



IBM Software Group

CICS Performance Analyzer for z/OS

What's New in CICS PA Version 1 Release 3



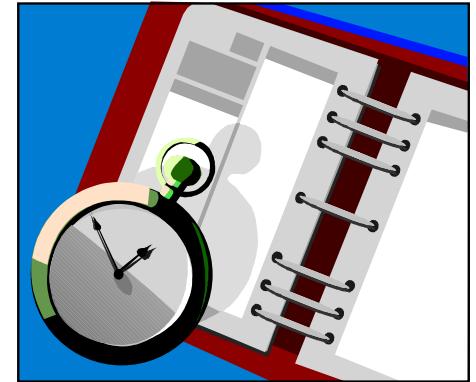
Preface

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Presentation Overview

- CICS PA Release 3 Highlights
- CICS PA Overview
- CICS PA Release 3 content ...
 - ▶ Historical Performance Data Repository
 - ▶ WebSphere MQ (SMF 116) Reporting
 - ▶ New and Enhanced CICS Monitoring Facility (CMF) Reports
 - ▶ ISPF Dialog Enhancements
 - ▶ Other Functional Enhancements
 - ▶ CICS Transaction Server Version 2.3 Support
- Summary



CICS PA Release 3 Highlights

- Historical Performance Database Repository
 - ▶ Short and Long term historical performance data
 - ▶ Comprehensive reporting facilities
- WebSphere MQ (SMF 116) Reporting
- New and Enhanced CICS Monitoring Facility (CMF) Reports
 - ▶ Enhanced CMF Resource Class Reports ...
 - Temporary Storage Queue List and Summary reports
 - ▶ Performance Wait (Bottleneck) Analysis
- ISPF Dialog Enhancements ...
 - ▶ Report Set menu restructured for easier report selection
 - ▶ More flexible and easier-to-use Report Set JCL generation
- Other Functional Enhancements ...
 - ▶ Report Forms enhanced to allow specification of Selection Criteria



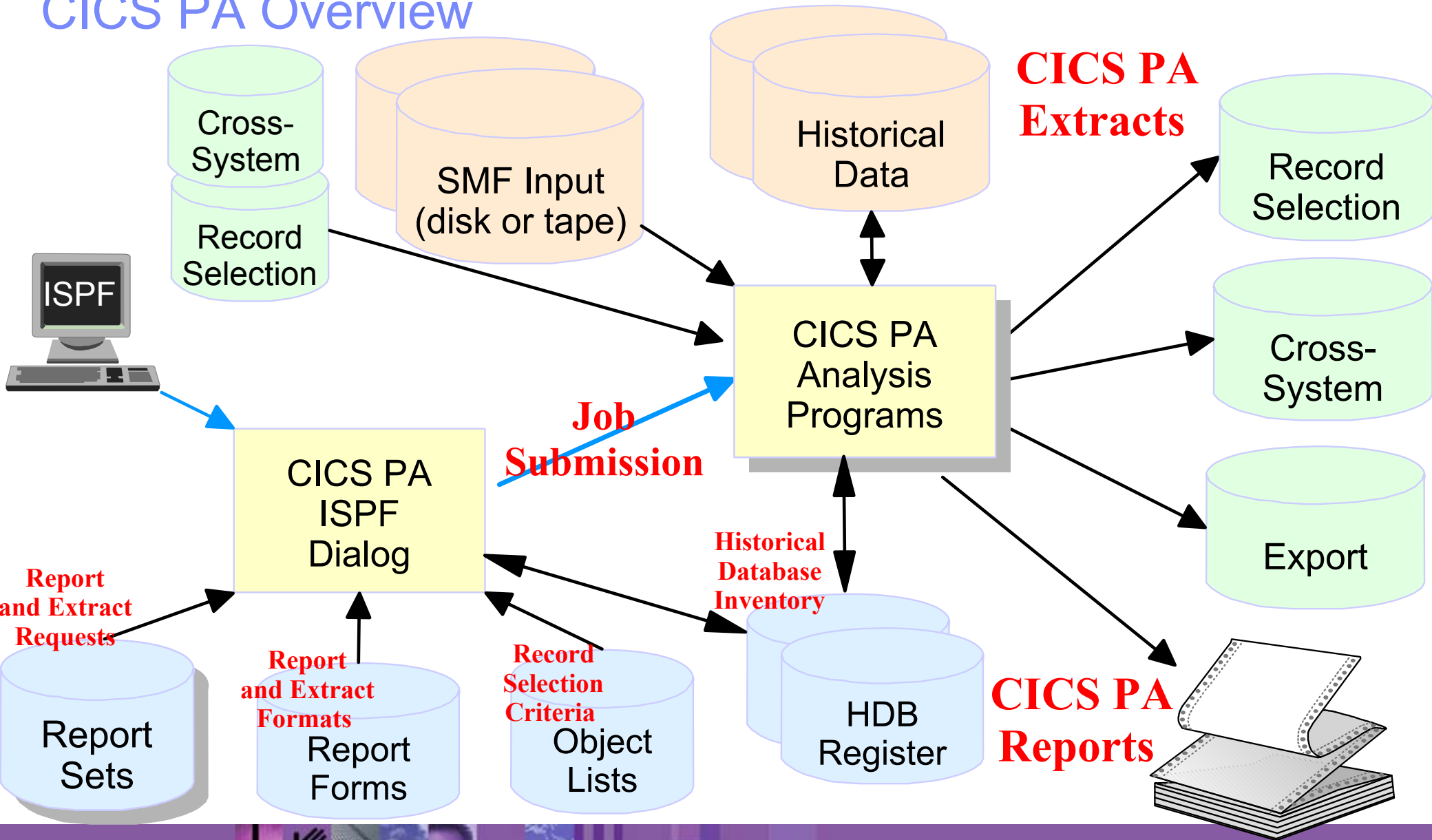
CICS PA Release 3 Highlights - Notes

CICS Performance Analyzer Release 3 provides a number of significant enhancements including:-

