

IBM Software Group

# Solving CICS Performance Issues with: CICS Performance Analyzer and Application Performance Analyzer

Eric Higgins, CICS Tools Specialist

Russ Courtney, Problem Determination Tools Specialist



**ON** DEMAND BUSINESS™

## Preface

The following are trademarks of International Business Machines Corporation in the United States, other countries, or both:

IBM, CICS, CICS/ESA, CICS TS, CICS Transaction Server, CICSplex, DB2, MQSeries, OS/390, S/390, WebSphere, z/OS, zSeries, Parallel Sysplex.

Java, JavaBeans, and all Java-based trademarks and logos are trademarks of Sun Microsystems, Inc. in the United States, other countries, or both.

Microsoft, Windows, Windows NT, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both.

Other company, product, and service names and logos may be trademarks or service marks of others.



## Looking for Trouble?

- ▶ *What's the value of identifying performance issues before they get a chance to escalate?*
- ▶ *How often do you go looking for tuning opportunities?*
- ▶ *What can a performance measurement tool do to help resolve bad application behavior?*

## If so, you've come to the right place....

- ▶ **Application Performance Analyzer and CICS Performance Analyzer can help you!**



# Poorly Performing Application

## Problem

- End users are complaining that they are not getting the throughput that they expect.

## Solution

- Use CICS PA to find the transactions that are not performing up to expectations.
- Use APA to drill down to the application program level to identify the root cause.

VIR3M0 CICS Performance Analyzer  
Wait Analysis Report

WAIT0001 Printed at 14:01:01 7/24/2003 Data from 19:26:39 7/14/2003 to 19:38:16 7/14/2003 Page 1

---

Trans=CBM1

Summary Data	Time		Count		Ratio
	Total	Average	Total	Average	
# Tasks			3962		
Response Time	39174.1585	9.8875			
Dispatch Time	4860.6282	1.2268	347472	87.7	12.4% of Response
CPU Time	179.7728	0.0454	347472	87.7	3.7% of Dispatch
Suspend Wait Time	34313.4642	8.6606	347472	87.7	87.6% of Response
Dispatch Wait Time	26770.4022	6.7568	343510	86.7	78.0% of Response
Resource Manager Interface (RMI) elapsed time	4302.4135	1.0859	191768	48.4	11.0% of Response
Resource Manager Interface (RMI) suspend time	2641.0973	0.6666	19211	4.8	7.7% of Suspend

Suspend Detail

	Suspend Time				Count	
	Total	Average	%age	Graph	Total	Average
N/A Other Wait Time	21836.2138	5.5114	63.6%	*****	332847	84.0
MAXOTDLY MAXOPENTCBS wait time	4094.5942	1.0335	11.9%	**	639	0.2
LU62WTT LU6.2 wait time	3035.7758	0.7662	8.8%	*	5238	1.3
DSPDELAY First dispatch wait time	2398.0299	0.6053	7.0%	*	3962	1.0
MXTDELAY > First dispatch MXT wait time	374.7682	0.0946	1.1%		87	0.0
LMDELAY Lock Manager (LM) wait time	2206.6980	0.5570	6.4%	*	2621	0.7
GVUPWAIT Give up control wait time	437.0868	0.1103	1.3%		277	0.1
JCIOWTT Journal I/O wait time	305.0656	0.0770	0.9%		1888	0.5

---

Trans=CBPB

Summary Data	Time		Count		Ratio
	Total	Average	Total	Average	
# Tasks			13		
....					

## Value

- Faster time for problem resolution.
- CICS PA provides an easy mechanism to identify performance issues at the system level.
- APA allows performance analysis at the program level

