT
PS3	JOHNB	IYCUZC03	418	16:25:34.939	TERM	2318			0

Tran	Userid	APPLID	TaskNo	Start Time	RTyp	Origin	Response Time	User CPU Time	PHTran	PHTaskNo	PHAPPLID	PHStart Time	PHCount	PHLatncy Time
PS3	JOHNB	IYCUZC03	418	16:25:34.939	T	TERM	.0048	.0001		0			0	.0000
PS3	JOHNB	IYCUZC01	97486	16:25:34.941	T	MRO	.0029	.0007	PS3	418	IYCUZC03	16:25:34.939	1	.0019
CSMI	JOHNB	IYCUZC07	2966	16:25:34.941	T	MRO	.0027	.0004	PS3	97486	IYCUZC01	16:25:34.941	2	.0001

OTran	OUserid	OAPPLID	OTaskNo	OStart Time	OOrigin	OFcty	OTCPIPSr	OCLi6Adr	OCLIPORT
PX3	JOHNB	IYCUZC03	419	16:25:34.939	TERM	2930			0

Tran	Userid	APPLID	TaskNo	Start Time	RTyp	Origin	Response Time	User CPU Time	PHTran	PHTaskNo	PHAPPLID	PHStart Time	PHCount	PHLatncy Time
PX3	JOHNB	IYCUZC03	419	16:25:34.939	T	TERM	.0052	.0001		0			0	.0000
PX3	JOHNB	IYCUZC01	97487	16:25:34.941	T	MRO	.0032	.0008	PX3	419	IYCUZC03	16:25:34.939	1	.0019
CSMI	JOHNB	IYCUZC07	2967	16:25:34.941	T	MRO	.0028	.0004	PX3	97487	IYCUZC01	16:25:34.941	2	.0003



# CICS PA: Transaction Tracking summary report

V5R1M0

CICS Performance Analyzer  
Performance Transaction Tracking Summary

TTSU0001 Printed at 12:03:45 3/15/2011

Data from 17:07:03 3/07/2011

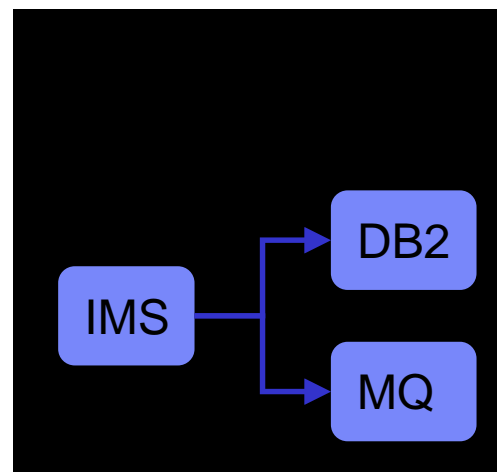
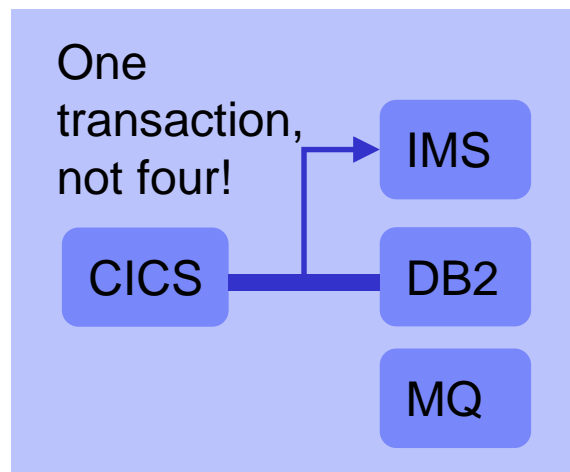
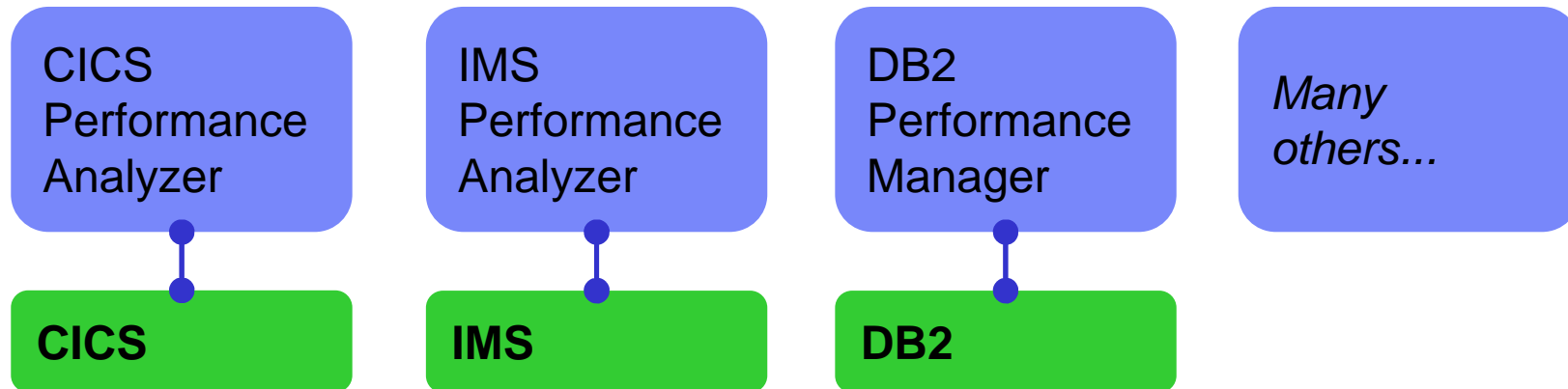
Page 1