- Historical Database (HDB) support
- WebSphere MQ support
- New and Enhanced CICS Monitoring Facility (CMF) Reports:-
 - New Transaction Resource Usage Reports to include Temporary Storage Queue usage
 - New Performance Wait (Bottleneck) Analysis Report.
- ISPF Dialog Enhancements:-
 - Report Set menu restructured for easier report selection
 - More flexible and easier-to-use Report Set JCL generation
 - Report Forms enhanced to allow the specification of Selection Criteria
 - Additional Report Form samples.
- Other Functional enhancements include:-
 - Performance List eXtended report now supports most CMF fields as sort criteria
 - Improved Performance Summary report presentation - additional sort fields supported
 - Enhanced Workload Activity Summary report - Sub-totaling by WLM phase (BTE and EXE)
 - CICS Transaction Server for z/OS Version 2.3 support



CICS PA Overview



CICS PA Overview - Notes

The CICS PA analysis programs use the performance and accounting data written to MVS System Management Facility (SMF) data sets. This includes the data collected by the CICS Monitoring Facility (CMF) and written as SMF type 110 records, DB2 Accounting data written as SMF type 101 records, WebSphere MQ Accounting data written as SMF type 116 records, and the MVS System Logger data written as SMF type 88 records.

You can produce all the CICS PA reports and extracts by simply defining your CICS Systems (APPLIDs), MVS Images, DB2 Subsystems, WebSphere MQ Queue Managers, and MVS System Logger along with their associated unloaded SMF data sets.

Other CICS PA data sets include:-

1. Report Sets define your report and data extract requests.
2. Report Forms enable you to tailor your reports and extracts to include the information that you want to see.
3. Object Lists enable you to group objects for reporting purposes, e.g. Analyze the resource usage of a particular group of transactions or users.
4. HDB Register is the inventory of all information associated with the CICS PA Historical Database Manager.



CICS PA Overview - Main Menu ...

```
File  Options  Help
V1R3M0          CICS Performance Analyzer 1.3 - Primary Option Menu
Option ===> _____

0  CICS PA Profile      Customize your CICS PA dialog profile
1  System Definitions   Specify CICS Systems, SMF files and Groups
2  Report Sets          Request and submit reports and extracts
3  Report Forms         Define Report Forms
4  Object Lists         Define Object Lists
5  Historical Database   Collect and process Historical Data
X  Exit                 Terminate CICS PA
```

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CICS PA Overview - Main Menu - Notes

The CICS PA Interactive System Productivity Facility (ISPF) dialog allows you to request and submit your report and data extract requests easily. For the more experienced user, a batch command interface is also available to request the reports and extracts.

Follow the dialog to meet your reporting and analysis requirements:-

1. Customize your CICS PA dialog profile (optional). CICS PA will use default settings and prompt you to allocate data sets (with default allocation attributes) when required.
2. Define your CICS Systems (APPLIDs), MVS Images, DB2 Subsystems, MQ Subsystems, MVS System Logger and their associated unloaded SMF data sets.
3. Report Sets define your report and data extract requests. Here you request and tailor the required reports and extracts, then submit them for batch processing.
4. Report Forms enable you to tailor your reports and extracts to include the information that you want to see. You simply edit the report or extract format and content to meet your specific requirements. Comprehensive online help is available for every CMF field, so you never need to reference a manual.
5. Object Lists enable you to group objects for reporting purposes, e.g. Analyze the resource usage of a particular group of transactions or users.
6. Historical Database enables you to collect and manage historical performance data for your CICS systems.



CICS PA Release 3 - Historical Database (HDB)

- Flexible and easy-to-use facility for collecting and managing historical performance data for your CICS systems
- The CICS PA history database function provides ...
 - ▶ Short term history data detailing individual transaction performance for use in performance problem analysis
 - ▶ Long term history data summarized over time can be used for trend analysis and capacity planning
 - ▶ Powerful and flexible definition facility for historical data repositories based on Report Forms
 - ▶ Comprehensive reporting facilities
 - ▶ Optionally load history data into DB2 for further analysis and reporting
 - ▶ Definition and management of the historical databases (HDBs) from the CICS PA ISPF dialog
 - ▶ Trending and capacity planning



CICS PA Release 3 - Historical Database (HDB) ...

```
File  Options  Help
-----
                                Historical Database Menu
Option ===> _____
1  Templates          Design HDB Templates
2  Define             Define a new HDB
3  Load              Load data into the HDBs
4  Report             Submit HDB report requests
5  Export             Export HDB data sets to DB2
6  Maintenance        Maintain HDB definitions and data sets
7  Housekeeping       Perform HDB housekeeping

HDB Register . . . TEST.HDB.REGISTER      +
```



CICS PA Historical Database (HDB) - HDB Template ...

- HDB Templates define the type and format of the data in the Historical Databases (HDBs)
- Similar to Report Forms, they provide HDBs with ...
 - ▶ Flexibility ...
 - you decide what and how much information is recorded in the HDB
 - ▶ Ease of use ...
 - the editor provides a simple way of tailoring the template
 - ▶ Transparency ...
 - you can see at a glance what information is recorded in the HDB
- Each Template contains the following definition information about the HDB ...
 - ▶ Type of HDB - List or Summary
 - ▶ Field names and associated attributes



