IBM CICS Performance Analyzer for z/OS

Report Reference

Version 2 Release 1

SC34-6800-00

Note!
Before using this information and the product it supports, read the information in “Notices,” on page 347.

First Edition (June 2007)

This edition applies to Version 2 Release 1 of IBM CICS Performance Analyzer for z/OS (product number 5697-N40) and to all subsequent releases and modifications until otherwise indicated in new editions.

This edition replaces SC34-6800-02. The technical changes for this edition are summarized under “Summary of changes” on page xix and are indicated by a vertical bar to the left of the change.

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About this book

This book contains information for IBM® CICS® Performance Analyzer for z/OS® Version 2 Release 1.

CICS Performance Analyzer for z/OS is a reporting tool for analyzing and tuning the performance of CICS systems. In this book, CICS Performance Analyzer for z/OS is referred to by its short name of CICS Performance Analyzer or CICS PA, and CICS Transaction Server is referred to as CICS.

This book describes the reports and extracts that can be requested, what they contain and how to use them. It also describes the System Management Facility (SMF) data that provides the input.

The following releases of CICS are supported:

530 CICS Transaction Server for OS/390® Version 1 Release 3
610 CICS Transaction Server for z/OS Version 2 Release 1
620 CICS Transaction Server for z/OS Version 2 Release 2
630 CICS Transaction Server for z/OS Version 2 Release 3
640 CICS Transaction Server for z/OS Version 3 Release 1
650 CICS Transaction Server for z/OS Version 3 Release 2

Who should read this book

This book is intended for managers, database administrators, system programmers, and application programmers responsible for monitoring and improving the performance of CICS systems. It assumes that you understand basic CICS concepts and your installation's CICS systems. If you are new to MVS™, OS/390, z/OS, DFSORT™, or CICS, you may want to review the information in "Bibliography" on page 351 before using this book and the CICS Performance Analyzer for z/OS.

Before you read this book, you need to have a good understanding of how CICS works. This assumes familiarity with many of the books in the CICS Transaction Server for z/OS library, together with adequate practical experience of installing and maintaining a CICS system. You will also need to have a good understanding of the CICS Monitoring Facility (CMF), which is described in the *CICS Performance Guide.*

Conventions used in this book

This book uses the following conventions.

Highlighting conventions

This book uses the following highlighting conventions:

- **Boldface type** indicates dialog commands or user interface controls such as names of fields or menu choices.
- `Monospace type` indicates examples of text and batch commands that you enter exactly as shown.
- *Italic type* indicates variables that you should replace with a value. It is also used to indicate book titles and to emphasize significant words.

Command syntax notational conventions

The notational conventions used in this book to describe the syntax of CICS PA batch commands are as follows:

Use of symbols

The levels of nesting in the syntax are separated by parentheses. When you enter the commands, enter the following symbols exactly as they appear in the list:

, comma
- hyphen
= equals
. period
: colon
( ) parentheses

The following symbols are used to distinguish operands and command syntax. Do ***not*** enter them when you enter commands:

brackets [ ] mean that you ***may*** select one of the operands, but they can be omitted. If the brackets are nested, the outermost operand (enclosed by one pair of brackets) is the highest level of nesting. That operand must be selected in order to select the next lower-level operand nested within it, and so forth.

underscore _____
denotes a default option. If you don't specify an operand, this is the operand the system selects.

vertical bar | separates operand alternatives within brackets.

Use of case

Uppercase letters represent information that you must enter as shown. Some operands can be abbreviated. The letters that must be used are in uppercase. The subsequent letters in lowercase may be omitted. For example, you can enter the operand `CROSSsystem` either as a full word or abbreviated. The uppercase letters `CROSS` are the shortest truncation that CICS PA accepts.

Lowercase letters represent variable information that you supply, such as start time, owner, delimiter, DDname, and so on. For example, `OUTPUT(ddname)` shows that the OUTPUT operand requires a DDname parameter.

$ (the dollar symbol)

In the character sets given in this book, the dollar symbol ($) is used as a national currency symbol and is assumed to be assigned the EBCDIC code point X'5B'. In some countries a different currency symbol, for example the pound symbol (£), or the yen symbol (¥), is assigned the same EBCDIC code point. In these countries, the appropriate currency symbol should be used instead of the dollar symbol.

Terminology used in this book

In this book, CICS Performance Analyzer for z/OS is referred to as "CICS Performance Analyzer" or its abbreviation "CICS PA".

CICS PA can produce various types of output, including reports (text or numeric data formatted for human readers), graphs (also for human readers), and extracts (data intended for use by other software applications). These outputs are often referred to collectively as "reports".

Much of the terminology in this book is based on CICS terminology. Refer to *CICS Transaction Server for OS/390: Glossary,* GC33-1705.

The following Web site consolidates in one convenient location several of the main glossaries created for IBM products, including the *Glossary of Computing Terms*:

http://www.ibm.com/ibm/terminology/

Service updates and support information

To find service updates and support information, including software FixPaks, PTFs, Frequently Asked Question (FAQs), technical notes, troubleshooting information, and downloads, refer to the following Web page:

www.ibm.com/cics/support

Where to find information

The CICS Library Web page provides current product documentation and IBM Redbooks™ that you can view, print, and download. To locate publications with the most up-to-date information, refer to the following Web page:

www.ibm.com/cics/library

Accessibility

Accessibility features help a user who has a physical disability, such as restricted mobility or limited vision, to use software products successfully. The major accessibility features in CICS Performance Analyzer enable users to:

- Use assistive technologies such as screen readers and screen magnifier software. Consult the assistive technology documentation for specific information when using it to access z/OS interfaces.
- Customize display attributes such as color, contrast, and font size.
- Operate specific or equivalent features using only the keyboard. Refer to the *z/OS ISPF User's Guide* for information about accessing ISPF interfaces. This guide describes how to use ISPF, including the use of keyboard shortcuts or function keys (PF keys), includes the default settings for the PF keys, and explains how to modify their functions.

You can perform most tasks required to set up and run CICS Performance Analyzer using a 3270 emulator logged on to TSO.

IBM Personal Communications (Version 5.0.1 for Windows® 95, Windows 98, Windows NT® and Windows 2000; Version 4.3 for OS/2®) provides 3270 emulation with accessibility features for people with disabilities. You can use this product to provide the accessibility features you need.

People with limited vision who use screen reader software might find the following require particular attention:

- The Performance Graph Reports
  - These reports are composed of character output. Screen readers can report all of these to you but they are unlikely to convey the overall impression of the graph.
  - All the data used to produce Performance Graph Reports is available from CMF performance class data. You might find it more helpful to work with, for example, the Performance Summary reports or the Performance Export Extract.

- Pop-up windows
  - CICS Performance Analyzer uses the ISPF function that produces pop-up windows for some tasks. The pop-up and its frame are just text that overlays the underlying information on the displayed panel. The frame of such a pop-up is not usually recognized as such by Screen reader software, so you may need to gain some familiarity with reading such panels before the information becomes meaningful. ISPF pop-up windows can be displayed on a full screen by using the **RESIZE** command.

A version of this publication which is more suitable for use with screen reader software can be made available on request. Use one of the contact methods described in “Sending your comments to IBM” on page 383 to submit such requests.

How to send your comments

Please refer to the topic “Sending your comments to IBM” on page 383.

Summary of changes

Significant changes in this edition are summarized here, and marked by a vertical bar in the left margin.

June 2007: CICS PA V2.1

CICS Performance Analyzer for z/OS V2.1 includes the following features and changes:

- Support for CICS Transaction Server V3.2
- Support for OMEGAMON XE for CICS
- Report and Extract enhancements
- Dialog enhancements

CICS PA has dropped support for SMF records created by these releases of CICS TS:

CICS/ESA® V4.1
CICS TS V1.1 and V1.2

Support for CICS Transaction Server V3.2

All CICS PA reports, HDB, and the ISPF dialog support CICS Transaction Server for z/OS V3.2 which is known by CICS PA as CICS Version 650. This includes support for:

- New CICS Monitoring Facility (CMF) performance class fields:
  - In group DFHCICS: ONETWKID, OAPPLID, OSTART, OTRANNUM, OTRAN, OUSERID, OUSERCOR, OTCPSVCE, OPORTNUM, OCLIPADR, OCLIPORT, OTRANFLG, OFCTYNME
  - In group DFHDOCH: DHDELCT
  - In group DFHCHNL: PGCSTHWM
  - In group DFHDATA: WMQREQCT, WMQGETWT
  - In group DFHSOCK: ISALLOCT, ISIOWTT, ISIPCNNM, CLIPPORT

  For a short description of these CMF fields, their equivalent CICS PA field names, and how you can use them, see Table 30 on page 317 and Table 32 on page 338.
- Higher-precision clock fields: all Type S clock fields are now 12 bytes.
- New CICS statistics records and fields. The CICS PA ISPF dialog uses the new statistics records to create the following new statistics reports:
  - IPCONN Resources
  - LIBRARY Resources (with a hyperlink from the LIBRARY name to a LIBRARY Data Set Names report)
  - WebSphere® MQ Connections
  - DOCTEMPLATE Resources
- Compressed SMF records. CICS Transaction Server V3.2 can write SMF records in compressed format. CICS PA can read these compressed records from SMF files, and also optionally write them, when creating a Cross-System Work extract or a Record Selection extract. (New **COMPRESS**|**NOCOMPRESS** options on the CICSPA RECSEL and CROSSsystem commands.)

Support for OMEGAMON XE for CICS

OMEGAMON XE for CICS fields from SMF type 110 records in report forms

CICS monitoring SMF type 110 records may include a user data field (field

ID: OMEGCICS.1) that contains performance class data from IBM Tivoli OMEGAMON XE for CICS on z/OS (OMEGAMON XE for CICS) V4.1.0, or later. Although the CICS monitoring control table (MCT) defines this data as a single field, it consists of many separate fields, including fields for various third-party systems monitored by OMEGAMON XE for CICS such as Adabas, CA-Datacom, CA-IDMS, and Supra. You can now include these fields in CICS PA report forms. These OMEGAMON XE for CICS fields are demonstrated in new sample report forms.

Note: Support for these fields was introduced in CICS PA V1.4 by APAR PK30209.

New reports from OMEGAMON XE for CICS SMF type 112 records

OMEGAMON XE for CICS produces SMF type 112 records that contain transaction data for the following types of database management system (DBMS):

Adabas
CA-Datacom
CA-IDMS
Supra

For each type of DBMS, you can request:

- A list report, showing one transaction per line. The report can optionally end with a section showing totals for selected transaction data (appropriate to the type of DBMS).
- A summary report, showing transaction data summarized by either transaction or database.

You can now also optionally include OMEGAMON XE for CICS SMF type 112 records in a Record Selection Extract, by specifying the new OMEGAMON® option on the CICSPA RECSEL command.

Report and Extract enhancements

Distribution reporting: summarize values by range

The new Range (RNG) function in summary report forms allows you to report the number or percentage of transactions that have a performance field whose value falls within a specified range, or match a single value. You can use this function to produce reports for service-level agreements and problem alerts. For example, you can report the percentage of transactions that have a response time between one and two seconds; or the number of transactions that have a CPU time greater than three seconds. In the batch commands, this function is represented by the RNGCOUNT and RNGPERCENT operands.

Performance Totals report

New CICS Transaction Server V3.2 CMF performance class fields added:

- From group DFHSOCK: ISALLOCT, ISIOWTT
- From group DFHDOCH: DHDELCT
- From group DFHCHNL: PGCSTHWM
- From group DFHDATA: WMQREQCT, WMQGETWT

Wait Analysis report

New CICS Transaction Server V3.2 CMF performance class fields added:

- From group DFHSOCK: ISIOWTT
- From group DFHDATA: WMQGETWT

System logger report enhancements: filter records using selection criteria, summarize by reporting interval, new field SMF88GRP

Previously, you could only filter records from the system logger report by logstream and structure name. Now you can also filter records using selection criteria, allowing you to include or exclude records based on time interval or individual field values.

You can also summarize logger records in multiples of the SMF reporting interval. For example, if the SMF reporting interval was 5 minutes at the time that the logger records were written, then you can generate a System Logger Summary report that summarizes the logger records at any multiple of 5 minutes: 5, 10, 15 etc.

The new field SMF88GRP, added to System Logger SMF type 88 records in z/OS V1.8, now appears in the System Logger reports under the heading "Group".

Extract system logger SMF type 88 records to comma-separated value (CSV) file

You can now extract system logger SMF type 88, subtype 1 records to a CSV file. (This CSV file does not include subtype 11 structure alter records.)

Cross-System Work and Workload Activity reports: sort in reverse chronological order

As an alternative to the sort order of descending stop time (this remains the default sort order), you can now sort these reports by ascending start time. To select the sort order, specify the new option TASKORDER(**STOP**|START) on the CICSPA CROSSsystem or WORKLOAD command.

New field TOTCPU for total task time (USRCPUT + RLSCPUT)

A new total task time field appears on the following reports: Performance List, Performance List Extended, and Performance Summary. You can also specify this field in report forms, selection criteria, HDB templates, HDB reporting, and HDB extracts.

Transaction Rate and Transaction Response Time graphs: granularity of one second

Previously, each row in these graphs represented a time interval measured in a number of whole minutes. You can now specify the time interval in the format hh:mm:ss to produce more detailed graphs, to the granularity of one second.

Dictionary records: match on MVSID+APPLID+RELEASE; improved messages

Previous releases of CICS PA used only the CICS applid and CICS release of an SMF record as keys to match the appropriate dictionary record. CICS PA now also uses the MVS system ID to match the appropriate dictionary record.

Support for DB2® V9.1

CICS PA V2.1 supports SMF records created by the following releases of DB2: V7.1, V8.1, and V9.1.

Support for WebSphere MQ V6.0

CICS PA V2.1 supports SMF records created by the following releases of WebSphere MQ: V5.3.0, V5.3.1, and V6.0.

New key field RELEASE in report forms and HDBs

You can use the new CICS PA field RELEASE as a sort key field in summary report forms and HDBs to summarize data by CICS release. This offers a quick and easy method to profile transaction performance across

CICS releases, and to identify the impact of a CICS release on transaction performance. For a demonstration of this field, see the sample summary report form TRARLSUM.

Dialog enhancements

Mass update CICS system definitions

Rather than having to edit CICS system definitions one at a time, you can now change several, or even all, personal or shared CICS system definitions with a single action. To select the CICS system definitions to change, you display the list panel of personal or shared system definitions, and then enter line action U next to one or more CICS system definitions.

This line action displays a panel that enables you to change the following attributes of the selected CICS system definitions: VRM (version, release, modification number), MVS image name, system definition description, CICS message control table (MCT) suffix, and the data set names of the MCT library, the CICS load library, and dictionary record. Before applying the change, you can generate a report of the CICS system definitions that would be affected by the change.

This is especially useful when you upgrade CICS systems to a new release of CICS Transaction Server: for example, you can select all of the associated system definitions in CICS PA and update their dictionary records.

New sample report forms

New sample report forms for OMEGAMON XE for CICS and CICS RMI Analysis.

Statistics reports enhancements

You can now filter SMF intervals on the statistics menu by CICS APPLID, MVS image, and time period, before displaying the list panel of available SMF intervals. Rather than selecting only a single SMF file for reporting, you can now select multiple SMF files, and then select from a combined list of all statistics intervals in those files.

Previous changes

This section outlines what was new and changed in previous editions.

April 2006 (fourth edition): updates to CICS PA V1.4

Contains updates for new features introduced by the following APARs:

- PK22931
- PK10771
- PK14621
- PK03641

New field in System Logger reports: number of times staging data set asynchronous buffer full (PK22931)

This new field SMF88EAF, added to System Logger SMF type 88 records in z/OS 1.7, now appears in the System Logger reports under the column heading “Staging DS Async Buf Full”. For details, see “System Logger report” on page 171.

Take up personal SMF file definitions to shared definitions (PK10771)

The take-up from personal system definitions to shared system definitions, which used to only take up systems and groups, now also takes up file

definitions. These appear in the shared system definitions as cyclic SMF files with no origin (described in the related item below).

Define cyclic SMF files with no origin (PK10771)

In shared system definitions, you can now define a cyclic SMF file with no origin (an origin value of NONE). Similar to an SMF file in your personal system definitions, you define a cyclic SMF file with no origin when you want to explicitly select a particular SMF data set for reporting, regardless of the reporting period.

Use symbolic date variables in the data set names of cyclic SMF files (PK10771)

You can use symbolic variables to represent date values in the data set names of cyclic SMF files. For instance, if the data set names of your monthly SMF files end with `.D`*yyyymm*, where *yyyy* is the 4-digit year and *mm* is the 2-digit month (for example, `CICSPROD.SMF.MONTHLY.D200604`), then you can define this in CICS PA as a cyclic SMF file with an interval of a month and a data set name of `CICSPROD.SMF.MONTHLY.D&YYYY&MM`.

Daily SMF data sets now expire only when uncataloged (PK10771)

Daily SMF data sets now expire only when no longer cataloged, not based on the date of their SMF records.

Define cyclic SMF files with an origin relative to the file creation date (PK10771)

You can specify that the origin of a cyclic SMF file is relative to the file creation date: CDATE, CDATE+*nnn*, or CDATE-*nnn* (where *nnn* is a number of days).

Exclude cyclic SMF files from selection (PK10771)

The new line action X on the cyclic SMF file definition panel excludes a file from being used in report requests.

Show cyclic SMF data sets that are available for reporting (PK10771)

The new line action S on the cyclic SMF file definition panel shows a list of all data sets that belong to the specified GDG Base or that match the specified data set name for an SMF file, along with the “from” and “to” date of the SMF records in each data set. The new primary command SHOW displays this information for all non-excluded SMF file definitions for the system. This lets you see exactly which data sets are available for reporting for this system, and the range of dates that they cover.

Load an HDB and export it to DB2 in a single job (PK14621)

Prior to this APAR, there was no easy way to automate exporting to DB2 after loading a historical database (HDB). You had to submit a job to load an HDB, identify which HDB container data sets the job created, and then submit another job to export those containers to DB2.

With this APAR, the HDB load process now writes the data set names of the created HDB containers to a PDS member. The JCL for exporting an HDB to DB2 can refer to this PDS member, rather than explicitly specifying the data set names of HDB containers. This enables you to load an HDB in one job step, and then export it to DB2 in a later step in the same job.

This feature appears as a new Load DB2 Table option on the Report Set HDB Load and the HDB Load dialog panels. Selecting this option generates JCL that loads an HDB and then exports the created HDB containers to DB2.

To support this new option, Statistics HDB definitions have a new Load DB2 column, enabling you to select which statistics records you want to load into

DB2. You can only load into DB2 records that have been collected: to export a record to DB2, you need to select both the existing Collect column and the new Load DB2 column.

DB2 settings available from CICS PA Profile Options Menu (PK14621)
Prior to this APAR, to edit DB2 settings (such as subsystem ID and database name) you had to go to the Export HDBs panel, select an HDB, and then select the container data sets to export: this displayed a panel that included the DB2 settings. Now you can select CICS PA Profile from the primary option menu, and then select DB2 settings.

Load an HDB from an SMF data set that has already been successfully loaded (PK14621)
The new line action F on the HDB Load Audit Trail panel changes the status of an SMF data set from OK to Failed. This enables you to load an HDB from an SMF data set that has already been used to load that HDB.

PRECISION option added to HDB Extract panel (PK03641)
Allows you to specify the precision of extracted numerical data.

March 2005 (third edition): CICS PA V1.4

CICS Performance Analyzer for z/OS V1.4 includes the following new features and changes:

- Support for CICS Transaction Server V3.1
- New CICS Statistics facility
- New Shared System Definitions
- Historical Database (HDB) enhancements
- Report and Extract enhancements
- Dialog enhancements

Support for CICS Transaction Server V3.1

All CICS PA reports, HDB and the ISPF dialog support CICS Transaction Server for z/OS V3.1 which is known by CICS PA as CICS Version 640. This includes support for:

- New CMF group DFHCHNL with fields: PGBRWCCT, PGCRECCT, PGGETCCT, PGGETCDL, PGMOVCCT, PGPUTCCT, PGPUTCDL, PGTOTCCT
- New fields in the DFHPROG, DFHTASK and DFHWEBB groups:
  - DFHPROG fields: PCDLCRDL, PCDLCSDL, PCDPLCCT, PCLNKCCT, PCRTNCCT, PCRTNCDL, PCXCLCCT
  - DFHTASK fields: DSCHMDLY, ICSTACCT, ICSTACDL, ICSTRCCT, ICSTRCDL, L9CPU, MAXSTDLY, MAXXTDLY, X8CPU, X9CPU
  - DFHWEBB fields: WBBRWOCT, WBCHRIN1, WBCHROU1, WBIWBSCT, WBPARSCT, WBRCVIN1, WBREDOCT, WBREPRDL, WBREPWDL, WBSNDOU1, WBWRTOCT
- New TCB modes: SP, L9, X8, and X9
- CICS Statistics enhancements
- Two obsolete fields: CHMODECT, MAXHTDLY

New CICS Statistics facility

The new CICS Statistics facility provides comprehensive reporting and analysis of CICS statistics and server statistics:

Interactive reporting
CICS PA provides comprehensive reporting of CICS Statistics, either directly from an SMF data set or from a CICS PA Historical Database. The interactive report facility provides QMF-like features including Tabular

reporting, Sorting by field (column), Forms to design personalized reports, Hyperlinks to jump directly to related reports, and a Print facility (to data set or SYSOUT).

Historical Database (HDB)
CICS Statistics data can be collected in a Historical Database, with facilities to Export to a DB2 table or Extract to a CSV file for off-host analysis. Historical statistics can also be reported via the interactive reporting facility.

New Shared System Definitions

The new Shared System Definitions facility provides the ability to share CICS system and related subsystem definitions. The dialog is similar to personal System Definitions (and Groups). However, shared System Definitions are saved in the HDB Register, typically maintained by a central administrator, and available to all users of the HDB Register.

Take-up (auto-discovery) of shared System Definitions can be from personal System Definitions or an SMF file. At report run time, specify whether to use personal or shared definitions.

Automated SMF File Selection provides time-based file selection for reporting, removing the requirement to explicitly specify data set names.

The Shared System Definitions facility provides two new SMF File types:

Cyclic GDG data set definitions for multiple generations of periodic SMF data, for example, daily, weekly, or monthly SMF files.

Daily Daily SMF files, built from the SMF dump process, and containing SMF data for a particular period of time during the current day. Expired daily SMF files are removed from the Register via the HDB Housekeeping process.

CICS PA report submission uses these definitions to generate the required SMF file data set DD statements for the requested reporting time interval.

Historical Database (HDB) enhancements

The Historical Database (HDB) is enhanced to provide the following new functions:

CICS Statistics
A new type of HDB called the Statistics HDB allows the collection of CICS Statistics and Server Statistics. Statistics HDBs are reported using the interactive Statistics Reporting facility.

Extract to CSV
HDB List, Summary and Statistics data can be extracted to a CSV file, a format suitable for off-host reporting via a spreadsheet or PC reporting tool.

Audit HDB Load requests are now audited in the HDB Register to prevent duplicate container data sets being generated. Audit information can be viewed from the HDB dialog. Expired audit records are removed from the Register via the HDB Housekeeping process.

Report and Extract enhancements

The following reports and extracts have been enhanced:

Summary report
The Summary report enhancements include:
- The maximum number of sort order keys is increased from 3 to 8
- Each key field can have its own sort sequence, ASCEND or DESCEND

- ORIGIN is supported as a key field
- Ordering by one numeric field, such as response time, is allowed
- The BY clause is no longer required
- Long fields are now supported
- Count fields can be converted to K or M
- Storage fields can be converted to KB or MB
- Time stamp fields support both date and time formats
- Subtotal and Grand total lines can be reported to desired level
- TASKTCNT field introduced as alternative Task (transaction) count
- Numeric field precision increased from 4 decimal places to 6 to report microseconds

List and List Extended reports

The List and List Extended report enhancements include:

- Count fields can be converted to K or M
- Storage fields can be converted to KB or MB
- Numeric field precision increased from 4 decimal places to 6 to report microseconds

Totals report

The Totals report supports the new CICS Transaction Server V3.1 TCB modes SP, L9, X8, and X9

Wait Analysis report

The Wait Analysis report supports the new CICS Transaction Server V3.1 wait clocks: DSCHMDLY, MAXSTDLY, MAXXTDLY

Cross-System Work report

The Cross-System Work report now provides unit-of-work Selection Criteria (SELUOW)

Cross-System Work extract

The Cross-System Work extract enhancements include:

- Unit-of-work Selection Criteria (SELUOW)
- Extract record contains the new CICS Transaction Server V3.1 fields

Transaction Resource Usage report

The temporary storage usage reports now support TSQUEUE names with unprintable characters, reporting the name in hexadecimal when required.

Miscellaneous enhancements

Other enhancements include:

- Selection Criteria now supports TRANTYPE
- The source of error messages can be traced back to the offending report by output ddname

Dialog enhancements

The main changes to the dialog are:

Report Sets

Report Set enhancements include:

- Report Form type validation for List, ListX, and Summary reports
- HDB Load requests can now be run from Report Sets

Report Forms

Report Form enhancements include:

- Wide reports allow the page width for Form based reports (List, ListX, Summary, Cross–System, HDB) to extend beyond 132 characters
- New Peak Percentile statistical function provides a distribution function for Summary reports

- More Samples to report the new CICS Transaction Server V3.1 monitor fields
- New Report Forms can be modelled from an HDB Template
- New Report Form “Select field categories” is changed to make CICS group selection easier

Record Selection extract
The Record Selection Extract is enhanced to support all CMF record types (not just Performance), including DB2, MQ, and System Logger.

FIND command
The FIND command is now available for selected member lists, including Report Sets, Report Forms, Sample Report Forms, Object Lists, and HDB.

Second edition: updates to CICS PA V1.3

These updates include the following new CICS PA V1.3 features and changes enabled by PTFs for APARs PQ77980, PQ79013, PQ79058, PQ81177, PQ83231.

- **Support for CICS Transaction Server V2R3**

  All CICS PA reports and the ISPF dialog support CICS Transaction Server for z/OS Version 2 Release 3 which is known by CICS PA as CICS Version 630. This includes support for:

  – 7 new CMF fields in the new CICS group DFHEJBS. These fields are: CBSRVRNM, EJBACTIV, EJBPASIV, EJBCREAT, EJBREMOV, EJBMETHD, EJBTOTAL.

  – 6 new CMF fields in the CICS group DFHTASK. These fields are: DSTCBHWM, KY9DISPT, KY9CPUT, J9CPUT, DSTCBMWT, DSMMSCWT.

- **Historical Database (HDB) changes**

  HDB collection is corrected to save elapsed time data in units of seconds.

  The List HDB Load now supports the following CMF fields: TASKFLAG, ERRFLAG, TRANFLAG, ORIGIN, TERMINFO, UOWID, UOWSEQ.

- **Report and Extract enhancements**

  The following reports and extracts have been enhanced:

  Performance Summary report
  NOTOTALS option is now available to exclude Totals report lines.

  Performance Summary export
  The Summary export data set with time interval data now includes the ISO date preceding the time, as two separate fields. For example:

  ```
  2005-01-16;10:15:00
  ```

  Performance Totals report
  The report includes the new field J9 CPU Time (J9CPUT).

  Cross-System Work report and extract
  Two-level Selection Criteria is now supported through batch commands (not yet available in the dialog). The SELECT and SELUOW commands provide selection at the UOW (multi-task) level as well as the Task level:

  – SELECT remains unchanged, providing first-level pre-sort filtering of records. This is suitable for time range checking and selecting all possible transaction IDs of interest.

  – SELUOW provides second-level post-sort filtering of units-of-work. SELUOW is applied at the UOW level, not the task (or record) level. Only one task in the UOW has to match the SELUOW criteria for the entire UOW to be reported.

Cross-System Work extract
The extract record format includes the 13 new CMF fields.

Transaction Resource Usage List report
The Function Shipping request types are now reported, prefixed by FS:

DB2 report
The DB2 Short and Long Summary reports now include total statistics for each DB2 SSID and CICS APPLID.

WebSphere MQ report
GET requests are now broken down by type to identify whether the queue is being depleted.

System Logger report
Sort by time option is now available to sort the List report by time. This ensures records will be printed in Logstream or Structure name sequence within each Interval expiry period.

- **Dialog enhancements**

  The main changes to the dialog are:

  1. CICS Version 630 (CICS Transaction Server V2.3) is now supported.
  2. You can optionally upgrade existing Report Forms to Version 630.
  3. Report Forms have been enhanced for Version 630:
     - There is a new Report Form field category that allows the new fields for DFHEJBS to be included.
     - The Report Form field category DFHTASK includes 6 new fields.
     - There are 9 new Sample Report Forms that report the new fields.
     - The LIST, LISTX and SUMMARY Report Forms allow the 13 new fields to be specified.
     - The LISTX and SUMMARY Report Forms allow the new field CBSRVRNM to be specified as a sort field.
  4. Report Sets have been enhanced:
     - Performance Selection Criteria have been enhanced to allow selection of the 13 new fields for CICS Transaction Server V2R3.
     - The Performance Summary Report has a new option: Exclude Totals.
     - The System Logger Report has a new option for the List report: Sort by Time.

First edition: CICS PA V1.3

CICS PA V1.3 includes the following new features and changes:

- **New Historical Database facility**

  The new Historical Database (HDB) provides a flexible and easy-to-use facility for managing historical performance data for your CICS systems:

  - Short term history data detailing individual transaction performance can be used for problem analysis
  - Long term history data summarized over time can be used for trend analysis and capacity planning
  - Flexible definition of data repositories based on Report Forms technology
  - Comprehensive reporting
  - Optionally load history data into DB2 for further analysis via your favorite SQL Query tool
  - Managed from the CICS PA ISPF dialog

- **New WebSphere MQ report**

  The new WebSphere MQ report processes MQ Accounting (SMF 116) records to provide comprehensive performance analysis and resource usage for your CICS transactions that use WebSphere MQ.

  The WebSphere MQ List report provides a trace of MQ Accounting records, reporting the comprehensive performance contained in subtype 0, 1 and 2 records. The WebSphere MQ Summary report provides two summarized views of your MQ transactions:

  – Summary by CICS Transaction ID, showing the WebSphere MQ system and queue resources use

  – Summary by WebSphere MQ Queue name, showing the Transactions they service and resources used

- **New Temporary Storage Resource Usage report**

  The Transaction Resource Usage Report has been enhanced to include comprehensive reporting for the new Temporary Storage Transaction resource class data for CICS Transaction Server Versions 1.3 and 2.2 or later.

  Transaction resource class data for Temporary Storage (and previously File) is a new class of CMF monitoring data that provides additional transaction-level information about individual resources accessed by a transaction. Three reports can be requested:

  1. Transaction Resource Usage List. This 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 Temporary Storage (and File) usage.
  2. Transaction Temporary Storage Usage Summary. This report summarizes Temporary Storage usage by Transaction ID. For each Transaction ID, it gives Transaction and Temporary Storage statistics followed by a breakdown of Temporary Storage usage for each Temporary Storage queue used
  3. Temporary Storage Usage Summary. This report summarizes Temporary Storage activity. For each Temporary Storage queue, it gives a breakdown of Temporary Storage usage by Transaction ID.

- **New Wait Analysis report**

  The new Wait Analysis report summarizes Transaction activity by Wait time. For each Transaction ID, the resources that cause this transaction to be suspended are shown in the order of most to least expensive.

  This report highlights the system resource bottlenecks that may be causing bad response time. More detailed analysis can then be performed, focusing on the problem resources identified.

- **Report enhancements**

  Minor changes to the following reports have been made:

  1. The List, ListX and Summary reports have been extended to support all CMF performance fields in the FIELDS, BY and PROCESS operands
  2. The ListX and Summary default sort sequence has been changed from TRAN, TERM to TRAN
  3. The Summary report presentation has been improved
  4. The Workload Activity Summary has been enhanced to include “Totals”

- **Dialog enhancements**

  The main changes to the dialog are:

1. Report Set menu changed to a Tree Structure. All reports are now displayed and selected from a single panel. Report categories can be expanded or collapsed as required.
2. Report Set JCL generation has been enhanced. Report Sets no longer need to be saved before submit proceeds. Report categories and individual reports can be selected for submission independently of the Report Set.
3. Selection Criteria has been enhanced. Selection Criteria can now be specified in Report Forms. Relational operators and decimal point are now supported. For example, to select response time greater than half a second, specify `SELECT(PERF(INC(RESP(>0.5))))` instead of `SELECT(PERF(INC(RESP(500,999999999))))`.
4. Report Forms have been enhanced. Report Forms can now specify Selection Criteria. Report Forms have 29 new samples.