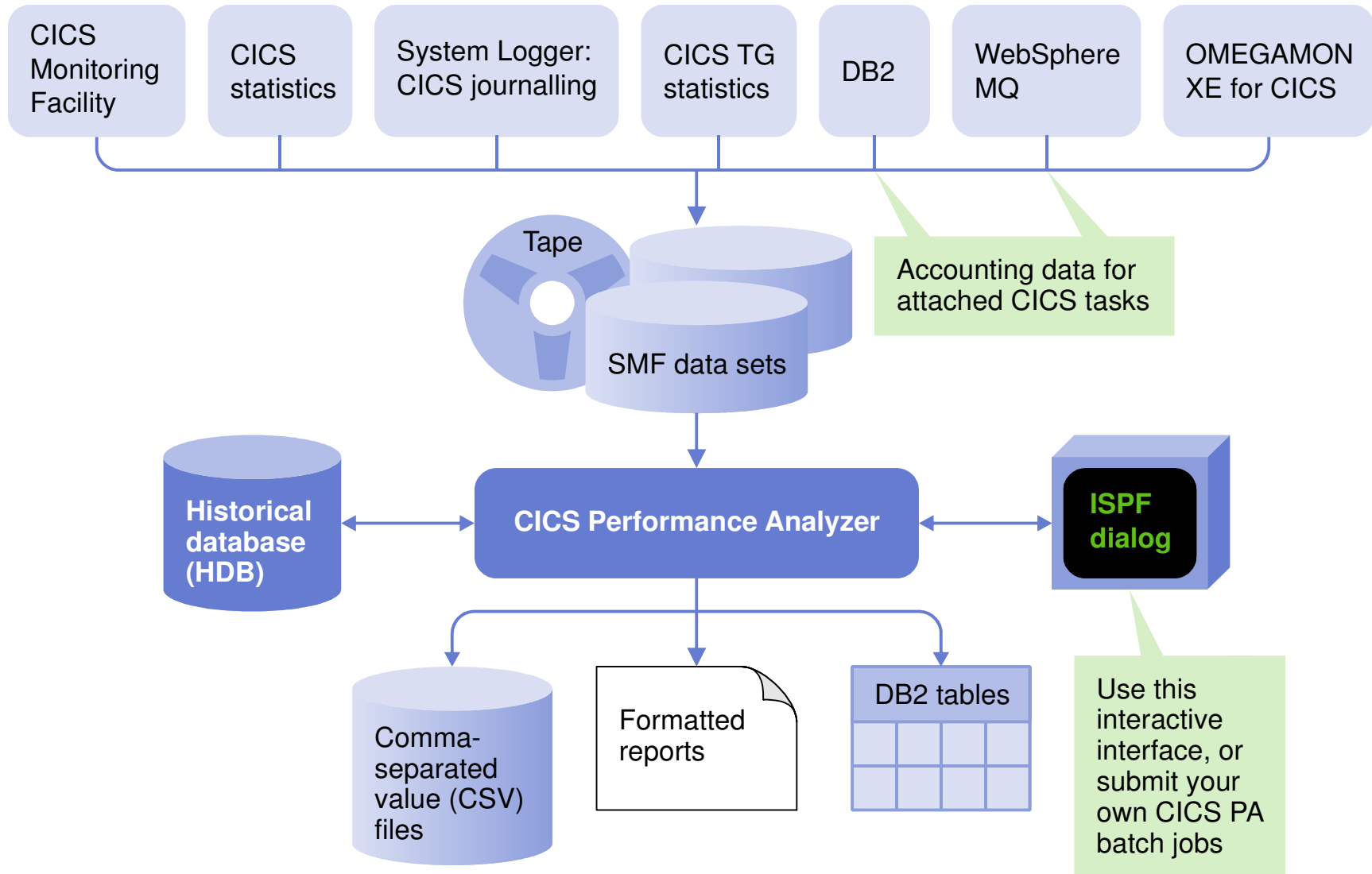


# CICS Performance Analyzer

- **What is it?**
  - ▶ A Historical Analysis Tool for solving CICS performance issues
- **What does it do?**
  - ▶ Comprehensive Batch Reporting and Analysis from SMF data
  - ▶ User friendly interface to build, maintain and submit reports
  - ▶ Extensive Tabular Reports and Extracts (over 150)
  - ▶ Create Historical Databases that include trend and capacity information
  - ▶ Online Statistics Reporting Capability
- **Benefits**
  - ▶ Improves tuning and capacity planning analysis
  - ▶ Improve transaction response time
  - ▶ Provides detailed performance bottleneck analysis
  - ▶ Uncovers trends leading to poor CICS performance or even outages
  - ▶ Helps plan capacity for optimal performance



# CICS PA Overview



## So, how can CICS PA help identify problem transactions.

- **Start with High Level Reports?**

- ▶ The Wait Analysis Report gives an overview of transaction activity at a summary level.

- **Next? Drill Down**

- ▶ Summary reports show aggregate performance.
  - Based on anomalies identified by the Wait Analysis report, chose a sample summary report that will highlight the issue.

- **Drill Down Further**

- ▶ List and ListX reports allow you to look at performance measurements for specific tasks.



# CICS PA Wait Analysis Report ... Summary Page

		----- Time -----		----- Ratio -----			
		Total	Average				
# Tasks		2119					
Response Time		3518683	1660.5398				
Dispatch Time		5801.6319	2.7379	0.2% of Response			
CPU Time		5476.9862	2.5847	94.4% of Dispatch			
Suspend Wait Time		3512882	1657.8019	99.8% of Response			
Dispatch Wait Time		5.3652	0.0025	0.0% of Suspend			
Resource Manager Interface (RMI) elapsed time		17218.8165	8.1259	0.5% of Response			
Resource Manager Interface (RMI) suspend time		17100.4236	8.0700	0.5% of Suspend			
		----- Suspend Time -----			Field Availability		
		Total	Average	%age	Graph	Present	Missing
N/A	Other Wait Time	1406049	663.5439	40.0%	*****		
WTEXWAIT	External ECB wait time	1184287	558.8899	33.7%	*****	2119	0
ENQDELAY	Local Enqueue wait time	4614743E-01	217.7793	13.1%	**	2119	0
TCTQWTT	Terminal wait for input time	4304608E-01	203.1434	12.3%	**	2119	0