PHAPPLID	PHTran	PHCount	APPLID	Tran	Hop%	#Tasks	Avg Response Time	Max Response Time	Avg Dispatch Time	Avg User Time	Avg CPU Time	Avg Suspend Time	Max Suspend Time	Avg DispWait Time	Avg FC Wait Time	Avg FCAMRq Count	Avg IR Wait Time	Avg SC24UHMW Count	Avg SC31UHMM Count
		0	IYCUZC03	/FOR		17175	.0016	.0529	.0003	.0001	.0013	.0526	.0002	.0000	.0000	0	.0010	0	0
IYCUZC03	/FOR	1	IYCUZC01	/FOR	100	17175	.0004	.0164	.0001	.0001	.0003	.0164	.0000	.0000	.0000	0	.0000	0	63280
		0	IYCUZC03	CSPG		1449	.0007	.0142	.0003	.0001	.0005	.0139	.0002	.0000	.0000	0	.0000	0	0
		0	IYCUZC03	DE1		958	.0136	.0525	.0002	.0001	.0134	.0523	.0002	.0000	.0000	0	.0130	0	0
IYCUZC03	DE1	1	IYCUZC01	DE1	100	958	.0123	.0517	.0004	.0003	.0120	.0513	.0002	.0000	.0000	0	.0110	0	167440
IYCUZC01	DE1	2	IYCUZC07	CSMI	100	958	.0114	.0504	.0002	.0002	.0113	.0502	.0004	.0008	.0000	3	.0010	0	23
IYCUZC03	DE1	1	IYCUZC01	DE20	9	92	.0088	.0284	.0005	.0005	.0083	.0278	.0001	.0000	.0000	0	.0070	0	409248
IYCUZC01	DE20	2	IYCUZC07	CSMI	9	92	.0083	.0264	.0002	.0002	.0081	.0262	.0002	.0010	.0000	13	.0018	0	0
IYCUZC03	DE1	1	IYCUZC01	DE21	10	104	.0090	.0288	.0005	.0005	.0085	.0282	.0001	.0000	.0000	0	.0073	0	409248
IYCUZC01	DE21	2	IYCUZC07	CSMI	10	104	.0085	.0286	.0003	.0002	.0083	.0282	.0003	.0011	.0000	13	.0018	0	1
IYCUZC03	DE1	1	IYCUZC01	DE22	9	95	.0077	.0341	.0005	.0005	.0072	.0335	.0001	.0000	.0000	0	.0059	0	409248
IYCUZC01	DE22	2	IYCUZC07	CSMI	9	95	.0071	.0329	.0002	.0002	.0069	.0325	.0002	.0009	.0000	13	.0017	0	1
IYCUZC03	DE1	1	IYCUZC01	DE23	10	105	.0092	.0464	.0005	.0005	.0087	.0459	.0002	.0000	.0000	0	.0070	0	409248
IYCUZC01	DE23	2	IYCUZC07	CSMI	10	105	.0086	.0462	.0003	.0002	.0084	.0459	.0002	.0009	.0000	13	.0021	0	0
IYCUZC03	DE1	1	IYCUZC01	DE24	9	89	.0077	.0282	.0005	.0005	.0072	.0276	.0001	.0000	.0000	0	.0059	0	409248
IYCUZC01	DE24	2	IYCUZC07	CSMI	9	89	.0073	.0279	.0002	.0002	.0070	.0276	.0002	.0008	.0000	13	.0019	0	0
IYCUZC03	DE1	1	IYCUZC01	DE25	9	94	.0098	.0269	.0005	.0005	.0093	.0263	.0002	.0000	.0000	0	.0080	0	409248
IYCUZC01	DE25	2	IYCUZC07	CSMI	9	94	.0093	.0266	.0003	.0002	.0090	.0263	.0003	.0012	.0000	13	.0018	0	1
IYCUZC03	DE1	1	IYCUZC01	DE26	8	83	.0081	.0307	.0005	.0005	.0076	.0302	.0001	.0000	.0000	0	.0065	0	409248
IYCUZC01	DE26	2	IYCUZC07	CSMI	8	83	.0077	.0302	.0002	.0002	.0075	.0299	.0002	.0010	.0000	13	.0017	0	0
IYCUZC03	DE1	1	IYCUZC01	DE27	10	103	.0084	.0293	.0005	.0005	.0079	.0288	.0002	.0000	.0000	0	.0066	0	409248
IYCUZC01	DE27	2	IYCUZC07	CSMI	10	103	.0079	.0290	.0002	.0002	.0076	.0288	.0002	.0009	.0000	13	.0020	0	0
IYCUZC03	DE1	1	IYCUZC01	DE28	10	101	.0082	.0333	.0005	.0005	.0077	.0326	.0001	.0000	.0000	0	.0066	0	409248
IYCUZC01	DE28	2	IYCUZC07	CSMI	10	101	.0077	.0324	.0002	.0002	.0075	.0319	.0002	.0008	.0000	13	.0017	0	1
IYCUZC03	DE1	1	IYCUZC01	DE29	9	93	.0080	.0296	.0005	.0005	.0075	.0291	.0001	.0000	.0000	0	.0064	0	409248
IYCUZC01	DE29	2	IYCUZC07	CSMI	9	93	.0076	.0292	.0002	.0002	.0073	.0289	.0002	.0009	.0000	13	.0017	0	0
		0	IYCUZC03	HR2		357	.0071	.0234	.0002	.0001	.0068	.0229	.0002	.0000	.0000	0	.0066	0	0
IYCUZC03	HR2	1	IYCUZC01	HR2	100	357	.0061	.0224	.0003	.0003	.0057	.0221	.0001	.0000	.0000	0	.0056	0	132896
IYCUZC01	HR2	2	IYCUZC07	CSMI	100	357	.0054	.0211	.0001	.0001	.0052	.0210	.0002	.0005	.0000	4	.0003	0	4