- **Support for DB2 Version 8**

  CICS PA now supports DB2 Version 8.

Changes in CICS PA V1.2

The most significant new features and changes for CICS Performance Analyzer for OS/390 V1.2 are:

- **CICS Transaction Server for z/OS Version 2 support**

  All CICS PA reports and the ISPF dialog support CICS Transaction Server for z/OS V2. This includes support for:
  – 27 new CMF fields introduced in CICS Transaction Server V2.1
  – 9 new CMF fields introduced in CICS Transaction Server V2.2

- **New Transaction Resource Usage report**

  The new Transaction Resource Usage report provides comprehensive reporting of Transaction Resource Class data for CICS Transaction Server Versions 1.3 and 2.2 or later. This is a new class of CMF monitoring data that provides additional transaction-level information about individual resources accessed by a transaction (in this release, File resources only). Three reports can be requested:

  1. Transaction Resource Usage List. This 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 usage.
  2. Transaction File Usage Summary. This report summarizes File usage by Transaction ID. For each Transaction ID, it gives Transaction and File Control statistics followed by a breakdown of File usage for each File used.
  3. File Usage Summary. This report summarizes File activity. For each File, it gives a breakdown of File usage by Transaction ID.

- **New DB2 report**

  The new DB2 report processes CICS CMF records and DB2 Accounting (SMF 101) records to produce a consolidated and detailed view of DB2 usage by your CICS systems. The DB2 report enables you to view CICS and DB2 resource usage statistics together in a single report.

  The DB2 List report shows detailed information of DB2 activity for each transaction. The DB2 Summary reports summarize DB2 activity by transaction.

  The reports include the following DB2 information:
  – DB2 Thread Identification, for easy cross-reference to DB2 PM
  – Class 1 Thread elapsed and CPU times
  – Class 2 In-DB2 elapsed and CPU times
  – Class 3 Suspend times
  – Buffer Manager statistics

  - Locking statistics
  - SQL DML statistics

  The DB2 report matches CMF performance records with DB2 accounting records by network unit-of-work ID. Your CICS-DB2 resources must be defined with ACCOUNTREC(TASK) or ACCOUNTREC(UOW) for matching to occur.

- **New System Logger report**

  The new System Logger report processes System Logger (SMF 88) records to provide information on the System Logger logstreams and coupling facility structures that are used by CICS Transaction Server for logging, recovery and backout operations. The report can assist with measuring the effects of tuning changes and identifying Logstream or Structure performance problems.

  The System Logger List report shows information on Logstream writes, deletes, and events, as well as Structure Alter events for each SMF recording interval.

  The System Logger Summary report summarizes Logstream and Structure statistics so you can measure Logger performance over a longer period of time.

  These reports, when used in conjunction with the CICS Logger reports produced from the standard CICS statistics reporting utilities, provide a comprehensive analysis of the logstream activity for all your CICS systems.

- **New Workload Activity report**

  The new Workload Activity report provides a transaction response time analysis by MVS Workload Manager (WLM) service and report class. This can be used in conjunction with the z/OS Resource Measurement Facility (RMF™) workload activity reports to understand from a CICS perspective how well your CICS transactions are meeting their response time goals.

  The Workload Activity List report is a cross-system report that correlates CMF performance class data from single or multiple CICS systems for each network unit-of-work. Importantly, this report ties MRO and function shipping tasks to their originating task so that their impact on response time can be assessed.

  The Workload Activity Summary report summarizes response time by WLM service and report classes.

- **New Record Selection extract**

  The new Record Selection extract is a facility that allows you to create a small extract file containing only the CMF performance (and optionally DB2 Accounting) records of interest to you. The extract file can then be used as input to CICS PA, allowing for more efficient reporting.

- **Report enhancements**

  CICS PA supports the new CICS monitoring capability of Application Naming in CICS Transaction Server Versions 1.3 and 2.2 or later. This capability allows you to specify special CICS event monitoring points (EMPs) in your application programs to include an alternative Transaction ID and Program name in your CMF performance records.

  The new fields (APPLTRAN and APPLPROG) can be included in all CICS PA reports and extracts that use Report Forms. They can also be specified in Performance Selection Criteria.

  Application Naming can be useful for monitoring the performance of individual application programs selected from a menu and run under one menu Transaction ID. Or conversely, for amalgamating the information for one application program that runs under many different Transaction IDs.

  Other enhancements include:

  - Cross-System Work report has been enhanced to allow the specification of a Report Form to customize the fields in the report.

- Time zone settings in the CMF records are used to convert CMF time stamp fields to local time, enabling easier and more consistent interpretation of the reports and extracts.
- The reliance on Dictionary records being available to interpret CMF performance records has been removed.
- Totals report has been enhanced to include statistics for the new CICS TS 2.1 and 2.2 CMF fields, including new RO TCB statistics.
- Summary report Time Interval limit increased from 60 minutes to 24 hours.
- Improved Cross-System and Transaction Group report format consistency.

- **Extract enhancements**

  The following CICS PA Extracts have been enhanced to provide the following new features:

  - The Export Extract includes the new CICS TS V2.1 and V2.2 CMF fields.
  - The Export Extract allows the (optional) specification of a Report Form (List or Summary) to customize the fields in the Extract. The inclusion of Report Forms and a summary capability allows you to either:
    1. List all CICS transactions and their performance data with the same flexibility as the List Report, or
    2. Summarize CICS transaction performance with the same flexibility as the Summary Report.
  - All Extracts (Cross-System, Export, and Record Selection) now produce a Recap report that totals the records written to the extract data set.

- **Dialog enhancements**

  The CICS PA ISPF Dialog has been significantly enhanced to provide the following new features:

  Primary Option Menu option 1 “APPLIDs/SMF Input” has been replaced with “System Definitions”. The enhancements include:

  - CICS PA can now process data from the following new sources:
    1. DB2 accounting SMF 101 records
    2. System Logger SMF 88 records

    To support this, new system types of DB2 subsystem and System Logger are introduced.
  - CICS, DB2 and System Logger system names can contain masking characters.
  - MVS ID has been replaced by an 8 character Image name.
  - A new maintenance facility for SMF File and Group definitions is provided.
  - A new Take-up facility allows you to populate your System Definitions from an SMF File. CICS PA analyzes the SMF File to locate CICS, DB2 and Logger systems and automatically populates your dialog System Definitions.
  - The limit of Systems belonging to a maximum of 3 Groups has been removed.
  - For users migrating from V1.1 to V1.2, CICS PA automatically upgrades your System Definitions to allow you to take immediate advantage of the improved functionality.

  Report Sets have been enhanced:

  - The new Transaction Resource Usage report is introduced.
  - Performance Selection Criteria has been extended to allow selection of the new Transaction resource class field FILENAME, and the new Application naming Performance class fields APPLTRAN and APPLPROG.

- There is a new run-time option to allow override of System Selection specifications in the Report Set.
- Three new reports (Workload Activity, DB2 and System Logger) and one new Extract (Record Selection) are introduced.
- Cross-System Work report can now (optionally) specify a List Report Form to allow you to tailor the format of the report.
- Export Extract now allows the (optional) specification of a List or Summary Report Form so you can customize the format and style of your extract data sets.
- Extract data sets have a new option for the specification of DISP=OLD or MOD.
- Report Set JCL generation has been enhanced to allow System specification at run time, rather than in the Report Set itself.
- Report Set JCL generation has been enhanced to include two new “missing SMF Files” options that allows you to proceed with JCL generation without the required SMF files being specified.
- Summary report Time Interval limit increased from 60 minutes to 24 hours.
- Performance Selection Criteria has been extended to allow selection based on the new CICS TS V2.1 and V2.2 CMF fields.
- Performance Selection Criteria has been extended to allow selection of a new special field, UOWID. UOWID is the 6 byte hexadecimal network unit-of-work ID (NETUOWSX) and allows you to request reporting for a particular UOW. The input field for the 1st value has been increased in length from 9 to 12 bytes to allow the specification of 12 hexadecimal digits.
- Selection Criteria for Exception reporting has been extended to include the following new fields: FSTRINGW, LUNAME, RESOURCE, TCLASS, PRTY, TSBUFFER, TSSTRING.
- Selection Criteria now supports null values with the specification of ' '.
- Selection Criteria has a new prompt capability to allow selection of Object Lists.
- The prompt capability for selection of Systems, Images, Groups, and Report Forms has been extended to the report and extract lists.

Report Forms have been enhanced:

- The new Application naming Performance class fields APPLTRAN and APPLPROG are introduced.
- There is a new Report Form field category (DFHAPPL) that allows the new fields APPLTRAN and APPLPROG to be included in all Report Forms.
- Most new CICS TS V2.1 and V2.2 CMF fields are now supported.
- New special fields JVMMTIME, RMIOTHER, UOWID and UOWSEQ are introduced.
- Report Form samples are provided. This facility allows you to select from over 60 pre-defined Report Forms to meet the most common reporting requirements.
- All Report Forms can now be used to format Export extracts, allowing you to tailor the contents and style of your extract data sets.
- The Summary Report Form allows the following new sort fields: RPTCLASS, RSYSID, SRVCLASS and TCPSRVCE.

  - There is a new Report Form field category (CROSSSYS) that allows the Cross-System Extract special user fields (TOTRECS, APPLRECS, TRANROUT, FUNCSHIP and DPLRECS) to be included in all Report Forms (List, List Extended, and Summary).

- **Expanded publications**

  The CICS PA User's Guide and Reference was split into two books, the User's Guide and the Report Reference:

  - The User's Guide contains information for the experienced and novice user alike. It explains how to best use and exploit the many features of CICS PA.
  - The Report Reference is for the systems performance analyst. It helps explain the many CICS PA reports and how they can be used to help measure and tune your CICS systems.

  The Guided Tour in the User's Guide was enhanced to walk you through more of the CICS PA dialog and help you get started with using CICS PA.

Part 1. Introduction to CICS PA

The chapter in this part introduces you to CICS Performance Analyzer for z/OS (CICS PA) concepts and facilities. It describes the reports and extracts that can be generated from Report Sets and the data that is used to produce them. It also introduces the Historical Database (HDB) facility which enables you to collect a history of CMF performance data and CICS (and server) statistics for reporting, DB2 export, and CSV extract. The dialog facilities for reporting CICS statistics and server statistics are also introduced.

Chapter 1. Introduction

This chapter provides a brief introduction to CICS PA. It describes the reports and extracts that you can request and the types of data they process. It also describes the fundamental concepts and facilities.

What is CICS PA?

CICS Performance Analyzer for z/OS (CICS PA) is a reporting tool that provides information on the performance of your CICS systems and applications, and helps you tune, manage, and plan your CICS systems effectively. CICS PA also provides a historical database facility to help you manage CICS statistics and performance data for your CICS transactions.

CICS PA is not an online monitoring tool. It produces reports and extracts using data normally collected by your system in MVS System Management Facility (SMF) data sets:

- CICS Monitoring Facility (CMF) performance class, exception class, and transaction resource class data in SMF 110 records
- CICS statistics and server statistics data in SMF 110 records
- DB2 accounting data in SMF 101 records
- WebSphere MQ accounting data in SMF 116 records
- System Logger data in SMF 88 records
- IBM Tivoli OMEGAMON XE for CICS on z/OS (OMEGAMON XE for CICS) data in SMF 112 records, containing transaction data for Adabas, CA-Datacom, CA-IDMS, and Supra database management systems

It is designed to complement the CICS-supplied utilities and sample programs such as DFH$MOLS, DFHSTUP, and DFH0STAT.

CICS PA can help:

- System Programmers to track overall CICS system performance and evaluate the results of their system tuning efforts
- Application Programmers to analyze the performance of their applications and the resources they use
- Database Administrators to analyze the usage and performance of database systems such as IMS™ and DB2
- MQ Administrators to analyze the usage and performance of their WebSphere MQ messaging systems
- Managers to ensure transactions are meeting their required Service Levels and measure trends to help plan future requirements and strategies

CICS PA reports all aspects of CICS system activity and resource usage, including:

- Transaction response time
- CICS system resource usage
- Cross-system performance, including multi-region operation (MRO) and advanced program-to-program communication (APPC)
- CICS Business Transaction Services (BTS)
- CICS Web support
- External subsystems, including DB2, IMS, and WebSphere MQ

- CICS transaction usage of database management systems that are monitored by OMEGAMON XE for CICS: Adabas, CA-Datacom, CA-IDMS, and Supra
- System Logger performance
- Exception events that cause performance degradation
- Transaction file and temporary storage usage

Data input

The primary data source for CICS PA is the data collected by the CICS Monitoring Facility. CMF data is written to the MVS System Management Facility (SMF) data set as SMF type 110 records, subtype 1.

There are three types, or “classes”, of CMF data analyzed by CICS PA:

CMF Performance class data
Detailed transaction-level information, such as the processor and elapsed time for a transaction, or the time spent waiting for I/O.

CMF Exception class data
Information about exceptional conditions suffered by a transaction, such as queuing for file strings, or waiting for temporary storage. This data highlights possible problems in system operation.

CMF Transaction resource class data
Additional transaction-level information about individual resources accessed by a transaction. Currently, the transaction resource class covers file and temporary storage resources only.

Another major data source for CICS PA is:

CICS statistics and server statistics data
SMF type 110 records, subtypes 2, 3, 4, and 5.

CICS PA also analyzes the following types of data:

DB2 accounting data
SMF type 101 records written by DB2 on behalf of CICS attached tasks.

WebSphere MQ accounting data
SMF type 116 records written by WebSphere MQ on behalf of CICS attached tasks.

System Logger data
SMF type 88 records written by the MVS System Logger on behalf of CICS Transaction Server journaling.

OMEGAMON XE for CICS data
SMF type 112 records written by OMEGAMON XE for CICS to log CICS transaction usage by the database management systems Adabas, CA-Datacom, CA-IDMS, and Supra.

The **CICS PA Historical Database** is a repository for CMF performance class data, and CICS statistics and server statistics data.

CICS PA reports and extracts

CICS PA provides an ISPF menu-driven dialog to help you request and submit your reports and extracts. The available reports and extracts are grouped by category and briefly described below.

Performance Reports
- List
- List Extended
- Summary
- Totals
- Wait Analysis
- Cross-System Work
- Transaction Group
- BTS
- Workload Activity

Exception Reports
- List
- Summary

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

Subsystem Reports
- DB2
- WebSphere MQ
- OMEGAMON

System Reports
- System Logger

Performance Graphs
- Transaction Rate
- Transaction Response Time

Extracts
- Cross-System Work
- Export
- Record Selection
- HDB Load
- System Logger

The CICS PA dialog automatically generates the commands and JCL for batch report processing.

The commands are under the `//SYSIN DD` statement of the JCL and have the general format:

```
CICSPA operand[(suboperand)][,operand[(suboperand)],]...
```

A brief description of the report categories and the reports and extracts follows. For a detailed discussion, see Part 2, “Report Set reports and extracts,” on page 17.

Performance reports

These reports are produced from CMF performance class data.

Performance List

Lists in detail the CMF performance class data. For more information, see “Performance List report” on page 19.

Performance List Extended
Sorts and lists in detail the CMF performance class data. For more information, see “Performance List Extended report” on page 28.

Performance Summary
Summarizes the CMF performance class data. For more information, see “Performance Summary report” on page 36.

Performance Totals
Provides totals and averages of the CMF performance class data. For more information, see “Performance Totals report” on page 47.

Wait Analysis
Summarizes transaction activity by wait time. For each Transaction ID (or other ordering options), the resources that cause this transaction to be suspended are shown in the order of most to least expensive. This report highlights the system resource bottlenecks that may be causing bad response time. More detailed analysis can then be performed, focusing on the problem resources identified. For more information, see “Wait Analysis report” on page 58.

Cross-System Work
A detailed listing of segments of work performed by the same or different CICS systems via transaction routing, function shipping, or distributed transaction processing on behalf of a single network unit-of-work ID. For more information, see “Cross-System Work report” on page 69. The format can be tailored to produce the Cross-System Work Extended report (see Figure 30 on page 74).

Transaction Group
A detailed listing of segments of work performed by the same or different CICS systems on behalf of a single transaction group ID. For more information, see “Transaction Group report” on page 76.

BTS (Business Transaction Services)
A detailed listing of the segments of work performed by the same or different CICS systems on behalf of a single CICS Business Transaction Services (BTS) process. For more information, see “BTS report” on page 84.

Workload Activity
Provides a transaction response time analysis by MVS Workload Manager (WLM) service and report class. This can be used in conjunction with the z/OS Resource Measurement Facility (RMF) workload activity reports to understand from a CICS perspective how well your CICS transactions are meeting their response time goals. The Workload Activity List report is a cross-system report that correlates CMF performance class data from single or multiple CICS systems for each network unit-of-work. Importantly, this report ties MRO and function shipping tasks to their originating task so that their impact on response time can be assessed. The Workload Activity Summary report summarizes response time by WLM service and report classes. For more information, see “Workload Activity report” on page 88.

Exception reports

These reports are produced from CMF exception class data.

Exception List
Lists in detail the CMF exception class data. For more information, see “Exception List report” on page 97.

Exception Summary
Summarizes the CMF exception class data. For more information, see "Exception Summary report" on page 101.

Transaction Resource Usage reports

These reports are produced from CMF performance class and transaction resource class data.

File Usage Summary
Provides two summaries of File usage:

- The Transaction File Usage Summary Report summarizes Transactions that use Files. The report consists of Transaction Identification and File Control statistics from the CMF Performance records. In addition, there is one sub-section for each File that this Transaction has used.
- The File Usage Summary Report summarizes File activity. For each File, it gives a breakdown of File usage by Transaction ID.

For more information, see "File Usage Summary report" on page 103.

Temporary Storage Usage Summary
Provides two summaries of Temporary Storage usage:

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

For more information, see "Temporary Storage Usage Summary report" on page 107.

Transaction Resource Usage List
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 Temporary Storage and File usage. This report processes only transaction resource class data, not performance class data. For more information, see "Transaction Resource Usage List report" on page 112.

Subsystem reports

The Subsystem reports are produced from database subsystem accounting data stored in SMF files. (Note that the DB2 report also processes CMF performance class data whereas the WebSphere MQ and OMEGAMON reports do not.) The reports in this category are:

DB2 Correlates CICS CMF performance class (SMF 110) records and DB2 accounting (SMF 101) records by network unit-of-work to produce a consolidated and detailed view of DB2 usage by your CICS systems. The DB2 report enables you to view CICS and DB2 resource usage statistics together in a single report. The DB2 List report shows detailed information of DB2 activity for each transaction. The DB2 Summary reports summarize DB2 activity by transaction. For more information, see "DB2 report" on page 119.

WebSphere MQ

Processes WebSphere MQ accounting (SMF 116) records to provide comprehensive performance analysis and resource usage for your CICS transactions that use MQ.

The WebSphere MQ List report provides a trace of MQ accounting records, reporting the comprehensive performance contained in subtype 0, 1 and 2 records. The WebSphere MQ Summary report provides two summarized views of your MQ transactions:

- Summary by CICS Transaction ID, showing the MQ system and queue resources use
- Summary by WebSphere MQ Queue name, showing the Transactions they service and resources used

For more information, see "WebSphere MQ report" on page 139.

OMEGAMON

Processes OMEGAMON XE for CICS (SMF 112) records to produce a detailed view of how CICS transactions use the following types of database management system (DBMS):

Adabas
CA-Datacom
CA-IDMS
Supra

For each type of DBMS, you can request up to three reports:

- A List report, showing database usage for each transaction.
- A Transaction Summary report, showing database usage summarized by transaction ID.
- A Database Summary report, showing database usage summarized by database.

The information in each report varies depending on the type of DBMS, but typically includes elapsed times and counts for each of the methods that transactions use to access a database, such as read, write, add, update, and delete.

For more information, see "OMEGAMON reports" on page 157.

System reports

These reports are produced from system data stored in SMF files. Note that the System Logger report does not process CMF performance class data.

System Logger

Processes System Logger (SMF 88) records to provide information on the System Logger logstreams and coupling facility structures that are used by CICS Transaction Server for logging, recovery and backout operations. The report can assist with measuring the effects of tuning changes and identifying Logstream or Structure performance problems. The System Logger List report shows information on Logstream writes, deletes, and events, as well as Structure Alter events for each SMF recording interval. The System Logger Summary report summarizes Logstream and Structure statistics so you can measure Logger performance over a longer period of time. These reports, when used in conjunction with the CICS Logger reports produced from the standard CICS statistics reporting utilities, provide a comprehensive analysis of the logstream activity for all your CICS systems.
For more information, see "System Logger report" on page 171.

Performance Graph reports

These are graphical-style reports produced from CMF performance class data. The graph reports can be useful as daily indicators of system activity, as well as for analyzing particular performance problem areas in your CICS system. The reports in this category are:

Transaction Rate
A set of two graphs illustrating the average response time and the number of transactions that completed in a specified time interval. For more information, see “Transaction Rate Graph report” on page 181.

Transaction Response Time
A set of two graphs illustrating the average and maximum response time, respectively, for all transactions that completed in a specified time interval. For more information, see “Transaction Response Time Graph report” on page 182.

Extracts

While the other categories produce reports and graphs intended for human readers, the extracts produce data sets intended for use by software applications, including CICS PA itself.

Cross-System Work
This data set is useful for cross-system analysis. CICS PA allows you to merge CMF performance class data from segments of work performed by the same or different CICS systems via transaction routing, function shipping, or distributed transaction processing on behalf of a single network unit-of-work ID. This Cross-System Work data set can be used as input to CICS PA Performance Reports such as the List, Summary, and Totals reports to monitor the total amount of resources used by a transaction within a single CICS system or across multiple CICS systems. For more information, see “Cross-System Work extract” on page 183.

Export
This data set contains a selected subset of CMF performance class data, extracted and formatted as a delimited text file. This file can then be imported into DB2 databases or PC spreadsheet applications such as Lotus® 1-2-3® for further reporting and analysis. The extract records have a default format which includes all the clock fields, or the format can be tailored like the Performance List or Performance Summary reports. For more information, see “Exported Performance Data extract” on page 192.

Record Selection
This data set contains only the SMF record types that are of interest to you. You can extract any combination of the SMF record types supported by CICS PA. The extract file can then be used as input to CICS PA, allowing for more efficient reporting. For more information, see “Record Selection extract” on page 197.

HDB Load
The HDB Load is a facility that loads SMF data into a Historical Database (HDB). This same facility is available from Primary Menu option 5 Historical Database, where the full set of HDB reporting facilities is available. However, from Report Sets you have the advantages of batch JCL generation and multiple load requests supported in the one job. A Recap report containing processing statistics is always printed at the end of load processing. For more information, see “HDB Load” on page 200.

System Logger
This data set contains a selected subset of System Logger data, extracted and formatted as a delimited text file. This file can then be imported into DB2 databases or PC spreadsheet applications such as Lotus 1-2-3 for further reporting and analysis. For more information, see “System Logger report” on page 171.

CICS PA concepts

CICS PA is based on the following concepts which are reflected in the Primary Option Menu of the CICS PA dialog:
1. Personal System Definitions
2. Report Sets
3. Report Forms
4. Object Lists
5. Historical Database
6. Shared System Definitions
7. Statistics reporting

The CICS PA dialog is an ISPF-based menu-driven dialog that helps you create, maintain and submit your report requests. It also helps you to specify your input data and tailor requests specific to your requirements without you having to understand the SMF data.

CICS PA Primary Option Menu

```
  File  Options  Help
-------------------------------------------------------------------------------
V2R1M0          CICS Performance Analyzer - Primary Option Menu
Option ===> ____________________________________________________________________

0  CICS PA Profile       Customize your CICS PA dialog profile
1  Personal Systems      Specify personal 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
6  Shared Systems        Specify shared CICS Systems, SMF Files and Groups
7  Statistics            Report CICS Statistics
X  Exit                  Terminate CICS PA
```

Figure 1. CICS PA Primary Option Menu

The following steps introduce the primary menu options and explain briefly how to use the dialog to start reporting:

1. Define your CICS systems and their SMF files. Once your CICS systems are defined, you can start reporting against them. You can automate this process by using the Take-Up facility. CICS PA extracts the relevant information about your CICS systems from your SMF files. If you define your own CMF user fields, then specify your MCT definition. The user fields can then be incorporated into your CICS PA reports.

   Related CICS systems, such as those systems that connect via IRC/MRO, ISC/APPC, or IPIC can be grouped together for reporting purposes. For example, assigning the CICS MRO systems (CICSPTOR, CICSPAOR, CICSPFOR, CICSPDOR) and DB2 subsystem (DB2P) to a Group allows you to report on these systems as a single entity. CICS PA reports can then show a

complete end-to-end picture of your MRO transaction activity, incorporating detailed DB2 statistics derived from the DB2 accounting data of subsystem DB2P.

You can use Personal System Definitions (option 1) or Shared System Definitions (option 6). Typically your personal definitions are maintained by you and used by you for reporting. They are saved in your Personal Profile Library (specified in option 0 CICS PA Profile). This contrasts with Shared System Definitions which are typically maintained by a central administrator and used by all users for reporting. They are saved in the HDB Register (specified in option 5 Historical Database).

2. Use option 2 to define Report Sets to build, submit, and save your report requests. A Report Set contains the set of reports and extracts that you wish to run in a single job. Simply select the ones you require and submit.

   Specify Selection Criteria to filter the input records to report only the information that you are interested in. For example, you can specify Selection Criteria to restrict reporting to:
   - A particular date/time range
   - A group of related Transaction IDs
   - Transaction response times that exceed your thresholds

   Run your Report Sets (or individual reports or extracts). The CICS PA dialog builds the JCL and commands to produce the reports and extracts. You can edit these jobs, or you can write your own jobs.
3. Use option 3 to define Report Forms to tailor the format and content of your reports and extracts. A simple to use editor allows you to design your own report by selecting the required CMF fields. Most CMF fields can be selected for reporting, and detailed explanations of each CMF field are available from the dialog. A comprehensive set of Sample Report Forms are provided to help you tailor your reports and extracts.
4. Use option 4 to define Object Lists to help you specify values for filtering and grouping objects such as transaction IDs and terminals. Object Lists are used when specifying Selection Criteria for reports and extracts.
5. Use option 5 to define and maintain Historical Databases (HDBs) as repositories of performance data. Generate reports against your HDBs or export HDB data to DB2 for further manipulation and analysis.
6. Use option 7 to report on CICS statistics and server statistics from eligible SMF files or HDBs.

CICS PA Profile

This facility allows you to customize your CICS PA user profile which includes:

- CICS PA dialog settings such as the name of your Personal Profile Library (where personal system definitions are stored), your preferred date format, and the job card CICS PA is to use when generating JCL.
- The allocation attributes of data sets that may need to be created during Report Set processing. CICS PA uses these when generating JCL.
- The control data sets to use for Report Sets, Report Forms and Object Lists.
- DB2 settings, for exporting data to DB2 tables.

You can bypass this menu option because CICS PA uses defaults and prompts you if and when further information is required.

System Definitions

Use System Definitions to define:

- CICS systems and SMF files that you want to report against
- DB2 subsystems and SMF files for the DB2 report and Record Selection extract
- MQ subsystems and SMF files for the WebSphere MQ report and Record Selection extract
- System Loggers and SMF files for the System Logger report and Record Selection extract

You can specify SMF data sets for each system (CICS, DB2, MQ, Logger) or for each MVS system (image) where they execute. In addition you can define groups of systems for reporting purposes, such as those systems that connect via IRC/MRO, ISC/APPC, or IPIC.

Your System Definitions are then used in the following ways:

- By specifying the Systems (or Groups) in your Report Sets, CICS PA can determine the related files to include in Report Set JCL generation.
- By specifying a CICS APPLID when creating Report Forms and HDB Templates, CICS PA can determine the user fields and CICS version. CICS PA can then populate your Report Form or HDB Template with CMF fields appropriate to the release of CICS and user fields for the particular CICS system.
- By specifying a CICS APPLID for the Cross-System Work extract, CICS PA can determine the user fields for the particular CICS system for inclusion in the extract file.
- The SSID of specified DB2 Subsystems provides filtering on SSID for the DB2 report and Record Selection extract.
- The SSID of specified MQ Subsystems provides filtering on SSID for the WebSphere MQ report and Record Selection extract.

For reporting, you can use either Personal System Definitions (Primary Menu option 1) or Shared System Definitions (Primary Menu option 6), but not both at the same time. Set **Systems** in the action bar to the definitions that you want to use for report. Typically your personal definitions are maintained by you and used by you for reporting.

Personal Systems

Personal System Definitions are maintained using Primary Menu option 1. They are saved in your Personal Profile Library (specified in option 0 CICS PA Profile Settings). Typically your personal definitions are maintained by you and used by you for reporting.

The dialog provides a take-up facility to automatically define your personal systems from an SMF file.

Shared Systems

Shared System Definitions are maintained using Primary Menu option 6. They are saved in the HDB Register (specified in option 5 Historical Database). Typically the shared definitions are maintained by a central administrator, but for reporting, they are used by all users of that register.

The dialog provides a take-up facility to automatically define your shared systems from an SMF file. The dialog provides a second take-up facility to automatically load your personal definitions into the Shared System Definitions.

Report Sets

A Report Set defines a selection of reports and extracts with their associated options. The CICS PA reports and extracts are listed in “CICS PA reports and extracts” on page 5.

You can define any number of Report Sets and select any number of reports and extracts in a Report Set. The reports in a Report Set are produced as a group from one pass of the input data sets.

A Report Set can be run on a one-off basis, or run repeatedly against different input each time. Changes are made to Report Sets using the CICS PA dialog, and immediately affect the next run of the Report Set.

The data to be analyzed by a Report Set can optionally be restricted by a Start/Stop date and time specified at submit time. This reduces the volume of data to be analyzed as only a subset of the data in the input files is passed to the report processors, thereby increasing the efficiency of the report processing.

Selection Criteria

Selection Criteria can be specified to provide filtering of the data to be reported or extracted. Selection Criteria are made up of a series of SELECT Statements which specify whether to include or exclude data based on:

- date-time ranges or time slots
- started, stopped, or continuing (active) transactions
- particular field values

You can filter on many fields, and specify value lists, masks or ranges. Object Lists are a convenient way to specify the values and define groups of objects such as transaction IDs and terminals.

Running Report Sets

The CICS PA dialog generates the JCL for batch report processing. The Report Set (or individual report or extract), and any Report Forms and Object Lists it uses, are converted to a stream of commands for batch execution. Eligible data sets specified in your System Selection are built into the JCL as input to the batch reporting programs.

Enter the **RUN** command to run your Report Set. This prompts you to check or change your run-time options before generating the JCL. Run-time options include System Selection, Report Interval, and whether you want to edit the JCL before submitting the job for batch execution.

Alternatives to the RUN command are JCL and SUB. These do the same as the RUN command except:

- The **JCL** command selects the run-time option Edit JCL before Submit. This allows you to review or modify the JCL before submit, or to save the JCL in an external library for later submission independent of the CICS PA dialog.
- The **SUBMIT** or **SUB** command does not select the run-time option Edit JCL before Submit. It requests that the job be submitted immediately.

Analyzing the output

View or print your reports using standard facilities such as SDSF or ISPF Outlist Utility.

Process your extract data sets according to their purpose:

- Analyze the Cross-System Work extract data using CICS PA Performance Reports such as the List, Summary, and Totals reports.
- Analyze the Performance export data or System Logger Extract using external programs such as DB2, or PC tools such as Lotus 1-2-3.
- Specify the Record Selection extract data sets as your SMF Files in System Definitions to reduce the volume of data processed by CICS PA.

Report Forms

Report Forms can be used to tailor the format and content of the following reports and extracts:

Performance List report
Performance List Extended report
Performance Summary report
Cross-System Work report
Export extract

One Report Form can be used by many reports of compatible type. The Report Form defines the CMF fields to include in the report, the order of the columns, sort sequence (where applicable), and report title.

List and Summary Report Forms can also be used to tailor HDB reports.

Object Lists

Object Lists provide a convenient way to specify field values for filtering the CMF data and grouping objects for reporting purposes. For example, to analyze the resource usage of a particular group of transactions.

An Object List defines particular values, masks, or ranges of values which can be used in the Selection Criteria for as many reports and extracts as required. Long lists of field values need only be defined once and reused in Report Sets as often as desired.

Historical Database

Historical Database (HDB) is a facility that allows you to manage performance and statistics data for your CICS transactions. SMF data is saved in HDB container data sets that are managed from the CICS PA dialog.