**Notice the High Enqueue Wait Time**



# CICS PA Wait Analysis Report ... Transaction Page

Tran=TSSA

Summary Data

	----- Time -----		----- Count -----		----- Ratio -----
	Total	Average	Total	Average	
# Tasks			260		
Response Time	97113.6699	373.5141			
Dispatch Time	1154.2078	4.4393	9914	38.1	1.2% of Response
CPU Time	1094.4785	4.2095	9914	38.1	94.8% of Dispatch
Suspend Wait Time	95959.4621	369.0749	9914	38.1	98.8% of Response
Dispatch Wait Time	0.6036	0.0023	9654	37.1	0.0% of Suspend
Resource Manager Interface (RMI) elapsed time	3139.0730	12.0734	238540	917.5	3.2% of Response
Resource Manager Interface (RMI) suspend time	3114.1584	11.9775	60	0.2	3.2% of Suspend

Suspend Detail

	----- Suspend Time -----				----- Count -----	
	Total	Average	%age	Graph	Total	Average
ENQDELAY Local Enqueue wait time	90481.8086	348.0070	94.3%	*****	254	1.0
DB2RDYQW DB2 Thread wait time	2959.1902	11.3815	3.1%		54	0.2
DSPDELAY First dispatch wait time	2356.4440	9.0632	2.5%		260	1.0
MXTDELAY > First dispatch MXT wait time	2354.1799	9.0545	2.5%		24	0.1
DB2CONWT DB2 Connection wait time	154.9675	0.5960	0.2%		4	0.0
FCIOWTT File I/O wait time	3.2069	0.0123	0.0%		1302	5.0
JCIOWTT Journal I/O wait time	2.6690	0.0103	0.0%		1560	6.0
N/A Other Wait Time	0.9206	0.0035	0.0%		96	0.4



# Transaction Summary Report

V2R1M0

## CICS Performance Analyzer Performance Summary

SUMM0001 Printed at 12:19:51 11/25/2008

Data from 20:57:35 11/17/2008 to 14:55:23 11/20/2008

Page 1

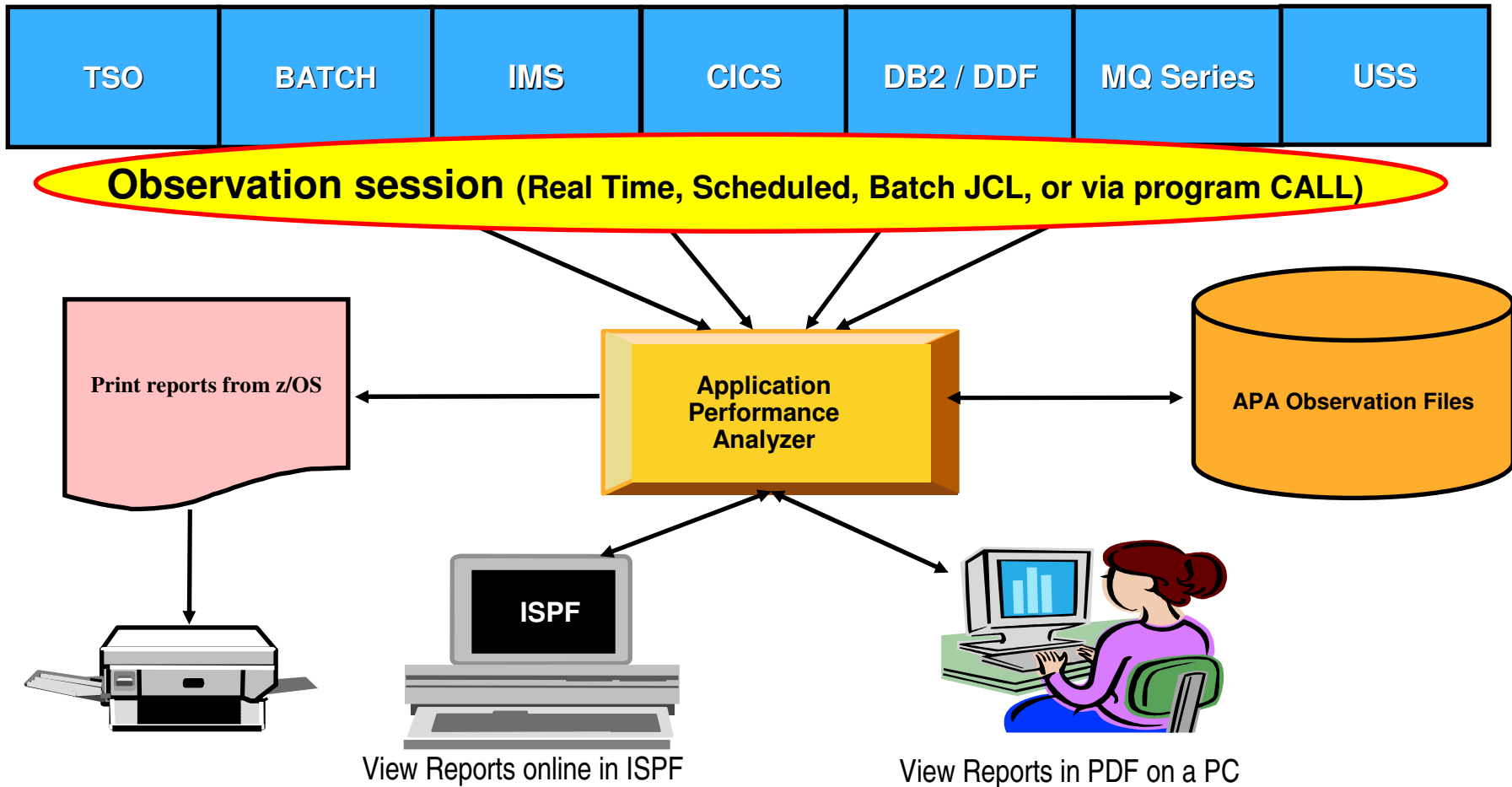
### Transaction CPU Analysis and Extract (V3) - Summary