CICS PA Historical Database (HDB) - HDB Template ...

```

File Edit Confirm Upgrade Options Help
Summary Template - HDBTEST1 Row 1 of 222 More: >
Command ==> _____ Scroll ==> CSR

Description . . . Summary HDB Template Version (VRM): 620

Selection Criteria:
_ Performance Time Interval . . 00:01:00 (hh:mm:ss)

Field
/ Name + K Description
--- START A Task start time
--- STOP A Task stop time
--- APPLID A CICS Generic APPLID
--- TRAN A Transaction identifier
--- TASKCNT Total Task count
--- RESPONSE Transaction response time
--- DISPATCH Dispatch time
--- CPU CPU time
--- SUSPEND Suspend time
--- DISPWAIT Redispatch wait time
--- FCWAIT File I/O wait time
--- FCAMCT File access-method requests
--- IRWAIT MRO link wait time
--- SC24UHWM UDSA HWM below 16MB
--- SC31UHWM EUDSA HWM above 16MB
--- EOD ----- End of HDB -----
--- TERM A Terminal ID
--- APPLTRAN A Application naming Tran ID
--- APPLPROG A Application naming Tran ID

```

CICS PA Historical Database (HDB) - Define an HDB ...

```

File  Options  Help
-----
                                New HDB Definition
Command ===> _____

Specify new HDB definition options then press EXIT to save.

Name . . . . . HDBDAILY  System _____ + Image _____
Description . . _____

HDB Format:                               Selection Criteria:
Template . . . SUMTEST1 +                _ Performance

Data Retention Period:
Years . . ____ Months . . ____ Weeks . . 1 Days . . ____ Hours . . ____

Data Set Allocation Settings:
DSN Prefix . . . . . CBAKER
Management class . . . _____ (Blank for default management class)
Storage class . . . . . _____ (Blank for default storage class)
Volume serial . . . . . _____ (Blank for system default volume)
Device type . . . . . _____ (Generic unit or device address)
Data class . . . . . _____ (Blank for default data class)
Space Units . . . . . CYLS (TRKS or CYLS)
Primary quantity . . 5 (In above units)
Secondary quantity   _____ (In above units)

```



CICS PA Historical Database (HDB) ...

- Load ...
 - ▶ Creates the JCL that builds the HDBs
 - Recap Report from the HDB Load process
- Report ...
 - ▶ Generates the Report JCL for HDBs
- Export ...
 - ▶ Creates the DDL to define the DB2 Table
 - ▶ Generates the JCL to load a HDB into a DB2 Table
- Maintenance ...
 - ▶ Maintenance functions that can be performed against HDBs ...
 - Display the HDB definition and its associated data sets
- Housekeeping ...
 - ▶ Housekeeping functions that can be performed against HDBs ...
 - Submit HDB Housekeeping JCL ...
 - Delete an entire HDB or individual datasets in the HDB
 - Repair HDB Register using VERIFY command



CICS PA Historical Database (HDB) - Reporting ...

```

File  Options  Help
|-----|-----|-----|
| File  Options  Help
|-----|-----|-----|
|                               Run SUMMARY HDB Report - HDBDAILY
|
| Command ==> _____
|
| Specify Report request options then press Enter to continue submit.
|
| Reporting Options:
| Report Form . . TRTODSUM +
|
|                               ----- Report Interval -----
|                               YYYY/MM/DD  HH:MM:SS.TH
|                               From _____
|                               To   _____
|
| Time Interval . . 00:05:00 (hh:mm:ss) Reporting Options:
|                               _ Exclude Totals
|
| Enter "/" to select option
| / Edit JCL before submit
|
| HDB contains data from 1999/02/04 11:10 to 1999/02/04 11:10.
|
|-----|-----|-----|

```

**Updated
Apar
PQ77980**



CICS PA Historical Database (HDB) - Reporting ...

CICS Performance Analyzer Historical Database Summary													
V1R3M0										Page		1	
HDBR0001 Printed at 15:37:23 7/22/2003										Data from 11:10:00 02/04/1999 to 08:10:00 02/16/1999			
Stop Interval	Tran	Tasks	Avg Response Time	Avg Response Time	Avg Dispatch Time	Avg User CPU Time	Avg Suspend Time	Avg DispWait Time	Avg FC Wait Time	Avg FCAMRq	Avg IR Wait Time	Avg SC24UHWM	Avg SC31UHWM
1999-02-04-11.10	AADD	3	.0537	.0537	.0492	.0049	.0045	.0044	.0000	1	.0000	1002	0
1999-02-04-11.10	ABRW	5	.1210	.1210	.0178	.0042	.1032	.0026	.0000	0	.1006	1020	0
1999-02-04-11.10	AINQ	1	.0018	.0018	.0017	.0016	.0001	.0000	.0000	0	.0000	928	0
1999-02-04-11.10	AMNU	1	.1724	.1724	.1720	.0091	.0004	.0004	.0000	0	.0000	512	0
1999-02-04-11.10	AUPD	3	.0491	.0491	.0265	.0079	.0226	.0056	.0000	0	.0024	992	0
1999-02-04-11.10	CATA	7	.0324	.0324	.0179	.0069	.0145	.0002	.0000	0	.0000	0	0
1999-02-04-11.10	CBAM	1	51.3803	51.3803	.0607	.0229	51.3196	.0003	.0000	0	.0000	0	0
1999-02-04-11.10	CEMT	21	10.3531	10.3531	.0282	.0089	10.3250	.0158	.0000	0	.0000	0	0
1999-02-04-11.10	CESN	14	.0228	.0228	.0215	.0080	.0014	.0013	.0000	0	.0000	0	0
1999-02-04-11.10	CGRP	2	.5862	.5862	.0571	.0076	.5291	.4134	.0000	0	.0000	0	0
1999-02-04-11.10	CLQ2	2	2.0731	2.0731	.0628	.0068	2.0103	.0820	.0000	0	1.9054	0	0
1999-02-04-11.10	CLR2	2	.0604	.0604	.0030	.0020	.0574	.0000	.0000	0	.0135	0	0
1999-02-04-11.10	CPLT	2	18.3106	18.3106	.3495	.0372	17.9611	.0176	.0000	0	.0000	0	0
1999-02-04-11.10	CQRY	11	5.5908	5.5908	.0078	.0016	5.5830	.0006	.0000	0	.0000	0	0
1999-02-04-11.10	CRSQ	2	.0731	.0731	.0416	.0039	.0315	.0313	.0000	0	.0000	0	0
1999-02-04-11.10	CSAC	7	.3676	.3676	.0022	.0012	.3654	.0001	.0000	0	.0000	0	0
1999-02-04-11.10	CSFU	2	2.7193	2.7193	2.2322	.1714	.4871	.0232	.0000	0	.0000	0	0
1999-02-04-11.10	CSMI	6	.0983	.0983	.0774	.0078	.0209	.0006	.0009	5	.0153	16	0
1999-02-04-11.10	CSSY	18	2.5720	2.5720	1.3231	.3193	1.2489	.2908	.1534	268	.0000	0	179
1999-02-04-11.10	CSTE	2	.1338	.1338	.1250	.0125	.0088	.0086	.0000	0	.0000	0	0
1999-02-04-11.10	CWBA	1	.3753	.3753	.3691	.0146	.0062	.0059	.0000	0	.0000	0	38320
1999-02-04-11.10	CWBG	2	.0267	.0267	.0255	.0039	.0012	.0010	.0000	0	.0000	0	0
1999-02-04-11.10	CWXN	1	.1772	.1772	.1653	.0104	.0119	.0054	.0000	0	.0000	0	2064
1999-02-04-11.10	CXRE	2	.1275	.1275	.0265	.0049	.1010	.1008	.0000	0	.0000	0	0
1999-02-04-11.10	CZUX	5	.0152	.0152	.0104	.0051	.0048	.0006	.0000	0	.0000	0	32544
1999-02-04-11.10	CZXS	1	.0907	.0907	.0340	.0078	.0567	.0016	.0000	0	.0000	0	43712
1999-02-04-11.10	EXCI	45	.0044	.0044	.0042	.0015	.0003	.0001	.0000	3	.0000	528	124
1999-02-04-11.10		169	2.5475	2.5475	.1929	.0408	2.3546	.0415	.0164	29	.0263	215	1512