There are three types of HDB:

Performance List HDB
A List HDB is built from CMF performance class data. In a List HDB data set, one record represents one transaction. Typically, List HDBs are used to analyze recent transaction events. Data is usually only required for a short period of time. The type of information and level of detail contained in a List HDB is determined by the List Template on which it is based.

Performance Summary HDB
A Summary HDB is built from CMF performance class data. In a Summary HDB data set, one record represents a summary of transaction activity over a user-specified time interval. Typically, Summary HDBs are used for long-term trend analysis and capacity planning. Data is retained for a longer period of time, sometimes years. The type of information and level of detail contained in a Summary HDB is determined by the Summary Template on which it is based.

Statistics HDB

A Statistics HDB contains collections of CICS statistics and server statistics over a specified time interval.

You can run reports against your HDB, export the HDB data to DB2 tables, or export the HDB data to extract data sets in CSV format.

Statistics reporting

CICS PA provides comprehensive reporting and analysis of CICS statistics and server statistics data. It complements the CICS statistics reporting utilities DFHSTUP and DFH0STAT. CICS PA can interactively process and report statistics data directly from SMF files or from an HDB after collection. The advantage of collecting statistics data in an HDB is that data can also be exported to DB2 and extracted to CSV data sets for off-host analysis.

Features of the interactive statistics reporting facility include:

- Tabular reporting, sorting by field (column)
- Forms to design personalized reports
- Hyperlinks to jump directly to related reports
- Print facility, either to a data set or to SYSOUT

Part 2. Report Set reports and extracts

The chapters in this part provide a detailed description of each of the CICS PA Report Set reports and extracts, their content and sample output. The reports and extracts are discussed in the order in which they are presented in the Report Set panel in the CICS PA dialog.

The batch commands and options to tailor the reports and extracts are also briefly described. You can set up your own JCL or use the CICS PA dialog to automatically generate your Report Set requests. For more information on using the CICS PA dialog, refer to the *CICS Performance Analyzer for z/OS User's Guide.*

Chapter 2. Performance reports

The Performance reports are produced from CMF performance class data. The reports in this category are:

- Performance List report
- Performance List Extended report
- Performance Summary report
- Performance Totals report
- Wait Analysis report
- Cross-System Work report and Tailored format: Cross-System Work Extended
- Transaction Group report
- BTS report
- Workload Activity report

Performance List report

The Performance List report provides a detailed list of the CMF performance class records.

You can request a list of all available records, or specify selection criteria to list only the information that meets specific requirements.

Report command

The Performance List report can be requested from a Report Set in the CICS PA dialog. Select the **List** report in the **Performance Reports** category.

In batch, the `LIST` command is used to request the Performance List report.

Performance List report

The command to produce the default report is:

```
CICSPA LIST
```

To tailor the report, you can specify report options as follows:

```
CICSPA LIST(
       [OUTPUT(ddname),]
       [FIELDS(field1[(options)],...),]
       [LINECOUNT(nnn),]
       [TITLE1('...sub-heading left ...'),]
       [TITLE2('...sub-heading right...'),]
       [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
       [SELECT2(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))])
```

The CICS PA dialog generates the FIELDS operand when a Report Form is specified. This controls the format of the report by specifying the desired fields, their format, and the order of the columns.

If the FIELDS operand is not specified, the default is:

```
CICSPA LIST(FIELDS(TRAN,              Transaction ID
                   STYPE,             Start type of transaction
                   TERM,              Terminal ID
                   USERID,            User ID
                   RSYSID,            Remote System ID
                   PROGRAM,           Initial program name
                   TASKNO,            Transaction number
                   STOP(TIMET),       Stop time (hh:mm:ss.thm)
                   RESPONSE,          Response time
                   DISPATCH(TIME),    Dispatch time (sss.thmi)
                   CPU(TIME),         CPU time
                   SUSPEND(TIME),     Suspend time
                   DISPWAIT(TIME),    Dispatch wait time
                   FCWAIT(TIME),      File Control I/O wait time
                   FCAMCT,            File Control access method calls
                   IRWAIT(TIME)))     Inter-Region (MRO) I/O wait time
```

List Export

The LIST command can be used to tailor the format of the Export file.

The command format for the List Export is:

```
CICSPA LIST(
       [OUTPUT(ddname),]
       [DDNAME(ddname),]
       [DELIMIT('field-delimiter'),]
       [LABELS|NOLABELS,]
       [FLOAT,]
       [FIELDS(field1[(options)],...),]
       [TITLE1('...1st 64 characters of title...'),]
       [TITLE2('...2nd 64 characters of title...'),]
       [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
       [SELECT2(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))])
```

See Figure 66 on page 194 for an example of the List Export file.

Report content

You can specify a LIST Report Form (FIELDS operand) to tailor the format and content of the Performance List report. If a Report Form is not specified, the default format of the report is produced.

Default format

A report line is printed for each performance class record in the input file. The data is listed in the same order (time sequence) as it was written to SMF.

The following report is an example of the default Performance List report.

```
V2R1M0                                          CICS Performance Analyzer
                                                    Performance List

LIST0001 Printed at  9:06:18  3/28/2004    Data from 11:10:51  3/24/2004                  APPLID CICSPA1          Page   1

 Tran SC Term Userid RSID Program  TaskNo Stop         Response Dispatch User CPU  Suspend DispWait  FC Wait   FCAMRq  IR Wait
                                          Time           Time     Time     Time     Time     Time      Time               Time
 CSSY U       CBAKER      DFHAPATT     13 11:10:52.256    .6743    .0728    .0134    .6015    .4000    .0000        0    .0000
 CSSY U       CBAKER      DFHAPATT     10 11:10:52.289    .7498    .1910    .0228    .5588    .1997    .0000        0    .0000
 CSSY U       CBAKER      DFHAPATT     14 11:10:53.132   1.3344    .3202    .0378   1.0142    .2626    .0000        1    .0000
 CSSY U       CBAKER      DFHAPATT     11 11:10:53.341   1.4292    .1497    .0313   1.2794    .3461    .0000        0    .0000
 CPLT U       CBAKER      DFHSIPLT      7 11:11:07.123  15.9915    .3383    .0369  15.6532    .0155    .0000        0    .0000
 CSSY U       CBAKER      DFHAPATT    III 11:11:07.345  16.0761   9.3488   2.3435   6.7273   1.1645    .9522     2059    .0000
 CWBG S       CBAKER      DFHWBGB      24 11:11:08.123    .0262    .0248    .0041    .0013    .0012    .0000        0    .0000
 CRSQ S       CBAKER      DFHCRQ       25 11:11:08.234    .0818    .0449    .0040    .0369    .0367    .0000        0    .0000
 CXRE S       CBAKER      DFHZXRE      27 11:11:09.345    .2255    .0243    .0049    .2011    .2009    .0000        0    .0000
 CLR2 TO R11  CBAKER      DFHLUP       29 11:11:10.456    .0263    .0030    .0020    .0232    .0000    .0000        0    .0232
 CSFU S       CBAKER      DFHFCU       26 11:11:10.567   1.6968   1.5899    .1136    .1069    .0294    .0000        0    .0000
 CSAC TO SAMA CBAKER      DFHACP       31 11:11:13.678    .5217    .0028    .0011    .5189    .0002    .0000        0    .0000
 CLQ2 U       CBAKER      DFHLUP       28 11:11:13.789   3.8259    .0818    .0068   3.7441    .0035    .0000        0   3.7344
 CEMT TO SAMA CBAKER      DFHEMTP      32 11:11:13.890    .1877    .1842    .0264    .0035    .0030    .0000        0    .0000
 CEMT TO SAMA CBAKER      DFHEMTP      33 11:11:14.801    .0091    .0068    .0026    .0023    .0001    .0000        0    .0000
 CEMT TO SAMA CBAKER      DFHEMTP      34 11:11:15.912    .0092    .0068    .0025    .0024    .0000    .0000        0    .0000
 CSAC TO SAMA CBAKER      DFHACP       35 11:11:16.023    .5109    .0042    .0012    .5067    .0001    .0000        0    .0000
 CSAC TO SAMA CBAKER      DFHACP       36 11:11:17.120    .5150    .0011    .0011    .5139    .0001    .0000        0    .0000
 CSTE U       CBAKER      DFHTACP      37 11:11:17.231    .1420    .1381    .0126    .0039    .0037    .0000        0    .0000
 CATA U       CBAKER      DFHZATA      38 11:11:27.342    .0537    .0394    .0121    .0143    .0003    .0000        0    .0000
 CQRY S  S208 CBAKER      DFHQRY       39 11:11:28.453    .3476    .0451    .0048    .3025    .0038    .0000        0    .0000
 CQRY S  S208 CBAKER      DFHQRY       39 11:11:28.564    .4147    .0012    .0008    .4136    .0000    .0000        0    .0000
 CESN S  S208 CBAKER      DFHSNP       40 11:11:28.675    .0806    .0770    .0102    .0036    .0036    .0000        0    .0000
 CATA U       CBAKER      DFHZATA      41 11:11:28.786    .0309    .0048    .0045    .0261    .0003    .0000        0    .0000
 CQRY S  S23D CBAKER      DFHQRY       42 11:11:29.897    .2951    .0013    .0008    .2938    .0000    .0000        0    .0000
 CQRY S  S23D CBAKER      DFHQRY       42 11:11:29.908    .4037    .0012    .0008    .4024    .0000    .0000        0    .0000
 CESN S  S23D CBAKER      DFHSNP       43 11:11:29.099    .0030    .0029    .0020    .0001    .0000    .0000        0    .0000
 CESN TP S208 CBAKER      DFHSNP       44 11:11:35.110    .0284    .0280    .0147    .0004    .0003    .0000        0    .0000
 CESN TP S23D CBAKER      DFHSNP       45 11:11:41.221    .0203    .0197    .0114    .0006    .0006    .0000        0    .0000
```

Figure 2. Performance List report: default format

For the complete list of performance class data fields that can be selected for the Performance List report, see the *CICS Performance Analyzer for z/OS User's Guide.*

A brief description of the fields in the default report follows. For more details, see "CMF performance class data fields" on page 239.

Tran

The Transaction ID (field: TRAN, owner: DFHTASK, field ID: 001) identifies the name of the transaction that this performance class record represents. Applications that are using Distributed Program Link (DPL) requests should use the TRANSID('xxxx') parameter on the EXEC CICS LINK PROGRAM('xxxxxxxx') command to enable better transaction/application analysis from the monitoring performance class data. If the TRANSID('xxxx') parameter is not specified, all the performance class records on the target system for a Distributed Program Link (DPL) mirror transaction will have the same transaction ID. For example, 'CSMI' for a Distributed Program Link (DPL) request from another connected CICS system.

SC

The transaction start type (field: STYPE, owner: DFHTASK, field ID: 004). The high-order bytes (0 and 1) are set to:

TO Attached from terminal input
S Attached by automatic transaction initiation (ATI) without data
SD Attached by automatic transaction initiation (ATI) with data
QD Attached by transient data trigger level
U Attached by user request
TP Attached from terminal TCTTE transaction ID
SZ Attached by Front End Programming Interface (FEPI).

Term
The Terminal ID (field: TERM, owner: DFHTERM, field ID: 002) is either the terminal ID or the session ID. This field is blank if the transaction was not associated with a terminal or session facility.

Userid
The User identifier of the transaction (field: USERID, owner: DFHCICS, field ID: 089).

RSID
The Transaction Routing Sysid (field: RSYSID, owner: DFHCICS, field ID: 130) can be used to identify the connection name (sysid) of the remote system to which the transaction was routed. If the transaction was not routed, this field is blank and the initial program name **Program** field will identify the initial application program name invoked for the transaction.

Program
The Program Name (field: PGMNAME, owner: DFHPROG, field ID: 071) identifies the initial application program invoked for the transaction. Depending on the type of transaction, this field contains either the application program name as defined in the transaction definition, the program name returned by a user written dynamic routing program, the application program name passed on a function shipped Dynamic Program Link (DPL) request, the initial application program name of an ONC RPC Alias Transaction, or the initial application program name of a WEB Alias Transaction. A program name of ######## indicates that the transaction was invoked using the definition of the transaction ID specified by the DTRTRAN system initialization parameter.

TaskNo
The transaction identification number (owner: DFHTASK, field ID: 031). Normally numeric, but some CICS system tasks are identified by special characters in this field:
III system initialization task
TCP terminal control task

Stop Time
The transaction stop time (owner: DFHCICS, field ID: 005).

Response Time
The transaction response time. This field is calculated by subtracting the transaction start time (owner: DFHCICS, field ID: 005) from the transaction stop time (owner: DFHCICS, field ID: 006).

Dispatch Time
The transaction dispatch time (owner: DFHTASK, field ID: 007).

User CPU Time
The transaction CPU time (owner: DFHTASK, field ID: 008).

Suspend Time
The transaction suspend time (owner: DFHTASK, field ID: 014).

DispWait Time
The transaction dispatch wait time (owner: DFHTASK, field ID: 102).

FC WAIT Time
The transaction file control I/O wait time (owner: DFHFILE, field ID: 063).

FCAMRq
The number of file control access method calls (field: FCAMCT, owner: DFHFILE, field ID: 070).

IR Wait Time
The transaction inter-region (MRO) I/O wait time (field: IRIOWTT, owner: DFHTERM, field ID: 100).

Note: Some of the fields that contain large values may be represented in exponential format. For example, 2 834 000 may be shown as 2834E3.

Tailored format

You can tailor the Performance List report to include any CMF performance class field. From the CICS PA dialog, you can design a LIST Report Form to include the required fields in your report. Sample Report Forms are available to help you tailor your report for a specific purpose.

In batch the `FIELDS` operand of the `LIST` report command is used to specify the required report fields.

Example: DBCTL: An example of a Performance List report showing DBCTL transaction activity is shown in Figure 4 on page 24.

The commands to request this report are like the following:

```
CICSPA IN(SMFIN004),
   SELECT(PERFORMANCE(EXCLUDE(
          CHARACTER(OWNER(DBCTL),    Exclude transaction if no PSB name
          SUBSTR(1,1),VALUE(' '))))),
   LIST(FIELDS(
               TRAN,                 Transaction identifier
               DBCTL(PSBNAME),       PSB name
               START,                Task start time
               RESPONSE,             Transaction response time
               CPU,                  CPU time
               DISPATCH,             Dispatch time
               SUSPEND,              Suspend time
               DBCTL(
                     POOLWAIT,       Elapsed wait time for Pool Space
                     INTCWAIT,       Elapsed wait time for Intent Conflict
                     SCHTELAP,       Elapsed time for Schedule Process
                     DBIOELAP,       Elapsed time for Database I/O
                     PILOCKEL,       Elapsed time for PI Locking
                     DBIOCALL,       Number of Database I/Os
                     DLICALLS)))     Total DL/I Database calls
```

To use the CICS PA dialog to request this report, specify a Report Form like the following:

Performance List report

```
                    EDIT LIST Report Form - DBCTLIST

     Field                                                  - User Field -
     Name       Type       Length  Dictionary Definition  Offset  Length
__   TRAN____   ________        4  TRAN     DFHTASK C001   ___      ___
__   PSBNAME_   ________        8  PSBNAME  DBCTL   C001   ___      ___
__   START___   TIMET__       12  START    DFHCICS T005   ___      ___
__   RESPONSE   ________        8  RESP     CICSPA  D901   ___      ___
__   CPU_____   TIME___        8  USRCPUT  DFHTASK S008   ___      ___
__   DISPATCH   TIME___        8  USRDISPT DFHTASK S007   ___      ___
__   SUSPEND_   TIME___        8  SUSPTIME DFHTASK S014   ___      ___
__   POOLWAIT   ________        8  POOLWAIT DBCTL   A002   ___      ___
__   INTCWAIT   ________        8  INTCWAIT DBCTL   A003   ___      ___
__   SCHTELAP   ________        8  SCHTELAP DBCTL   A004   ___      ___
__   DBIOELAP   ________        8  DBIOELAP DBCTL   A005   ___      ___
__   PILOCKEL   ________        8  PILOCKEL DBCTL   A006   ___      ___
__   DBIOCALL   ________        8  DBIOCALL DBCTL   A007   ___      ___
__   DLICALLS   ________        8  DLICALLS DBCTL   A017   ___      ___
__   EOR_____   ________                                    ___      ___
__   EOX_____   ________                                    ___      ___
********************************** End of list **********************************
```

Figure 3. LIST Report Form: DBCTL fields

```
V2R1M0                                    CICS Performance Analyzer
                                            Performance List

LIST0001 Printed at 11:49:51  3/24/2004    Data from 15:58:48  2/19/2004                    APPLID CICPAOR1      Page       1
DBCTL transactions

 Tran PSB      Start        Response User CPU Dispatch  Suspend PoolWait   ICwait SchedElp DBIOElap PILockEl DBIOcall DLIcalls
              Time           Time     Time     Time     Time     Time     Time     Time     Time     Time
 DLI0 DDLPSB51 15:58:47.251   1.0479    .0483    .9427    .1052    .0000    .0000    .0079    .0000    .0000        0        0
 DLI0 DDLPSB51 15:58:49.634    .0615    .0118    .0168    .0447    .0000    .0000    .0034    .0000    .0000        0        0
 DLI0 DDLPSB51 16:51:16.979   1.4467    .0474   1.2820    .1648    .0000    .0000    .0080    .0000    .0000        0        0
 DLI0 DDLPSB51 16:58:03.662    .0934    .0114    .0176    .0758    .0000    .0000    .0034    .0000    .0000        0        0
 DLI0 DDLPSB51 16:58:04.244    .0933    .0114    .0161    .0772    .0000    .0000    .0035    .0000    .0000        0        0
 DLI2 DDLPSB51 17:00:16.874   3.0710    .0110    .1065   2.9644    .0000    .0000    .0034    .0000    .0000        0        0
 DLI7 DDLPSB51 17:00:17.180   3.0274    .0116    .1441   2.8833    .0000    .0000    .0245    .0000    .0000        0        0
 DLI3 DDLPSB51 17:00:17.212   3.2297    .0129    .0108   3.2189    .0000    .0000    .0056    .0000    .0000        0        0
 DLI4 DDLPSB51 17:00:17.213   3.7488    .0109    .0112   3.7375    .0000    .0000    .0036    .0000    .0000        0        0
 DLI9 DDLPSB51 17:00:17.217  18.7260    .0108   2.8553  15.8707    .0000    .0000    .0034    .0000    .0000        0        0
 DLI1 DDLPSB51 17:00:17.218  18.8168    .0131    .0227  18.7941    .0000    .0000    .0041    .0000    .0000        0        0
 DLI0 DDLPSB51 17:00:17.217  18.9042    .0130   2.7601  16.1441    .0000    .0000    .0034    .0000    .0000        0        0
  . . .
 DLI0 DDLPSB51 13:14:14.187    .5046    .0439    .1369    .3676    .0000    .0000    .0035    .0000    .0000        0        0
 DLI0 PSB99    13:01:22.918   5.9288   2.1340   3.8341   2.0947    .0000    .0000   1.0004    .0000    .0000        0        2
 DLI0 PSB99    13:17:35.232   3.5302   2.1659   2.7387    .7914    .0000    .0000    .0010    .0000    .0000        0        2
 DLI0 PSB99    13:45:38.833   3.4382   2.1744   2.4742    .9640    .0000    .0000    .0010    .0000    .0000        0        2
 DLI0 PSB99    13:48:16.354   1.0711    .0428    .2282    .8429    .0000    .0000    .0024    .0000    .0000        0        1
 DLI0 PSB99    13:48:24.131    .2516    .0118    .0184    .2332    .0000    .0000    .0010    .0000    .0000        0        1
 DLI0 PSB99    13:48:25.012    .3658    .0117    .0168    .3490    .0000    .0000    .0011    .0000    .0000        0        1
 DLI0 PSB99    13:48:25.963    .3745    .0118    .0174    .3571    .0000    .0000    .0010    .0000    .0000        0        1
 DLI0 PSB99    13:48:26.919    .2871    .0116    .0180    .2691    .0000    .0000    .0010    .0000    .0000        0        1
 DLI0 PSB99    13:48:27.907    .2511    .0117    .0170    .2341    .0000    .0000    .0010    .0000    .0000        0        1
 DLI0 PSB99    15:36:20.458    .7925    .0451    .2664    .5261    .0000    .0000    .0010    .0000    .0000        0        1
 DLI0 PSB99    15:38:29.047    .6985    .0466    .1953    .5032    .0000    .0000    .0011    .0000    .0000        0        2
 DLI0 PSB99    15:38:50.508    .5742    .0457    .1260    .4482    .0000    .0000    .0010    .0000    .0000        0        2
 DLI0 PSB99    15:49:07.072    .9596    .0486    .1879    .7717    .0000    .0000    .0010    .0000    .0000        0        2
 DLI2 PSB99    15:53:29.716  91.8213   1.8717   2.0128  89.8085    .0000    .0000    .0010    .0000    .0000        0        1
 DLI3 PSB99    15:53:30.402 156.501    1.9866  24.4980 132.003     .0000    .0000    .0055    .0000    .0000        0        1
 DLI5 PSB99    15:53:30.497 233.355    1.9771  18.1590 215.196     .0000    .0000    .0049    .0000    .0000        0        1
 DLI1 PSB99    15:56:53.478  95.2870   1.9511  16.4508  78.8363    .0000    .0000    .0050    .0000    .0000        0        1
```

Figure 4. Performance List report: DBCTL transactions

Note: The IMS Performance Analyzer (IMS PA) can provide a more comprehensive analysis of IMS DBCTL performance.

Example: Application naming: An example of a Performance List report produced from CMF performance class data with application naming enabled is shown in Figure 5.

The commands to request this report are like the following:

```
CICSPA IN(SMFIN002),
       LIST(FIELDS(
              APPLTRAN,           Application naming transaction ID
              USERID,             User identifier
              APPLPROG,           Application naming program name
              TASKNO,             Transaction identification number
              STOP(TIMET),        Task stop time (hh:mm:ss.thm)
              DISPATCH(TIME),     Dispatch time
              CPU(TIME),          CPU time
              SUSPEND(TIME),      Suspend time
              DISPWAIT(TIME),     Redispatch wait time
              APPLID,             CICS Generic APPLID
              JOBNAME,            Job name
              MVSID,              MVS SMF ID
              RELEASE))           CICS release
```

```
 V2R1M0                                          CICS Performance Analyzer
                                                     Performance List

LIST0001 Printed at 15:23:53  7/19/2004    Data from 07:30:47  5/29/2004                                                  Page   1

 Tran Userid   Program    TaskNo  Stop         Dispatch User CPU  Suspend DispWait APPLID   Jobname  MVS  Rlse
                          Time           Time     Time     Time     Time
 TOP1 CBAKER   PROGOPT1       16  7:30:47.653    .0002    .0002    .0029    .0000 IYK2Z1V1 CI07CJB1 MV2C 0620
 TOP2 CBAKER   PROGOPT2       17  7:30:47.660    .0019    .0007    .0067    .0000 IYK2Z1V1 CI07CJB1 MV2C 0620
 TOP3 CBAKER   PROGOPT3       18  7:30:47.699    .0112    .0011    .0362    .0298 IYK2Z1V1 CI07CJB1 MV2C 0620
 TOP4 CBAKER   PROGOPT4       13  7:30:47.785    .0189    .0031    .1189    .1157 IYK2Z1V1 CI07CJB1 MV2C 0620
 TOP5 CBAKER   PROGOPT5       15  7:30:47.829    .0261    .0044    .1539    .1053 IYK2Z1V1 CI07CJB1 MV2C 0620
 TOP6 CBAKER   PROGOPT6       12  7:30:47.842    .0363    .0034    .1587    .0012 IYK2Z1V1 CI07CJB1 MV2C 0620
 TOP7 CBAKER   PROGOPT7       10  7:30:47.945    .1053    .0142    .1930    .1393 IYK2Z1V1 CI07CJB1 MV2C 0620
```

Figure 5. Performance List report: Application naming

Example: Precision(4) and conversion of numeric fields: Figure 6 shows an example of a Performance List report with precision to 4 decimal places for clock fields and conversion of count and storage fields to K, M, KB, MB.

The commands to request this report are like the following:

```
CICSPA IN(SMFIN001),
       NOAPPLID,
       LINECNT(60),
       FORMAT(':','/'),
       PRECISION(4),
   LIST(OUTPUT(LIST0001),
       FIELDS(TRAN,
              APPLID,
              TASKNO,
              PC31AHWM,
              PC31AHWM(K),
              PC31AHWM(KB),
              PC31AHWM(M),
              PC31AHWM(MB),
              RESPONSE))
```

```
 V2R1M0                                              CICS Performance Analyzer
                                                        Performance List

LIST0001 Printed at 16:24:20  3/14/2005    Data from 23:40:54  2/03/2003                                    Page       1

Tran APPLID     TaskNo PC31aHWM PC31aHWM PC31aHWM PC31aHWM PC31aHWM Response
                              K        KB       M        MB      Time
XCMT A02CICP1     3973   151184      151      148        0         0  6.0242
NPXF A02CICP1     3993    21872       22       21        0         0   .0111
HR00 A02CICP5      106   426832      427      417        0         0   .0650
CWBG A02CICP5      107      768        1        1        0         0   .0018
CRMF A02CICP5      108     1736        2        2        0         0   .0015
CATD A02CICP5      109   258352      258      252        0         0   .0257
CWBG A02CICP5      110      768        1        1        0         0   .0017
CRMF A02CICP5      111     1736        2        2        0         0   .0015
CWBG A02CICP5      112      768        1        1        0         0   .0014
CWBG A02CICP5      114      768        1        1        0         0   .0014
CRSQ A02CICP5      113      872        1        1        0         0   .0027
CRMF A02CICP5      115     1736        2        2        0         0   .0014
CWBG A02CICP5      116      768        1        1        0         0   .0015
CRMF A02CICP5      117     1736        2        2        0         0   .0014
CWBG A02CICP5      118      768        1        1        0         0   .0014
CWBG A02CICP5      119      768        1        1        0         0   .0014
CRMF A02CICP5      120     1736        2        2        0         0   .0014
CWBG A02CICP5      121      768        1        1        0         0   .0014
CRMF A02CICP5      122     1736        2        2        0         0   .0017
SYSU A02CICP5      123   151104      151      148        0         0   .0324
```

Figure 6. Performance List report: Precision(4) and conversion of numeric fields

Example: Precision(6) and conversion of numeric fields: The following example is the same report as the previous example in Figure 6 on page 26 but with microsecond precision.

The commands to request this report are like the following:

```
CICSPA IN(SMFIN001),
       NOAPPLID,
       LINECNT(60),
       FORMAT(':','/'),
       PRECISION(6),
   LIST(OUTPUT(LIST0001),
       FIELDS(TRAN,
              APPLID,
              TASKNO,
              PC31AHWM,
              PC31AHWM(K),
              PC31AHWM(KB),
              PC31AHWM(M),
              PC31AHWM(MB),
              RESPONSE))
```

```
 V2R1M0                                              CICS Performance Analyzer
                                                         Performance List

LIST0001 Printed at 16:24:20  3/14/2005    Data from 23:40:54  2/03/2003                                          Page       1

Tran APPLID     TaskNo PC31aHWM PC31aHWM PC31aHWM PC31aHWM PC31aHWM Response
                              K        KB       M        MB      Time
XCMT A02CICP1     3973   151184      151      148        0         0 6.024186
NPXF A02CICP1     3993    21872       22       21        0         0  .011066
HR00 A02CICP5      106   426832      427      417        0         0  .065014
CWBG A02CICP5      107      768        1        1        0         0  .001800
CRMF A02CICP5      108     1736        2        2        0         0  .001499
CATD A02CICP5      109   258352      258      252        0         0  .025707
CWBG A02CICP5      110      768        1        1        0         0  .001672
CRMF A02CICP5      111     1736        2        2        0         0  .001530
CWBG A02CICP5      112      768        1        1        0         0  .001411
CWBG A02CICP5      114      768        1        1        0         0  .001380
CRSQ A02CICP5      113      872        1        1        0         0  .002673
CRMF A02CICP5      115     1736        2        2        0         0  .001419
CWBG A02CICP5      116      768        1        1        0         0  .001508
CRMF A02CICP5      117     1736        2        2        0         0  .001436
CWBG A02CICP5      118      768        1        1        0         0  .001418
CWBG A02CICP5      119      768        1        1        0         0  .001378
CRMF A02CICP5      120     1736        2        2        0         0  .001382
CWBG A02CICP5      121      768        1        1        0         0  .001448
CRMF A02CICP5      122     1736        2        2        0         0  .001702
SYSU A02CICP5      123   151104      151      148        0         0  .032409
```

Figure 7. Performance List report: Precision(6) and conversion of numeric fields

Performance List Extended report

The Performance List Extended report provides a detailed list of the CMF performance class records. It differs from the Performance List report in that you can specify the sorting criteria for the performance class records.

You can request a list of all available records, or specify selection criteria to list only the information that meets specific requirements.

Report command

The Performance List Extended report can be requested from a Report Set in the CICS PA dialog. Select the **List Extended** report in the **Performance Reports** category.

In batch, the `LISTX` command is used to request the Performance List Extended report.

Performance List Extended

The command to produce the default report is:

```
CICSPA LISTX
```

To tailor the report, you can specify report options as follows:

```
CICSPA LISTX(
        [OUTPUT(ddname),]
        [EXTERNAL(ddname),]
        [BY(by1(ASCEND|DESCEND),
                 by2(ASCEND|DESCEND),
                 by3(ASCEND|DESCEND)),]
        [LIMIT(byfield(proclim)),]
        [FIELDS(field1[(options)],...),]
        [LINECOUNT(nnn),]
        [TITLE1('...sub-heading left ...'),]
        [TITLE2('...sub-heading right...'),]
        [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
        [SELECT2(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))])
```

The Performance List Extended report is produced using an external SORT facility. An External Work Data Set is required to store the records before they are sorted. This data set is either specified explicitly using **EXTERNAL(ddname),** or CICS PA assigns one from the External Work File pool.

The FIELDS operand controls the format of the report by specifying the desired fields and the order of the columns.

The BY operand specifies up to 3 sort fields, ascending or descending. For one of the sort fields, LIMIT specifies the maximum number of records to process. The default sort sequence is ascending **BY(TRAN)** with no LIMIT.

If BY and FIELDS are not specified, the default is:

```
CICSPA LISTX(BY(TRAN),
             FIELDS(TRAN,             Transaction ID
                    STYPE,            Start type of transaction
                    USERID,           User ID
                    RSYSID,           Remote System ID
                    PROGRAM,          Initial program name
                    TASKNO,           Transaction number
                    STOP(TIMET),      Stop time (hh:mm:ss.thm)
                    RESPONSE,         Response time
```

```
DISPATCH(TIME),    Dispatch time (sss.thmi)
CPU(TIME),         CPU time
SUSPEND(TIME),     Suspend time
DISPWAIT(TIME),    Dispatch wait time
FCWAIT(TIME),      File Control I/O wait time
FCAMCT(TIME),      File Control access method calls
IRWAIT(TIME)))     Inter-Region (MRO) I/O wait time
```

The CICS PA dialog uses the LISTX Report Form to generate the FIELDS and BY operands.

Cross-System Work Extended

The LISTX command can be used to produce the Cross-System Work Extended report as follows:

```
CICSPA LISTX(
        [OUTPUT(ddname),]
        [EXTERNAL(ddname),]
        [BY(UOWID),]
        [PRINTMULTIPLE|NOPRINTMULTIPLE,]
        [PRINTSINGLE|NOPRINTSINGLE,]
        [FIELDS(field1[(options)],...),]
        [LINECOUNT(nnn),]
        [TITLE1('...sub-heading left ...'),]
        [TITLE2('...sub-heading right...'),]
        [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
        [SELECT2(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))])
```

This produces a report similar to the Performance List Extended report, but note the following differences:

1. No other BY sort field can be specified.
2. LIMIT is ignored.
3. CMF records for the same Network UOWID are reported together. A blank line separates each network unit-of-work, except when you specify NOPRINTMULTIPLE,PRINTSINGLE. In this case, no blank lines are necessary as each record is a distinct unit-of-work.
4. The report heading shows “Cross-System Work Extended”.
5. The sorting sequence is the same as the default Cross-System Work report (see “Cross-System Work report” on page 69):
   NETUOWPX NETNAME (ascending)
   NETUOWSX Network unit-of-work ID (ascending)
   NETUOWSX Period or syncpoint count (descending)
   STOP Task Stop time (descending)
   APPLID CICS generic APPLID (ascending)

For an example of the report, see Figure 30 on page 74.