Tran	#Tasks	Avg Response Time	Avg Dispatch Time	Avg User CPU Time	Avg Suspend Time	Avg DispWait Time	Avg DSCHMDLY Time	Avg FC Wait Time	Avg ENQDelay Time	Avg DB2 Reqs Count	Avg DB2ThdWt Time
NACT	16	.0009	.0008	.0007	.0000	.0000	.0000	.0000	.0000	0	.0000
TSO	1	80.9640	.0013	.0009	80.9627	.0007	.0000	.0000	.0000	0	.0000
TSSA	260	373.5141	4.4393	4.2095	369.0749	.0023	.0010	.0123	348.0070	913	11.3815
TSSB	260	381.8605	4.4397	4.2094	377.4208	.0026	.0009	.0123	354.8348	913	12.3988
TSSC	260	383.7118	4.4416	4.2093	379.2701	.0026	.0011	.0124	355.9240	913	12.6487
TSSD	260	385.2657	4.4176	4.2092	380.8481	.0024	.0010	.0124	356.9188	913	12.7140
TSSE	260	388.4694	4.4420	4.2095	384.0273	.0024	.0010	.0121	359.2161	913	13.0671
TSS1	26	12.9916	.0236	.0016	12.9680	.0000	.0000	.0000	.0000	0	.0000
VIDC	1	91.4269	.0024	.0008	91.4245	.0007	.0000	.0000	.0000	0	.0000
VTMI	1	.0007	.0006	.0005	.0000	.0000	.0000	.0000	.0000	0	.0000
Total	1345	370.1441	4.2881	4.0686	365.8560	.0024	.0010	.0119	343.1035	882	12.0257



# Application Performance Analyzer Functional Overview

Application performance analysis tooling for application developers



# Application Performance Analyzer Report Summary

## **CICS**

Session Statistics  
 CPU Usage by Txn  
 Mean Service Time by Txn  
 Total Service Time by Txn  
 Service Time by Task Id  
 Wait Time by Txn

## **Wait**

Time by Task/Category  
 Time by Task/Module  
 Time Referred Attribution

## **MQSeries**

Activity Summary  
 CPU Usage by Queue  
 CPU Usage by Request  
 CPU Usage by TXN  
 Serv Time by Queue  
 Serv Time by Request  
 Serv Time by TXN  
 Wait Time by Queue  
 Wait Time by Request  
 Wait Time by TXN

## **Coupling Facility**

Summary  
 Mean Times  
 Facility Total Times

## **Storage & Statistics**

Measurement Profile  
 Load Module Attributes  
 Load Module Summary  
 TCB Summary  
 Memory Usage Timeline  
 Data Space Usage Timeline  
 TCB Execution Summary  
 Processor Utilization Summary

## **CPU**

Usage by Category  
 Usage by Procedure  
 Usage by Module  
 Referred Attribution  
 Usage by Code Slice  
 Usage Timeline  
 Usage Task/Category  
 Usage Task/Module

## **Variance**

Summary

## **DASD**

Usage by Device  
 Activity Timeline  
 Usage by DDNAME  
 I/O Wait Time  
 Usage by Dataset  
 VSAM Buffer Pool Usage  
 Dataset Attributes  
 Summary  
 DASD VSAM Statistics

## **DB2**

Measurement Profile  
 Wait Time by Stmt / Plan / DBRM  
 Activity Timeline  
 Activity by Stmt / Plan / DBRM  
 CPU/Svc Time Stmt / Plan / DBRM  
 Statement Attributes  
 Threads Analysis  
 CPU by Plan/Stored Proc  
 Incoming DRDA/DDF Requests