CICS PA Historical Database (HDB) - Exporting ...

```

File  Options  Help
-----
                                Export HDB data set
Command ===> _____

HDB Name . . . . : HDBDAILY
Data Set Name . : CBAKER.HDBDAILY.D03196.T144501.HDB

Select option
1 1. Create DDL to define table          2. Load data into table

Create Options                                Load Options
_ Create Database                            1 1. Resume
_ Create Storage Group                       2. Replace

DB2 Settings:
DB2 Subsystem ID . . . . _____
DSNTIAD Plan Name . . . . _____
DB2 Load Library . . . . _____
DB2 Exit Library . . . . _____
DB2 RUNLIB Library . . . . _____
Database . . . . . _____ Storage Group . . . . _____
VCAT Catalog name . . . . _____ Volume . . . . . _____

Include Clock Field Components                Summary Options
1 1. Time and Count                        _ Include Sums of Squares
   2. Time only
   3. Count only

```



CICS PA Release 3 - MQ Reports ...

- Provide a detailed performance analysis of the CICS transactions that access an WebSphere MQ Queue Manager
 - ▶ WebSphere MQ Accounting data (SMF 116)
 - Class 1 (Subtype 0), Class 3 (Subtypes 1 and 2) records
 - Accounting data for each task, at thread and queue level
- MQ Reports ...
 - ▶ List ...
 - Class 1, Class 3, ...
 - ▶ Summary ...
 - Class 1, Class 3, ...
 - Summarized by ...
 - CICS Transaction ID and/or MQ queue name
- Record Selection Extract



CICS PA Release 3 - MQ Reports - Notes ...

The new CICS PA MQ reports use the WebSphere MQ Accounting data (SMF 116 records) to provide a detailed performance analysis of the CICS transactions that access an MQ queue manager.

The CICS PA MQ List reports provide a detailed trace of the WebSphere MQ accounting records, reporting the comprehensive performance data contained in the Class 1 (Subtype 0) and Class 3 (Subtypes 1 and 2) records. The MQ Summary reports provide, summarized by either CICS Transaction ID or by MQ queue name, an analysis of the MQ system and queue resources used and the transactions they service.

To produce the CICS PA MQ Reports, you need to accumulate WebSphere MQ Accounting statistics (SMF 116 records). CICS PA Version 1 Release 3 supports the WebSphere MQ Accounting statistics data from MQSeries for OS/390 Version 5.2, IBM WebSphere MQ for z/OS Version 5.3, and IBM WebSphere MQ for z/OS Version 5.3.1.

The WebSphere MQ SupportPac "MP1B: MQSeries for OS/390 V5.2 - Interpreting accounting and statistics data" provides information on the use and interpretation of the accounting and statistics available in MQSeries for OS/390 Version 5.2 (and later) and also provides information about the layout of the SMF records and suggests ways of analysing the data.



CICS PA Release 3 - MQ Reports - List ...