# ■ Transaction Analysis Workbench

## Traditional SME Tols and Cyclic Analysis

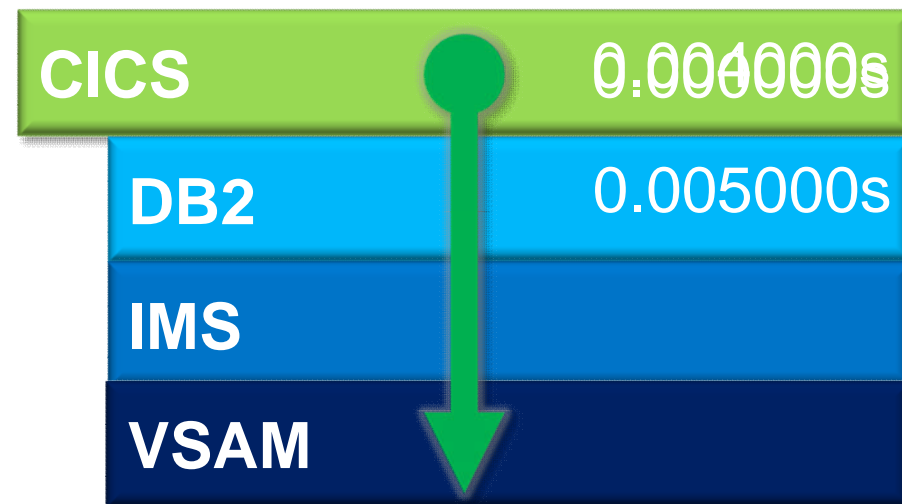
There are many tools to help analyze *individual* transaction environments on System z:



Each tool is well-suited to its environment, but you often need a subject matter expert to use each tool

## The transactions lifecycle is what's important

- Automatically locates the log files for the problem time range (for some subsystems)
- Combines logs from many subsystems to provide a single, consolidated timeline of transaction activity
- Generates Exception reports and files of likely candidates for evaluation
- Shows events that are related to the same transaction lifecycle
- Why investigate parts of the transaction that are performing well