## **HFS / zFiles**

File Activity  
 Device Activity  
 Wait Times  
 Service Times

## **IMS**

Measurement Profile  
 DL/I Call Timeline  
 DL/I Transaction Timeline  
 Transaction Activity Timeline  
 Usage by PSB  
 Usage by Transaction  
 Usage by DL/I Call  
 Transaction Service Times  
 Transaction DL/I Counts

## **JAVA**

Summary  
 CPU Usage  
 Service Time  
 Wait Time



# APA Observation Sessions

Session A - [43 x 80]

File Edit View Communication Actions Window Help

File View Navigate Help

R02: IBM APA for z/OS Observation List (CAZ0) Row 00001 of 00038  
 Command ==> Scroll ==> CSR

ReqNum	Owned By	Description	Job Name	Date/Time	Samples	Status
0067 +	DNET047		CICSAOR6	Dec-1 11:46	60,000	REPEAT
+ 0068				Dec-1 11:49	60,000	Ended
+ 0069				Dec-1 11:52	60,000	Ended
+ 0070				Dec-1 11:55	60,000	Ended
+ 0071				Dec-1 11:58	60,000	Ended
+ 0072				Dec-1 12:01	60,000	Ended
+ 0073				Dec-1 12:04	60,000	Ended
+ 0074				Dec-1 12:07	60,000	Ended
+ 0075				Dec-1 12:10	60,000	Ended
+ 0076				Dec-1 12:13	60,000	Ended
+ 0077				Dec-1 12:16	60,000	Ended
0066	SYS029	TSS* measure	CICSAOR6	Nov-20 14:53	62,752	Cancel
0065	SYS029	TSS* measure	CICSAOR6	Nov-20 14:49	100,000	Ended
0054 +	DNET047		CICSAOR6	Nov-19 8:23	60,000	REPEAT
0053	DNET047		CICSAOR6	Nov-18 19:06	60,000	Ended
0052	DNET047		CICSAOR6	Nov-18 19:04	60,000	Ended
0051	DNET047		CICSAOR6	Nov-18 19:00	60,000	Ended
0040 +	DNET047		CICSAOR6	Nov-13 17:35	60,000	REPEAT
0039	DNET070		CICSAOR4	Jul-22 14:03	1,000	Ended
0038	DNET100	TSAFE 100 secs	CICSAOR5	Jul-26 7:48	100,000	Ended
0037	SYS030	TSAFE 100 secs	CICSAOR4	Mar-31 9:54	100,000	Ended
0036	DNET197	demo sample	DNET197R	Mar-18 3:15	100,000	Ended
0035	DNET687	DEMO SAMPLE	DNET687R	Mar-18 3:10	100,000	Ended
0034	DNET039		DNET039R	Mar-17 4:43	10,000	Ended
0033	ADTU010		CICSAOR1	Feb-21 14:09	10,000	Ended
0032	ADTU010		ADTU010	Feb-21 13:50	2,000	Ended
0031	ADTU009		ADTU009	Feb-21 13:50	10,000	Ended
0030	DNET328	slow TSAFE 4 mi	CICSAOR4	Feb-19 6:44	100,000	Ended
0024	SYS030	TSAFE 100 secs	CICSAOR4	Feb-14 10:04	100,000	Ended
0023	SYS030	TSAFE 100 secs	CICSAOR4	Feb-14 9:54	100,000	Ended
0015 +	DNET603		DNET603E	Feb-6 11:29	10,000	STEPS
0010	DNET070	I/O Bound	DNET070X	Jan-30 14:12	84,303	Ended
0009	DNET070	CPU Bound	DNET070X	Jan-30 13:57	100,000	Ended

04 / 015

Connected to remote server/host zservers.demos.ibm.com using lu/pool TCP00042 and Brother MFC-7820N BR-Script3 on Ne22:

# APA Matches To Source

```

Session A - [43 x 80]
File Edit View Communication Actions Window Help
File View Navigate Help
R01: IBM APA for z/OS Performance Reports (0068/CICSA0R6) Row 00001 of 00007
Command ==> CSR
Scroll ==> CSR

Select a category from the list to the right to view the available reports in the selection list below.
-- A Admin/Miscellaneous -- I IMS Measurement
-- S Statistics/Storage -- E CICS Measurement
-- C CPU Usage Analysis -- F DB2 Measurement
-- D DASD I/O Analysis -- Q MQ Measurement
-- W CPU WAIT Analysis -- G Coupling Facility
-- H HFS Analysis -- J Java Measurement
-- V Variance Reports

Enter S to make a selection or enter the report code on the command line
-- E01 CICS Session Statistics -- E07 CICS Wait by Txn
-- E02 CICS CPU and Use Counts by Pgm -- E08 CICS Mean Service Time by Trm
-- E03 CICS CPU Usage by Txn -- E09 CICS Total Service Time by Trm
-- E04 CICS Mean Service Time by Txn
-- E05 CICS Total Service Time by Txn
-- E06 CICS Service Time by Task Id

Mâ a 04/015
Connected to remote server/host zserveros.demos.ibm.com using lu/pool TCP00042 and Brother MFC-7820N BR-Script3 on Ne22:

```

# CICS Wait by Transaction – (expanded report)

Session A - [43 x 80]

File Edit View Communication Actions Window Help

File View Navigate Help

E07: CICS Wait by Txn (0068/CICSAOR6) Row 00001 of 00055  
 Command ==> Scroll ==> CSR

Name	NTxns/Description	Percent Wait Time * 10.00%	±0.0%
TSSB	10	20.44	=====
→ ENQUEUE	Wait on VSAM/CICS Data Table	20.41	=====
→ PROGRAM	Wait on Loader	0.01	
→ CICSDly	CICS Dispatch Delay	0.00	
→ LMQUEUE	Waiting on resource lock	0.00	
→ LGWRITE	Wait on Writing Log Record	0.00	
→ CICSSusp	Suspend	0.00	
TSSC	10	20.14	=====
→ ENQUEUE	Wait on VSAM/CICS Data Table	20.11	=====
→ PROGRAM	Wait on Loader	0.01	
→ CICSDly	CICS Dispatch Delay	0.00	
→ LMQUEUE	Waiting on resource lock	0.00	
→ LGWRITE	Wait on Writing Log Record	0.00	
→ CICSSusp	Suspend	0.00	
TSSD	10	19.61	=====
→ ENQUEUE	Wait on VSAM/CICS Data Table	19.58	=====
→ PROGRAM	Wait on Loader	0.01	
→ CICSDly	CICS Dispatch Delay	0.00	
→ LMQUEUE	Waiting on resource lock	0.00	
→ LGWRITE	Wait on Writing Log Record	0.00	
→ CICSSusp	Suspend	0.00	
TSSE	10	19.09	=====
→ ENQUEUE	Wait on VSAM/CICS Data Table	19.06	=====
→ PROGRAM	Wait on Loader	0.01	
→ CICSDly	CICS Dispatch Delay	0.00	
→ LMQUEUE	Waiting on resource lock	0.00	

MA a 06/002

Connected to remote server/host zserveros.demos.ibm.com using lu/pool TCP00042 and Brother MFC-7820N BR-Script3 on Ne22:

# CICS Mean Service Time by Transaction

Session A - [43 x 80]

File Edit View Communication Actions Window Help

File View Navigate Help

E04: CICS Mean Service Time by Txn (0068/CICSA0R6) Row 00001 of 00204  
 Command ==> Scroll ==> CSR

Name	NTxns	Description	Error	----- Execution	Mean Time in + Suspend +	Seconds Delay	----- Service
TSSB	10		±32.2%	0.525	41.075	0.008	41.609
→ TSSSUB01		EXEC CICS		0.000	41.027	0.000	41.028
→ +05B6		READ FILE(FILEA)		0.000	41.025	0.000	41.025
→ ENQUEUE		Wait on VSAM/CICS Data Table		0.000	41.025	0.000	41.025
→ +063A		REWRITE FILE(FILEA)		0.000	0.001	0.000	0.002
→ LGWRITE		Wait on Writing Log Record		0.000	0.001	0.000	0.001
→ CICSDly		CICS Dispatch Delay		0.000	0.000	0.000	0.000
→ +0948		FORMATIME		0.000	0.000	0.000	0.000
→ +07E2		ASKTIME ABSTIME		0.000	0.000	0.000	0.000
→ TSSSUB01		CICS Program		0.516	0.001	0.000	0.518
→ CICS		System Services		0.516	0.001	0.000	0.518
→ CICSSusp		Suspend		0.000	0.001	0.000	0.001
→ TSSMAIN1		CICS Program		0.000	0.038	0.002	0.041
→ CICS		System Services		0.000	0.038	0.002	0.041
→ PROGRAM		Wait on Loader		0.000	0.038	0.000	0.038
→ CICSDly		CICS Dispatch Delay		0.000	0.000	0.002	0.002
→ CICS		System Services		0.000	0.007	0.005	0.012
→ CICS		System Services		0.000	0.007	0.005	0.012
→ LMQUEUE		Waiting on resource lock		0.000	0.007	0.000	0.007
→ CICSDly		CICS Dispatch Delay		0.000	0.000	0.005	0.005
→ LGWRITE		Wait on Writing Log Record		0.000	0.000	0.000	0.000
→ TSSSUB01		EXEC SQL		0.007	0.000	0.000	0.007
→ +0768		SELECT		0.007	0.000	0.000	0.007
→ DFHD2EX1		CICS Program		0.000	0.000	0.000	0.000
→ CICS		System Services		0.000	0.000	0.000	0.000
→ CICSSusp		Suspend		0.000	0.000	0.000	0.000