CICS Performance Analyzer													
WebSphere MQ Class 1 List													
MQ000001 Printed at 12:06:24 6/18/2003 Data from 10:45:00 1/10/2003											Page 1		
APPLID	SSID	Tran	Time	Task	CPU	GET Counts				PUTx Counts			
						<=99	<=999	<=9999	>=10000	<=99	<=999	<=9999	>=10000
CICSPTST	CBA1	CKBP	10:45:00.11	13458	0.001069	0	1	0	0	0	1	0	0
CICSPTST	CBA1	CKBP	10:45:00.11	13459	0.000999	0	1	0	0	0	1	0	0
CICSPRD2	CBP1	CKBP	10:45:00.11	37690	0.000518	1	0	0	0	0	0	0	0
CICSPTST	CBA1	CKBP	10:45:00.37	13463	0.001086	0	1	0	0	0	1	0	0
CICSPTST	CBA1	CKBP	10:45:00.38	13465	0.000978	0	1	0	0	0	1	0	0
CICSPTST	CBA1	CKBP	10:45:00.38	13461	0.000909	0	1	0	0	0	1	0	0
CICSPTST	CBA1	CKBP	10:45:00.38	13464	0.000824	0	1	0	0	0	1	0	0
CICSPTST	CBA1	CKBP	10:45:00.38	13462	0.000875	0	1	0	0	0	1	0	0
CICSPTST	CBA1	CKBP	10:45:00.42	13466	0.000940	0	1	0	0	0	1	0	0
CICSPTST	CBA1	CKBP	10:45:00.42	13467	0.001077	0	1	0	0	0	1	0	0
CICSPTST	CBA1	CKBP	10:45:00.47	13471	0.001014	0	1	0	0	0	1	0	0
CICSPRD2	CBP1	CKBP	10:45:00.50	37693	0.000492	1	0	0	0	0	0	0	0
CICSPTST	CBA1	CKBP	10:45:00.50	13469	0.000863	0	1	0	0	0	1	0	0
CICSPTST	CBA1	CKBP	10:45:00.50	13468	0.000877	0	1	0	0	0	1	0	0
CICSPTST	CBA1	CKBP	10:45:00.50	13474	0.000914	0	1	0	0	0	1	0	0
CICSPTST	CBA1	CKBP	10:45:00.50	13470	0.000996	0	1	0	0	0	1	0	0
CICSPTST	CBA1	CKBP	10:45:00.51	13473	0.000899	0	1	0	0	0	1	0	0
CICSPTST	CBA1	CKBP	10:45:00.51	13472	0.000934	0	1	0	0	0	1	0	0
CICSPRD2	CBP1	Q412	10:45:00.57	37694	0.001148	0	1	0	0	0	1	0	0
CICSPRD2	CBP1	Q431	10:45:00.60	37695	0.001271	0	1	0	0	0	0	0	1
CICSPRD2	CBP1	Q411	10:45:00.61	37696	0.000948	0	1	0	0	0	1	0	0



CICS PA Release 3 - MQ Reports - Summary ...

```

V1R3M0
CICS Performance Analyzer
WebSphere MQ Class 1 Summary
MQ000003 Printed at 12:06:25 6/18/2003 Data from 10:45:00 01/10/2003 to 11:00:59 01/10/2003 Page 1
----- Key -----
SSID  APPLID  TRAN  Count  Average CPU  Average GET Counts  Average PUTx Counts
          <=99  <=999  <=9999  >=10000  <=99  <=999  <=9999  >=10000
CBA1  CICSPTST  CKBP  45319  0.001099  2.0  0.0  1.0  0.0  0.0  0.0  1.0  0.0  0.0
CBP1  CICSPRD2  CKBP   123  0.000548  1.0  1.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
CBP1  CICSPRD2  Q451    8  0.138772 110.6  0.0  0.0  0.0  55.8  54.4  0.1  0.0  0.4
CBP1  CICSPRD2  Q401    79  0.001141  2.0  0.0  1.0  0.0  0.0  0.0  0.0  1.0  0.0
CBP1  CICSPRD2  Q411  1044  0.001012  2.0  0.0  1.0  0.0  0.0  0.0  1.0  0.0  0.0
CBP1  CICSPRD2  Q412  1187  0.001206  2.0  0.0  1.0  0.0  0.0  0.0  1.0  0.0  0.0
CBP1  CICSPRD2  Q413    4  0.000885  2.0  0.0  1.0  0.0  0.0  0.0  1.0  0.0  0.0
CBP1  CICSPRD2  Q428   284  0.001060  2.0  0.0  1.0  0.0  0.0  0.0  1.0  0.0  0.0
CBP1  CICSPRD2  Q430   818  0.000976  2.0  0.0  1.0  0.0  0.0  0.0  1.0  0.0  0.0
CBP1  CICSPRD2  Q431   635  0.001346  2.0  0.0  1.0  0.0  0.0  0.0  0.0  0.0  1.0
CBP1  CICSPRD2  Q444   327  0.001068  2.0  0.0  1.0  0.0  0.0  0.0  1.0  0.0  0.0
CBT1  CICSTST2  CKBP    4  0.001235  2.0  0.0  0.8  0.3  0.0  0.0  0.8  0.3  0.0
    
```



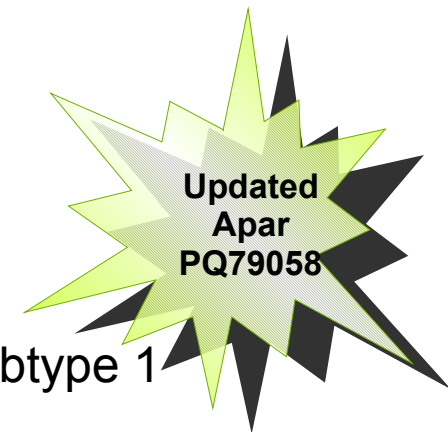
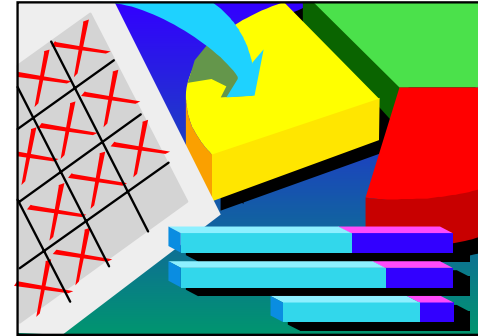
CICS PA Release 3 - CMF Report Enhancements ...

- Enhanced CICS Monitoring Facility (CMF) Reports ...
 - ▶ Resource Class data reporting
 - Temporary Storage
 - List and Summary Reports
 - ▶ Performance Wait Analysis Report
 - Provides a transaction activity summary by wait (suspend) time
 - Summarizes, by transaction ID, the resources that cause a transaction to be suspended
 - Highlights the CICS system resource bottlenecks that may be causing bad response time
 - Enables a more detailed analysis, focusing on the problem resources identified, to be more easily performed
 - ▶ Workload Activity Report
 - Sub-totalling by WLM phase (BTE and EXE)



CICS PA Release 3 - Resource Usage Reports ...