Report content

You can specify a LISTX Report Form (FIELDS operand) to tailor the format and content of the Performance List Extended report. If a Report Form is not specified, the default format of the report is produced.

Default format

A report line is printed for each BY sort field combination, up to the specified LIMIT.

The following report is an example of the default Performance List Extended report.

Performance List Extended report

```
 V2R1M0                                          CICS Performance Analyzer
                                                 Performance List Extended

LSTX0001 Printed at  9:06:18  3/28/2004 Data from 11:10:51  3/24/2004 TO 11:34:13  3/24/2004                    Page   1


 Tran SC Userid   RSID Program    TaskNo Stop         Response Dispatch User CPU  Suspend DispWait  FC Wait   FCAMRq  IR Wait
                                         Time          Time     Time     Time     Time     Time     Time              Time
 AADD TO BRENNER       DFHSAALL       52 11:12:54.123   .0945    .0831    .0084    .0114    .0113    .0000        0    .0000
 AADD TO BRENNER       DFHSAALL       54 11:13:06.217   .0636    .0619    .0047    .0017    .0016    .0000        0    .0000
 AADD TP BRENNER       DFHSAALL       65 11:14:27.328   .0029    .0026    .0017    .0003    .0002    .0000        3    .0000
 AADD TO BRENNER       DFHSAALL      551 11:26:41.439   .0016    .0016    .0013    .0001    .0000    .0000        0    .0000
 AADD TP BRENNER       DFHSAALL      561 11:27:02.540   .0026    .0022    .0017    .0003    .0002    .0000        3    .0000
 AADD TO GBURGES       DFHSAALL      136 11:20:04.651   .0011    .0010    .0010    .0001    .0000    .0000        0    .0000
 AADD TO GBURGES       DFHSAALL      137 11:20:08.762   .0022    .0021    .0012    .0001    .0000    .0000        0    .0000
 AADD TP GBURGES       DFHSAALL      138 11:20:15.123   .0023    .0022    .0013    .0001    .0000    .0000        0    .0000
 AADD TO GBURGES       DFHSAALL      183 11:21:51.234   .0022    .0022    .0012    .0001    .0000    .0000        0    .0000
 AADD TP GBURGES       DFHSAALL      184 11:21:58.310   .0023    .0022    .0013    .0001    .0000    .0000        0    .0000
 ABRW TO CBAKER        DFHSABRW      139 11:16:51.429   .6982    .6717    .0385    .0264    .0111    .0051        6    .0000
 ABRW TP CBAKER        DFHSABRW      140 11:16:52.538   .0018    .0018    .0015    .0001    .0000    .0000        7    .0000
 ABRW TP CBAKER        DFHSABRW      141 11:16:52.647   .0021    .0020    .0015    .0001    .0000    .0000        7    .0000
 ABRW TP CBAKER        DFHSABRW      142 11:16:52.756   .0018    .0017    .0014    .0001    .0000    .0000        7    .0000
 ABRW TP CBAKER        DFHSABRW      143 11:16:53.865   .0020    .0019    .0015    .0001    .0000    .0000        7    .0000
 ABRW TP CBAKER        DFHSABRW      144 11:16:53.974   .0038    .0037    .0013    .0001    .0000    .0000        0    .0000
 ABRW TO CBAKER        DFHSABRW      365 11:22:38.083   .0020    .0019    .0015    .0001    .0000    .0000        6    .0000
 ABRW TP CBAKER        DFHSABRW      366 11:22:40.192   .0019    .0016    .0013    .0002    .0000    .0000        7    .0000
 ABRW TP CBAKER        DFHSABRW      367 11:22:41.200   .0018    .0018    .0015    .0001    .0000    .0000        7    .0000
 ABRW TP CBAKER        DFHSABRW      368 11:22:41.319   .0018    .0017    .0012    .0001    .0000    .0000        0    .0000
 ABRW TO CBAKER        DFHSABRW      206 11:24:34.129   .0052    .0021    .0021    .0031    .0000    .0000        0    .0030
 ABRW TO BRENNER       DFHSABRW       53 11:12:19.238   .5819    .0783    .0121    .5037    .0127    .0000        0    .4908
 ABRW TP BRENNER       DFHSABRW       59 11:13:17.320   .0070    .0034    .0029    .0036    .0000    .0000        0    .0036
 ABRW TP BRENNER       DFHSABRW       61 11:13:20.431   .0080    .0028    .0024    .0052    .0000    .0000        0    .0051
 ABRW TP BRENNER       DFHSABRW       62 11:13:21.542   .0064    .0027    .0023    .0036    .0000    .0000        0    .0036
 ABRW TP BRENNER       DFHSABRW       63 11:13:24.653   .0018    .0017    .0014    .0001    .0000    .0000        0    .0000
 ABRW TO GBURGES       DFHSABRW      109 11:19:44.764   .0071    .0040    .0027    .0030    .0000    .0000        0    .0030
 ABRW TP GBURGES       DFHSABRW      110 11:19:49.875   .0064    .0031    .0021    .0033    .0000    .0000        0    .0032
 ABRW TP GBURGES       DFHSABRW      111 11:19:50.986   .0065    .0032    .0022    .0033    .0000    .0000        0    .0033
```

Figure 8. Performance List Extended report : default format

For the complete list of performance class data fields that can be selected for the Performance List report, see the *CICS Performance Analyzer for z/OS User's Guide.*

A brief description of the fields in the default report follows. For more details, see "CMF performance class data fields" on page 239.

Tran
The Transaction ID (field: TRAN, owner: DFHTASK, field ID: 001) identifies the name of the transaction that this performance class record represents. Applications that are using Distributed Program Link (DPL) requests should use the TRANSID('xxxx') parameter on the EXEC CICS LINK PROGRAM('xxxxxxxx') command to enable better transaction/application analysis from the monitoring performance class data. If the TRANSID('xxxx') parameter is not specified all the performance class records on the target system for a Distributed Program Link (DPL) mirror transaction will have the same transaction ID. For example, 'CSMI' for a Distributed Program Link (DPL) request from another connected CICS system.

SC
The transaction start type (field: STYPE, owner: DFHTASK, field ID: 004).

Userid
The User identifier of the transaction (owner: DFHCICS, field ID: 089).

RSID
The Transaction Routing Sysid (field: RSYSID, owner: DFHCICS, field ID: 130) can be used to identify the connection name (sysid) of the remote system to which the transaction was routed. If the transaction was not routed this field is blank and the initial program name **Program** field will identify the initial application program name invoked for the transaction.

Program
The Program Name (field: PGMNAME, owner: DFHPROG, field ID: 071) identifies the initial application program invoked for the transaction. Depending on the type of transaction, this field contains either the application program name as defined in the transaction definition, the program name returned by a user written dynamic routing program, the application program name passed on a function shipped Dynamic Program Link (DPL) request, the initial application program name of an ONC RPC Alias Transaction, or the initial application program name of a WEB Alias Transaction. A program name of ######## indicates that the transaction was invoked using the definition of the transaction id specified by the DTRTRAN system initialization parameter.

TaskNo
The transaction identification number (owner: DFHTASK, field ID: 031).

Stop Time
The transaction stop time (owner: DFHCICS, field ID: 005).

Response Time
The transaction response time. This field is calculated by subtracting the transaction start time (owner: DFHCICS, field ID: 005) from the transaction stop time (owner: DFHCICS, field ID: 006).

Dispatch Time
The transaction dispatch time (owner: DFHTASK, field ID: 007).

User CPU Time
The transaction CPU time (owner: DFHTASK, field ID: 008).

Suspend Time
The transaction suspend time (owner: DFHTASK, field ID: 014).

DispWait Time
The transaction dispatch wait time (owner: DFHTASK, field ID: 102).

FC Wait Time
The transaction file control I/O wait time (owner: DFHFILE, field ID: 063).

FCAMRq
The number of file control access method calls (field: FCAMCT, owner: DFHFILE, field ID: 070).

IR Wait Time
The transaction inter-region (MRO) I/O wait time (field: IRIOWTT, owner: DFHTERM, field ID: 100).

Note: Some of the fields may contain large values and be represented in exponential format. For example, 2 834 000 may be shown as 2834E3.

Tailored format

You can tailor the Performance List Extended report to include any CMF performance class field. From the CICS PA dialog, you can design a LISTX Report Form to include the required fields in your report. Sample Report Forms are available to help you tailor your report for a specific purpose.

In batch the `FIELDS` operand of the `LISTX` report command is used to specify the required report fields, their format, and the order of the columns.

Example: Top 10 response times by transaction: The example in Figure 10 on page 33 shows a Performance List Extended report sorted by transaction ID and lists the longest 10 response times for each. To generate this report, specify that

the records are sorted in descending order by response time within ascending order by transaction ID, and limit the performance class records processed to the first 10 records for each transaction ID.

The **BY, LIMIT** and **FIELDS** operands of the **LISTX** command are used to generate this report as shown in the following example:

```
CICSPA LISTX(
         BY(TRAN(ASCEND),RESPONSE(DESCEND)),
         LIMIT(RESPONSE(10)),
         FIELDS(TRAN,               Transaction ID
                RESPONSE,           Response time
                TERM,               Terminal ID
                STYPE,              Start type of transaction
                USERID,             User ID
                RSYSID,             Remote System ID
                PROGRAM,            Initial program name
                TASKNO,             Transaction number
                STOP(TIMES),        Stop time (hh:mm:ss)
                DISPATCH,           Dispatch time
                CPU,                CPU time
                SUSPEND,            Suspend time
                DISPWAIT,           Dispatch wait time
                FCWAIT,             File Control I/O wait time
                IRWAIT),            Inter-Region (MRO) I/O wait time
         TITLE1('Response Times by Transaction ID'),
         TITLE2('*** 10 worst times ***'))
```

To use the CICS PA dialog to request this report, use the sample Report Form BADRESP or specify a Report Form like the following:

```
                  EDIT LISTX Report Form - BADTRANS

    Field
    Name       S   Type      Limit     Description
__  TRAN____   A   ________  ________  Transaction identifier
__  RESPONSE   D   ________  10______  Transaction response time
__  TERM____   *   ________  ________  Terminal ID
__  STYPE___   _   ________  ________  Transaction start type
__  USERID__   *   ________  ________  User ID
__  RSYSID__   _   ________  ________  Remote System ID
__  PROGRAM_   _   ________  ________  Program name
__  TASKNO__   _   ________  ________  Transaction identification number
__  STOP____   *   TIMES__   ________  Task stop time
__  RESPONSE   *   ________  ________  Transaction response time
__  DISPATCH   *   TIME___   ________  Dispatch time
__  CPU_____   *   TIME___   ________  CPU time
__  SUSPEND_   *   TIME___   ________  Suspend time
__  DISPWAIT   *   TIME___   ________  Redispatch wait time
__  FCWAIT__   _   TIME___   ________  File I/O wait time
__  IRWAIT__   _   TIME___   ________  MRO link wait time
__  EOR_____   _   ________  ---------- End of Report --------------
__  EOX_____   _   ________  ---------- End of Extract -------------
__  FCAMCT__   *   ________  ________  File access-method requests
```

Figure 9. LISTX Report Form: using Sort Sequence and Limit

```
 V2R1M0                                        CICS Performance Analyzer
                                               Performance List Extended

LSTX0001 Printed at 11:44:10  2/19/2005     Data from 11:10:51  2/14/2005 to 11:34:13  2/14/2005            Page    1
Response Times by Transaction ID                                *** 10 worst times ***

 Tran Response Term SC Userid   RSID Program    TaskNo Stop      Dispatch User CPU  Suspend DispWait  FC Wait  IR Wait
        Time                                          Time        Time     Time     Time     Time     Time     Time
 AADD    .0945 S23C TO BRENNER       DFHSAALL       52 11:12:54     .0831    .0084    .0114    .0113    .0000    .0000
 AADD    .0636 S23C TO BRENNER       DFHSAALL       54 11:13:06     .0619    .0047    .0017    .0016    .0000    .0000
 AADD    .0029 S23C TP BRENNER       DFHSAALL       65 11:14:27     .0026    .0017    .0003    .0002    .0000    .0000
 AADD    .0026 S23C TP BRENNER       DFHSAALL      561 11:27:02     .0022    .0017    .0003    .0002    .0000    .0000
 AADD    .0023 TC26 TP GBURGES       DFHSAALL      138 11:20:15     .0022    .0013    .0001    .0000    .0000    .0000
 AADD    .0023 TC26 TP GBURGES       DFHSAALL      184 11:21:58     .0022    .0013    .0001    .0000    .0000    .0000
 AADD    .0022 TC26 TP GBURGES       DFHSAALL      183 11:21:51     .0022    .0012    .0001    .0000    .0000    .0000
 AADD    .0022 TC26 TO GBURGES       DFHSAALL      137 11:20:08     .0021    .0012    .0001    .0000    .0000    .0000
 AADD    .0016 S23C TO BRENNER       DFHSAALL      551 11:26:41     .0016    .0013    .0001    .0000    .0000    .0000
 AADD    .0011 TC26 TO GBURGES       DFHSAALL      136 11:20:04     .0010    .0010    .0001    .0000    .0000    .0000
 ABRW    .6982 P015 TO CBAKER        DFHSABRW      139 11:16:51     .6717    .0385    .0264    .0111    .0051    .0000
 ABRW    .5819 S23D TO BRENNER       DFHSABRW       53 11:12:19     .0783    .0121    .5037    .0127    .0000    .4908
 ABRW    .0156 TC26 TP GBURGES       DFHSABRW      128 11:19:57     .0028    .0024    .0128    .0000    .0000    .0127
 ABRW    .0146 TC26 TO GBURGES       DFHSABRW      164 11:21:05     .0030    .0023    .0115    .0000    .0000    .0114
 ABRW    .0124 TC26 TP GBURGES       DFHSABRW      169 11:21:17     .0043    .0028    .0080    .0000    .0000    .0080
 ABRW    .0120 TC32 TP GBURGES       DFHSABRW      391 11:24:38     .0120    .0017    .0001    .0000    .0000    .0000
 ABRW    .0097 TC26 TP GBURGES       DFHSABRW      175 11:21:27     .0059    .0025    .0038    .0000    .0000    .0037
 ABRW    .0094 TC26 TP GBURGES       DFHSABRW      117 11:19:52     .0036    .0024    .0058    .0000    .0000    .0057
 ABRW    .0085 TC26 TP GBURGES       DFHSABRW      170 11:21:19     .0037    .0024    .0048    .0000    .0000    .0048
 ABRW    .0085 TC26 TP GBURGES       DFHSABRW      176 11:21:29     .0043    .0024    .0042    .0001    .0000    .0042
 AINQ    .0040 TC26 TO GBURGES       DFHSAALL      187 11:22:14     .0027    .0017    .0013    .0000    .0000    .0013
 AINQ    .0024 S23C TO BRENNER       DFHSAALL      574 11:27:26     .0016    .0015    .0008    .0000    .0000    .0000
 AINQ    .0023 S23C TO BRENNER       DFHSAALL      564 11:27:11     .0022    .0015    .0001    .0000    .0000    .0000
 AINQ    .0020 S23C TO BRENNER       DFHSAALL      341 11:21:19     .0019    .0014    .0001    .0000    .0000    .0000
 AINQ    .0020 S23C TO BRENNER       DFHSAALL      328 11:21:09     .0019    .0012    .0001    .0000    .0000    .0000
 AINQ    .0018 S23C TO BRENNER       DFHSAALL      580 11:27:34     .0017    .0014    .0001    .0000    .0000    .0000
 AINQ    .0018 S23C TO BRENNER       DFHSAALL      112 11:14:46     .0017    .0016    .0001    .0000    .0000    .0000
 AINQ    .0014 R11  TO CBAKER        DFHSAALL      232 11:26:30     .0013    .0012    .0000    .0000    .0000    .0000
 AINQ    .0013 S23C TO BRENNER       DFHSAALL      569 11:27:19     .0013    .0013    .0001    .0000    .0000    .0000
 AINQ    .0012 TC26 TO GBURGES       DFHSAALL      186 11:22:08     .0011    .0010    .0001    .0000    .0000    .0000
 AMNU    .1724 S23D TO BRENNER       DFHSAMNU       50 11:11:53     .1720    .0091    .0004    .0004    .0000    .0000
 AMNU    .0713 CAAD TO CBAKER        DFHSAMNU      249 11:19:41     .0519    .0085    .0194    .0042    .0000    .0000
```

Figure 10. Performance List Extended report: top 10 response times by transaction

Example: Precision(4) and conversion of numeric fields: Figure 11 shows an example of a Performance List Extended report with precision to 4 decimal places for clock fields and conversion of count and storage fields to K, M, KB, MB.

The commands to request this report are like the following:

```
CICSPA IN(SMFIN001),
       NOAPPLID,
       LINECNT(60),
       FORMAT(':','/'),
       PRECISION(4),
   LISTX(OUTPUT(LSTX0001),
       EXTERNAL(CPAXW001),
       BY(TRAN,
          CPU(DESCEND)),
       LIMIT(CPU(20)),
       FIELDS(TRAN,
              CPU(TIME),
              PC31AHWM,
              PC31AHWM(K),
              PC31AHWM(KB)
              PC31AHWM(M),
              PC31AHWM(MB)
              RESPONSE))
```

```
 V2R1M0                                  CICS Performance Analyzer
                                         Performance List Extended

LSTX0001 Printed at 17:07:18  3/14/2005 Data from 19:06:30  2/01/2003 to 23:50:44  2/03/2003                    Page      1

Tran User CPU PC31aHWM PC31aHWM PC31aHWM PC31aHWM PC31aHWM Response
       Time              K        KB       M        MB      Time
CWBA    .0283    92208       92       90        0        0    .2609
CWBA    .0251   1938E3     1938     1892        2        2    .1436
CWBA    .0212    92208       92       90        0        0   1.0060
CWBA    .0183   1938E3     1938     1892        2        2    .0673
CWBA    .0128    92208       92       90        0        0    .0287
CWBA    .0086   1975E3     1975     1928        2        2    .1011
CWBA    .0069   1975E3     1975     1928        2        2    .1101
CWBA    .0044   1959E3     1959     1913        2        2    .0171
CWBA    .0036   1973E3     1973     1926        2        2    .0620
CWBA    .0034   1972E3     1972     1926        2        2    .0043
CWBA    .0034   1972E3     1972     1926        2        2    .0046
CWBA    .0033   1972E3     1972     1926        2        2    .0040
CWBA    .0032   1972E3     1972     1926        2        2    .0039
CWBA    .0031    47632       48       47        0        0    .0203
CWBA    .0030   1959E3     1959     1913        2        2    .0042
CWBA    .0029   1959E3     1959     1913        2        2    .0048
CWBA    .0027   1975E3     1975     1928        2        2    .0436
CWBA    .0026   1959E3     1959     1913        2        2    .0037
CWBA    .0026   1959E3     1959     1913        2        2    .0039
CWBA    .0026   1959E3     1959     1913        2        2    .0038
CWBG    .0030     1056        1        1        0        0    .0171
CWBG    .0028      784        1        1        0        0    .0597
CWBG    .0028     1056        1        1        0        0    .0146
CWBG    .0027     1056        1        1        0        0    .0297
CWBG    .0026      784        1        1        0        0    .3154
CWBG    .0026     1056        1        1        0        0    .1528
```

Figure 11. Performance List Extended report: Precision(4) and conversion of numeric fields

Example: Precision(6) and conversion of numeric fields: The following example is the same report as the previous example in Figure 11 on page 34 but with microsecond precision.

The commands to request this report are like the following:

```
 CICSPA IN(SMFIN001),
        NOAPPLID,
        LINECNT(60),
        FORMAT(':','/'),
        PRECISION(6),
    LISTX(OUTPUT(LSTX0001),
        EXTERNAL(CPAXW001),
        BY(TRAN,
           CPU(DESCEND)),
        LIMIT(CPU(20)),
        FIELDS(TRAN,
               CPU(TIME),
               PC31AHWM,
               PC31AHWM(K),
               PC31AHWM(KB)
               PC31AHWM(M),
               PC31AHWM(MB)
               RESPONSE))
```

```
 V2R1M0                                    CICS Performance Analyzer
                                           Performance List Extended

LSTX0001 Printed at 17:07:18  3/14/2005 Data from 19:06:30  2/01/2003 to 23:50:44  2/03/2003                    Page      1

Tran User CPU PC31aHWM PC31aHWM PC31aHWM PC31aHWM PC31aHWM Response
       Time               K        KB       M        MB      Time
CWBA  .028304    92208       92       90        0        0  .260863
CWBA  .025072   1938E3     1938     1892        2        2  .143602
CWBA  .021184    92208       92       90        0        0 1.006030
CWBA  .018288   1938E3     1938     1892        2        2  .067328
CWBA  .012848    92208       92       90        0        0  .028668
CWBA  .008624   1975E3     1975     1928        2        2  .101078
CWBA  .006944   1975E3     1975     1928        2        2  .110104
CWBA  .004448   1959E3     1959     1913        2        2  .017112
CWBA  .003648   1973E3     1973     1926        2        2  .062020
CWBA  .003376   1972E3     1972     1926        2        2  .004337
CWBA  .003360   1972E3     1972     1926        2        2  .004596
CWBA  .003264   1972E3     1972     1926        2        2  .003970
CWBA  .003168   1972E3     1972     1926        2        2  .003947
CWBA  .003104    47632       48       47        0        0  .020255
CWBA  .002992   1959E3     1959     1913        2        2  .004209
CWBA  .002880   1959E3     1959     1913        2        2  .004786
CWBA  .002736   1975E3     1975     1928        2        2  .043593
CWBA  .002608   1959E3     1959     1913        2        2  .003677
CWBA  .002576   1959E3     1959     1913        2        2  .003896
CWBA  .002560   1959E3     1959     1913        2        2  .003811
CWBG  .002960     1056        1        1        0        0  .017110
CWBG  .002784      784        1        1        0        0  .059680
CWBG  .002768     1056        1        1        0        0  .014561
CWBG  .002656     1056        1        1        0        0  .029693
CWBG  .002624      784        1        1        0        0  .315409
CWBG  .002576     1056        1        1        0        0  .152797
```

Figure 12. Performance List Extended report: Precision(6) and conversion of numeric fields

Performance Summary report

The Performance Summary report is a summary of the CMF performance class records.

You can request a report that summarizes all available records, or you can specify selection criteria to summarize only the information that meets specific requirements.

Report command

The Performance Summary report can be requested from a Report Set in the dialog. Select the **Summary** report in the **Performance Reports** category.

In batch, the SUMMARY command is used to request the Performance Summary report.

Performance Summary report

The command to produce the default report is:

```
CICSPA SUMMARY
```

To tailor the report, you can specify report options as follows:

```
CICSPA SUMMARY(
          [OUTPUT(ddname),]
          [EXTERNAL(ddname),]
          [TOTALS(n)|NOTOTALS,]
          [INTERVAL(hh:mm:ss),]
          [BY(by1[(ufld-options)],
                  by2([(ufld-options)],
                  by3([(ufld-options)]),]
          [FIELDS(field1[(fld-options)],...),]
          [LINECOUNT(nnn),]
          [TITLE1('...sub-heading left ...'),]
          [TITLE2('...sub-heading right...'),]
          [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
          [SELECT2(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))])
```

The FIELDS operand controls the format of the report by specifying the desired fields, their format, the order of the columns, and for numeric fields, the statistical functions (**AVE|DEV|MIN|MAX|TOT|nn|RNGCOUNT(range)|RNGPERCENT(range)**) used to summarize the data. nn% represents a peak percentile, such as 95%. A range can be specified as a lower limit and an upper limit separated by a hyphen (for example, 0.1-0.2), or as a comparison operator (one of: = > >= < <=) followed by a value (for example, >0). If the function is omitted, **AVE** is the default.

You can specify up to 8 Sort Key fields to order in ascending or descending sequence. The default is **TRAN(ASCEND).** The BY operand is optional. If the FIELDS operand is specified with key fields, the BY operand is ignored.

Sort fields identify the grouping required for summarization, and can be START and STOP time, or any character field, including character user fields.

Key fields must be the first fields specified in the Form and must be contiguous. However, TASKCNT and TASKTCNT can be specified anywhere in the list of fields, including amongst the key fields.

In addition to the Sort Key fields, one numeric field can be selected as Ascending or Descending to activate **Alternate Sequencing.** This will change the order of report

lines from Sort Key to numeric field sequence. For example, specify Alternate Sequencing of D for RESPONSE time to see the transactions with the highest response time at the top of the report. Note that grouping by Sort Key remains unaffected.

If BY and FIELDS are omitted, the default is:

```
CICSPA SUMMARY(
           FIELDS(TRAN,                Transaction ID
                  TASKCNT,             Number of CMF Records
                  RESPONSE(AVE,MAX),   Avg/Max Response Time
                  DISPATCH,            Avg Dispatch Time
                  CPU,                 Avg CPU Time
                  SUSPEND(AVE,MAX),    Avg/Max Suspend Time
                  DISPWAIT,            Avg Dispatch Wait Time
                  FCWAIT,              Avg File Control I/O Wait Time
                  FCAMCT,              Avg FC Access Method Calls
                  IRWAIT,              Avg Inter-Region I/O Wait Time
                  SC24UHWM,            Avg User Storage HWM below 16MB
                  SC31UHWM))           Avg User Storage HWM above 16MB
```

The CICS PA dialog uses the SUMMARY Report Form to generate the FIELDS operand.

Note: If the report becomes too large. . .

The Performance Summary report sorts the input records prior to reporting. When the EXTERNAL operand is not specified, CICS PA performs an internal sort using virtual storage. The amount of virtual storage required depends on the number of key fields and the resulting combinations. If the report becomes too large for virtual storage, you can use an External Work Data Set to store the records before they are sorted. Use **EXTERNAL(ddname)** to specify the External Work Data Set and invoke the external SORT facility.

Summary Export

The SUMMARY command can be used to tailor the format of the Export file.

The command format for the Summary Export is:

```
CICSPA SUMMARY(
          [OUTPUT(ddname),]
          [DDNAME(ddname),]
          [DELIMIT('field-delimiter'),]
          [LABELS|NOLABELS,]
          [FLOAT,]
          [EXTERNAL(ddname),]
          [INTERVAL(hh:mm:ss),]
          [BY(by1[(ufld-options)],...),]
          [FIELDS(field1[(fld-options)],...),]
          [TITLE1('...1st 64 characters of title...'),]
          [TITLE2('...2nd 64 characters of title...'),]
          [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
          [SELECT2(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))])
```

See Figure 68 on page 195 for an example of the Summary Export file.

Totals are not written to the file. That is reserved for later processing of the export data.

Report content

You can specify a SUMMARY Report Form (FIELDS operand) to tailor the format and content of the Performance Summary report.

The first 1 to 8 character or time stamp (START, STOP) fields are used to summarize and subtotal the Summary report entries. The combination of key field values determines the group of data for summarization. A summary line is printed for each Key field combination. Depending on the value specified in the TOTALS operand, the Summary report prints a subtotal line whenever a key field value changes.

If a Report Form is not specified, the default format of the report is produced.

Default format

The following report is an example of the default Performance Summary report.

```
 V2R1M0                                              CICS Performance Analyzer
                                                       Performance Summary

SUMM0001 Printed at  7:17:20  3/28/2004     Data from 11:10:51  3/24/2004 to 11:34:13  3/24/2004                      Page   1

                      Avg      Max       Avg      Avg      Avg      Max      Avg      Avg      Avg      Avg      Avg      Avg
Tran       #Tasks Response Response Dispatch User CPU  Suspend  Suspend DispWait  FC Wait   FCAMRq  IR Wait SC24UHWM SC31UHWM
                     Time     Time     Time     Time     Time     Time     Time     Time              Time
AADD           10   .0175    .0945    .0161    .0024    .0014    .0013    .0000    .0000        1   .0000      960        0
ABRW          134   .0142    .6982    .0085    .0022    .0057    .0002    .0000    .0053        3   .0053     1007        0
AINQ           10   .0020    .0040    .0017    .0014    .0003    .0000    .0000    .0001        1   .0001      928        0
AMNU           12   .0270    .1724    .0246    .0028    .0023    .0008    .0000    .0000        0   .0000      424      221
AUPD           12   .0144    .0665    .0083    .0030    .0061    .0014    .0000    .0010        0   .0010      960        0
B               2   .0028    .0031    .0027    .0015    .0001    .0000    .0000    .0000        0   .0000        0        0
BING            1   .0024    .0024    .0023    .0016    .0001    .0000    .0000    .0000        0   .0000        0        0
```

Figure 13. Performance Summary report: default format

For the complete list of performance class data fields that can be selected for the Performance Summary report, see the *CICS Performance Analyzer for z/OS User's Guide.*

The default report is summarized by transaction ID and contains the following information. For more details on the fields in this report, see "CMF performance class data fields" on page 239.

Tran
The Transaction ID.

#Tasks
The number of tasks (performance records) summarized.

Avg Response Time
The average response time.

Max Response Time
The maximum response time.

Avg Dispatch Time
The average dispatch time.

Avg User CPU Time
The average CPU time.

Avg Suspend Time
The average suspend time.

Max Suspend Time
The maximum suspend time.

Avg DispWait Time
The average dispatch wait time.

Avg FC Wait Time
The average file control I/O wait time.

Avg FCAMRq Count
The average number of access method calls.

Avg IR Wait Time
The average inter-region (MRO) I/O wait time.

Avg SC24UHWM
The average storage high-water mark below 16MB.

Avg SC31UHWM
The average storage high-water mark above 16MB.

Note: Some of the fields may contain very large values and be represented in exponential format. For example, 2 834 000 may be shown as 2834E3.

Tailored format

You can tailor the Performance Summary report to include any CMF performance class field. From the CICS PA dialog, you can design a SUMMARY Report Form to include the required fields in your report. Sample Report Forms are available to help you tailor your report for a specific purpose.

In batch the `FIELDS` operand of the `SUMMARY` report command is used to specify the required report fields.

Example: Summary by start time: The Performance Summary report in Figure 15 on page 40 shows transaction activity broken down into 30 second time intervals. This allows you to measure transaction performance variations over time.

The commands to request this report are shown in the following example:

```
CICSPA SUMMARY(
               INTERVAL(00:00:30),          Time Interval is 30 seconds
               FIELDS(TRAN,                 Transaction ID
                      START,                Transaction Start Time
                      TASKCNT,              Total Task count
                      RESPONSE(AVE,MAX),    Transaction response time
                      DISPATCH(TIME(AVE)),  Dispatch time
                      CPU(TIME(AVE)),       CPU time
                      SUSPEND(TIME(AVE)),   Suspend time
                      DISPWAIT(TIME(AVE)),  Redispatch wait time
                      FCWAIT(TIME(AVE)),    File I/O wait time
                      FCAMCT(AVE),          File access-method requests
                      IRWAIT(TIME(AVE)),    MRO link wait time
                      SC24UHWM(AVE),        UDSA HWM below 16MB
                      SC31UHWM(AVE)),       EUDSA HWM above 16MB
               TITLE1('Summary by Start Interval within Transaction ID'))
```

To use the CICS PA dialog to request this report, specify a Report Form like the following:

```
                    EDIT SUMMARY Report Form - STARTIME

     Field    Sort
     Name +   K  O  Type     Fn   Description
__   TRAN____ K  A  ________ ___  Transaction identifier
__   START___ K  A  TIMES__ ___  Task start time
__   TASKCNT_        ________ ___  Total Task count
__   RESPONSE        ________ AVE  Transaction response time
__   RESPONSE        ________ MAX  Transaction response time
__   DISPATCH        TIME___ AVE  Dispatch time
__   CPU_____        TIME___ AVE  CPU time
__   SUSPEND_        TIME___ AVE  Suspend time
__   DISPWAIT        TIME___ AVE  Redispatch wait time
__   FCWAIT__        TIME___ AVE  File I/O wait time
__   FCAMCT__        ________ AVE  File access-method requests
__   IRWAIT__        TIME___ AVE  MRO link wait time
__   SC24UHWM        ________ AVE  UDSA HWM below 16MB
__   SC31UHWM        ________ AVE  EUDSA HWM above 16MB
__   EOR_____        ________ ___  ---------------- End of Report ----------------
__   EOX_____        ________ ___  ---------------- End of Extract ----------------
```

Figure 14. SUMMARY Report Form: by start time within transaction

```
 V2R1M0                                          CICS Performance Analyzer
                                                   Performance Summary

SUMM0001 Printed at 15:47:48  3/19/2004     Data from 15:04:02  2/27/2004 to 15:07:28  2/27/2004                    Page   1
Summary by Start Interval within Transaction ID

                                 Avg      Max      Avg      Avg      Avg      Avg      Avg      Avg      Avg      Avg      Avg
Tran     Start      #Tasks Response Response Dispatch User CPU  Suspend DispWait  FC Wait   FCAMRq  IR Wait SC24UHWM SC31UHWM
         Interval           Time     Time     Time     Time     Time     Time     Time              Time
TR01     15:04:00       89    .0584    .1233    .0012    .0011    .0572    .0015    .0025        3    .0000        0    88363
TR01     15:04:30      109    .0562    .1220    .0011    .0011    .0550    .0016    .0026        3    .0000        0    88360
TR01     15:05:00      104    .0551    .1328    .0013    .0012    .0538    .0017    .0027        3    .0000        0    88356
TR01     15:05:30      106    .0550    .1041    .0011    .0011    .0539    .0018    .0028        3    .0000        0    88355
TR01     15:06:00       86    .0588    .1354    .0012    .0011    .0576    .0016    .0026        3    .0000        0    88362
TR01     15:06:30       99    .0557    .0823    .0012    .0011    .0545    .0018    .0029        3    .0000        0    88352
TR01     15:07:00      117    .0549    .0912    .0012    .0011    .0537    .0016    .0024        3    .0000        0    88353
TR01                   710    .0562    .1354    .0012    .0011    .0550    .0016    .0026        3    .0000        0    88357

TR02     15:04:00      101    .1719    .3674    .0030    .0029    .1689    .0055    .0134       18    .0000        0    88358
TR02     15:04:30       98    .1612    .3661    .0029    .0028    .1583    .0056    .0134       18    .0000        0    88353
TR02     15:05:00      105    .1548    .3683    .0029    .0029    .1519    .0045    .0116       18    .0000        0    88356
TR02     15:05:30      104    .1693    .4151    .0030    .0029    .1663    .0048    .0122       19    .0000        0    88363
TR02     15:06:00      105    .1631    .4046    .0030    .0029    .1601    .0043    .0122       18    .0000        0    88359
TR02     15:06:30       89    .1572    .3499    .0030    .0028    .1541    .0049    .0125       18    .0000        0    88357
TR02     15:07:00       88    .1541    .3164    .0031    .0028    .1511    .0050    .0123       18    .0000        0    88354
TR02                   690    .1619    .4151    .0030    .0029    .1589    .0049    .0125       18    .0000        0    88357
```

Figure 15. Performance Summary report: by start time within transaction

Example: Summary by stop time: The Performance Summary report in Figure 16 shows transaction activity broken down into 1 minute intervals. Every transaction that completed processing during the interval is reported. This allows you to look at periods of time during which performance may be degraded and examine each Transaction ID's usage.