MÁ a 07/002

Connected to remote server/host zserveros.demos.ibm.com using lu/pool TCP00042 and Brother MFC-7820N BR-Script3 on Ne22:



# Location of Wait Within the Program Source Listing

Session A - [43 x 80]

File Edit View Communication Actions Window Help

File View Navigate Help

E04: CICS Mean Service Time by Txn (0068/CICSAOR6) Row 00001 of 00204  
Command ==> CSR Scroll ==>

Name	NTxns	Description	Error	Mean Time in Seconds			Service
				Execution	+ Suspend	+ Delay	=
TSSB	10		±32.2%	0.525	41.075	0.008	41.609
→ TSSUB01		EXEC CICS		0.000	41.027	0.000	41.028
→ PG5B6		READ FILE(FILEA)		0.000	41.025	0.000	41.025
→ ENQUEUE		Wait on VSAM/CICS Data Table		0.000	41.025	0.000	41.025
→ +063A		REWRITE FILE(FILEA)		0.000	0.001	0.000	0.002
→ LGWRITE		Wait on Writing Log Record		0.000	0.001	0.000	0.001
→ CICSdly		CICS Dispatch Delay		0.000	0.000	0.000	0.000
→ +0948		FORMATTIME		0.000	0.000	0.000	0.000
→ +07E2		ASKTIME ABSTIME		0.000	0.000	0.000	0.000
→ TSSSUB01		CICS Program		0.516	0.001	0.000	0.518
→ CICS		System Services		0.516	0.001	0.000	0.518
→ CICSSusp		Suspend		0.000	0.001	0.000	0.001
→ TSSMAIN1		CICS Program		0.000	0.038	0.002	0.041
→ CICS		System Services		0.000	0.038	0.002	0.041
→ PROGRAM		Wait on Loader		0.000	0.038	0.000	0.038
→ CICSdly		CICS Dispatch Delay		0.000	0.000	0.002	0.002
→ CICS		System Services		0.000	0.007	0.005	0.012
→ CICS		System Services		0.000	0.007	0.005	0.012
→ LMQUEUE		Waiting on resource lock		0.000	0.007	0.000	0.007
→ CICSdly		CICS Dispatch Delay		0.000	0.000	0.005	0.005
→ LGWRITE		Wait on Writing Log Record		0.000	0.000	0.000	0.000
→ TSSSUB01		EXEC SQL		0.007	0.000	0.000	0.007
→ +0768		SELECT		0.007	0.000	0.000	0.007
→ DFHD2EX1		CICS Program		0.000	0.000	0.000	0.000
→ CICS		System Services		0.000	0.000	0.000	0.000
→ CICSSusp		Suspend		0.000	0.000	0.000	0.000

MA a 11 / 007

Connected to remote server/host zserveros.demos.ibm.com using lu/pool TCP00042 and Brother MFC-7820N BR-Script3 on Ne22:

# APA Matches To Source

Session A - [43 x 80]

File Edit View Communication Actions Window Help

File View Navigate Help

P01: Source Program Attribution (0068/CICSAOR6) Row 00001 of 00022  
 Command ==> CSR Scroll ==> CSR

Load Module: TSSSUB01 LIB: USER.CICSAOR6.LOADLIB CSECT: TSSSUB01  
 Mapped by: DNET047.ADLAB.SYSDEBUG(TSSSUB01) (COBOL)  
 Compiler: COBOL 4.1.0 Compile Time: 2008/12/01 12:15:42

LineNo	Offset	Count	Source Statement
000127			
000128			01 SHARED-AREA.
000129			03 SHARED-COUNTER PIC S9(8) COMP.
000130			
000131			PROCEDURE DIVISION USING SHARED-AREA.
000132	00056C		MOVE EIBTRNID TO WS-TXN.
000133			
000134			** READ FILE FOR UPDATE - NOT LOCATED NEXT TO REWRI
000135			**
000136	00057A		MOVE '000100' TO NUMB.
000137	000580	9999+	EXEC CICS READ UPDATE
000138			FILE(WS-FILEA) RIDFLD(NUMB) INTO(WS-FILEA-RECO
000139			NOHANDLE
000140			END-EXEC.
000141			
000142			* LOOP 200 TIMES TO CHEW UP SOME PROCESSING TIME
000143	0005D6		PERFORM A-LOOP THRU A-EXIT 200 TIMES
000144			
000145			* ** REWRITE THE RECORD **
000146	000606		MOVE WS-ABSTIME TO COMMENT
000147	000610		EXEC CICS REWRITE

MA a 04/015

Connected to remote server/host zserveros.demos.ibm.com using lu/pool TCP00042 and Brother MFC-7820N BR-Script3 on Ne22:

# CICS PA Transaction Profiling Report

```

V2R1M0
CICS Performance Analyzer
Transaction Profiling

PROF0001 Printed at 13:45:18 11/25/2008 Report Data from 13:10:17 11/25/2008 to 13:15:05 11/25/2008 Page 1
Baseline Data from 13:08:55 11/18/2008 to 13:34:43 11/18/2008
Transaction CPU Analysis and Extract (V3) - Summary
    
```