- Transaction Resource Usage Reports ...
 - ▶ Transaction Resource Usage List
 - File and Temporary Storage Queue
 - ▶ Transaction File Usage Summary
 - ▶ Transaction Temporary Storage Usage Summary
 - ▶ File Usage Summary
 - File Usage by Transaction ID
 - ▶ Temporary Storage Usage Summary
 - Tsqueue Usage by Transaction ID
- Transaction Resource Usage Reports ...
 - ▶ CMF Resource Data and Performance Data - SMF 110 subtype 1
- CMF Resource Class ...
 - ▶ CICS TS for z/OS Version 2.2 with PTFs UQ68396 and UQ79266
 - ▶ CICS TS for OS/390 Version 1.3 with PTFs UQ70905 and UQ79397



CICS PA Release 3 - Resource Usage Reports - Notes ...

The CICS PA Transaction Resource Usage Reports provide a detailed analysis of the Resource Class records collected by the CICS Monitoring Facility (CMF). The reports include:-

- Transaction Resource Usage List
- Transaction File Usage Summary and Transaction Temporary Storage Usage Summary
- File Usage Summary and Temporary Storage Usage Summary

The Transaction Resource Usage List report provides a list of all Transaction resource class records in the sequence that they appear in the SMF file. It gives Transaction Information, detailing their individual File and Temporary Storage Queue usage.

The Transaction File Usage Summary report summarizes File usage by Transaction ID. For each Transaction ID, it gives Transaction information and File Control statistics followed by a breakdown of File usage for each File used.

The Transaction Temporary Storage Usage Summary report summarizes Temporary Storage Queue usage by Transaction ID. For each Transaction ID, it gives Transaction information and Temporary Storage statistics followed by a breakdown of Tsqname usage for each Temporary Storage Queue used.

The File Usage Summary report summarizes File activity. For each File, it gives a breakdown of File usage by Transaction ID.

The Temporary Storage Usage Summary report summarizes Tsqueue activity. For each Tsqueue, it gives a breakdown of Temporary Storage Queue usage by Transaction ID.



CICS PA Release 3 - Resource Usage Reports - List ...

CICS Performance Analyzer															
Transaction Resource Usage List															
RESU0001 Printed at 15:18:36 6/19/2003 Data from 14:49:42 6/19/2003											Page		7		
Tran	Userid	SC	TranType	Term	Request		Fcty	Conn	NETName	APPLID	UOW R		Response		
-----	-----	-----	-----	-----	LUName	Type	Program	T/Name	Name	-----	Task	Seq	T	Stop Time	Time
AUPD	CBAKER	TP	U	TC28	IYCWTC28	AP:	DFHGAALL	T/TC28	GBIBMIYA.IYCWTC28	IYK2Z1V1	91	1	T	15:13:39.474	.0072
***** FC Calls *****															
File	Elapse		Get	Put	Browse	Add	Delete	Total	File	RLS	CFDT	AccMeth			
-----	-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----		-----	
FILEA	Count		1	1	0	0	0	2	1	0	0	4			
***** I/O Waits *****															

CECI	CBAKER	TO	U	TC05	IYCWTC05	AP:	DFHECIP	T/TC05	GBIBMIYA.IYCWTC05	IYK2Z1V1	69	1	T	15:14:26.435	266.7346
***** FC Calls *****															
File	Elapse		Get	Put	Browse	Add	Delete	Total	File	RLS	CFDT	AccMeth			
-----	-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----		-----	
FILEA	Count		0	0	5	0	0	6	0	0	0	7			
***** TS Calls *****															
TSQueue	Elapse		Get	Put_Aux	Put_Main	Total	I/O Waits		TS Item		*****				
-----	-----		-----	-----	-----	-----	TS	Shr_TS	Get	Put_Aux	Put_Main	-----		-----	
TESTQ1	Count		0	0	3	3	0	0	Length	0	0	360			
TESTQ2	Count		0	2	0	2	0	0	Length	0	120	0			
Total	Count		0	2	3	5	0	0	Length	0	120	360			



CICS PA Release 3 - Resource Usage Reports ...

```

File  Systems  Options  Help
-----
                        RESTEST - Temporary Storage Summary Report

Command ==> _____

System Selection:
APPLID . . _____ +
Image  . . _____ +
Group  . . _____ +

Report Output:
DDname . . . . . TSRU0001
Print Lines per Page . . _____ (1-255)

Temporary Storage Summary Reports Required:
/ Transaction Temporary Storage Usage
/ Temporary Storage Usage
  / Break down by Transaction ID
  / Include Transaction Totals

Report Format:
Title . . _____

Selection Criteria:
_ Performance
    
```

Showing Defaults



CICS PA Release 3 - Resource Usage Reports - Notes ...

The Transaction Resource Usage Report panel shows the options available when requesting a Transaction Resource Usage Summary Report:-

- **CICS System Selection** identifies the CICS Systems (APPLIDs) that you want to report against.
- You can request a **Transaction Temporary Storage Usage Summary** report and/or a **Temporary Storage Usage Summary** report.
- The **Transaction Temporary Storage Usage Summary** report summarizes the transactions that use Temporary Storage Queues. The report consists of Transaction Identification and Temporary Storage statistics from the CMF Performance records. In addition, there is one sub-section for each Temporary Storage Queue that this transaction has used. For those transactions which access more than one temporary storage queue, resource sub-totals will also be included in the report.
- The **Temporary Storage Usage Summary** report summarizes Temporary Storage activity, breaking down individual Temporary Storage Queue usage by Transaction ID.
 - Select **Break down by Transaction ID** to include individual Transaction statistics.
 - Select **Include Transaction Totals** to include total Transaction statistics.
- Specify **Selection Criteria** to Include or Exclude:-
 - CMF Performance records based on (a) specified time intervals and/or (b) particular field values.
 - CMF Resource records based on (a) specified time intervals and/or (b) particular field values, including temporary storage queue name.