The commands to request this report are shown in the following example:

```
CICSPA SUMMARY(
               INTERVAL(00:01:00),          Time Interval is 1 minute
               FIELDS(STOP,                 Transaction Stop Time
                      TRAN,                 Transaction ID
                      TASKCNT,              Total Task count
                      RESPONSE(AVE,MAX),    Transaction response time
                      DISPATCH(TIME(AVE)),  Dispatch time
                      CPU(TIME(AVE)),       CPU time
                      SUSPEND(TIME(AVE)),   Suspend time
                      DISPWAIT(TIME(AVE)),  Redispatch wait time
                      FCWAIT(TIME(AVE)),    File I/O wait time
                      FCAMCT(AVE),          File access-method requests
                      IRWAIT(TIME(AVE)),    MRO link wait time
                      SC24UHWM(AVE),        UDSA HWM below 16MB
                      SC31UHWM(AVE)),       EUDSA HWM above 16MB
               TITLE1('Summary by Transaction ID within Stop Interval'))
```

To use the CICS PA dialog to request this report, specify a **Time Interval** of **00:01:00** (the default) on the Performance Summary report panel, and use the sample Report Form TRTODSUM or specify one similar.

```
 V2R1M0                                          CICS Performance Analyzer
                                                   Performance Summary

SUMM0001 Printed at 15:47:48  2/19/2005     Data from 15:04:02  2/13/2005 to 15:07:28  2/13/2005                  Page   1
Summary by Transaction ID within Stop Interval

                              Avg      Max      Avg      Avg      Avg      Avg      Avg      Avg      Avg      Avg      Avg
Stop     Tran       #Tasks Response Response Dispatch User CPU  Suspend DispWait  FC Wait   FCAMRq  IR Wait SC24UHWM SC31UHWM
Interval                        Time     Time     Time     Time     Time     Time     Time             Time
15:04:00 TR01          198    .0572    .1233    .0012    .0011    .0560    .0016    .0026        3    .0000        0    88361
15:04:00 TR02          199    .0569    .2220    .0012    .0011    .0557    .0016    .0024        3    .0000        0    88359
15:04:00 TR03          201    .1743    .3789    .0030    .0029    .1713    .0053    .0125       18    .0000        0    88360
15:04:00 TR04          199    .1666    .3674    .0029    .0028    .1637    .0056    .0134       18    .0000        0    88356
   . . .
15:04:00 TR12          216    .0901    .1345    .0014    .0013    .0887    .0021    .0049        5    .0000        0    88359
15:04:00 TR13          225    .0888    .1234    .0014    .0013    .0874    .0024    .0050        5    .0000        0    88357
15:04:00              8903    .0473    .6318    .0013    .0013    .0460    .0015    .0035        7    .0000        0    69261

15:05:00 TR01          210    .0551    .1328    .0012    .0011    .0538    .0017    .0027        3    .0000        0    88355
15:05:00 TR02          207    .1609    .4151    .0030    .0029    .1579    .0046    .0119       18    .0000        0    88359
15:05:00 TR03          211    .0062    .0125    .0026    .0025    .0036    .0005    .0031       18    .0000        0    88352
15:05:00 TR04          246    .0069    .0148    .0038    .0037    .0031    .0003    .0026       34    .0000        0    88352
   . . .
15:05:00 TR12          244    .0874    .1227    .0014    .0013    .0860    .0026    .0052        5    .0000        0    88354
15:05:00 TR13          283    .0887    .1924    .0014    .0013    .0873    .0024    .0051        5    .0000        0    88360
15:05:00              9275    .0476    .7551    .0014    .0013    .0462    .0014    .0035        7    .0000        0    70591
```

Figure 16. Performance Summary report: by transaction within stop time

Example: DBCTL: An example of a Performance Summary report showing a summary of DBCTL activity by transaction is shown in Figure 18 on page 43. The report is sorted by transaction ID and PSB name.

The commands to request this report are shown in the following example:

```
CICSPA IN(SMFIN004),
         SELECT(PERFORMANCE(EXCLUDE(
                CHARACTER(OWNER(DBCTL),         Exclude transactions
                SUBSTR(1,1),VALUE(' '))))),     without a PSB name
        SUMMARY(
          FIELDS(TRAN,                Transaction identifier
                 DBCTL(PSBNAME),      PSB name
                 TASKCNT,             Total Task count
                 RESPONSE,            Transaction response time
                 CPU,                 CPU time
                 DISPATCH,            Dispatch time
                 SUSPEND,             Suspend time
                 DBCTL(
                       POOLWAIT,      Elapsed wait time for Pool Space
                       INTCWAIT,      Elapsed wait time for Intent Conflict
                       SCHTELAP,      Elapsed time for Schedule Process
                       DBIOELAP,      Elapsed time for Database I/O
                       PILOCKEL,      Elapsed time for PI Locking
                       DBIOCALL,      Number of Database I/Os
                       DLICALLS)),    Total DL/I Database calls
          TITLE1('*** All DBCTL transactions ***'))
```

To use the CICS PA dialog to request this report, specify a Report Form such as:

```
                  EDIT SUMMARY Report Form - DBCTLSUM

    Field    Sort                                                  - User Field -
    Name +   K  O  Type    Fn    Length  Dictionary Definition    Offset  Length
__  TRAN____ K  A  _______ ___        8  TRAN     DFHTASK C001     ___     ___
__  PSBNAME_ K  A  _______ ___        8  PSBNAME  DBCTL   C001     ___     ___
__  TASKCNT_       _______ ___        8  TASKCNT  CICSPA  X902     ___     ___
__  RESPONSE       _______ AVE        8  RESP     CICSPA  D901     ___     ___
__  CPU_____       TIME___ AVE        8  USRCPUT  DFHTASK S008     ___     ___
__  DISPATCH       TIME___ AVE        8  USRDISPT DFHTASK S007     ___     ___
__  SUSPEND_       TIME___ AVE        8  SUSPTIME DFHTASK S014     ___     ___
__  POOLWAIT       _______ AVE        8  POOLWAIT DBCTL   A002     ___     ___
__  INTCWAIT       _______ AVE        8  INTCWAIT DBCTL   A003     ___     ___
__  SCHTELAP       _______ AVE        8  SCHTELAP DBCTL   A004     ___     ___
__  DBIOELAP       _______ AVE        8  DBIOELAP DBCTL   A005     ___     ___
__  PILOCKEL       _______ AVE        8  PILOCKEL DBCTL   A006     ___     ___
__  DBIOCALL       _______ AVE        8  DBIOCALL DBCTL   A007     ___     ___
__  DLICALLS       _______ AVE        8  DLICALLS DBCTL   A017     ___     ___
__  EOR_____       _______ ___                                     ___     ___
__  EOX_____       _______ ___                                     ___     ___
__  APPLID__ K  *  _______ ___        8  APPLID   CICSPA  C903     ___     ___
__  START___ K  *  TIMES__ ___        8  START    DFHCICS T005     ___     ___
```

Figure 17. SUMMARY Report Form (DBCTL fields)

```
 V2R1M0                                          CICS Performance Analyzer
                                                   Performance Summary

SUMM0001 Printed at 11:49:51  3/24/2004     Data from 15:58:47  2/19/2004 to 15:58:28  2/21/2004                    Page       1
*** All DBCTL transactions ***

                                Avg      Avg      Avg      Avg      Avg      Avg      Avg      Avg      Avg      Avg      Avg
Tran     PSB        #Tasks Response User CPU Dispatch  Suspend PoolWait   ICwait SchedElp DBIOElap PILockEl DBIOcall DLIcalls
                           Time     Time     Time     Time     Time     Time     Time     Time     Time    Count    Count
DLI0     DDLPSB51       16   9.3221    .0255    .5016   8.8205    .0000    .0000    .0104    .0000    .0000        0        0
DLI0     PSB99          13   1.4249    .5201    .7799    .6450    .0000    .0000    .0780    .0000    .0000        0        1
DLI0                    29   5.7820    .2472    .6264   5.1556    .0000    .0000    .0407    .0000    .0000        0        1

DLI1     DDLPSB51        4  26.4267    .0125    .8290  25.5977    .0000    .0000    .0041    .0000    .0000        0        0
DLI1     PSB99           1  95.2870   1.9511  16.4508  78.8363    .0000    .0000    .0050    .0000    .0000        0        1
DLI1                     5  40.1988    .4003   3.9534  36.2454    .0000    .0000    .0043    .0000    .0000        0        0

DLI2     DDLPSB51        4  19.3463    .0125    .2029  19.1433    .0000    .0000    .0040    .0000    .0000        0        0
DLI2     PSB99           1  91.8213   1.8717   2.0128  89.8085    .0000    .0000    .0010    .0000    .0000        0        1
DLI2                     5  33.8413    .3843    .5649  33.2764    .0000    .0000    .0034    .0000    .0000        0        0
```

Figure 18. Performance Summary report: DBCTL activity

Note: The IMS Performance Analyzer (IMS PA) can provide a more comprehensive analysis of IMS DBCTL performance.

Example: Application naming: An example of a Performance Summary report produced from CMF performance class data with application naming enabled is shown in Figure 19. The report is sorted by transaction ID, application naming transaction ID, and application naming program name.

The commands to request this report are shown in the following example:

```
CICSPA IN(SMFIN001),
       SUMMARY(
            EXTERNAL(CPAXW001),
            NOTOTALS,
            FIELDS(TRAN,           Transaction identifier
                   APPLTRAN,       Application naming Transaction ID
                   APPLPROG,       Application naming Program name
                   TASKCNT,        Total Task count
                   RESPONSE,       Transaction response time
                   DISPATCH,       Dispatch time
                   CPU,            CPU time
                   SUSPEND,        Suspend time
                   DISPWAIT))      Redispatch wait time
```

```
 V2R1M0                                          CICS Performance Analyzer
                                                   Performance Summary

SUMM0001 Printed at 15:25:43  7/19/2004     Data from 07:30:47  5/29/2004 to 08:35:48  5/29/2004                  Page  4

                                      Avg       Avg       Avg       Avg       Avg
Tran     Tran     Program    #Tasks  Response  Dispatch  User CPU  Suspend  DispWait
                                       Time      Time      Time      Time      Time
MENU     TOP1     PROGOPT1        5   1.4249     .0934     .0196  684.379     .0064
MENU     TOP2     PROGOPT2       48   1.0589     .7688     .2039   1.1260     .1046
MENU     TOP3     PROGOPT3        1   2.8065     .0002     .0002    .0029     .0000
MENU     TOP4     PROGOPT4       49   5.7820     .7531     .1997   1.1030     .1025
MENU     TOP5     PROGOPT5        4   3.1749     .0695     .0088    .0191     .0191
```

Figure 19. Performance Summary report: Application naming

Example: Precision(4) and conversion of numeric fields: Figure 20 shows an example of a Performance Summary report with precision to 4 decimal places for clock fields and conversion of storage fields to KB and MB.

The commands to request this report are like the following:

```
        CICSPA IN(SMFIN001),
               APPLID(*),
               LINECNT(60),
               FORMAT(':','/'),
               PRECISION(4),
           SUMMARY(OUTPUT(SUMM0001),
               TOTALS(8),
               INTERVAL(24:00:00),
               FIELDS(
                      TRAN,
                      TASKCNT,
                      SC24UHWM(TOT),     * Total <16MB storage
                      SC24UHWM(TOT,KB),  * Total <16MB storage in KB's
                      SC31UHWM(TOT),     * Total >16MB storage
                      SC31UHWM(TOT,MB),  * Total >16MB storage in MB's
                      RESPONSE(AVE),
                      DISPATCH(TIME(AVE)),
                      CPU(TIME(AVE)),
                      SUSPEND(TIME(AVE)),
                      DISPWAIT(TIME(AVE)),
                      FCWAIT(TIME(AVE))),
               TITLE1(
 'This report illustrates precision and numeric conversion    '))
```

V2R1M0 CICS Performance Analyzer
Performance Summary

SUMM0001 Printed at 9:17:10 3/15/2005 Data from 19:06:30 2/01/2003 to 23:50:44 2/03/2003 Page 1
This report illustrates precision and numeric conversion

Tran	#Tasks	Total SC24UHWM Count	Total SC24UHWM KB	Total SC31UHWM Count	Total SC31UHWM MB	Avg Response Time	Avg Dispatch Time	Avg User CPU Time	Avg Suspend Time	Avg DispWait Time	Avg FC Wait Time
DEMM	39	3304032	3226	3658720	3	.6154	.1015	.0733	.5140	.0134	.1831
DEM1	938	38038240	37146	65290528	62	.4187	.0618	.0521	.3569	.0122	.1936
EE00	8	168624	164	147728	0	.0143	.0112	.0012	.0031	.0001	.0029
EE01	248	6119856	5976	12332032	11	.0697	.0159	.0106	.0538	.0071	.0534
EE02	389	8152944	7961	14707472	14	.0157	.0091	.0050	.0065	.0011	.0063
EE03	268	5694816	5561	8823376	8	.0245	.0130	.0055	.0115	.0017	.0100
EE07	101	2126304	2076	3427664	3	.0098	.0063	.0024	.0034	.0007	.0032
EE08	63	1332336	1301	1848384	1	.0105	.0069	.0019	.0036	.0003	.0033
EE11	148	3115584	3042	5221440	4	.0052	.0045	.0012	.0007	.0001	.0006
EE29	33	693792	677	1196480	1	.0360	.0111	.0070	.0249	.0043	.0245
HR00	661	3659296	3573	27345312	26	.3390	.0356	.0286	.3034	.0052	.0752
HY00	933	34252816	33450	13116320	12	.0771	.0122	.0070	.0649	.0025	.0000
HY12	230	7473936	7298	3204848	3	.0396	.0083	.0054	.0313	.0021	.0000
HY14	526	20859344	20370	7263008	6	.0481	.0083	.0059	.0398	.0020	.0000
HY38	432	14556320	14215	5994064	5	3.3657	.0078	.0052	3.3578	.0022	.0000
HY59	297	23323808	22777	4137456	3	.1203	.0116	.0084	.1087	.0036	.0000
NPXF	51943	218217E4	2131030	682439E3	650	.0218	.0050	.0038	.0168	.0014	.0000
NPXR	1108	83417392	81462	27302512	26	.1108	.0123	.0101	.0984	.0039	.0000
VO00	2348	12995184	12690	100638E3	95	.9938	.0266	.0214	.9672	.0050	.0083
Total	60713	245145E4	2394003	988094E3	942	.0965	.0075	.0058	.0890	.0018	.0046

Figure 20. Performance Summary report: Precision(4) and conversion of numeric fields

Example: Precision(6) and conversion of numeric fields: The following example is the same report as the previous example in Figure 20 on page 44 but with microsecond precision.

The commands to request this report are like the following:

```
        CICSPA IN(SMFIN001),
               APPLID(*),
               PRECISION(6),
            SUMMARY(OUTPUT(SUMM0001),
               TOTALS(8),
               INTERVAL(24:00:00),
               FIELDS(
                      TRAN,
                      TASKCNT,
                      SC24UHWM(TOT),     * Total <16MB storage
                      SC24UHWM(TOT,KB),  * Total <16MB storage in KB's
                      SC31UHWM(TOT),     * Total >16MB storage
                      SC31UHWM(TOT,MB),  * Total >16MB storage in MB's
                      RESPONSE(AVE),
                      DISPATCH(TIME(AVE)),
                      CPU(TIME(AVE)),
                      SUSPEND(TIME(AVE)),
                      DISPWAIT(TIME(AVE)),
                      FCWAIT(TIME(AVE))),
               TITLE1(
             'This report illustrates precision and numeric conversion'))
```

```
 V2R1M0                                          CICS Performance Analyzer
                                                    Performance Summary

SUMM0001 Printed at 14:35:55  3/15/2005     Data from 23:17:59  2/01/2003 to 23:41:30  2/03/2003                    Page       1
This report illustrates precision and numeric conversion

                    Total    Total    Total    Total      Avg      Avg      Avg      Avg      Avg      Avg
Tran       #Tasks SC24UHWM SC24UHWM SC31UHWM SC31UHWM Response Dispatch User CPU  Suspend DispWait  FC Wait
                     Count     KB      Count     MB       Time     Time     Time     Time     Time     Time
DEMM           39  3304032     3226  3658720        3  .615435  .101474  .073271  .513955  .013413  .183122
DEM1          938 38038240    37146 65290528       62  .418662  .061761  .052133  .356893  .012196  .193565
EE00            8   168624      164   147728        0  .014270  .011170  .001214  .003094  .000124  .002936
EE01          248  6119856     5976 12332032       11  .069702  .015891  .010623  .053803  .007066  .053391
EE02          389  8152944     7961 14707472       14  .015651  .009121  .004988  .006521  .001134  .006305
EE03          268  5694816     5561  8823376        8  .024497  .013031  .005464  .011457  .001666  .009987
EE07          101  2126304     2076  3427664        3  .009782  .006338  .002380  .003436  .000726  .003163
EE08           63  1332336     1301  1848384        1  .010454  .006872  .001903  .003574  .000323  .003284
EE11          148  3115584     3042  5221440        4  .005169  .004463  .001165  .000698  .000150  .000576
EE29           33   693792      677  1196480        1  .035991  .011057  .006972  .024928  .004307  .024538
HR00          661  3659296     3573 27345312       26  .339045  .035614  .028619  .303422  .005247  .075227
HY00          933 34252816    33450 13116320       12  .077108  .012230  .006985  .064871  .002507  .000000
HY12          230  7473936     7298  3204848        3  .039579  .008305  .005423  .031267  .002084  .000000
HY14          526 20859344    20370  7263008        6  .048087  .008316  .005873  .039763  .001967  .000000
HY38          432 14556320    14215  5994064        5 3.365655  .007800  .005166 3.357846  .002219  .000000
HY59          297 23323808    22777  4137456        3  .120345  .011609  .008405  .108727  .003608  .000000
NPXF        51943 218217E4  2131030 682439E3      650  .021812  .004965  .003825  .016839  .001363  .000000
NPXR         1108 83417392    81462 27302512       26  .110790  .012350  .010116  .098432  .003871  .000000
VO00         2348 12995184    12690 100638E3       95  .993789  .026573  .021438  .967208  .005024  .008326

Total       60713 245145E4  2394003 988094E3      942  .096514  .007529  .005819  .088977  .001830  .004576
```

Figure 21. Performance Summary report: Precision(6) and conversion of numeric fields

Example: Peak percentile: This example produces a Performance Summary report with a distribution of response time using peak percentiles.

To request this report, specify the following command:

```
CICSPA IN(SMFIN),
       PRECISION(6),
   SUMMARY(OUTPUT(SUMM0004),
       EXTERNAL(CPAXW001),
       NOTOTALS,
       FIELDS(TRAN(ASCEND),
              TASKCNT,
              CPU(TIME(AVE)),
              SUSPEND(TIME(AVE)),
              DISPATCH(TIME(AVE)),
              DISPWAIT(TIME(AVE)),
              RESPONSE(MIN),
              RESPONSE(80),
              RESPONSE(85),
              RESPONSE(90),
              RESPONSE(95),
              RESPONSE(98),
              RESPONSE(99),
              RESPONSE(MAX)))
```

```
 V2R1M0                                          CICS Performance Analyzer
                                                   Performance Summary

SUMM0004 Printed at 23:41:06  3/15/2005     Data from 16:20:08 12/15/2004 to 11:28:14 12/16/2004                    Page       1


                     Avg      Avg      Avg      Avg      Min      80%      85%      90%      95%      98%      99%      Max
Tran       #Tasks User CPU  Suspend Dispatch DispWait Response Response Response Response Response Response Response Response
                    Time     Time     Time     Time     Time     Time     Time     Time     Time     Time     Time     Time
CATA           28  .003666  .012189  .086434  .006367  .000273  .263817  .301876  .350137  .421351  .501590  .554952  .866135
CATR           33  .002185  .000693  .014265  .000660  .002807  .024125  .026234  .028909  .032857  .037304  .040262  .047388
CDTS           21  .001264  .003115  .001481  .000030  .003943  .005198  .005335  .005508  .005763  .006051  .006242  .006927
CEDA           67  .055209 26.48349 1.547822  .004297  .451570 134.2897 158.7721 189.8167 235.6265 287.2413 321.5671 954.6099
CEDF           68  .001127 3.187671  .014316  .000323  .000203 12.11531 14.16897 16.77309 20.61578 24.94540 27.82476 58.90035
CEJR          186  .550488 4.315791 8.343663  .048935  .001269 57.86544 68.28108 81.48849 100.9776 122.9363 137.5396 479.1123
CESD           32  .001816  .249016  .029644  .076466  .000749  .637936  .720713  .825678  .980566 1.155080 1.271139 1.375740
CGRP           43  .002864  .846599  .049918  .818119  .047297 1.703957 1.889993 2.125893 2.473990 2.866198 3.127032 3.139892
CITS           40  .001177  .004175  .001746  .000052  .002395  .008443  .009023  .009758  .010842  .012064  .012876  .016951
CJTR           10  .000899  .022832  .011030  .021589  .005166  .071792  .080529  .091607  .107955  .126374  .138624  .154776
```

Figure 22. Performance Summary report: Peak percentiles

Performance Totals report

The Performance Totals report provides detailed statistics of all fields in the CMF performance class records. The statistics are accumulated during input file processing, and printed at the End of File.

You can request statistics from all available records, or you can specify selection criteria to request statistics from only the records that meet specific requirements.

Report command

The Performance Totals report can be requested from a Report Set in the CICS PA dialog. Select the **Totals** report in the **Performance Reports** category.

In batch, the `TOTAL` command is used to request the Performance Totals report.

The command to produce the default report is:

```
CICSPA TOTAL
```

To tailor the report, you can specify report options as follows:

```
CICSPA TOTAL(
        [OUTPUT(ddname),]
        [LINECOUNT(nnn),]
        [TITLE1('...sub-heading left ...'),]
        [TITLE2('...sub-heading right...'),]
        [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))])
```

Report content

The Performance Totals report has four parts:

1. **CICS System Statistics.** Statistics about the CICS system as a whole, including:
   - CPU and Dispatch times
   - Performance Record and Task counts
2. **CPU and Dispatch Statistics.** Breakdown of CPU, Dispatch, and Suspend counts and elapsed time.
3. **Resource Utilization Statistics.** Each field in the performance record is summarized:
   - For Clock fields, the count and time components are broken down.
   - For Count fields, the count values are reported.
4. **User Field Statistics.** Statistics for the User Fields defined in the CMF performance class records.

Part 1: CICS system statistics

The first part of the Performance Totals report provides statistics about the CICS system as a whole.

```
 V2R1M0                                              CICS Performance Analyzer
                                                       Performance Totals

TOTL0001 Printed at 22:47:16  3/14/2005    Data from 16:20:08 12/15/2004 to 11:28:14 12/16/2004                    Page       1


                                      Dispatched Time          CPU Time
                                    DD HH:MM:SS    Secs   DD HH:MM:SS    Secs

Total Elapsed Run Time                 19:08:07   68887


From Selected Performance Records

QR Dispatch/CPU Time                   00:23:05    1385      00:01:10      70
MS Dispatch/CPU Time                   00:30:59    1859      00:00:19      19
                                       --------   -----      --------  ------
 TOTAL (QR + MS)                       00:54:05    3245      00:01:29      89

L8 CPU Time                                                  00:00:01       1
J8 CPU Time                                                  00:02:22     142
S8 CPU Time                                                  00:00:00       0
X8 CPU Time                                                  00:00:00       0
                                       --------   -----      --------  ------
 TOTAL (L8 + J8 + S8 + X8)             00:04:04     244      00:02:22     142

L9 CPU Time                                                  00:00:00       0
J9 CPU Time                                                  00:00:09       9
X9 CPU Time                                                  00:00:00       0
                                       --------   -----      --------  ------
 TOTAL (L9 + J9 + X9)                  00:00:12      12      00:00:09       9

                                       --------   -----      --------  ------
 Total CICS TCB Time                   00:58:21    3501      00:04:01     241


Total Performance Records (Type C)                    0
Total Performance Records (Type D)                  247
Total Performance Records (Type F)                  327
Total Performance Records (Type S)                    0
Total Performance Records (Type T)                15566
                                                 --------                                                    --------
Total Performance Records (Selected)              16140          Total Performance Records                    16140
```

Figure 23. Performance Totals report (part 1): CICS system statistics

The columns are:

Dispatched Time
The total elapsed time presented in days, hours, minutes, seconds, and then as total seconds.

CPU Time
The total CPU time presented in days, hours, minutes, seconds, and then as total seconds.

The rows are:

Total Elapsed Run Time
Performance Totals report interval or elapsed time (first performance record start time to last performance record stop time).

From Selected Performance Records
The CICS TCB mode data which applies only to performance class records from CICS Transaction Server Version 1.3 or later.

QR Dispatch/CPU Time
The total CICS TCB, mode QR dispatch and CPU time accumulated from the selected performance class records.

MS Dispatch/CPU Time
The total CICS TCB, mode RO, CO, FO, RP, SZ, SL, and SO dispatch and CPU time from the selected performance class records.

Total (QR + MS)
The total CICS TCB, mode QR, RO, CO, FO, RP, SZ, SL, and SO dispatch and CPU time accumulated from the selected performance class records.

L8 CPU Time
The total CICS TCB, mode L8 CPU Time accumulated from the selected performance class records.

J8 CPU Time
The total CICS TCB, mode J8 CPU time accumulated from the selected performance class records.

S8 CPU Time
The total CICS TCB, mode S8 CPU time accumulated from the selected performance class records.

Total (L8 + J8 + S8)
The total CICS TCB, mode L8, J8 and S8 dispatch and CPU time accumulated from the selected performance class records.

J9 CPU Time
The total CICS TCB, mode J9 CPU time accumulated from the selected performance class records.

Total (J9)
The total CICS TCB, mode J9 dispatch and CPU time accumulated from the selected performance class records.

Total CICS TCB Time
The total CICS TCB time, all TCB modes dispatch and CPU time accumulated from the selected performance class records.

Total Performance Records (Type C)
The total number of **Converse** performance class records selected.

Total Performance Records (Type D)
The total number of **Deliver** performance class records selected.

Total Performance Records (Type F)
The total number of **Frequency** performance class records selected.

Total Performance Records (Type S)
The total number of **Syncpoint** performance class records selected.

Total Performance Records (Type T)
The total number of **Terminate** performance class records selected.

Total Performance Records (Selected)
The total number of performance class records selected.

Total Performance Records
The total number of performance class records.

For more detailed descriptions of the performance class data fields, see “CMF performance class data fields” on page 239.

Part 2: CPU and dispatch statistics

The second part of the Performance Totals report displays the total, average per task, and maximum per task for the CPU, Dispatch, and Suspend counts and elapsed time. Time values are represented in seconds, with millisecond precision.

```
 V2R1M0                                                        CICS Performance Analyzer
                                                                  Performance Totals

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                                                             ...... C  O  U  N  T  S ......  ........... T  I  M  E ...........
From Selected Performance Records                                 Total   Avg/Task   Max/Task       Total    Avg/Task     Max/Task


Dispatch Time                                                    108129        6.7       1587        3456        .214      756.551
CPU Time                                                                                              223        .014        6.233
RLS CPU (SRB) Time                                                                                      0        .000         .000
Suspend Time                                                     108249        6.7       1587      923449      57.215      +++.+++
Dispatch Wait Time                                                92456        5.7       1586         334        .021        7.393
Dispatch Wait Time (QR Mode)                                      69952        4.3       1065          36        .002        7.393
Response (-TCWait for Type C)                                                                           0        .000         .000
Response (All Selected Tasks)                                                                     1955791     121.177      +++.+++
QR Dispatch Time                                                  85418        5.3       1066        1370        .085      756.549
MS Dispatch Time                                                  17876        1.1        227        1855        .115      478.739
RO Dispatch Time                                                   4746         .3         40         304        .019       13.317
QR CPU Time                                                                                            69        .004        1.699
MS CPU Time                                                                                            19        .001         .185
RO CPU TIME                                                                                            12        .001         .159
L8 CPU Time                                                                                             1        .000         .470
L9 CPU Time                                                                                             0        .000         .000
J8 CPU Time                                                                                           124        .008        6.221
J9 CPU Time                                                                                             9        .001        5.174
S8 CPU Time                                                                                             0        .000         .000
X8 CPU Time                                                                                             0        .000         .000
X9 CPU Time                                                                                             0        .000         .000
```

Figure 24. Performance Totals report (part 2): CPU and dispatch statistics

The individual count fields may not always add up to the total count field. There are two reasons for this:

1. Some individual fields may not have been collected for the duration of the report. The counts are, however, still reflected in the total count (FCTOTAL).
2. There may be a differential due to another count, which is not collected in the CMF performance class record and not printed on the report. This other count is, however, reflected in the total count.

The information in this part of the report includes:

Total
Total count or time value (in seconds) for all the records selected, based on the selection criteria provided.

Avg/Task
Average count or time per task computed by dividing the count or time by the total number of selected tasks.

Max/Task
The largest count or time value that was recorded for any one task.

Response (minus TC Wait for Type C)
The internal response time for conversational tasks.

Response (All Selected Tasks)
The total time. This is the accumulation of the response times (Stop Time minus Start Time) for all selected conversational (Type C) minus the Terminal Control I/O Wait Time for those tasks.

Part 3: Resource utilization statistics

The third part of the Performance Totals report displays the count and time values (total, average per task, and maximum per task) from the CMF performance class records for the resource utilization fields. Time values are represented in seconds, with millisecond precision.