## Expert collaboration must be improved

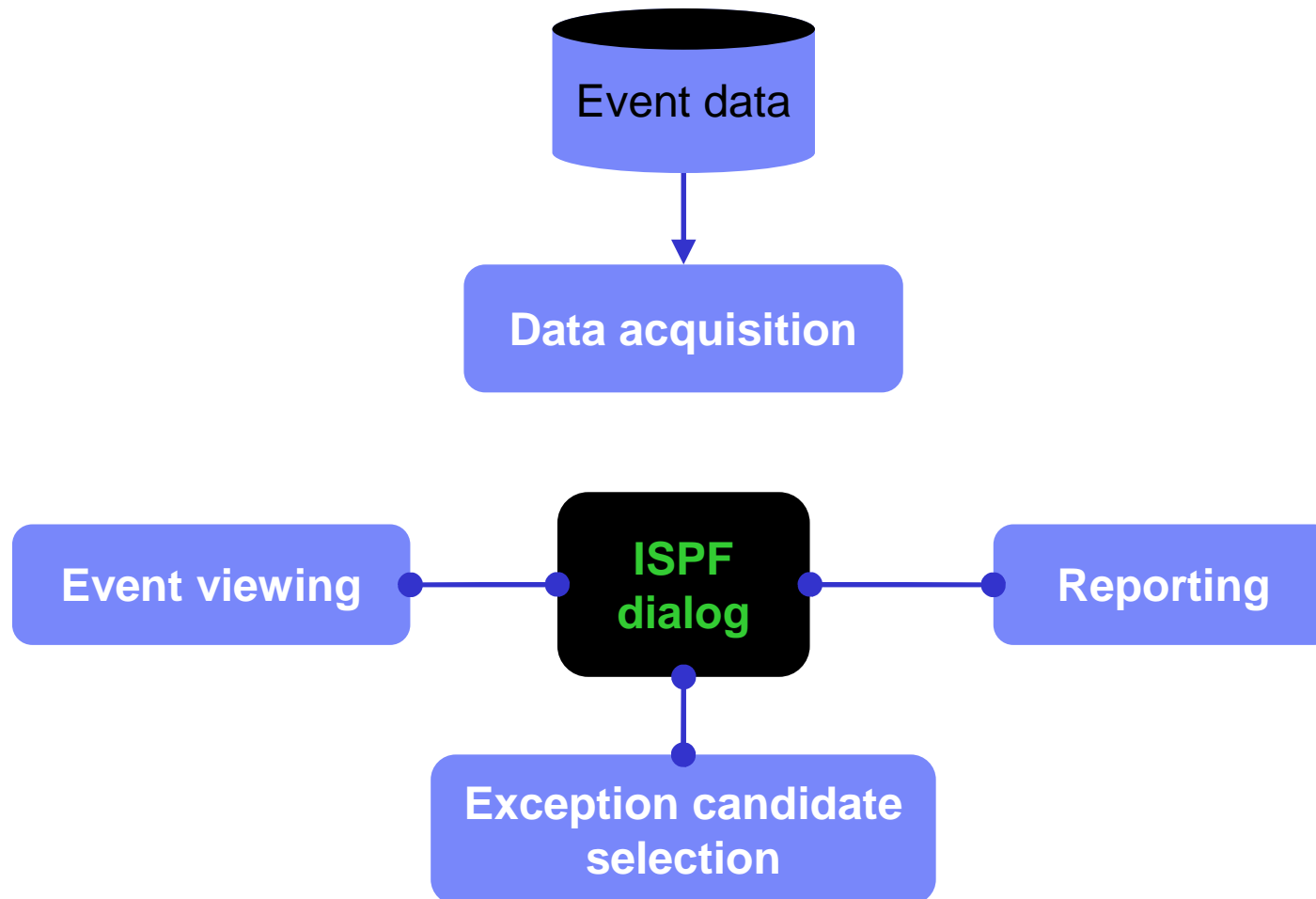
- Today, the process of problem diagnosis is often “**silo-oriented**”.  
For example:

A green rounded rectangular button with the text "CICS" in white.A light blue rounded rectangular button with the text "DB2" in white.A medium blue rounded rectangular button with the text "IMS" in white.A dark blue rounded rectangular button with the text "WebSphere" in white.