Transaction Temporary Storage Usage Summary Report

Tran		#Tasks	***** TS Calls *****				*** I/O Waits ***		***** TS Item *****		
			Get	Put_Aux	Put_Main	Total	TS	Shr_TS	Get	Put_Aux	Put_Main
V1R3M0 CICS Performance Analyzer Transaction Temporary Storage Usage Summary TEMP0001 Printed at 16:55:16 7/15/2003 Data from 14:49:42 6/19/2003 to 15:16:15 6/19/2003 APPLID IYK2Z1V1 Page 1											
CECI	2	Elapse Avg					.0000	.0000			
		Max					.0000	.0000			
	Count	Avg	0	1	1	3	0	0			
		Max	0	2	3	5	0	0			
SHAR1	1	Elapse Avg	.0000	.0070	.0000	.0070	.0000	.0044			
		Max	.0000	.0070	.0000	.0070	.0000	.0044			
	Count	Avg	0	2	0	2	0	3	0	600	0
		Max	0	2	0	2	0	3	0	600	0
									Length		
TESTQ1	2	Elapse Avg	.0000	.0000	.0008	.0009	.0000	.0000			
		Max	.0000	.0000	.0017	.0017	.0000	.0000			
	Count	Avg	0	0	1	2	0	0	0	0	180
		Max	0	0	3	3	0	0	0	0	360
									Length		
TESTQ2	1	Elapse Avg	.0000	.0000	.0000	.0000	.0000	.0000			
		Max	.0000	.0000	.0000	.0000	.0000	.0000			
	Count	Avg	0	2	0	2	0	0	0	120	0
		Max	0	2	0	2	0	0	0	120	0
									Length		
Total	4	Elapse Avg	.0000	.0018	.0004	.0022	.0000	.0011			
		Max	.0000	.0070	.0017	.0070	.0000	.0044			
	Count	Avg	0	1	0	2	0	0	0	180	90
		Max	0	2	3	3	0	3	0	600	360
									Length		



Resource Usage Reports - Temp Storage Usage Summary

V1R3M0													
CICS Performance Analyzer													
Temporary Storage Usage Summary													
TEMP0001 Printed at 16:55:16 7/15/2003			Data from 14:49:42 6/19/2003 to 15:16:15 6/19/2003				APPLID IYK2Z1V1		Page 4				
TSQueue	Tran	#Tasks	***** TS Calls *****				*** I/O Waits ***		***** TS Item *****				
			Get	Put_Aux	Put_Main	Total	TS	Shr_TS	Get	Put_Aux	Put_Main		
SHAR1	CEBR	1 Elapse	Avg	.0035	.0000	.0000	.0035	.0000	.0000				
			Max	.0035	.0000	.0000	.0035	.0000	.0000				
		Count	Avg	16	0	0	16	0	0	24228	0	0	
			Max	16	0	0	16	0	0	Length 24228	0	0	
		CECI	1 Elapse	Avg	.0000	.0070	.0000	.0070	.0000	.0044			
				Max	.0000	.0070	.0000	.0070	.0000	.0044			
	Count	Avg	0	2	0	2	0	3	0	600	0		
		Max	0	2	0	2	0	3	Length 0	600	0		
	Totl	2 Elapse	Avg	.0017	.0035	.0000	.0052	.0000	.0022				
			Max	.0035	.0070	.0000	.0070	.0000	.0044				
		Count	Avg	8	1	0	9	0	1	12114	300	0	
			Max	16	2	0	16	0	3	Length 24228	600	0	
STATTC28CBAKER	1 Elapse	Avg	.0000	.0000	.0000	.0000	.0000	.0000					
		Max	.0000	.0000	.0000	.0000	.0000	.0000					
	Count	Avg	0	1	0	1	0	0	0	69	0		
		Max	0	1	0	1	0	0	Length 0	69	0		



CICS PA Release 3 - Wait Analysis (Bottleneck) Report ...

- Performance Wait Analysis (Bottleneck) Report
 - ▶ Provides transaction activity by wait (suspend) time
 - ▶ Summarizes, by transaction ID (default), ...
 - the resources that cause a transaction to be suspended
 - highlights the CICS system resource bottlenecks that may be causing bad response time
 - ▶ Enables a more detailed analysis, focusing on the problem resources identified, to be more easily performed



CICS PA Release 3 - Wait Analysis Report ...

V1R3M0		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	

Tran=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 Suspend	
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

Tran=CBPB							
Summary Data							
		----- Time -----		----- Count -----		----- Ratio -----	
		Total	Average	Total	Average		
# Tasks				13			
....							



CICS PA Release 3 - Workload Activity Report ...

```

V1R3M0                                CICS Performance Analyzer
                                Workload Manager Activity Summary by Service Class
WKLD0001 Printed at 16:43:42  6/18/2003 Data from 14:18:57 11/05/2002 to 15:04:59 11/05/2002
                                Page      1920
Service Class      APPLID      Phase      #Tasks      Average      Std Dev      90% Peak      Maximum
-----
CICSDFLT  SCSCPAA1  BTE         51         .0377         .1073         .1753         .5600
           SCSCPAA1  EXE        1533         .0316         .0781         .1316         1.1133
           SCSCPAA4  BTE         17        111.043        457.767        697.900        1887.44
           SCSCPAA4  EXE        8239         .0204         .0569         .0934         1.2754
           SCSCPJA7  EXE         810         .0035         .0043         .0090         .0297
           SCSCPLA1  BTE        8816         .3441        20.0989        26.1108        1887.18
           SCSCPLA2  BTE        6954         .4033        22.6318        29.4172        1887.33
           SCSCPTA1  BTE        6624         .0356         .0792         .1371         1.2963
           SCSCPTA2  BTE        4680         .0412         .0891         .1555         1.1289
CICSDFLT  *Total*   BTE       27142         .3005        19.8410        25.7367        1887.44
           *Total*   EXE       10582         .0207         .0587         .0960         1.2754
CICSWORK  SCSCPJA7  BTE         32        58.9871        333.661        486.741        1887.47
* Grand Total *   BTE       27174         .3696        22.8968        29.7233        1887.47
* Grand Total *   EXE       10582         .0207         .0587         .0960         1.2754
  