Note: Some of the fields may contain large values and be represented in exponential format. For example, 2 834 000 may be shown as 2834E3.

```
 V2R1M0                                          CICS Performance Analyzer
                                                   Performance Totals

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```

From Selected Performance Records		..... C O U N T S ..... Total	Avg/Task	Max/Task	..... T I M E ..... Total	Avg/Task	Max/Task
FCWAIT	File I/O wait time	5378	.3	294	15	.001	2.086
RLSWAIT	RLS File I/O wait time	8	.0	1	0	.000	.022
TSWAIT	VSAM TS I/O wait time	31	.0	3	0	.000	.005
TSSHWAIT	Asynchronous Shared TS wait time	0	.0	0	0	.000	.000
JCWAIT	Journal I/O wait time	2108	.1	66	6	.000	.870
TDWAIT	VSAM transient data I/O wait time	0	.0	0	0	.000	.000
IRWAIT	MRO link wait time	1493	.1	70	76	.005	4.863
CFDTWAIT	CF Data Table access requests wait time	0	.0	0	0	.000	.000
CFDTSYNC	CF Data Table syncpoint wait time	0	.0	0	0	.000	.000
RUNTRWAI	BTS run Process/Activity wait time	0	.0	0	0	.000	.000
SYNCDLY	SYNCPOINT parent request wait time	0	.0	0	0	.000	.000
RMITIME	Resource Manager Interface (RMI) elapsed time	22391	1.4	112	5395	.334	4458.381
RMISUSP	Resource Manager Interface (RMI) suspend time	139	.0	42	5389	.334	4458.379
JVMITIME	JVM initialize elapsed time	543	.0	30	32	.002	5.159
JVMTIME	JVM elapsed time	1514	.1	90	227	.014	10.493
JVMRTIME	JVM reset elapsed time	661	.0	40	1	.000	.111
JVMSUSP	JVM suspend time	6574	.4	562	13	.001	2.873
DB2CONWT	DB2 Connection wait time	0	.0	0	0	.000	.000
DB2RDYQW	DB2 Thread wait time	0	.0	0	0	.000	.000
DB2WAIT	DB2 SQL/IFI wait time	0	.0	0	0	.000	.000
IMSWAIT	IMS (DBCTL) wait time	0	.0	0	0	.000	.000
TCWAIT	Terminal wait for input time	2556	.2	194	75437	4.674	+++.+++
LU61WAIT	LU6.1 wait time	0	.0	0	0	.000	.000
LU62WAIT	LU6.2 wait time	750	.0	53	6	.000	1.471
SZWAIT	FEPI services wait time	0	.0	0	0	.000	.000
SOWAIT	Inbound Socket I/O wait time	2904	.2	47	1000	.062	186.623
OSOWAIT	Outbound Socket I/O Wait Time	0	.0	0	0	.000	.000
RQRWAIT	Request Receiver Wait Time	0	.0	0	0	.000	.000
RQPWAIT	Request Processor Wait Time	173	.0	23	12	.001	2.847
DSPDELAY	First dispatch wait time	15467	1.0	2	9	.001	.793
TCLDELAY	First dispatch TCLSNAME wait time	0	.0	0	0	.000	.000
MXTDELAY	First dispatch MXT wait time	0	.0	0	0	.000	.000
ENQDELAY	Local Enqueue wait time	8	.0	1	119	.007	119.230
GNQDELAY	Global Enqueue wait time	0	.0	0	0	.000	.000
ICDELAY	Interval Control (IC) wait time	49	.0	2	78	.005	5.212
GIVEUPWT	Give up control wait time	9053	.6	127	4	.000	1.330
WAITCICS	CICS ECB wait time	156	.0	88	3552	.220	3521.733

Figure 25. Performance Totals report (part 3): Resource utilization statistics (Part 1 of 7)

```
 V2R1M0                                                         CICS Performance Analyzer
                                                                   Performance Totals

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                                                          ...... C  O  U  N  T  S ......   ........... T  I  M  E ...........
From Selected Performance Records                            Total   Avg/Task   Max/Task       Total    Avg/Task     Max/Task

WAITEXT  External ECB wait time                               2409         .1         64       34684       2.149     4458.482
PTPWAIT  3270 Bridge Partner wait time                           0         .0          0           0        .000         .000
RRMSWAIT Resource Recovery Services indoubt wait time            0         .0          0           0        .000         .000
LOCKDLAY Lock Manager (LM) wait time                           665         .0         24         791        .049       29.926
DSTCBMWT Dispatcher TCB Mismatch wait time                       0         .0          0           0        .000         .000
MAXOTDLY Maximum Open TCB delay time                             0         .0          0           0        .000         .000
MAXJTDLY Maximum JVM TCB delay time                              0         .0          0           0        .000         .000
MAXHTDLY Maximum Hot-Pooling TCB delay time                      0         .0          0           0        .000         .000
DSMMSCWT DS storage constraint wait time                         0         .0          0           0        .000         .000
PCLOADTM Program Library wait time                            3094         .2         31          63        .004        2.761
SYNCTIME SYNCPOINT processing time                           16354        1.0         33         383        .024      252.070
OTSINDWT OTS Indoubt Wait time                                   0         .0          0           0        .000         .000
EXWAIT   Exception Conditions wait time                          1         .0          1           0        .000         .000
DSCHMDLY Redispatch wait time caused by change-TCB mode      28019        1.7       1314         177        .011        3.041
MAXSTDLY Maximum SSL TCB delay time                              0         .0          0           0        .000         .000
MAXXTDLY Maximum XPLink TCB delay time                           0         .0          0           0        .000         .000
TCMSGIN1 Messages received count                              3307         .2        195
TCCHRIN1 Terminal characters received count                 139647        8.7       8053
TCMSGOU1 Messages sent count                                  3612         .2        195
TCCHROU1 Terminal characters sent count                    1290689       80.0      76437
TCMSGIN2 Messages received from LU6.1                            0         .0          0
TCCHRIN2 LU6.1 characters received count                         0         .0          0
TCMSGOU2 Messages sent to LU6.1                                  0         .0          0
TCCHROU2 LU6.1 characters sent count                             0         .0          0
TCALLOC  TCTTE ALLOCATE requests                               230         .0         10
TCM62IN2 LU6.2 messages received count                           0         .0          0
TCC62IN2 LU6.2 characters received count                         0         .0          0
TCM62OU2 LU6.2 messages sent count                             227         .0          4
TCC62OU2 LU6.2 characters sent count                          3279         .2         53
FCADD    File ADD requests                                     803         .0         30
FCBROWSE File Browse requests                               166097       10.3       9425
FCDELETE File DELETE requests                                  855         .1         30
FCGET    File GET requests                                    5439         .3        163
FCPUT    File PUT requests                                      90         .0         10
```

Figure 25. Performance Totals report (part 3): Resource utilization statistics (Part 2 of 7)

```
 V2R1M0                                              CICS Performance Analyzer
                                                       Performance Totals

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                                                  ...... C  O  U  N  T  S ......   ........... T  I  M  E ...........
From Selected Performance Records                    Total   Avg/Task   Max/Task       Total    Avg/Task     Max/Task

FCTOTAL  File Control requests                      197898       12.3       9682
FCAMCT   File access-method requests                201247       12.5       9697
TDGET    Transient data GET requests                   261         .0         18
TDPUT    Transient data PUT requests                128312        7.9       4449
TDPURGE  Transient data PURGE requests                 33         .0          3
TDTOTAL  Transient data Total requests              128606        8.0       4449
TSGET    Temporary Storage GET requests                574         .0         27
TSPUTAUX Auxiliary TS PUT requests                     497         .0         20
TSPUTMAI Main TS PUT requests                          782         .0         20
TSTOTAL  TS Total requests                            2509         .2         52
BMSMAP   BMS MAP requests                               24         .0          1
BMSIN    BMS IN requests                               170         .0         10
BMSOUT   BMS OUT requests                              521         .0         10
BMSTOTAL BMS Total requests                            721         .0         20
JNLWRITE Journal write requests                         31         .0          3
LOGWRITE Log Stream write requests                    2088         .1         66
ICSTART  Interval Control START or INITIATE requests   700         .0          6
ICTOTAL  Interval Control requests                   13191         .8         19
SC24CGET CDSA GETMAINs below 16MB                     4133         .3        111
SC31CGET ECDSA GETMAINs above 16MB                  343382       21.3      13743
SC24CHWM CDSA HWM below 16MB                        498640       30.9      79056
SC31CHWM ECDSA HWM above 16MB                      33627E4    20834.5     144160
SC24COCC CDSA Storage Occupancy below 16MB          22665        1.4       3497
SC31COCC ECDSA Storage Occupancy above 16MB        808635       50.1     250095
SC24UGET UDSA GETMAINs below 16MB                    1055         .1         35
SC31UGET EUDSA GETMAINs above 16MB                   5776         .4       1358
SC24UHWM UDSA HWM below 16MB                      3202336      198.4     265920
SC31UHWM EUDSA HWM above 16MB                     10065E4     6235.9    8574576
SC24UOCC UDSA Storage Occupancy below 16MB           1005         .1        274
SC31UOCC EUDSA Storage Occupancy above 16MB        324906       20.1     102275
SC24SGET CDSA/SDSA GETMAINs below 16MB                421         .0          8
SC24GSHR CDSA/SDSA storage GETMAINed below 16MB    9317232      577.3     208144
SC24FSHR CDSA/SDSA storage FREEMAINed below 16MB    945872       58.6      74848
SC31SGET ECDSA/ESDSA GETMAINs above 16MB              4158         .3        122
```

Figure 25. Performance Totals report (part 3): Resource utilization statistics (Part 3 of 7)

Performance Totals report

```
 V2R1M0                                                CICS Performance Analyzer
                                                         Performance Totals

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                                                    ..... C  O  U  N  T  S .....   ........... T  I  M  E ...........
From Selected Performance Records                      Total   Avg/Task   Max/Task       Total    Avg/Task     Max/Task

SC31GSHR ECDSA/ESDSA storage GETMAINed above 16MB    57478E3     3561.2     860928
SC31FSHR ECDSA/ESDSA storage FREEMAINed above 16MB   60722E3     3762.2     301632
PCLINK   Program LINK requests                         274370       17.0       9357
PCLOAD   Program LOAD requests                           3276         .2         39
PCXCTL   Program XCTL requests                             35         .0          1
PCLURM   Program LINK URM requests                        637         .0         28
PCDPL    Distributed Program Link (DPL) requests            1         .0          1
PCSTGHWM Program Storage HWM above and below 16MB    20157E5   124886.3    9231512
PC24BHWM Program Storage HWM below 16MB              56092E3     3475.3      48008
PC31AHWM Program Storage HWM above 16MB              19612E5   121511.4    9183504
PC24CHWM Program Storage (CDSA) HWM below 16MB         132680        8.2      11000
PC31CHWM Program Storage (ECDSA) HWM above 16MB       2385752      147.8      38048
PC24SHWM Program Storage (SDSA) HWM below 16MB         541336       33.5      40800
PC31SHWM Program Storage (ESDSA) HWM above 16MB       1773944      109.9      60536
PC24RHWM Program Storage (RDSA) HWM below 16MB       55418E3     3433.6      48008
PC31RHWM Program Storage (ERDSA) HWM above 16MB      19575E5   121283.3    9168704
DB2REQCT DB2 requests                                    424         .0        111
IMSREQCT IMS (DBCTL) requests                              0         .0          0
CHMODECT Change-TCB modes requests                      5908         .4        174
TCBATTCT TCBs attached count                              66         .0          2
DSTCBHWM CICS Dispatcher TCB HWM                         182         .0          2
CFCAPI   OO Foundation Class requests                   1445         .1        128
SYNCPT   SYNCPOINT requests                            16349        1.0         33
SOEXTRCT EXTRACT TCP/IP and CERTIFICATE requests           0         .0          0
SOCNPSCT Create Non-Persistent Outbound Socket reqs       94         .0         10
SOCPSCT  Create Persistent Outbound Socket requests        0         .0          0
SORCV    Outbound Sockets RECEIVE requests               815         .1         69
SOSEND   Outbound Sockets SEND requests                  241         .0         23
SOTOTAL  Socket Total requests                          6740         .4        172
SOCHRIN  Outbound Sockets characters received count   141925        8.8       7890
SOCHROUT Outbound Sockets characters sent count        98167        6.1      11419
SOMSGIN1 Inbound Sockets RECEIVE requests               1540         .1          8
SOMSGOU1 Inbound Sockets SEND requests                  2225         .1          5
```

Figure 25. Performance Totals report (part 3): Resource utilization statistics (Part 4 of 7)

```
 V2R1M0                                                     CICS Performance Analyzer
                                                               Performance Totals

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                                                          ...... C  O  U  N  T  S ......   ........... T  I  M  E ...........
From Selected Performance Records                            Total   Avg/Task   Max/Task       Total    Avg/Task     Max/Task

SOCHRIN1 Inbound Sockets characters received count          626471       38.8       3464
SOCHROU1 Inbound Sockets characters sent count              984214       61.0      40584
WBEXTRCT Web EXTRACT requests                                   53         .0          2
WBBROWSE Web Browse requests                                    43         .0         17
WBREAD   Web READ requests                                      31         .0          2
WBWRITE  Web WRITE requests                                     10         .0          1
WBRCV    Web RECEIVE requests                                   51         .0          2
WBSEND   Web SEND requests                                      34         .0          1
WBTOTAL  Web Total requests                                    369         .0         27
WBCHRIN  Web characters received count                        1750         .1        100
WBCHROUT Web characters sent count                               0         .0          0
WBREPRCT Web Temporary Storage Repository read requests        185         .0          6
WBREPWCT Web Temporary Storage Repository write requests      1040         .1         10
DHCREATE Document Handler CREATE requests                       44         .0          2
DHINSERT Document Handler INSERT requests                        0         .0          0
DHSET    Document Handler SET requests                           0         .0          0
DHRETRVE Document Handler RETRIEVE requests                     44         .0          2
DHTOTAL  Document Handler Total requests                       122         .0          5
DHTOTDCL Total length of all documents created               35120        2.2      13507
EJBACTIV Number of Bean State Activation requests                0         .0          0
EJBPASIV Number of Bean State Passivation requests               0         .0          0
EJBCREAT Number of Bean Creation requests                        0         .0          0
EJBREMOV Number of Bean Removal requests                         0         .0          0
EJBMETHD Number of EJB Method Calls                              0         .0          0
EJBTOTAL Total Number of EJB requests                            0         .0          0
SOBYENCT Secure Socket bytes encrypted count                     0         .0          0
SOBYDECT Secure Socket bytes decrypted count                     0         .0          0
BARSYNCT BTS synchronous Process/Activity count                  0         .0          0
BARASYCT BTS asynchronous Process/Activity count                 0         .0          0
BALKPACT BTS Link Process/Activity count                         0         .0          0
BADPROCT BTS Define Process requests                             0         .0          0
BADACTCT BTS Define Activity requests                            0         .0          0
BARSPACT BTS Reset Process/Activity requests                     0         .0          0
```

Figure 25. Performance Totals report (part 3): Resource utilization statistics (Part 5 of 7)

```
 V2R1M0                                                CICS Performance Analyzer
                                                         Performance Totals

TOTL0001 Printed at 22:47:16  3/14/2005    Data from 16:20:08 12/15/2004 to 11:28:14 12/16/2004                    Page       8

                                                    ...... C  O  U  N  T  S ......   ........... T  I  M  E ...........
From Selected Performance Records                      Total   Avg/Task   Max/Task       Total    Avg/Task     Max/Task

BASUPACT BTS Suspend Process/Activity requests             0         .0          0
BARMPACT BTS Resume Process/Activity requests              0         .0          0
BADCPACT BTS Cancel Process/Activity requests              0         .0          0
BAACQPCT BTS Acquire Process/Activity requests             0         .0          0
BATOTPCT BTS Total Process/Activity requests               0         .0          0
BAPRDCCT BTS Process Data Containers requests              0         .0          0
BAACDCCT BTS Activity Data Containers requests             0         .0          0
BATOTCCT BTS Process/Activity Data Container requests      0         .0          0
BARATECT BTS Retrieve-Reattach Event requests              0         .0          0
BADFIECT BTS Define-Input Event requests                   0         .0          0
BATIAECT BTS TIMER Event requests                          0         .0          0
BATOTECT BTS Event-related requests                        0         .0          0
SZALLOC  Conversations allocated count                     0         .0          0
SZRCV    FEPI RECEIVE requests                             0         .0          0
SZSEND   FEPI SEND requests                                0         .0          0
SZSTART  FEPI START requests                               0         .0          0
SZTOTAL  FEPI API and SPI requests                         0         .0          0
SZCHRIN  FEPI characters received count                    0         .0          0
SZCHROUT FEPI characters sent count                        0         .0          0
SZALLCTO Allocate conversation time-out count              0         .0          0
SZRCVTO  Receive Data time-out count                       0         .0          0
PCDLCSDL Container data length for DPL reqs with CHANNEL   0         .0          0
PCDLCRDL Container data length for DPL RETURN w/ CHANNEL   0         .0          0
PCLNKCCT LINK requests with CHANNEL option                 5         .0          2
PCXCLCCT XCTL requests with CHANNEL option                 0         .0          0
PCDPLCCT DPL requests with CHANNEL option                  0         .0          0
PCRTNCCT Program RETURN requests with CHANNEL option       0         .0          0
PCRTNCDL Container data length for RETURN with CHANNEL     0         .0          0
ICSTACCT Local IC START requests with CHANNEL option       0         .0          0
ICSTACDL Container data len for Local IC START w/ CHANNEL  0         .0          0
ICSTRCCT Remote IC START requests with CHANNEL option      0         .0          0
ICSTRCDL Container data len for Remot IC START w/ CHANNEL  0         .0          0
WBREDOCT CICS Web Support READ HTTPHEADER requests         1         .0          1
WBWRTOCT CICS Web Support WRITE HTTPHEADER requests        7         .0          1
WBRCVIN1 CICS Web Support RECEIVE and CONVERSE requests   32         .0         10
WBCHRIN1 CICS Web Support RECEIVE and CONVERSE chars     8625         .5       1777
WBSNDOU1 CICS Web Support SEND and CONVERSE requests      29         .0         10
WBCHROU1 CICS Web Support SEND and CONVERSE chars       11528         .7       2187
WBPARSCT CICS Web Support PARSE URL requests               41         .0         24
```

Figure 25. Performance Totals report (part 3): Resource utilization statistics (Part 6 of 7)

```
 V2R1M0                                                CICS Performance Analyzer
                                                         Performance Totals

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                                                    ...... C  O  U  N  T  S ......   ........... T  I  M  E ...........
From Selected Performance Records                      Total   Avg/Task   Max/Task       Total    Avg/Task     Max/Task

WBBRWOCT CICS Web Support BROWSE HTTPHEADER requests       0         .0          0
WBIWBSCT CICS INVOKE WEBSERVICE requests                  14         .0          1
PGTOTCCT Total number of CHANNEL CONTAINER requests     2067         .1        117
PGBRWCCT BROWSE CHANNEL CONTAINER requests               142         .0         20
PGGETCCT GET CHANNEL CONTAINER requests                  927         .1         46
PGPUTCCT PUT CHANNEL CONTAINER requests                  998         .1         52
PGMOVCCT MOVE CHANNEL CONTAINER requests                   0         .0          0
PGGETCDL GET CHANNEL CONTAINER data length            125781        7.8       9165
PGPUTCDL PUT CHANNEL CONTAINER data length             87237        5.4       6993
```

Figure 25. Performance Totals report (part 3): Resource utilization statistics (Part 7 of 7)

Part 4: User field statistics

This final part of the Performance Totals report displays the count and time values described above for the user fields contained in the CMF performance class records. The CICS 12-byte ID is printed to define each field.

```
 V2R1M0                                              CICS Performance Analyzer
                                                        Performance Totals

TOTL0001 Printed at  7:48:49  3/28/2004    Data from 11:10:52  3/24/2004 to 11:34:12  3/24/2004                    Page      10

                                        ...... C  O  U  N  T  S ......   ........... T  I  M  E ...........
From Selected User Records                 Total   Avg/Task   Max/Task       Total    Avg/Task     Max/Task

TEST          TEST    S001                    21         .0          1           8        .011        1.180
TEST          TEST    S002                    21         .0          1           0        .000         .001
RMITOTAL      CPARMI  A001                     0         .0          0
RMIOTHER      CPARMI  A002                     0         .0          0
RMIDB2        CPARMI  A003                     0         .0          0
RMIDBCTL      CPARMI  A004                     0         .0          0
RMIEXDLI      CPARMI  A005                     0         .0          0
RMIMQM        CPARMI  A006                     0         .0          0
RMITCPIP      CPARMI  A007                     0         .0          0
ICTOTAL       IC      A001                     0         .0          0
ASKTIME       IC      A002                     0         .0          0
CANCEL        IC      A003                     0         .0          0
DELAY         IC      A004                     0         .0          0
INTERVAL      IC      A005                     0         .0          0
POST          IC      A006                     0         .0          0
RETRIEVE      IC      A007                     0         .0          0
START         IC      A008                     0         .0          0
```

Figure 26. Performance Totals report (part 4): User field statistics

Wait Analysis report

The Wait Analysis report provides a breakdown of wait activity by Transaction ID (or other ordering fields). You can see at a glance which CICS resources are causing your transactions to be suspended. This report can help you to quickly identify the possible source of a performance response time problem.

Report command

The Wait Analysis report can be requested from a Report Set in the CICS PA dialog. Select the **Wait Analysis** report in the **Performance Reports** category.

In batch, the `WAITANALysis` command is used to request the Wait Analysis report.

The command to produce the default report is:

```
CICSPA WAITANALYSIS
```

To tailor the report, you can specify report options as follows:

```
CICSPA WAITANALYSIS(
        [BY(by1[,by2][,by3]),]
        [INTERVAL(hh:mm:ss),]
        [OUTPUT(ddname),]
        [LINECOUNT(nnn),]
        [TITLE1('...sub-heading left ...'),]
        [TITLE2('...sub-heading right...'),]
        [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))])
```

You can specify up to three BY operands to determine the sort order of the report. If omitted, the default is **BY(TRAN)**. Only fields of type T (Time) and C (Character) may be specified. The following fields are eligible sort fields:

- APPLID
- FCTY
- LUNAME
- PROGRAM
- APPLPROG
- APPLTRAN
- RLUNAME
- RPTCLASS
- SRVCLASS
- START
- STOP
- TCLASSNM
- TCPSRVCE
- TERM
- TERMCNNM
- TRAN
- USERID
- ISIPICNM

The time interval applies when you want to summarize wait activity over time, and is only applicable when one of the BY operands is a time stamp (START or STOP). The default time interval is **00:01:00** (1 minute).

Report content

The Wait Analysis report provides a detailed breakdown of Suspend Wait time. The BY operands control the sort order and enable the data to be aggregated. A Recap report, printed at the conclusion of the detail report, provides an overall breakdown of Suspend Wait Time.

Note: Some suspend times or counts, particularly in the Recap report, may be large. Very large numbers are displayed in exponential format *nnnnnnnEsmm* where:

nnnnnnn is the leftmost 7 digits of the original number
mm is the exponent
s is the sign (+ or -)

Detail report

The Wait Analysis report prints details per control break. Each BY sort field combination causes a control break in the report.

Figure 27 on page 60 shows part of the Wait Analysis report and Figure 28 on page 68 shows the Wait Analysis Recap report produced by the command:

```
CICSPA WAITANAL(OUTPUT(WAIT0001),
               INTERVAL(03:00:00),
               BY(TRAN,APPLID))
```

Wait Analysis report

```
 V2R1M0                                              CICS Performance Analyzer
                                                       Wait Analysis Report
WAIT0001 Printed at 17:10:13  3/15/2005    Data from 16:20:08 12/15/2004 to 11:28:14 12/16/2004                    Page       1

-------------------------------------------------------------------------------------------------------------------------------
Tran=AP01  APPLID=IYK3Z4
  Summary Data                                          -------- Time ---------    ------ Count ------    ------ Ratio ------
                                                             Total     Average       Total    Average
    # Tasks                                                                            5
    Response Time                                          4.1142      0.8228
    Dispatch Time                                          3.8222      0.7644         135       27.0     92.9% of Response
    CPU Time                                               0.0713      0.0143         135       27.0      1.9% of Dispatch
    Suspend Wait Time                                      0.2920      0.0584         135       27.0      7.1% of Response
    Dispatch Wait Time                                     0.0082      0.0016         130       26.0      2.8% of Suspend
    Resource Manager Interface (RMI) elapsed time          0.0000      0.0000           0        0.0      0.0% of Response
    Resource Manager Interface (RMI) suspend time          0.0000      0.0000           0        0.0      0.0% of Suspend

  Suspend Detail                                        ------------------- Suspend Time ------------------- ----- Count -----
                                                             Total     Average   %age  Graph                   Total  Average
    N/A      Other Wait Time                               0.2276      0.0455  78.0% |***************          30      6.0
    FCIOWTT  File I/O wait time                            0.0429      0.0086  14.7% |**                       20      4.0
    TSIOWTT  VSAM TS I/O wait time                         0.0098      0.0020   3.3% |                          5      1.0
    JCIOWTT  Journal I/O wait time                         0.0059      0.0012   2.0% |                          5      1.0
    DSCHMDLY Redispatch wait time caused by change-TCB mode 0.0056     0.0011   1.9% |                         70     14.0
    DSPDELAY First dispatch wait time                      0.0002      0.0000   0.1% |                          5      1.0

-------------------------------------------------------------------------------------------------------------------------------
Tran=CATR  APPLID=IYK2ZFV1
  Summary Data                                          -------- Time ---------    ------ Count ------    ------ Ratio ------
                                                             Total     Average       Total    Average
    # Tasks                                                                            3
    Response Time                                          0.0532      0.0177
    Dispatch Time                                          0.0529      0.0176           9        3.0     99.5% of Response
    CPU Time                                               0.0066      0.0022           9        3.0     12.4% of Dispatch
    Suspend Wait Time                                      0.0003      0.0001           9        3.0      0.5% of Response
    Dispatch Wait Time                                     0.0001      0.0000           6        2.0     56.3% of Suspend
    Resource Manager Interface (RMI) elapsed time          0.0004      0.0001           4        1.3      0.7% of Response
    Resource Manager Interface (RMI) suspend time          0.0000      0.0000           0        0.0      0.0% of Suspend

  Suspend Detail                                        ------------------- Suspend Time ------------------- ----- Count -----
                                                             Total     Average   %age  Graph                   Total  Average
    N/A      Other Wait Time                               0.0001      0.0000  50.0% |**********               4      1.3
    DSPDELAY First dispatch wait time                      0.0001      0.0000  31.3% |******                   3      1.0
    DSCHMDLY Redispatch wait time caused by change-TCB mode 0.0000     0.0000  18.8% |***                      2      0.7