- Typically, each silo has its own set of subject-matter experts (SME).
- Analysis between silos involves experts starting all over again. This slows problem resolution.
  - **The experts often repeat steps already taken by other experts**
- Workbench offers a framework that spans the silos; effectively, *dissolving* barriers between silos.
  - **Can automate simple tasks like data acquisition**
- Experts from different areas can collaborate on the same problem without collecting log data all over again.
  - **Eliminating start-up time and work for collaborating experts can reduce reluctance of other SME's to help**



# Automating The Most Common of Tasks



## Scenario: CICS MRO problem

- On the following slides, we present an example scenario: a user has reported a long response time in a CICS transaction
  
- The analysis is divided into two parts:
  1. The **first responder** registers the problem in the Workbench session manager, collects the log files, and then runs some preliminary batch reports to attempt to identify the cause of the problem
  2. The **specialist** performs a “deep dive” on the problem: reviewing the reports, and using interactive analysis to identify the specific log records for the cause of the problem

# Register the problem details

```

File Help
-----
                                Problem Details                                Row 1 to 7 of 7
Command ==> _____ Scroll ==> PAGE

Key . . . . . : 00000030
Summary . . . . : CICS MRO w/ VSAM, DB2 and IMS Description...
Severity . . . . : 2
Reference . . . . : TICKET-9102 — When problem occurred —
Reported by . . : John _____ YYYY-MM-DD HH.MM.SS.TH
Assigned to . . : Jim _____ From 2012-02-24 20.40.00.00
Status . . . . . : OPEN _____ To 2012-02-24 21.00.00.00 Zone . . LOCAL

Systems where problem occurred (maximum of 32):

/ System + Type +
— FTS1 IMAGE
— CICSPLEX CICS
— CICSTOR CICS
— CICSAOR CICS
— CICSDOR CICS
— IMSP IMS
— DB2P DB2
***** Bottom of data *****
    
```

# 1. Locate the files required for problem analysis

```

Locate and Manage Log Files                               Row 1 to 5 of 5
Command ==> _____ Scroll ==> CSR

Select an option to add log files to the session then press Enter
2 1. Manually specify the log files required for analysis
    2. Run automated file selection to locate the required log files

Automated File Selection:                                — Locate Files Interval —
System . . . _____ +                               YYYY-MM-DD  HH.MM.SS.TH
Type . . . . _____ +                               From 2012-02-24 20.40.00.00
To 2012-02-24 21.00.00.00

→ Log Files:

/      Data Set Name                                     — System — File
X_____ FTS1.WEEKLY.SMF.G0456V00                       FTS1  IMAGE  SMF
_____ JIM.CICS.DBCTL.INDEX                             IMSP  IMS     IDX
_____ IMSP.SLDS.D12055.T2049325.V16                   IMSP  IMS     LOG
_____ DB2P.ARCLOG1.A0000083                             DB2P  DB2     LOG
***** Bottom of data *****
    
```

# Reporting using IMS PA and CICS PA

## Reporting - CICS Transaction Analysis

```

Type of analysis:
/ Individual transaction detail
/ Transaction statistical summary

Focus of transaction analysis:
/ Response and CPU usage
/ VSAM files
/ VSAM files

Report Interval
YYYY-MM-DD HH.MM.SS.TH
From 2012-02-24 20:45
To 2012-02-24 21:00

SMF File . . 'JIM.CICS.CMF.MRO.EXTRACT' +
    
```

### CICS Performance Analyzer

#### Performance Transaction summary: Response time and CPU

Tran	#Tasks	Avg Response Time	Max Response Time	>0.5 Response Time	Avg Dispatch Time	Avg User CPU Time	Avg Suspend Time	Max Suspend Time	Avg Dispwait Time	Avg FC wait Time	Avg DB2SQLWt Time	Avg IMS Wait Time
CSMI	55	2.3161	34.3956	21.82%	.0293	.0065	4.2868	34.3071	.0004	.0020	.0180	.0114
PART	25	2.1760	43.5463	20.00%	.0098	.0064	5.1662	43.5337	.0035	.0000	.0000	.0000
Total	236	2.1215	43.5463	31.36%	.0114	.0032	2.1101	43.5337	.0030	.0005	.0042	.0027

### IMS Performance Analyzer

#### Transaction summary: Response & CPU

APPLID	Tran	Tran Count	Avg Process Time	Max Process Time	>1.0 Process Time	Avg CPU Time	Max CPU Time	Avg DB Get Count	Avg DB Updat Count	Avg FP Get Count	Avg FP Updat Count
CICSIMS	CSMI	89129	0.086663	5.065890	23.21%	0.001693	1.278172	4	6	2	3



# Locating the problem transaction

1. Start a filter to look for CICS transactions

```
VIEW                               Filter                               Row 1 of 1 More: < >

Filter . . BADPARTS +           Description . . PART trans w/ long response time

/ Log Code + Exc Description
S CMF 6E13           CICS Transaction
***** Bottom of data *****
```

2. Specify filter conditions to narrow down the search

```
Conditions                               Row 1 to 2 of 2

/ Field Name +                           Oper Value +
- TRAN                               EQ 'PART'
- RESPONSE                           GT 2.0
***** Bottom of data *****
```