Tran		#Tasks	Avg Response Time	Avg Dispatch Time	Avg User CPU Time	Avg Suspend Time	Avg DispWait Time	Avg DSCMMDLY Time	Avg FC Wait Time	Avg ENQDelay Time	Avg DB2 Reqs Count	Avg DB2ThdWt Time
TSSA	Report	20	94.9614	4.6920	4.6239	90.2693	.0078	.0025	.0147	5.9570	1000	84.2705
TSSA	Baseline	30	110.6497	4.6885	4.6242	105.9613	.0014	.0002	.0118	105.9301	1000	.0000
	Delta	-10	-15.6883	+.0036	-.0003	-15.6919	+.0064	+.0022	+.0028	-99.9731	0	+84.2705
	Change%	-33.33	-14.18	+.08	-.01	-14.81	+469.45	+906.91	+23.89	-94.38	.00	+9999.99
TSSB	Report	19	90.3706	4.6960	4.6237	85.6746	.0081	.0024	.0149	6.3132	1000	79.3199
TSSB	Baseline	29	116.5672	4.6883	4.6238	111.8789	.0015	.0002	.0118	111.8473	1000	.0000
	Delta	-10	-26.1966	+.0077	-.0000	-26.2042	+.0066	+.0022	+.0032	-105.534	0	+79.3199
	Change%	-34.48	-22.47	+.16	-.00	-23.42	+432.59	+1070.64	+27.03	-94.36	.00	+9999.99



## *Summary*



**ON** DEMAND BUSINESS™

# CICS Performance Analyzer for z/OS

## Key features

- ▶ Comprehensive Performance Reporting and Analysis for CICS
- ▶ Including DB2, WebSphere MQ, and MVS System Logger
- ▶ Extensive Tabular Reports and Extract Data Sets
- ▶ Historical Database (HDB)
- ▶ Trending and Capacity Planning
- ▶ ISPF Dialog to build, maintain, and submit reports and extracts
- ▶ Comprehensive reporting of CICS Statistics data
- ▶ **Threadsafe metrics like TCB use by transaction, dispatch and CPU time, number of TCB switches etc**

## CICS Support

- ▶ CICS TS V2,V3, and V1.3

## New in CICS PA V2.1

### •CICS TS V3.2 support including:

- Compressed SMF type 110 records
- Higher precision (12-byte) clock

### •Extended integration with OMEGAMON XE for CICS

- Report on 3<sup>rd</sup> party systems monitored by OMEGAMON (Adabas, CA-IDMS, CA-Datcom, Supra)
- Report on Resource Limit Warnings

### •New and updated sample reports

- Transaction Profiling reports
- Distribution reports

### ▪Application Grouping

### •Historical Reporting using SupportPac CP12



# Application Performance Analyzer for z/OS

## Key features

- ▶ Summary/Profile Reports – drill down into detail levels – Load Module, CSECT, Source
- ▶ Non-Intrusive Analyzer
- ▶ Supports CICS, IMS, DB2, DDF/DRDA, USS, BATCH, MQ, TSO
- ▶ Supports COBOL, PL/I, Assembler, JAVA, C/C++
- ▶ Region Analysis – All Activity in a Region
- ▶ Named Transaction Analysis – up to 16 Transactions or 16 Transaction Masks using wild card
- ▶ Terminal ID Analysis – up to 8 Terminal ID or 8 Terminal ID Masks

## CICS Support

- ▶ CICS TS V2, V3 and V1.3

## New in APA V9.1

### •Reporting

- XML Generation

### •Recommendation Support

- Includes Hints and Tips

### •Source Support

- Elf/Dwarf formats used by the C/C++ language

### •Processor Usage

- zIPP and zAPP processor usage reflected in reports

### •IMS Analysis

- Supports Named Transactions



## Want to know more?

- **CICS Tools Web site:** <http://www.ibm.com/software/htp/cics/tools>
- **PD Tools Web site:** <http://www.ibm.com/software/awdtools/deployment>
  
- **Manuals:**
  - ▶ CICS Performance Analyzer for z/OS V2.1 User's Guide SC34-6799
  - ▶ CICS Performance Analyzer for z/OS V2.1 Report Reference SC34-6800
  - ▶ Application Performance Analyzer for z/OS V9.1 User's Guide SC23-9937
  
- **IBM CICS Explorer - The New Face of CICS :**
  - ▶ SupportPacs available now at [ibm.com/cics/explorer](http://ibm.com/cics/explorer)
  
- **Contact your Local IBM Representative**

A 3D graphic of the words "THANK YOU" in a light blue, blocky font. The letters are rendered with perspective, appearing to float above a black rectangular base. The lighting creates shadows and highlights on the letters, giving them a three-dimensional appearance.