```

- by MVS WLM Service Class and Report Class
 - ▶ Applid, WLM Completion phase, Number of tasks, ...
 - ▶ Response time ...
 - Average, Std Deviation, Peak percentile, Maximum, ...



CICS PA Release 3 - ISPF Dialog Enhancements ...

- System Definitions - MQ Subsystem ...
 - ▶ WebSphere MQ Accounting records (SMF 116 records)
- Report Set menu restructured ...
 - ▶ Allows easier selection of reports and extracts
 - ▶ More flexible and easier-to-use Report Set JCL generation
 - JCL generation without Save'ing
 - JCL generation for Report Set, Report Group, or Individual Report
- Report Form Enhancements ...
 - ▶ Allow the specification of Selection Criteria
 - ▶ More than 90 sample Report Forms
 - Additional Report Form samples ...
 - CICS RMI Analysis, Abend Analysis, DBCTL, SOAP for CICS, ...
 - Worst File, Temporary Storage, Transient Data usage, ...



CICS PA Release 3 - ISPF Dialog Enhancements ...

```

File  Systems  Confirm  Options  Help
EDIT                                     Report Set - PERFRPTS                Row 1 of 20
Command ===> _____                Scroll ===> CSR

Description . . . CICS PA Report Set

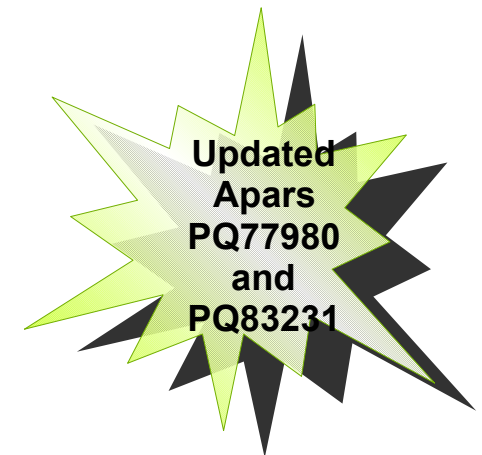
Enter "/" to select action.

____  ** Reports **                                Active
+ ____ Options                                    No
+ ____ Selection Criteria                          No
- RUN Performance Reports                          Yes
    ____ List                                       No
    ____ List Extended                             No
    ____ Summary                                    Yes
    ____ Totals                                     Yes
RUN Wait Analysis                                Yes
    ____ Cross-System Work                          No
    ____ Transaction Group                          No
    ____ BTS                                         No
    ____ Workload Activity                          No
+ ____ Exception Reports                            No
+ ____ Transaction Resource Usage Reports           No
- ____ Subsystem Reports                            No
    ____ DB2                                         No
    ____ WebSphere MQ                               No
+ ____ System Reports                               No
+ ____ Performance Graphs                          No
+ ____ Extracts                                     No
    ____ ** End of Reports **
    
```

*Report Set Category
or
an individual Report*

CICS PA Release 3 - Other Functional Enhancements ...

- Performance List, List eXtended, and Summary reports
 - ▶ Support all CICS Monitoring Facility (CMF) performance data fields
 - ▶ Listx report now supports most CMF fields as sort criteria
- Improved Performance Summary report presentation
 - ▶ Revised default sort field - Tran (Tran/Term)
 - ▶ Additional sort fields supported
 - ▶ New option to suppress the Total (control break) report lines
- Transaction Resource Usage List report
 - ▶ File resource sub-totals
- Enhanced Workload Activity Summary report
 - ▶ Sub-totaling by WLM phase (BTE and EXE)
- System Logger Report
 - ▶ New List report option to Sort by Time Interval
- DB2 Summary Reports
 - ▶ New Totals by DB2 Subsystem ID



CICS Transaction Server for z/OS Version 2.3 Support

- CICS Transaction Server V2.3 support includes ...
 - ▶ Support for all new CMF Performance Class data fields ...
 - Performance List, ListX, and Summary Reports and Extracts
 - Performance Record Selection Criteria
 - ▶ Revised Performance Totals Report
 - ▶ Revised Performance Wait Analysis Report
 - ▶ Additional Summary Report and Extract By keywords
 - ▶ Additional Performance ListX Report By and Limit keywords
 - ▶ Revised Cross-System Work Extract default record format
 - ▶ Revised Performance Data Extract default record format
 - ▶ Additional Sample Report Forms
 - ▶ Documentation Refresh
- New Red Book ...
 - ▶ CICS Performance Analyzer Release 3, SG24-6063



Summary

- CICS Performance Analyzer for z/OS
 - ▶ Comprehensive Performance Reporting for CICS
 - Including DB2, WebSphere MQ, and MVS System Logger
 - ▶ Extensive Tabular Reports and Extract Data Sets
 - ▶ Historical Database
 - Trending and Capacity Planning
 - ▶ ISPF Dialog to build, maintain, and submit reports and extracts
- CICS PA Version 1.3 - Product information ...
 - ▶ Program Product - 5655-F38
 - ▶ Releases Supported ...
 - CICS Transaction Server for z/OS, Version 2
 - CICS Transaction Server for OS/390, Version 1
 - ▶ More Information

<http://www.ibm.com/cics/>