3. Display is reduced to problem candidate list

```
BROWSE      JIM.CICS.CMF.MRO.EXTRACT      Record 0000020 More: < >
Slice . . Duration _____ Date 2012-02-24 Time 20.40.38.002499
Code Description < 00.00.00.000000 > 2012-02-24 Friday Time (LOCAL)
/ -----
___ 6E13 CICS Transaction TranCode=PART Task=122 Resp=2.019223 20.44.58.297560
___ 6E13 CICS Transaction TranCode=PART Task=274 Abend=AEIV 20.55.24.768251
TX 6E13 CICS Transaction TranCode=PART Task=286 Resp=2.141418 20.57.15.950542
___ 6E13 CICS Transaction TranCode=PART Task=288 Resp=2.003727 20.57.34.335989
***** Bottom of Data *****
```

## CICS transaction with 4 MRO subtasks

```

BROWSE      JIM.CICS.CMF.MRO.EXTRACT                      Record 00000216 More: < >
Command ==> CSR
Slice . . Duration 15.00.00      Date 2012-02-24      Time 20.46.04.986507
Code Description < _____ > 2012-02-24 Friday    Time (Relative)
/-----/
G TAG CICS Tran=PART Task=286 has the long response time 20.57.15.950542
TX 6E13 CICS Transaction 20.57.15.950542
      TranCode=PART Program=PARTMENU Userid=JIM Terminal=NY Task=286
      ACCT=FTS3.SC0TCP22.2C5958F82B96 Resp=2.251886 CPU=0.002323
-----
 6E13 CICS Transaction +0.001969
      TranCode=CSMI Program=PARTEEXEC Task=72
      ACCT=FTS3.SC0TCP22.2C5958F82B96 Resp=2.241418 CPU=0.002990
-----
 6E13 CICS Transaction +0.003165
      TranCode=CSMI Program=PARTFILE Task=82
      ACCT=FTS3.SC0TCP22.2C5958F82B96 Resp=2.236072 CPU=0.003273 FC=4
-----
 6E13 CICS Transaction +0.018608
      TranCode=CSMI Program=PARTIMS Task=60
      ACCT=FTS3.SC0TCP22.2C5958F82B96 Resp=2.225775 CPU=0.004406
      RecToken=CICSDIMS/C92C5958FCB44261 PSB=PARTSDB IMS=12
-----
 6E13 CICS Transaction +1.262832
      TranCode=CSMI Program=PARTDB2 Task=57
      ACCT=FTS3.SC0TCP22.2C5958F82B96 Resp=0.988344 CPU=0.014637 DB2=12
-----

```

Tracking displays all the events associated with the transaction – noise is removed

## CICS transaction details

```

BROWSE      JIM.CICS.CMF.MRO.EXTRACT      Record 00000216 Line 00000000
Command ===> _____ Scroll ===> CSR
Form      ===> MY6E13  +   Use Form in Filter      Format ===> STD
***** Top of data *****
+0005 Code... 6E13  CICS Transaction
+00B2 STCK... C92C5958F81CE043      LSN.... 00000000000000D8
      Date... 2012-02-24 Friday      Time... 20.57.15.950542.016

+009E DFHTASK.... Task Control
+009E Tran..... 'PART'      SC..... 'T0..'
+0856 Dispatch... 0.004109/6      UserCPU... 0.002323/6
+086E Suspend... 2.117776/26      TaskNo.... +286
+00E2 NETName.... 'FTS3.SC0TCP22'      NETUOWID... 2C5958F82B960001
+087A DispWait... 0.000051/5      Prty..... +1
+0132 Brdg..... 00000000      Disp1Dly... 0.000062
+0A7E RMIelap... 0.000018/3      RMISusp... 0
+0B92 QRModDly... 0.000051/5      QRDisp.... 0.004109/6      QRCPU.... 0.002323/6

      DFHCICS.... CICS task information
+00B2 Start.. 20.57.15.950542      Stop.. 20.57.18.202428      Response... 2.251886

      DFHRMI..... Resource Manager (RMI)
+0B06 RMITotal... 2.104618/26
+0B12 RMIDB2.... 1.062417/14      RMIDBCTL... 1.041290/12      RMIMQ..... 0

```

Select any record (CICS, IMS, DB2, MQ, and others) to see it neatly formatted

# Overall perspective

CICS  
CMF

IMS  
log

DB2  
Log &  
Trace

Coordinated  
Syncpoint

```

BROWSE      JCH.SMF.EXTRACT +                               Record 00028179 More: < >
Command ==> _____ Scroll ==> CSR
Slice . . Duration _____ Date 2012-02-24 Time 20.40.38.002499
Code Description < 00.00.00.000000 > 2012-02-24 Friday Time (Relative)
-----
/
TX 6E13 CICS Transaction TranCode=MROU Task=286 TOR 20.57.15.950542
   6E13 CICS Transaction TranCode=CSMI Task=72 AOR +0.001969
   6E13 CICS Transaction TranCode=CSMI Task=82 FC=4 +0.018608
   6E13 CICS Transaction TranCode=CSMI Task=60 IMS=12 +0.018608
   CA01 Transaction Program=DFHTWM04 LTerm=FUFWIR +0.019642
   08 Application Start TranCode=CSMI Program=DFHTWM04 +0.019642
   50 Database Update Database=DI21PART Region=0001 +0.034078
   50 Database Update Database=DI21PART Region=0001 +1.265202
   6E13 CICS Transaction TranCode=CSMI Task=57 DB2=14 +1.262832
   66 DB2 Performance 072 Create thread entry +1.264293
   . . .
   66 DB2 Performance 061 SQL update +1.272195
   0020 DB2 Unit of Recovery Control - Begin UR +1.272609
   0020 DB2 Update In-Place in a Data Page +1.272625
   66 DB2 Performance 058 SQL call completion +1.272673
   0010 DB2 Savepoint +1.273665
   66 DB2 Performance 021 Lock detail +1.274140
   0020 DB2 Delete from a Data Page +1.274209
   . . .
   0020 DB2 Insert into a Data Page +2.175537
   66 DB2 Performance 058 SQL call completion +2.175602
   5610 Syncpoint Start of Phase 1 Region=0001 +2.178900
   5950 FP Database Update Database=IVPDB3 Region=0001 +2.178921
   5611 Syncpoint End of Phase 1 Region=0001 +2.226836
   0020 DB2 Unit of Recovery Control - End Commit Phase 1 +2.232817
   3730 Syncpoint End of Phase 1 Region=0001 +2.242026
   5937 FP Syncpoint Program=DFHTWM04 Region=0001 +2.242924
   56FA Transaction Statistics Region=0001 +2.242963
   07 Application Terminate Region=0001 +2.243907
   66 DB2 Performance 070 Begin commit phase 2 +2.244799
   0020 DB2 Unit of Recovery Control - Begin Commit Phase 2 +2.245105
   5612 Syncpoint End of Phase 2 Program=DFHTWM04 Region=0001 +2.245664
   . . .
   0020 DB2 Unit of Recovery Control - End Commit Phase 2 +2.248257
   65 DB2 Accounting 003 Source=CICS +2.249216
   66 DB2 Performance 075 Terminate thread exit +2.250783
***** Bottom of Data *****
    
```

# IMS perspective

```

BROWSE      FTS1.WEEKLY.SMF.G0456V00 +                      Record 00028179 More: < >
Command ==> _____ Scroll ==> CSR
  Slice . . Duration 00.15.00   Date 2012-02-24   Time 20.45.00.000000
  Code Description < 00.00.00.000000 > 2012-02-24 Friday   Time (Relative)
/-----/-----/-----/-----/-----/-----/-----/-----/-----/-----/-----/-----/
 6E13 CICS Transaction TranCode=PART Task=286  TOR          20.57.15.950542
 6E13 CICS Transaction TranCode=CSMI Task=72   AOR              +0.001969
 6E13 CICS Transaction TranCode=CSMI Task=82   FC=4             +0.003165
 6E13 CICS Transaction TranCode=CSMI Task=60   IMS=12           +0.018608
-----/-----/-----/-----/-----/-----/-----/-----/-----/-----/-----/-----/
 CA01 Transaction                                          +0.019642
      TranCode=CSMI Program=PARTIMS LTerm=CICSDIMS
      IMSID=IMSP RecToken=CICSDIMS/C92C5958FCB44261
      RegTyp=DBC DBCalls=10 FPCalls=5 CPU=0.002172 Process=0.123315
-----/-----/-----/-----/-----/-----/-----/-----/-----/-----/-----/-----/
 08 Application Start TranCode=CSMI Program=PARTIMS      +0.019642
5607 Start of UOR Program=PARTIMS                          +0.019643
 50 Database Update Database=PARTSDB                      +0.034078
 50 Database Update Database=PARTSDB                      +1.265202
 6E13 CICS Transaction TranCode=CSMI Task=57              +1.272832
5610 Syncpoint Start of Phase 1                           +2.178900
5950 FP Database Update Database=PARTSDBF                 +2.188921
5611 Syncpoint End of Phase 1                             +2.216836
3730 Syncpoint End of Phase 1                             +2.242026
5937 FP Syncpoint Program=PARTIMS                         +2.242924
56FA Transaction Statistics                               +2.242963
 07 Application Terminate                                  +2.243907
5612 Syncpoint End of Phase 2 Program=PARTIMS             +2.245664
***** Bottom of Data *****
    
```







## DB2 perspective 2 – DB2 performance trace

```

BROWSE      FTS1.WEEKLY.SMF.G0456V00 +                      Record 00027543 More: < >
Command ==> _____ Scroll ==> CSR
  Slice . . Duration _____ Date 2012-02-24      Time 20.40.38.002499
  Code Description < 00.00.00.000000 > 2012-02-24 Friday Time (Relative)
/ -----
__ 6E13 CICS Transaction                                     +1.262832
    TranCode=CSMI Program=PARTDB2 LTerm=FUWFWAR
    Terminal=AR1 RecToken=FUWFWDR/C92C595905174403 Task=57
    ACCT=FTS3.SC0TCP22.2C5958F82B96 Resp=0.988344 CPU=0.014637 DB2=14
-----
__ 66  DB2 Performance 072 Create thread entry SSID=DB2P          +1.264293
__ 66  DB2 Performance 021 Lock detail                            +1.264857
__ 66  DB2 Performance 112 Successful plan allocation(allied)    +1.265228
__ 66  DB2 Performance 177 Successful package allocation        +1.255701
__ 66  DB2 Performance 065 SQL open cursor                       +1.266018
__ 66  DB2 Performance 058 SQL call completion                  +1.266129
__ 66  DB2 Performance 059 SQL fetch                            +1.266705
__ 66  DB2 Performance 044 IRLM suspend entry                   +1.267471
__ 66  DB2 Performance 093 Suspend                              +1.267525
__ 66  DB2 Performance 094 Resume                               +2.177735
__ 66  DB2 Performance 045 IRLM suspend exit                    +2.177790
__ 66  DB2 Performance 021 Lock detail                            +2.177836
__ 66  DB2 Performance 021 Lock detail                            +2.177907
__ 66  DB2 Performance 058 SQL call completion                  +2.177996
. . .
__ 66  DB2 Performance 075 Terminate thread exit                +2.250783
***** Bottom of Data *****

```



## Complete problem history including personal notes

```

                                History                                Row 1 to 4 of 4
Command ===> _____ Scroll ===> CSR

Select a history item or use the NEW command to create a new note.

/  Type      Description                                Changed                                ID
-  TAG       Personal savepoint for JIM                2012-02-29 11.19.03                    JIM
-  SMF       SMF report                                    2012-02-29 08.37.46                    LEVEL1
-  CICS      CICS SPA report                                2012-02-28 16.57.18                    LEVEL1
S TAG       CICS TRAN=PART long response time           2012-02-28 16.13.33                    JIM
***** Bottom of data *****

```

```

                                Notepad                                Columns 00001 00072
Command ===> _____ Scroll ===> CSR
***** ***** Top of Data *****
000001 CICS TOR TRAN=PART TASK=286 has the long response time
000002
000003 I have had a look at the problem, observations are:
000004 1. MRO to AOR CSMI TASK=72 - called FOR, IMS and DB2 - problem below
000005 2. MRO to FOR CSMI TASK=82 - VSAM file requests are OK, no delay
000006 3. DPL to IMS CSMI TASK=60 - 12 DLI calls, application delay - problem
000007 4. DPL to DB2 CSMI TASK=47 - 14 SQL calls , long delay - problem
000008
..... Please investigate the problem using your IMS and DB2 tool kits :- )
***** ***** Bottom of Data *****

```

## Summary: Transaction Analysis Workbench

- Companion to the popular IMS and CICS Performance Analyzer tools, allowing systems programmers to look outside of IMS and CICS for the source of problems
- Exploits the wealth of system performance and activity information available in SMF, OPERLOG, and event traces
- Allows medium-skilled analysts to perform expert analysis of their enterprise

## More information

- IBM DB2 and IMS Tools website:  
[www.ibm.com/software/data/db2imstools/](http://www.ibm.com/software/data/db2imstools/)
- IBM Transaction Analysis Workbench for z/OS:  
[www.ibm.com/software/data/db2imstools/imstools/trans-analysis/](http://www.ibm.com/software/data/db2imstools/imstools/trans-analysis/)
- Jim Martin, US Representative, Fundi Software:  
[jim\\_martin@fundi.com.au](mailto:jim_martin@fundi.com.au)
- Satish Tanna, IBM CICS Hursley Lab  
[satish\\_tanna@uk.ibm.com](mailto:satish_tanna@uk.ibm.com)



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