-------------------------------------------------------------------------------------------------------------------------------
```

Figure 27. Wait Analysis report

The Wait Analysis report has two sections:

1. The first section provides a summary of common performance metrics, including:
   - Number of tasks
   - Response time
   - Dispatch time
   - CPU time
   - Suspend wait time
   - Dispatch wait time
   - RMI elapsed time
   - RMI suspend time
2. The second section provides a detailed breakdown of Suspend time by component, such as Dispatch wait, File wait, and so on. Components are reported in descending wait time order, thereby ensuring that the primary cause of task wait is at the top of the list.

   Only wait clocks with non-zero elapsed time are reported.

BY sort fields:

You can select up to three BY sort fields. If one of the BY fields is a Start or a Stop time, the **Interval** specification is also reported. If a field is not present in the SMF input records, a value of **<Missing>** is reported. Missing values are always shown after values that are present.

Summary Data:

The column headings in this part of the Wait Analysis report are:

Time

Total Total elapsed time.

Average
Average elapsed time (Total divided by #Tasks).

Count

Total Total number of events.

Average
Average number of events (Total divided by #Tasks).

Ratio
Percentage of time this component contributed to overall Response, Dispatch or Suspend time. Ratios are calculated using the values in the **Total Time** column.

The row information includes:

 # Tasks
The total number of tasks.

Response Time
Task Response time, calculated as Stop time (owner: DFHCICS, field ID: 006) minus Start time (owner: DFHCICS, field ID: 005).

Dispatch Time
The total elapsed time during which the user task was dispatched by the CICS dispatcher domain on each CICS TCB under which the task executed (field: USRDISPT, owner: DFHTASK, field ID: 007).

CPU Time
The total processor (CPU) time during which the user task was dispatched by the CICS dispatcher domain on each CICS TCB under which the task executed (field: USRCPUT, owner: DFHTASK, field ID: 008).

Suspend Wait Time
The total elapsed suspend (wait) time for which the user task was suspended by the CICS dispatcher domain (field: SUSPTIME, owner: DFHTASK, field ID: 014).

Dispatch Wait Time
The elapsed time for which the user task waited for redispatch by the CICS dispatcher domain (field: DISPWTT, owner: DFHTASK, field ID: 102). This is the aggregate of the wait times between each wait event completion and the user task being redispatched by the CICS dispatcher domain.

Resource Manager Interface (RMI) elapsed time
The total elapsed time the user task spent in the CICS Resource Manager Interface (RMI) for all the resource managers invoked by the user task, including DB2, IMS (DBCTL), WebSphere MQ, CICS Sockets, and so on (field: RMITIME, owner: DFHTASK, field ID: 170).

Resource Manager Interface (RMI) suspend time
The elapsed time during which the user task was suspended by the CICS dispatcher domain whilst in the CICS Resource Manager Interface (RMI) (field: RMISUSP, owner: DFHTASK, field ID: 171).

Suspend Detail:

This section details the components of the **Suspend Wait Time** reported in the Summary Data section.

The column headings in this part of the Wait Analysis report are:

Suspend Time

Total
Total component Suspend Time.

Average
Average component Suspend Wait Time, calculated as Total component Suspend Time divided by #Tasks (from Summary Data).

%age
Percentage of time this component contributed to the Suspend Time, calculated as Total component Suspend Time divided by Suspend Wait Time (from Summary Data) multiplied by 100.

Graph
A histogram representation of the **%age** value with one asterisk per 5%. 100% is 20 asterisks, 5% is one asterisk. Any value less than 5% does not appear in the graph.

Count

Total
Total component suspend count.

Average
Average component suspend count, calculated as Total Count divided by #Tasks (from Summary Data).

The Suspend Detail includes one report line for every Suspend component clock with a non-zero value. The components are reported in descending wait time order, ensuring that the primary cause of task wait is at the top of the list.

Note that occasionally there are Suspend Events that are wholly contained within another Suspend Event. These events are shown with their Suspend Description prefixed with >. For example, DSPDELAY contains TCLDELAY and MXTDELAY. Dependent Suspend event metrics are not included in Totals as their Parent event is assumed to contain all of the dependent events' resource usage.

N/A
Occasionally, the total task suspend time is greater than the sum of the component suspend times. This unaccounted time is reported with a Field Name of **N/A** and a description of **Other Wait Time.** This unaccounted time is calculated as the difference between Suspend Wait Time (from the Summary Data section) minus the sum of the component values (from the Suspend Detail section). The **Other Wait Time** count value is calculated similarly.

CFDTWAIT CF Data Table access requests wait time
The elapsed time in which the user task waited for a data table access request to the coupling facility data table server to complete (owner: DFHFILE, field ID: 176).

DB2CONWT DB2 Connection wait time
In CICS Transaction Server for z/OS Version 2.1 or earlier, this field is the elapsed time in which the user task waited for a CICS subtask (TCB) to become available.

In CICS Transaction Server for z/OS Version 2.2 or later:

- When CICS is connected to DB2 Version 5 or earlier, and is therefore not exploiting the CICS open transaction environment, (OTE) this field is the elapsed time in which the user task waited for a CICS subtask (TCB) to become available.
- When CICS is connected to DB2 Version 6 or later, and so is using the CICS open transaction environment (OTE), this field is the elapsed time in which the user task waited for a DB2 connection to become available for use with the user tasks open TCB.

(owner: DFHDATA, field ID: 188).

DB2RDYQW DB2 Thread wait time
The elapsed time in which the user task waited for a DB2 thread to become available (owner: DFHDATA, field ID: 187).

DB2WAIT DB2 SQL/IFI wait time
In CICS Transaction Server for z/OS Version 2.1 or earlier, this field is the elapsed time in which the user task waited for DB2 to service the DB2 EXEC SQL and Instrumentation Facility Interface (IFI) requests issued by the user task.

In CICS Transaction Server for z/OS Version 2.2 or later:

- When CICS is connected to DB2 Version 5 or earlier, and is therefore not exploiting the CICS open transaction environment (OTE), this field is the elapsed time in which the user task waited for DB2 to service the DB2 EXEC SQL and Instrumentation Facility Interface (IFI) requests issued by the user task.
- When CICS is connected to DB2 Version 6 or later, and so is using the CICS open transaction environment (OTE), this field does not apply and will be zero. This is because the CICS-DB2 attachment facility uses open TCBs as

the thread TCBs rather than using specially created subtask TCBs and as a result any waits in DB2 that occur on a CICS L8 mode TCB will not be visible to the CICS dispatcher domain.

(owner: DFHDATA, field ID: 189).

DSCHMDLY Redispatch wait time caused by change-TCB mode
The elapsed time in which the user task waited for redispatch after a CICS Dispatcher change-TCB mode request was issued by or on behalf of the user task. For example, a change-TCB mode request from a CICS L8 or S8 mode TCB back to the CICS QR mode TCB might have to wait for the QR TCB because another task is currently dispatched on the QR TCB (owner: DFHTASK, field ID: 247).

DSMMSCWT CICS Dispatcher MVS Storage Constraint wait time
The elapsed time which the user task spent waiting because no TCB was available, and none could be created because of MVS storage constraints (owner: DFHTASK, field ID: 279).

DSPDELAY First Dispatch wait time
The elapsed time in which the user task waited for the first dispatch by the CICS dispatcher domain (owner: DFHTASK, field ID: 125).

DSTCBMWT CICS Dispatcher TCB Mismatch wait time
The elapsed time which the user task spent in TCB Mismatch waits, that is, waiting because there was no TCB available matching the request, but there was at least one non-matching free TCB (owner: DFHTASK, field ID: 279). For transactions that invoke a Java™ program to run in a JVM, this shows the time spent waiting for a TCB of the correct mode (J8 or J9) and JVM profile.

ENQDELAY Local Enqueue wait time
The elapsed time in which the user task waited for a CICS task control local enqueue (owner: DFHTASK, field ID: 129).

FCIOWTT File I/O wait time
The elapsed time in which the user task waited for non-RLS file I/O (owner: DFHFILE, field ID: 063).

GNQDELAY Global Enqueue wait time
The elapsed time in which the user task waited for a CICS task control global enqueue (owner: DFHTASK, field ID: 123).

GVUPWAIT Give up control wait time
The elapsed time in which the user task waited as a result of giving up control to another task (owner: DFHTASK, field ID: 184).

ICDELAY Interval Control (IC) wait time
The elapsed time that the user task waited as a result of issuing either:
- An interval control EXEC CICS DELAY command for a specified time interval, or
- An interval control EXEC CICS DELAY command for a specified time of day to expire, or
- An interval control EXEC CICS RETRIEVE command with the WAIT option specified.

(owner: DFHTASK, field ID: 183).

IMSWAIT IMS (DBCTL) wait time
The total elapsed time in which the user task waited for IMS (DBCTL) to service the IMS requests issued by the user task (owner: DFHDATA, field ID: 186).

IRIOWTT MRO link wait time
The elapsed time in which the user task waited for control to return at this end of an MRO (Inter-Region Communication) connection (owner: DFHTERM, field ID: 100).

JCIOWTT Journal I/O wait time
The elapsed time in which the user task waited for journal (logstream) I/O (owner: DFHJOUR, field ID: 010).

LMDELAY Lock Manager (LM) wait time
The elapsed time in which the user task waited to acquire a lock on a resource. A user task cannot explicitly acquire a lock on a resource, but many CICS modules lock resources on behalf of user tasks using the CICS lock manager (LM) domain (owner: DFHTASK, field ID: 128).

LU61WTT LU6.1 wait time
The elapsed time in which the user task waited for I/O on a LUTYPE6.1 connection or session. This time includes the waits for conversations across LUTYPE6.1 connections, but not the waits incurred due to LUTYPE6.1 syncpoint flows. (owner: DFHTERM, field ID: 133).

LU62WTT LU6.2 wait time
The elapsed time in which the user task waited for I/O on a LUTYPE6.2 connection or session. This time includes the waits for conversations across LUTYPE6.2 (APPC) connections, but not the waits incurred due to LUTYPE6.2 (APPC) syncpoint flows (owner: DFHTERM, field ID: 134).

MAXHTDLY Max Hot-Pooling TCB Delay time
The elapsed time in which the user task waited to obtain a CICS Hot-Pooling TCB (H8 mode), because the CICS system had reached the limit set by the system parameter, MAXHPTCBS (owner: DFHTASK, field ID: 278). The H8 mode open TCBs are used exclusively by HPJ-compiled Java programs defined with HOTPOOL(YES). This field is not available from CICS Transaction Server V3.1.

MAXJTDLY Max JVM TCB Delay time
The elapsed time during which the user task waited to obtain a CICS JVM TCB (J8 mode), because the CICS system had reached the limit set by the system parameter, MAXJVMTCBS (owner: DFHTASK, field ID: 277). The J8 mode open TCBs are used exclusively by Java programs defined with JVM(YES).

MAXOTDLY MAXOPENTCBS wait time
The elapsed time in which the user task waited to obtain a CICS open mode TCB because the CICS system had reached the limit set by the system parameter, MAXOPENTCBS (owner: DFHTASK, field ID: 250).

MAXSTDLY Maximum SSL TCB delay time
The elapsed time in which the user task waited to obtain a CICS SSL TCB (S8 mode), because the CICS system had reached the limit set by the system initialization parameter MAXSSLTCBS. The S8 mode open TCBs are used exclusively by secure sockets layer (SSL) pthread requests issued by or on behalf of a user task (owner: DFHTASK, field ID: 281).

MAXXTDLY Maximum XPLink TCB delay time
The elapsed time in which the user task waited to obtain a CICS XP TCB (X8 or X9 mode), because the CICS system had reached the limit set by the system parameter, MAXXPTCBS. The X8 and X9 mode open TCBs are used exclusively by C and C++ programs that were compiled with the XPLINK option (owner: DFHTASK, field ID: 282).

MXTDELAY First Dispatch MXT wait time
The elapsed time in which the user task waited for first dispatch which was delayed because of the limits set by the MXT system parameter being reached (owner: DFHTASK, field ID: 127).

PTPWAIT 3270 Bridge Partner wait time
The elapsed time in which the user task waited for the 3270 bridge partner transaction to complete (owner: DFHTASK, field ID: 285).

RLSWAIT RLS File I/O wait time
The elapsed time in which the user task waited for RLS file I/O (owner: DFHFILE, field ID: 174).

RQPWAIT Request Processor wait time
The elapsed time during which the request processor user task CIRP waited for any outstanding replies to be satisfied (owner: DFHTASK, field ID: 193).

RQRWAIT Request Receiver wait time
The elapsed time during which the request receiver user task CIRR (or user specified transaction ID) waited for any outstanding replies to be satisfied (owner: DFHTASK, field ID: 192).

RRMSWAIT Resource Recovery Services Indoubt wait time
The elapsed time in which the user task waited indoubt using the MVS resource recovery services (RRS) for transactional EXCI (owner: DFHTASK, field ID: 191).

RUNTRWTT BTS run Process/Activity wait time
The elapsed time in which the user task waited for completion of a transaction that executed as a result of the user task issuing a CICS BTS run ACQPROCESS or run activity request to execute a process or activity synchronously (owner: DFHTASK, field ID: 195).

SOIOWTT Inbound Socket I/O wait time
The elapsed time in which the user task waited for inbound socket I/O (owner: DFHSOCK, field ID: 241).

SOOIOWTT Outbound Socket I/O wait time
The elapsed time in which the user task waited for outbound socket I/O (owner: DFHSOCK, field ID: 299).

SRVSYWTT CF Data Table syncpoint wait time
The elapsed time in which the user task waited for completion of syncpoint or resynchronization processing using the coupling facility data table server to complete (owner: DFHSYNC, field ID: 177).

SYNCDLY SYNCPOINT parent request wait time
The elapsed time in which the user task waited for a syncpoint request to be issued by it's parent transaction (owner: DFHSYNC, field ID: 196). The user task was executing as a result of the parent transaction issuing a CICS Business Transaction Services (BTS) Run ACQPROCESS or Run Activity requests to execute a process or activity synchronously.

SZWAIT FEPI services wait time
The elapsed time in which the user task waited for FEPI services (owner: DFHFEPI, field ID: 156).

TCIOWTT Terminal wait for input time
The elapsed time in which the user task waited for input from the terminal user, after issuing an EXEC CICS RECEIVE request (owner: DFHTERM, field ID: 009).

TCLDELAY First Dispatch TCLSNAME wait time
The elapsed time in which the user task waited for first dispatch which was delayed because of the limits set for this transaction's transaction class (owner: DFHTASK, field ID: 126).

TDIOWTT VSAM transient data I/O wait time
The elapsed time in which the user task waited for VSAM I/O to the intrapartition transient data set, DFHINTRA (owner: DFHDEST, field ID: 101).

TSIOWTT VSAM TS I/O wait time
The elapsed time in which the user task waited for VSAM I/O to the auxiliary temporary storage data set, DFHTEMP (owner: DFHTEMP, field ID: 011).

TSSHWAIT Asynchronous Shared TS wait time
The elapsed time in which the user task waited for an asynchronous shared temporary storage request to a temporary storage data server to complete (owner: DFHTEMP, field ID: 178).

WTCEWAIT CICS ECB wait time
The elapsed time the user task waited for:
- One or more ECBs, passed to CICS by the user task using the EXEC CICS WAITCICS ECBLIST command, to be MVS POSTed.
- Completion of an event initiated by the same or by another task.

(owner: DFHTASK, field ID: 182).

WTEXWAIT External ECB wait time
The elapsed time the user task waited for one or more ECBs, passed to CICS by the user task using the EXEC CICS WAIT EXTERNAL ECBLIST() command, to be MVS POSTed. (owner: DFHTASK, field ID: 181).

Recap report

The Wait Analysis report is always followed by the Wait Analysis Recap report to provide a breakdown of the CMF input data. The BY fields are ignored.

The Recap report performs two functions:

1. It provides an overview of system-wide wait time. All CMF suspend components are reported in descending wait time order ensuring that the primary cause of system-wide task wait is at the top of the list.
2. It shows **Field Availability** information:

   Present The number of times the field was present in the CMF performance records

   Missing The number of times the field was *not* present in the CMF performance records

The Recap report shows all wait clocks, even clocks that accumulated no wait time. This allows you to see at a glance:
- All the individual Suspend component clocks.
- Which clocks may be missing.

For a description of the fields in the Recap report, see "Detail report" on page 59.

In addition, the Recap report might display an Average value of **N/C** which indicates that it is not calculable. This occurs if there was no wait activity for this component.

Figure 27 on page 60 shows part of the Wait Analysis report and Figure 28 on page 68 shows the Wait Analysis Recap report produced by the command:

Wait Analysis report

```
CICSPA WAITANAL(OUTPUT(WAIT0001),
                INTERVAL(03:00:00),
                BY(TRAN,APPLID))
```

```
 V2R1M0                                     CICS Performance Analyzer
                                            Wait Analysis Recap Report
WAIT0001 Printed at 17:10:13  3/15/2005    Data from 16:20:08 12/15/2004 to 11:28:14 12/16/2004                Page       1

                                                 --------- Time --------                             ------ Ratio ------
                                                       Total     Average

# Tasks                                                16140
Response Time                                    1955790       121.1766
Dispatch Time                                      3500.9583      0.2169                               0.2% of Response
CPU Time                                            240.9877      0.0149                               6.9% of Dispatch
Suspend Wait Time                                1952289       120.9597                               99.8% of Response
Dispatch Wait Time                                  340.1962      0.0211                               0.0% of Suspend
Resource Manager Interface (RMI) elapsed time      5394.9880      0.3343                               0.3% of Response
Resource Manager Interface (RMI) suspend time      5388.6855      0.3339                               0.3% of Suspend

                                                 ------------------- Suspend Time -------------------   Field Availability
                                                       Total     Average   %age  Graph                 Present    Missing

N/A      Other Wait Time                         1333484        82.6199  68.3% |*************
WTEXWAIT External ECB wait time                  5370308E-01    33.2733  27.5% |*****                    16140          0
TCIOWTT  Terminal wait for input time              75752.9705     4.6935   3.9% |                          16140          0
WTCEWAIT CICS ECB wait time                         3552.3100     0.2201   0.2% |                          16140          0
SOIOWTT  Inbound Socket I/O wait time               1000.0914     0.0620   0.1% |                          16140          0
LMDELAY  Lock Manager (LM) wait time                 791.4872     0.0490   0.0% |                          16140          0
ICDELAY  Interval Control (IC) wait time             246.0453     0.0152   0.0% |                          16140          0
DSCHMDLY Redispatch wait time caused by change-TCB mode  176.8542  0.0110  0.0% |                          13303       2837
ENQDELAY Local Enqueue wait time                     119.2798     0.0074   0.0% |                          16140          0
IRIOWTT  MRO link wait time                           75.8102     0.0047   0.0% |                          16140          0
FCIOWTT  File I/O wait time                           15.7649     0.0010   0.0% |                          16140          0
RQPWAIT  Request Processor Wait Time                  13.9620     0.0009   0.0% |                          16140          0
DSPDELAY First dispatch wait time                     12.2934     0.0008   0.0% |                          16140          0
MXTDELAY > First dispatch MXT wait time                0.0000        N/C   0.0% |                          16140          0
TCLDELAY > First dispatch TCLSNAME wait time           0.0000        N/C   0.0% |                          16140          0
JCIOWTT  Journal I/O wait time                         6.5225     0.0004   0.0% |                          16140          0
LU62WTT  LU6.2 wait time                               6.5023     0.0004   0.0% |                          16140          0
GVUPWAIT Give up control wait time                     4.2724     0.0003   0.0% |                          16140          0
RLSWAIT  RLS File I/O wait time                        0.1546     0.0000   0.0% |                          16140          0
TSIOWTT  VSAM TS I/O wait time                         0.0453     0.0000   0.0% |                          16140          0
MAXXTDLY Maximum XPLink TCB delay time                 0.0000        N/C   0.0% |                          13303       2837
MAXSTDLY Maximum SSL TCB delay time                    0.0000        N/C   0.0% |                          13303       2837
DSMMSCWT DS storage constraint wait time               0.0000        N/C   0.0% |                          15711        429
DSTCBMWT Dispatcher TCB Mismatch wait time             0.0000        N/C   0.0% |                          15711        429
PTPWAIT  3270 Bridge Partner wait time                 0.0000        N/C   0.0% |                          16140          0
MAXHTDLY Maximum Hot-Pooling TCB delay time            0.0000        N/C   0.0% |                           2837      13303
MAXJTDLY Maximum JVM TCB delay time                    0.0000        N/C   0.0% |                          16140          0
RQRWAIT  Request Receiver Wait Time                    0.0000        N/C   0.0% |                          16140          0
SOOIOWTT Outbound Socket I/O Wait Time                 0.0000        N/C   0.0% |                          16140          0
LU61WTT  LU6.1 wait time                               0.0000        N/C   0.0% |                          16140          0
TSSHWAIT Asynchronous Shared TS wait time              0.0000        N/C   0.0% |                          16140          0
MAXOTDLY Maximum Open TCB delay time                   0.0000        N/C   0.0% |                          16140          0
RUNTRWTT BTS run Process/Activity wait time            0.0000        N/C   0.0% |                          16140          0
RRMSWAIT Resource Recovery Services indoubt wait time  0.0000        N/C   0.0% |                          16140          0
GNQDELAY Global Enqueue wait time                      0.0000        N/C   0.0% |                          16140          0
SYNCDLY  SYNCPOINT parent request wait time            0.0000        N/C   0.0% |                          16140          0
SRVSYWTT CF Data Table syncpoint wait time             0.0000        N/C   0.0% |                          16140          0
CFDTWAIT CF Data Table access requests wait time       0.0000        N/C   0.0% |                          16140          0
SZWAIT   FEPI services wait time                       0.0000        N/C   0.0% |                          16140          0
TDIOWTT  VSAM transient data I/O wait time             0.0000        N/C   0.0% |                          16140          0
DB2WAIT  DB2 SQL/IFI wait time                         0.0000        N/C   0.0% |                          16140          0
DB2CONWT DB2 Connection wait time                      0.0000        N/C   0.0% |                          16140          0
DB2RDYQW DB2 Thread wait time                          0.0000        N/C   0.0% |                          16140          0
IMSWAIT  IMS (DBCTL) wait time                         0.0000        N/C   0.0% |                          16140          0

*Total*   (All Suspend Wait events)              1952289       120.9597 100.0% |********************
```

Figure 28. Wait Analysis Recap report

Cross-System Work report

The Cross-System Work report accepts performance class data from a single or multiple CICS systems and correlates the data by network unit-of-work.

The report default is to print only the CMF performance class records that are contained in a unique network unit-of-work that includes multiple performance records.

Note: The Cross-System Work report will also include multiple performance class records from a single system.

You can request a report from all available records, or you can specify selection criteria to request a report from only the records that meet specific requirements. The SELECT and SELUOW commands provide selection at the UOW (multi-task) level as well as the Task level.

Report command

The Cross-System Work report can be requested from a Report Set in the CICS PA dialog. Select the **Cross-System Work** report in the **Performance Reports** category.

In batch, the `CROSSsystem` command is used to request the Cross-System Work report. To tailor the report, the `LISTX` command is used and produces the Cross-System Work Extended report.

Cross-System Work

The command to produce the default report is:

```
CICSPA CROSSSYSTEM
```

To tailor the report, you can specify report options as follows:

```
CICSPA CROSSSYSTEM(
              [OUTPUT(ddname),]
              [EXTERNAL(ddname),]
              [PRINTMULTIPLE,]
              [NOPRINTMULTIPLE,]
              [PRINTSINGLE,]
              [NOWRITE,]
              [LINECOUNT(nnn),]
              [TITLE1('...sub-heading left ...'),]
              [TITLE2('...sub-heading right...'),]
              TASKORDER(START|STOP)
              [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
              [SELUOW(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))])
```

Cross-System Work Extended

To tailor the format of the report, see “Cross-System Work Extended” on page 29.

Report content

You can specify a LIST or LISTX Report Form to tailor the format and content of the Cross-System Work report. Specifying a Report Form produces the Cross-System Work Extended report. Otherwise, the default format of the Cross-System Work report is produced.

Default format: Cross-System Work

On the Cross-System Work report, each line is printed from a single CMF performance class record. Records that are part of the same network unit-of-work

are printed sequentially in groups separated by blank lines. The printed information allows you to find the corresponding records in the Performance List report.

The Cross-System Work report is produced using an external SORT facility. An External Work Data Set is required to store the records before they are sorted. This data set is either specified explicitly using **EXTERNAL(ddname),** or CICS PA assigns one from the External Work File pool.

The records are sorted in the following order:

1. Network Unit-of-Work NETNAME
2. Network Unit-of-Work ID
3. Syncpoint count concatenated with either:
   - Task stop time in descending (reverse) order

     or
   - Task start time in ascending order
4. APPLID

In the third sort field, the syncpoint count is used to resolve unsynchronized STORE CLOCK (STCK) values between systems. The syncpoint count and stop time (or start time) show the sequence of tasks within the network unit-of-work. In some cases (for example, where user event monitor points (EMPs) are used), the syncpoint count does not reflect the sequence of events within a network unit-of-work. For these instances, all the task records are printed, but not necessarily in the order they happened. You can tell that this situation exists if the stop times are not in descending order (or the start times are not in ascending order).

For more information on correlating the performance class data by network unit-of-work ID, see “Correlating performance class data” on page 299.

The Cross-System Work report shown in Figure 29 on page 71 was created using the command:

```
CICSPA CROSS(PRINTS,PRINTM,NOWRITE,OUTPUT(CROS0001))
```

```
 V2R1M0                                                  CICS Performance Analyzer
                                                              Cross-System Work

CROS0001 Printed at 11:36:16  3/01/2004 Data from 11:10:29  2/04/2004 to 11:33:51  2/04/2004                          Page       8

                                        Request           Fcty  Conn                   UOW                 R              Response A
Tran Userid   SC TranType Term  LUName   Type   Program  T/Name Name NETName           Seq APPLID     Task T   Stop Time    Time   B

STOC BRENNER  U  U      R               AP:     DFH0STOC             GBIBMIYA.IGCS23C   1  IYK2Z1V3    242 T 11:19:41.001    .7984
RED1 BRENNER  U  U      R               AP:     DFH0RED1             GBIBMIYA.IGCS23C   1  IYK2Z1V3    241 T 11:19:40.337    .1479
SAL1 BRENNER  TP U        S23C IGCS23C  AP:     DFH0SAL1 T/S23C      GBIBMIYA.IGCS23C   1  IYK2Z1V3    239 T 11:19:40.334    .1835

SAL1 BRENNER  TP U        S23C IGCS23C  AP:     DFH0SAL1 T/S23C      GBIBMIYA.IGCS23C   1  IYK2Z1V3    251 T 11:19:42.763    .0022

SAL1 BRENNER  TP U        S23C IGCS23C  AP:     DFH0SAL1 T/S23C      GBIBMIYA.IGCS23C   1  IYK2Z1V3    255 T 11:19:45.463    .0018

CBAM BRENNER  TO U        S23C IGCS23C  AP:     DFHECBAM T/S23C      GBIBMIYA.IGCS23C   1  IYK2Z1V3    259 T 11:19:55.368   7.0077

PAYM BRENNER  TO U        S23C IGCS23C  AP:     DFH0PAY0 T/S23C      GBIBMIYA.IGCS23C   1  IYK2Z1V3    289 T 11:20:00.569    .0026

PAY1 BRENNER  TP U        S23C IGCS23C  AP:     DFH0PAY1 T/S23C      GBIBMIYA.IGCS23C   1  IYK2Z1V3    294 T 11:20:04.202    .1390
SALE BRENNER  U  U      R               AP:     DFH0SAL2             GBIBMIYA.IGCS23C   1  IYK2Z1V3    295 T 11:20:04.200    .1353

3333 BRENNER  TO U        S23C IGCS23C  AP:     ######## T/S23C      GBIBMIYA.IGCS23C   1  IYK2Z1V3    300 T 11:20:08.003    .0028

PAYM BRENNER  TO U        S23C IGCS23C  AP:     DFH0PAY0 T/S23C      GBIBMIYA.IGCS23C   1  IYK2Z1V3    303 T 11:20:15.964    .0022

PAY1 BRENNER  TP U        S23C IGCS23C  AP:     DFH0PAY1 T/S23C      GBIBMIYA.IGCS23C   1  IYK2Z1V3    305 T 11:20:19.635    .0747
SALE BRENNER  U  U      R               AP:     DFH0SAL2             GBIBMIYA.IGCS23C   1  IYK2Z1V3    306 T 11:20:19.634    .0715

CSAC BRENNER  TO U        S23C IGCS23C  AP:     DFHACP   T/S23C      GBIBMIYA.IGCS23C   1  IYK2Z1V3    313 T 11:20:44.089    .0017

CBAM BRENNER  TO U        S23C IGCS23C  AP:     DFHECBAM T/S23C      GBIBMIYA.IGCS23C   1  IYK2Z1V3    315 T 11:20:50.772   3.7993

RMNU BRENNER  TO U        S23C IGCS23C  TR:CJB1          T/S23C      GBIBMIYA.IGCS23C   1  IYK2Z1V3    323 T 11:20:54.392    .0317
AMNU CBAKER   TO U        R11  IYK2Z1V3 AP:     DFHSAMNU S/S23C CJB3 GBIBMIYA.IGCS23C   1  IYK2Z1V1    158 T 11:20:54.390    .0228
```

Figure 29. Cross-System Work report

The following fields are shown on the Cross-System Work report. For more information on these fields, see "CMF performance class data fields" on page 239.

Tran

The Transaction ID (field: TRAN, owner: DFHTASK, field ID: 001) identifies the name of the transaction that this performance class record represents. Applications that are using Distributed Program Link (DPL) requests should use the TRANSID('xxxx') parameter on the EXEC CICS LINK PROGRAM('xxxxxxxx') command to enable better transaction/application analysis from the monitoring performance class data. If the TRANSID('xxxx') parameter is not specified all the performance class records on the target system for a Distributed Program Link (DPL) mirror transaction will have the same transaction ID. For example, 'CSMI' for a Distributed Program Link (DPL) request from another connected CICS system.

Userid

The User identifier of the transaction (owner: DFHCICS, field ID: 089).

SC

Type of transaction start or start code (owner: DFHTASK, field ID: 004).

TranType

This column describes the transaction type:

```
 S          System transaction
 U          User transaction
  M         Mirror transaction
   D        DPL Mirror transaction
    O       ONC RPC Alias transaction
     W      WEB Alias transaction
      B     Bridge transaction
       -    Reserved
        R   CICS BTS Run (ACQPROCESS or activity) transaction synchronous
```

The transaction type is represented as an byte 1 of the transaction flags field (owner: DFHTASK, field ID: 164).

Term
The Terminal ID (field: TERM, owner: DFHTERM, field ID: 002) is either the terminal ID or the session ID. This field is blank if the transaction was not associated with a terminal or session facility.

LUName
The LUname (field: LUNAME, owner: DFHTERM, field ID: 111) is either the VTAM® netname of the terminal ID (if the Access Method for the terminal is VTAM) or the VTAM APPLID of the connection for the session ID. For an EXCI connection, this field will be blank. The transaction's terminal or session type can be identified from the NATURE field (byte 0) within the terminal information field (field: TERMINFO, owner: DFHTERM, field ID: 165). This field is blank if the transaction was not associated with a terminal or session facility.

Request Type
This field describes the type of request that the performance record represents:

	Description
AP:	An application program request. The **Program** field will identify the initial application program name invoked for the transaction. **Note:** Function shipped Distributed Program Link (DPL) requests are interpreted as application requests. In this case the **AP:** is followed by the '----' (as for other function shipping requests) to indicate the types of requests issued by the application program.
FS:----	A function shipping request. The '----' indicate the types of function shipping request: **F** File Control **I** Interval Control **D** Transient Data **S** Temporary Storage
TR:xxxx	A transaction routing request from a terminal-owning region. The 'xxxx' is the transaction routing sysid from the RSYSID field (owner: DFHCICS, field ID: 130) and identifies the connection name (sysid) of the remote system to which the transaction was routed.

Program
The Initial Program Name (field: PGMNAME, owner: DFHPROG, field ID: 071) identifies the initial application program invoked for the transaction. Depending on the type of transaction, this field contains either the application program name as defined in the transaction definition, the program name returned by a user written dynamic routing program, the application program name passed on a function shipped Dynamic Program Link (DPL) request, the initial application program name of an ONC RPC Alias Transaction, or the initial application program name of a WEB Alias Transaction. A program name of ######## indicates that the transaction was invoked using the definition of the transaction ID specified by the DTRTRAN system initialization parameter.

FCTY T
This field is an interpretation of byte 0 of the transaction flags field (owner: DFHTASK, field ID: 164) and describes the transaction's facility type:

Type	**Description**
blank	None

T Terminal or Session
S Surrogate
D Transient Data queue
B Bridge Terminal

FCTY Name
The transaction's facility name (owner: DFHTASK, field ID: 163).

Conn Name
The terminal session connection name (owner: DFHTERM, field ID: 169). If the terminal facility associated with this transaction is a session, then this field is the name of the owning connection (sysid).

NETName
This column is the network unit-of-work ID (field: NETUOWPX, owner: DFHTASK, field ID: 097) from the system where the network unit-of-work ID originated. This name is constant within each network unit-of-work ID.

For more information on the NETUOWPX field, see page 264.

UOW Seq
The syncpoint sequence number from the network unit-of-work ID (field: NETUOWSX, owner: DFHTASK, field ID: 098) that was assigned at transaction attach time.

For more information on the NETUOWSX field, see page 265.

APPLID
The APPLID of the CICS system upon which the CMF performance record was created. This field indicates the CICS system that performed the work recorded in the record.

Task
The transaction identification number (owner: DFHTASK, field ID: 031). This is printed for all records to help identify the corresponding records on a Performance List report.

R T
The performance class record type (field: RTYPE, owner: DFHCICS, field ID: 112):

C Record output for a terminal converse.

D Record output by a user event monitoring point (EMP) DELIVER request.

F Record output for a long running transaction.

S Record output for a syncpoint request.

T Record was output for a transaction termination (detach).

Stop Time or **Start Time**
Stop or start time (hh:mm:ss.thm) of the transaction (owner: DFHCICS, field ID: 005 for start, 006 for stop). The transactions within the same network unit-of-work are generally displayed in either descending stop time or ascending start time sequence. This may not always be true, however, due to syncpointing within the transaction, and to the difficulties involved in synchronizing the STORE CLOCK (STCK) values between different CPUs.

Response Time
The transaction response time. This field is calculated by subtracting the transaction Start Time (owner: DFHCICS, field ID: 005) from the transaction Stop Time (owner: DFHCICS, field ID: 006).

A B

Y in this column indicates that the transaction abended.

Tailored format: Cross-System Work Extended

You can tailor the format of the Cross-System Work report. To use the CICS PA dialog to do this, simply specify a LIST or LISTX Report Form for the Cross-System Work report. This produces the Cross-System Work Extended report like the example shown in Figure 30. The commands to request this report are:

```
CICSPA IN(SMFIN001),
       LISTX(OUTPUT(CROS0001),
             EXTERNAL(CPAXW001),
             NOPRINTMULTIPLE,PRINTSINGLE,
             BY(UOWID),
             FIELDS(TRAN,
                    RESPONSE,
                    USERID,
                    TASKNO,
                    STOP(TIMET),
                    RESPONSE,
                    DISPATCH(TIME),
                    DISPATCH(COUNT),
                    CPU(TIME),
                    SUSPEND(TIME),
                    SUSPEND(COUNT),
                    DISPWAIT(TIME),
                    DISPWAIT(COUNT),
                    IRWAIT(TIME)))
```

V2R1M0 CICS Performance Analyzer
Cross-System Work Extended

CROS0001 Printed at 0:56:39 7/23/2004 Data from 15:41:19 7/12/2004 to 16:19:15 7/12/2004 Page 1

Tran	Response Time	Userid	TaskNo	Stop Time	Response Time	Dispatch Time	Dispatch Count	User CPU Time	Suspend Time	Suspend Count	DispWait Time	DispWait Count	IR Wait Time
CPLT	.3939	CICSUSER	6	15:41:19.419	.3939	.0782	3	.0325	.3158	3	.3149	2	.0000
CSSY	71.4053	CICSUSER	III	15:42:30.828	71.4053	46.9670	401	17.6543	24.4382	401	9.9254	400	.0000
CSSY	4.9137	CICSUSER	12	15:41:24.346	4.9137	.4928	66	.0476	4.4209	66	2.5618	65	.0000
CSSY	5.3932	CICSUSER	10	15:41:24.822	5.3932	.8932	59	.2172	4.4999	59	2.7531	58	.0000
CSSY	5.6419	CICSUSER	9	15:41:25.069	5.6419	1.6045	75	.1472	4.0374	75	2.9273	74	.0000
CSSY	5.9801	CICSUSER	13	15:41:25.434	5.9801	.7826	87	.1627	5.1975	87	3.3042	86	.0000
CSSY	2.9653	CICSUSER	14	15:41:22.420	2.9653	1.2597	14	.0555	1.7056	14	.0393	13	.0000
CSSY	.4372	CICSUSER	15	15:41:19.898	.4372	.0037	1	.0034	.4335	1	.0000	0	.0000
CSSY	.5093	CICSUSER	16	15:41:19.977	.5093	.0065	3	.0084	.5028	3	.0103	2	.0000
CGRP	5.4980	CICSUSER	11	15:41:24.928	5.4980	.7931	69	.0613	4.7049	69	3.7141	68	.0000
CSSY	3.3315	CICSUSER	17	15:41:22.805	3.3315	.0995	37	.0269	3.2321	37	1.3057	36	.0000
CPLT	.5196	CICSUSER	6	15:41:29.169	.5196	.1771	3	.0316	.3425	3	.3422	2	.0000

Figure 30. Cross-System Work Extended report

Required CMF fields

If you are using the CICS Monitoring Control Table (MCT) Exclude/Include parameters to reduce the size of the performance class record, you must ensure that the data fields required for the Cross-System Work report and extract are not excluded.

The following table lists the fields that must be collected in the performance class records to ensure correct correlation of the data records for the Cross-System Work report and extract.

Table 1. Cross-System Work report and extract: Required CMF fields

Owner	Field ID	CICS Informal Name
DFHCICS	112	RTYPE
DFHCICS	130	RSYSID
DFHDEST	091	TDTOTCT
DFHFILE	093	FCTOTCT
DFHPROG	071	PGMNAME
DFHPROG	113	ABCODEO
DFHTASK	031	TRANNUM
DFHTASK	066	ICTOTCT
DFHTASK	097	NETUOWPX
DFHTASK	098	NETUOWSX
DFHTASK	163	FCTYNAME
DFHTASK	164	TRANFLAG
DFHTEMP	092	TSTOTCT
DFHTERM	111	LUNAME
DFHTERM	169	TERMCNNM

Transaction Group report

The Transaction Group report accepts data from one or more CICS systems, correlating the data by transaction group ID. The default is to print only the CMF performance class records that are contained in a transaction group that includes multiple performance records.

The Transaction Group report can be used to understand the correlation of the performance class records for the transactions that CICS executes as part of the same incoming work request (for example, the CWXN and CWBA transactions for CICS Web support requests).

You can request a report from all available records, or you can provide criteria to select only the records that meet specific requirements.

Report command

The Transaction Group report can be requested from a Report Set in the CICS PA dialog. Select the **Transaction Group** report in the **Performance Reports** category.

In batch, the `TRANGROUP` command is used to request the Transaction Group report.

The command to produce the default report is:

```
CICSPA TRANGROUP
```

To tailor the report, you can specify report options as follows:

```
CICSPA TRANGROUP(
            [OUTPUT(ddname),]
            [EXTERNAL(ddname),]
            [PRINTMULTIPLE,]
            [NOPRINTMULTIPLE,]
            [PRINTSINGLE,]
            [LINECOUNT(nnn),]
            [TITLE1('...sub-heading left ...'),]
            [TITLE2('...sub-heading right...'),]
            [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
                                ...))])
```

Report content

The Transaction Group report consists of a detail report and a summary report. For the detail report, each line is printed from a single CMF performance class record. Records that are part of the same transaction group are printed sequentially in groups, separated by blank lines. The reported information allows you to find the corresponding records in the Performance List report. The summary report summarizes the information from the performance class records in the detail report.

If you request this report and other reports in the same job, specify an **OUTPUT(ddname)** for each report. Output for the reports must be directed to separate SYSOUT data sets to prevent interleaving of the report lines.

The Transaction Group report is produced using an external SORT facility. An External Work Data Set is required to store the records before they are sorted. This data set is either specified explicitly using **EXTERNAL(ddname),** or CICS PA assigns one from the External Work File pool.

The records are sorted in the following order:
1. Transaction Group ID

2. Task Stop Time in reverse (or descending) order.

Note: The Stop Time, sorted in reverse (descending) order, shows the sequence of tasks within the same Transaction Group ID.

For more information on correlating the performance class data by transaction group ID, see "Correlating performance class data" on page 299.

Detail report

The Transaction Group report shown in Figure 31 was created using the command:

```
CICSPA TRANGROUP(PRINTS,PRINTM,OUTPUT(TRGP0001))
```

```
 V2R1M0                                                  CICS Performance Analyzer
                                                             Transaction Group

TRGP0001 Printed at 11:51:08  3/01/2004 Data from 11:10:29  2/04/2004 to 11:33:51  2/04/2004                          Page      41

                            Brdg   Client          Request                         Fcty  Conn                 R              Response
Tran Userid   SC Origin     Tran IP Address         Type    Program  Term LUName   T/Name Name APPLID     Task T  Stop Time    Time

SALE BRENNER  U  SCHEDULE                          AP:     DFH0SAL2                            IYK2Z1V3    268 T 11:19:52.38    .0399

SALE BRENNER  U  SCHEDULE                          AP:     DFH0SAL2                            IYK2Z1V3    279 T 11:19:57.58    .0683

REM1 BRENNER  U  SCHEDULE                          AP:     DFH0REM1                            IYK2Z1V3    281 T 11:19:57.60    .0231

SALE BRENNER  U  SCHEDULE                          AP:     DFH0SAL2                            IYK2Z1V3    282 T 11:19:57.64    .0405

STAT CBAKER   TO BRIDGE     CWBA                   AP:     DFH0STAT CAAE CAAE     B/CAAE       IYK2Z1V3    292 T 11:20:12.04  10.5089
CWBA CBAKER   U  WEB             9.20.30.232       AP:     DFHWBTTA                            IYK2Z1V3    291 T 11:20:01.65    .1188
CWXN CBAKER   U  SOCKET          9.20.30.232       AP:     DFHWBXN                             IYK2Z1V3    290 T 11:20:01.54    .0169

SALE BRENNER  U  SCHEDULE                          AP:     DFH0SAL2                            IYK2Z1V3    293 T 11:20:02.81    .0568

SALE BRENNER  U  SCHEDULE                          AP:     DFH0SAL2                            IYK2Z1V3    296 T 11:20:04.33    .1340

SALE BRENNER  U  SCHEDULE                          AP:     DFH0SAL2                            IYK2Z1V3    297 T 11:20:04.33    .1326

CWBA CBAKER   U  WEB             9.20.30.232       AP:     DFHWBTTA                            IYK2Z1V3    299 T 11:20:07.37   1.0015
CWXN CBAKER   U  SOCKET          9.20.30.232       AP:     DFHWBXN                             IYK2Z1V3    298 T 11:20:06.38    .3103

CWBA CBAKER   U  WEB             9.20.30.232       AP:     DFHWBTTA                            IYK2Z1V3    302 T 11:20:12.04    .0423
CWXN CBAKER   U  SOCKET          9.20.30.232       AP:     DFHWBXN                             IYK2Z1V3    301 T 11:20:12.01    .2331

CZUX CBAKER   QD TDQUEUE                           AP:     DFH0VZUX               D/CSZX       IYK2Z1V3    304 T 11:20:19.36    .0078

SALE BRENNER  U  SCHEDULE                          AP:     DFH0SAL2                            IYK2Z1V3    307 T 11:20:20.34    .7041

SALE BRENNER  U  SCHEDULE                          AP:     DFH0SAL2                            IYK2Z1V3    308 T 11:20:20.43    .7920

CWXN CBAKER   U  SOCKET          9.20.30.232       AP:     DFHWBXN                             IYK2Z1V3    331 T 11:34:12.76  782.697
CEMT CBAKER   TO BRIDGE     CWBA                   AP:     DFHEMTP  CAAG CAAG     B/CAAG       IYK2Z1V3    354 T 11:21:55.38  13.3797
CWBA CBAKER   U  WEB             9.20.30.232       AP:     DFHWBTTA                            IYK2Z1V3    353 T 11:21:42.10    .0986
CWBA CBAKER   U  WEB             9.20.30.232       AP:                                         IYK2Z1V3    332 T 11:21:10.12    .0529

CWXN CBAKER   U  SOCKET          9.20.30.232       AP:     DFHWBXN                             IYK2Z1V3    333 T 11:25:52.65  282.577
CWBA CBAKER   U  WEB             9.20.30.232       AP:     DFHWBTTA                            IYK2Z1V3    351 T 11:21:32.85    .0378
CWBA CBAKER   U  WEB             9.20.30.232       AP:                                         IYK2Z1V3    334 T 11:21:10.12    .0485

CZUX CBAKER   QD TDQUEUE                           AP:     DFH0VZUX               D/CSZX       IYK2Z1V3    340 T 11:21:19.48    .0240
```

Figure 31. Transaction Group report (detail)

This section gives a brief description of the performance class data fields shown in the Transaction Group report. For more information, see "CMF performance class data fields" on page 239.

Tran

The Transaction ID (field: TRAN, owner: DFHTASK, field ID: 001) identifies the name of the transaction that this performance class record represents. Applications that are using Distributed Program Link (DPL) requests should use

the TRANSID('xxxx') parameter on the EXEC CICS LINK PROGRAM('xxxxxxxx') command to enable better transaction/application analysis from the monitoring performance class data. If the TRANSID('xxxx') parameter is not specified, all the performance class records on the target system for a Distributed Program Link (DPL) mirror transaction will have the same transaction ID. For example, 'CSMI' for a Distributed Program Link (DPL) request from another connected CICS system.

Userid
The User identifier of the transaction (owner: DFHCICS, field ID: 089).

SC
Type of transaction start or start code (field: TTYPE, owner: DFHTASK, field ID: 004).

Origin
This field is an interpretation of the transaction origin type from byte 4 of the transaction flags field (field: TRANFLAG, owner: DFHTASK, field ID: 164) and can be used as an indicator of the source of the transaction. This field can have one of the following values:

Origin Type	Description
NONE	None
TERMINAL	Terminal
TDQUEUE	Transient data queue
START	Start
TERM START	Terminal start
SCHEDULE	CICS BTS scheduler (CSHQ)
XM RUN	XM run transaction
BRIDGE	Bridge
SOCKET	Socket
WEB	Web
IIOP	IIOP
RRS	RRS
LU6.1 SESS	LU 6.1 session
LU6.2 SESS	LU 6.2 (APPC) session
MRO SESS	MRO session
ECI SESS	ECI session
IIRQ RECVR	II Request Receiver
RZ ST TRPT	Request Stream in-storage transport
IPIC	IP interconnectivity session

The ***Origin Type*** is an interpretation of the primary transaction client type with which the transaction was attached using the CICS Transaction Manager.

Brdg Tran
This field contains the name of the bridge listener transaction for those transactions that are attached by the CICS 3270 Bridge interface.

Client IP Address
The client IP address in the interpreted format of *nnn.nnn.nnn.nnn* (owner: DFHSOCK, field ID: 244).

Request Type
This field describes the type of request that the performance record represents:

	Description
AP:	An application program request. The **Program** field will identify the initial application program name invoked for the transaction.

Note: Function shipped Distributed Program Link (DPL) requests are interpreted as application requests. In this case the **AP:** is followed by the **----** (as for other function shipping requests) to indicate the types of requests issued by the application program.

FS:---- A function shipping request. The **----** indicate the types of function shipping request:

F File Control
I Interval Control
D Transient Data
S Temporary Storage

TR:xxxx
A transaction routing request from a terminal-owning region. The 'xxxx' is the transaction routing sysid (field: RSYSID, owner: DFHCICS, field ID: 130) and identifies the connection name (sysid) of the remote system to which the transaction was routed.

Program
The Initial Program Name (field: PGMNAME, owner: DFHPROG, field ID: 071) identifies the initial application program invoked for the transaction. Depending on the type of transaction, this field contains either the application program name as defined in the transaction definition, the program name returned by a user written dynamic routing program, the application program name passed on a function shipped Dynamic Program Link (DPL) request, the initial application program name of an ONC RPC Alias Transaction, or the initial application program name of a WEB Alias Transaction. A program name of ######## indicates that the transaction was invoked using the definition of the transaction ID specified by the DTRTRAN system initialization parameter.

Term
The Terminal ID (field: TERM, owner: DFHTERM, field ID: 002) is either the terminal ID or the session ID. This field is blank if the transaction was not associated with a terminal or session facility.

LUName
This field (field: LUNAME, owner: DFHTERM, field ID: 111) is either the VTAM netname of the terminal ID (if the Access Method for the terminal is VTAM) or the VTAM APPLID of the connection for the session ID. For an EXCI connection, this field will be blank. The transaction's terminal or session type can be identified from the NATURE field (byte 0) within the terminal information field (field: TERMINFO, owner: DFHTERM, field ID: 165). This field is blank if the transaction was not associated with a terminal or session facility.

Fcty T
This field is an interpretation of byte 0 of the transaction flags field (owner: DFHTASK, field ID: 164) and describes the transaction's facility type:

Type	Description
blank	None
T	Terminal or Session
S	Surrogate
D	Transient Data queue
B	Bridge Terminal

Fcty Name
The transaction's facility name (owner: DFHTASK, field ID: 163).

Conn Name
The terminal session connection name (owner: DFHTERM, field ID: 169). If the

terminal facility associated with this transaction is a session, then this field is the name of the owning connection (sysid).

APPLID
The APPLID of the CICS system upon which the CMF performance record was created. This field indicates the CICS system that performed the work recorded in the record.

Task
The transaction identification number (owner: DFHTASK, field ID: 031). This is printed for all records to help identify the corresponding record on a Performance List report.

R T
The performance class record type (field: RTYPE, owner: DFHCICS, field ID: 112):

C Record output for a terminal converse.

D Record output by a user event monitoring point (EMP) DELIVER request.

F Record output for a long running transaction.

S Record output for a syncpoint request.

T Record was output for a transaction termination (detach).

Stop Time
Stop time of the transaction (owner: DFHCICS, field ID: 006). The transactions within the same network unit-of-work are generally displayed in ascending stop time sequence. This may not always be true, however, due to syncpointing within the transaction, and to the difficulties involved in synchronizing the STORE CLOCK (STCK) values between different CPUs.

Response Time
The transaction response time. This field is calculated by subtracting the transaction start time (owner: DFHCICS, field ID: 005) from the transaction stop time (owner: DFHCICS, field ID: 006).

Note: If the transaction response time is followed by an asterisk (*) then the transaction has allocated a session to another CICS system for either transaction routing, function shipping, or distributed transaction processing. This information is determined from the terminal session allocation request count field (owner: DFHTERM, field ID: 069). See the Transaction Group report in Figure 32 on page 81 for examples of transactions that illustrate this session allocation indicator.

Example: The following figure shows the Transaction Group report using PRINTS, NOPRINTM.

```
 V2R1M0                                              CICS Performance Analyzer
                                                         Transaction Group

TRGP0001 Printed at  7:43:07  2/19/2005 Data from 11:10:51  2/14/2005 to 11:34:13  2/14/2005                             Page       5

                            Brdg    Client       Request                              Fcty  Conn                   R             Response
Tran Userid   SC  Origin    Tran  IP Address      Type   Program  Term LUName    T/Name Name APPLID      Task T  Stop Time    Time

3333 BRENNER  TO  TERMINAL                       AP:     ######## S23C IGCS23C  T/S23C       IYK2Z1V3     300 T 11:20:08.00    .0028

0AYM BRENNER  TO  TERMINAL                       AP:     DFH0PAY0 S23C IGCS23C  T/S23C       IYK2Z1V3     303 T 11:20:15.96    .0022

PAY1 BRENNER  TP  TERMINAL                       AP:     DFH0PAY1 S23C IGCS23C  T/S23C       IYK2Z1V3     305 T 11:20:19.64    .0747

SALE BRENNER  U   XM RUN                         AP:     DFH0SAL2                            IYK2Z1V3     306 T 11:20:19.63    .0715

CSAC BRENNER  TO  TERMINAL                       AP:     DFHACP   S23C IGCS23C  T/S23C       IYK2Z1V3     313 T 11:20:44.09    .0017

CBAM BRENNER  TO  TERMINAL                       AP:     DFHECBAM S23C IGCS23C  T/S23C       IYK2Z1V3     315 T 11:20:50.77   3.7993

RMNU BRENNER  TO  TERMINAL                       AP:              S23C IGCS23C  T/S23C       IYK2Z1V3     323 T 11:20:54.39    .0317*

AMNU BRENNER  TO  MRO SESS                       AP:     DFHSAMNU R11  IYK2Z1V3 S/S23C CJB3 IYK2Z1V1     158 T 11:20:54.39    .0228

AINQ BRENNER  TO  TERMINAL                       AP:     DFHSAALL S23C IGCS23C  T/S23C       IYK2Z1V3     328 T 11:21:09.56    .0020

AINQ BRENNER  TO  TERMINAL                       AP:     DFHSAALL S23C IGCS23C  T/S23C       IYK2Z1V3     341 T 11:21:19.47    .0020

AMNU BRENNER  TP  TERMINAL                       AP:     DFHSAMNU S23C IGCS23C  T/S23C       IYK2Z1V3     356 T 11:21:54.06    .0026

AUPD BRENNER  TO  TERMINAL                       AP:     DFHSAALL S23C IGCS23C  T/S23C       IYK2Z1V3     358 T 11:22:10.66    .0020

1111 BRENNER  TO  TERMINAL                       AP:     ######## S23C IGCS23C  T/S23C       IYK2Z1V3     360 T 11:22:15.07    .0021

AUPD BRENNER  TO  TERMINAL                       AP:     DFHSAALL S23C IGCS23C  T/S23C       IYK2Z1V3     362 T 11:22:19.77    .0046

RUPD BRENNER  TO  TERMINAL                       AP:              S23C IGCS23C  T/S23C       IYK2Z1V3     364 T 11:22:36.07    .0029*

AUPD CBAKER   TO  MRO SESS                       AP:     DFHSAALL R11  IYK2Z1V3 S/S23C CJB3 IYK2Z1V1     192 T 11:22:36.07    .0013

CSAC BRENNER  TO  TERMINAL                       AP:     DFHACP   S23C IGCS23C  T/S23C       IYK2Z1V3     379 T 11:24:25.57    .0023

RING BRENNER  TO  TERMINAL                       AP:     ######## S23C IGCS23C  T/S23C       IYK2Z1V3     547 T 11:26:23.88    .0020

RINQ BRENNER  TO  TERMINAL                       AP:              S23C IGCS23C  T/S23C       IYK2Z1V3     548 T 11:26:30.17    .0036*

AINQ CBAKER   TO  MRO SESS                       AP:     DFHSAALL R11  IYK2Z1V3 S/S23C CJB3 IYK2Z1V1     232 T 11:26:30.17    .0014

AADD BRENNER  TO  TERMINAL                       AP:     DFHSAALL S23C IGCS23C  T/S23C       IYK2Z1V3     551 T 11:26:41.64    .0016

AADD BRENNER  TP  TERMINAL                       AP:     DFHSAALL S23C IGCS23C  T/S23C       IYK2Z1V3     561 T 11:27:02.87    .0026

AINQ BRENNER  TO  TERMINAL                       AP:     DFHSAALL S23C IGCS23C  T/S23C       IYK2Z1V3     564 T 11:27:11.57    .0023
```

Figure 32. Transaction Group report (detail): using PRINTS,NOPRINTM

Summary report

The Transaction Group Summary report summarizes the information from the performance class records in the detail report.

```
 V2R1M0                                          CICS Performance Analyzer
                                                 Transaction Group – Summary

TRGP0001 Printed at 15:05:46  3/27/2004 Data from 11:10:51  3/24/2004 to 11:34:13  3/24/2004                    Page      45

  Origin                    Average    Average    Average    Average    Average    Average    Average    Average    Average
   Type      Transactions   Response   Dispatch   CPU Time   Suspend    DispWait   IR Wait    RMI Susp   FC Wait    SO Wait

BRIDGE              17      10.140       .000       .000       .010       .000       .000       .000       .000       .000
MRO SESS           163        .634       .000       .000       .001       .000       .001       .000       .000       .000
NONE                51      82.697       .001       .000       .082       .000       .000       .000       .000       .000
SCHEDULE            62        .280       .000       .000       .000       .000       .000       .000       .000       .000
SOCKET              50      44.630       .000       .000       .045       .000       .000       .000       .000       .045
START               22        .332       .000       .000       .000       .000       .000       .000       .000       .000
TDQUEUE             23        .012       .000       .000       .000       .000       .000       .000       .000       .000
TERM START          10        .018       .000       .000       .000       .000       .000       .000       .000       .000
TERMINAL           860       4.150       .000       .000       .004       .000       .000       .000       .000       .000
WEB                 60        .154       .000       .000       .000       .000       .000       .000       .000       .000
XM RUN              16        .424       .000       .000       .000       .000       .000       .000       .000       .000
            ----------   --------   --------   --------   --------   --------   --------   --------   --------   --------
TOTAL             1334       7.747       .000       .000       .008       .000       .000       .000       .000       .002
```

Figure 33. Transaction Group Summary report

The Transaction Group Summary report contains the following information:

Origin Type
The transaction origin type; see page 78 for details.

Transactions
The total number of transactions completed.

Average Response
The average response time. This field is calculated by subtracting the transaction start time (owner: DFHCICS, field ID: 005) from the transaction stop time (owner: DFHCICS, field ID: 006).

Average Dispatch
The average dispatch time (owner: DFHTASK, field ID: 007).

Average CPU Time
The average CPU time (owner: DFHTASK, field ID: 008).

Average Suspend
The average suspend time (owner: DFHTASK, field ID: 014).

Average DispWait
The average dispatch wait time (owner: DFHTASK, field ID: 102).

Average IR Wait Time
The average inter-region (MRO) I/O wait time (owner: DFHTERM, field ID: 100).

Average RMI Susp
The average RMI suspend time (owner: DFHTASK, field ID: 171).

Average FC Wait
The average file I/O wait time (owner: DFHFILE, field ID: 063).

Average SO Wait
The average inbound socket I/O wait time (owner: DFHSOCK, field ID: 241).

Required CMF fields

If you are using the CICS Monitoring Control Table (MCT) Exclude/Include parameters to reduce the size of the performance class record, you must ensure that the data fields required for the Transaction Group report are not excluded.

The following table lists the fields that must be collected in the performance class records to ensure correct correlation of the data records for the Transaction Group report.

Table 2. Transaction Group report: Required CMF fields

Owner	Field ID	CICS Informal Name
DFHCICS	112	RTYPE
DFHCICS	130	RSYSID
DFHDEST	091	TDTOTCT
DFHFILE	063	FCIOWTT
DFHFILE	093	FCTOTCT
DFHPROG	071	PGMNAME
DFHSOCK	241	CLIPADDR
DFHSOCK	244	SOIOWTT
DFHSOCK	245	TCPSRVCE (*CICS TS V2.1 or later*)
DFHSOCK	246	PORTNUM (*CICS TS V2.1 or later*)
DFHSOCK	299	SOOIOWTT (*CICS TS V2.1 or later*)
DFHTASK	007	USRDISPT
DFHTASK	008	USRCPUT
DFHTASK	014	SUSPTIME
DFHTASK	031	TRANNUM
DFHTASK	066	ICTOTCT (*CICS TS V1.2 or later*)
DFHTASK	082	TRNGRPID
DFHTASK	097	NETUOWPX
DFHTASK	098	NETUOWSX
DFHTASK	102	DISPWTT
DFHTASK	124	BRDGTRAN
DFHTASK	163	FCTYNAME
DFHTASK	164	TRANFLAG
DFHTASK	171	RMISUSP
DFHTEMP	092	TSTOTCT
DFHTERM	069	TCALLOCT
DFHTERM	100	IRIOWTT
DFHTERM	111	LUNAME
DFHTERM	169	TERMCNNM

BTS report

The BTS report accepts data from one or more CICS systems, correlating the data by CICS BTS process ID (root activity ID).

You can request a report from all available records, or you can provide criteria to select only the records that meet specific requirements.

Note: The BTS report is only supported for CMF performance class data from CICS Transaction Server Version 1.3 or later.

Report command

The BTS report can be requested from a Report Set in the CICS PA dialog. Select the **BTS** report in the **Performance Reports** category.

In batch, the `BTS` command is used to request the BTS report.

The command to produce the default report is:

```
CICSPA BTS
```

To tailor the report, you can specify report options as follows:

```
CICSPA BTS(
      [OUTPUT(ddname),]
      [EXTERNAL(ddname),]
      [LINECOUNT(nnn),]
      [TITLE1('...sub-heading left ...'),]
      [TITLE2('...sub-heading right...'),]
      [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))])
```

Report content

On the BTS report, each line is printed from a single CMF performance class record. Records that are part of the same CICS BTS Process ID (Root Activity ID) are printed sequentially in groups, separated by blank lines. The printed information allows you to find the corresponding records in the Performance List report.

The BTS report is produced using an external SORT facility. An External Work Data Set is required to store the records before they are sorted. This data set is either specified explicitly using **EXTERNAL(ddname),** or CICS PA assigns one from the External Work File pool.

The records are sorted in the following order:
1. CICS BTS Process ID (Root Activity ID)
2. Transaction Identification Number
3. Task Stop Time in ascending order

Note: The Transaction Identification Number is only used for those transactions that have had some CICS BTS request activity, as determined from the Total Request count fields, but which do not have a CICS BTS Process ID (Root Activity ID).

For more information on correlating the performance class data by CICS BTS Process ID, see “Correlating performance class data” on page 299.

Figure 34 on page 85 shows an example of the BTS report.

```
 V2R1M0                                                 CICS Performance Analyzer
                                                     Business Transaction Services (BTS)

CBTS0001 Printed at  9:54:40  3/28/2004 Data from 11:10:51  3/24/2004 to 11:34:13  3/24/2004                           Page       1

                                                     Process                    Pro/Act Cont'er  Event        R             Response
Tran SC TranType Process Name                          Type    Activity Name     Reqs     Reqs    Reqs    Task T  Stop Time    Time

SAL1 TP U                                                                           2        2       0     146 T 11:17:04.85    .6881

PAY1 TP U                                                                           2        0       0     160 T 11:17:12.21    .2010

SAL1 TP U                                                                           2        2       0     174 T 11:17:53.63    .1657

PAY1 TP U                                                                           2        0       0     197 T 11:18:14.42    .0861

SAL1 TP U                                                                           2        2       0     211 T 11:18:47.27    .1222

SAL1 TP U                                                                           2        2       0     239 T 11:19:40.33    .1835

PAY1 TP U                                                                           2        0       0     294 T 11:20:04.20    .1390

PAY1 TP U                                                                           2        0       0     305 T 11:20:19.64    .0747

RED1 U  U      R SALES111111                         ORDER    CREDIT-CHECK         0        2       1     176 T 11:17:54.05    .5333
STOC U  U      R SALES111111                         ORDER    STOCK-CHECK          0        2       1     177 T 11:17:54.05    .5145
SALE U  U      R SALES111111                         ORDER    DFHROOT             10        5       4     175 T 11:17:54.05    .5675
INV1 U  U        SALES111111                         ORDER    INVOICE-BUILD        0        1       1     178 T 11:17:54.09    .0359
DEL1 U  U        SALES111111                         ORDER    DELIV-NOTE           0        1       1     179 T 11:17:55.29   1.2323
SALE U  U        SALES111111                         ORDER    DFHROOT              0        0       0     180 T 11:17:55.31   1.2198
SALE U  U        SALES111111                         ORDER    DFHROOT              1        3       2     183 T 11:17:55.37    .0800
SALE U  U        SALES111111                         ORDER    DFHROOT              1        3       5     184 T 11:17:55.42    .0519
SALE U  U        SALES111111                         ORDER    DFHROOT              2        2       1     186 T 11:18:00.65    .0566
REM1 U  U        SALES111111                         ORDER    SEND-REMINDER        0        1       1     187 T 11:18:00.68    .0243
SALE U  U        SALES111111                         ORDER    DFHROOT              1        0       3     188 T 11:18:00.72    .0389
SALE U  U        SALES111111                         ORDER    DFHROOT              2        2       1     191 T 11:18:05.92    .0826
REM1 U  U        SALES111111                         ORDER    SEND-REMINDER        0        1       1     192 T 11:18:05.96    .0367
SALE U  U        SALES111111                         ORDER    DFHROOT              1        0       3     193 T 11:18:06.04    .0824
SALE U  U        SALES111111                         ORDER    DFHROOT              2        2       1     194 T 11:18:11.13    .0463
REM1 U  U        SALES111111                         ORDER    SEND-REMINDER        0        1       1     195 T 11:18:11.16    .0282
SALE U  U        SALES111111                         ORDER    DFHROOT              1        0       3     196 T 11:18:11.20    .0437
SALE U  U      R SALES111111                         ORDER    DFHROOT              0        1       3     198 T 11:18:14.42    .0821
SALE U  U        SALES111111                         ORDER    DFHROOT              0        0       0     199 T 11:18:15.03    .6101

RED1 U  U      R SALES222222                         ORDER    CREDIT-CHECK         0        2       1     213 T 11:18:47.79    .6162
STOC U  U      R SALES222222                         ORDER    STOCK-CHECK          0        2       1     214 T 11:18:47.79    .6072
SALE U  U      R SALES222222                         ORDER    DFHROOT             10        5       4     212 T 11:18:47.79    .6282
INV1 U  U        SALES222222                         ORDER    INVOICE-BUILD        0        1       1     215 T 11:18:47.82    .0312
DEL1 U  U        SALES222222                         ORDER    DELIV-NOTE           0        1       1     216 T 11:18:49.58   1.7859
SALE U  U        SALES222222                         ORDER    DFHROOT              0        0       0     217 T 11:18:49.59   1.7700
SALE U  U        SALES222222                         ORDER    DFHROOT              1        3       2     219 T 11:18:49.63    .0488
SALE U  U        SALES222222                         ORDER    DFHROOT              1        3       5     220 T 11:18:49.67    .0399
SALE U  U        SALES222222                         ORDER    DFHROOT              2        2       1     222 T 11:18:54.91    .0479
REM1 U  U        SALES222222                         ORDER    SEND-REMINDER        0        1       1     223 T 11:18:54.93    .0244
SALE U  U        SALES222222                         ORDER    DFHROOT              1        0       3     224 T 11:18:54.97    .0400
SALE U  U        SALES222222                         ORDER    DFHROOT              2        2       1     225 T 11:19:00.14    .0408
REM1 U  U        SALES222222                         ORDER    SEND-REMINDER        0        1       1     226 T 11:19:00.17    .0248
SALE U  U        SALES222222                         ORDER    DFHROOT              1        0       3     227 T 11:19:00.21    .0386
SALE U  U        SALES222222                         ORDER    DFHROOT              2        2       1     228 T 11:19:05.39    .0419
```

Figure 34. BTS report

The following fields are shown on the CICS Business Transaction Services Report. For more information on the fields, see "CMF performance class data fields" on page 239.

Tran
: The Transaction ID (field: TRAN, owner: DFHTASK, field ID: 001) identifies the name of the transaction that this performance class record represents. Applications that are using Distributed Program Link (DPL) requests should use the TRANSID('xxxx') parameter on the EXEC CICS LINK PROGRAM('xxxxxxxx') command to enable better transaction/application analysis from the monitoring performance class data. If the TRANSID('xxxx') parameter is not specified, all the performance class records on the target system for a Distributed Program Link (DPL) mirror transaction will have the

same Transaction ID. For example, 'CSMI' for a Distributed Program Link (DPL) request from another connected CICS system.

SC
The Transaction Start Type (field: STYPE, owner: DFHTASK, field ID: 004).

TranType
This column describes the transaction type:

```
S           System transaction
U           User transaction
 M          Mirror transaction
  D         DPL Mirror transaction
   O        ONC RPC Alias transaction
    W       WEB Alias transaction
     B      Bridge transaction
      -     Reserved
       R    CICS BTS Run (ACQPROCESS or activity) transaction synchronous
```

The transaction type is represented as an interpretation of byte 1 of the transaction flags field (owner: DFHTASK, field ID: 164).

Process Name
The name of the CICS Business Transaction Service (BTS) process (owner: DFHCBTS, field ID: 200) of which the user task formed part.

Process Type
The process-type of the CICS BTS process (owner: DFHCBTS, field ID: 201) of which the user task formed part.

Activity Name
The name of the CICS BTS activity (owner: DFHCBTS, field ID: 204) that the user task implemented.

Pro/Act Reqs
The total number of CICS BTS process and activity requests (owner: DFHCBTS, field ID: 215) issued by the user task.

Cont'er Reqs
The total number of CICS BTS process container and activity container requests (owner: DFHCBTS, field ID: 218) issued by the user task.

Event Reqs
The total number of CICS BTS event-related requests (owner: DFHCBTS, field ID: 222) issued by the user task.

Task
The transaction identification number (owner: DFHTASK, field ID: 031). This is printed for all records to help identify the corresponding records on a Performance List report.

R T
The performance class record type (field: RTYPE, owner: DFHCICS, field ID: 112):

C Record output for a terminal converse.

D Record output by a user event monitoring point (EMP) DELIVER request.

F Record output for a long running transaction.

S Record output for a syncpoint request.

T Record output for a transaction termination (detach).

Stop Time
Stop time of the transaction (owner: DFHCICS, field ID: 006). The transactions within the same network unit-of-work are generally displayed in ascending stop time sequence. This may not always be true, however, due to syncpointing within the transaction, and to the difficulties involved in synchronizing the STORE CLOCK (STCK) values between different CPUs.

Response Time
The transaction response time. This field is calculated by subtracting the transaction start time (owner: DFHCICS, field ID: 005) from the transaction stop time (owner: DFHCICS, field ID: 006).

For more information on CICS Business Transaction Services (BTS), see the *CICS Business Transaction Services.*

Required CMF fields

If you are using the CICS Monitoring Control Table (MCT) Exclude/Include parameters to reduce the size of the performance class record, you must ensure that the data fields required for the BTS report are not excluded.

The following table lists the fields that must be collected in the performance class records to ensure correct correlation of the data records.

Table 3. BTS report: Required CMF fields

Owner	Field ID	CICS Informal Name
DFHCBTS	200	PRCSNAME
DFHCBTS	201	PRCSTYPE
DFHCBTS	202	PRCSID
DFHCBTS	204	ACTVTYNM
DFHCBTS	215	BATOTPCT
DFHCBTS	218	BATOTCCT
DFHCBTS	222	BATOTECT
DFHCICS	112	RTYPE
DFHTASK	031	TRANNUM
DFHTASK	164	TRANFLAG

Workload Activity report

The Workload Activity report provides a transaction response time analysis by MVS Workload Manager (WLM) service and report class. This can be used in conjunction with the z/OS Resource Measurement Facility (RMF) workload activity reports to understand from a CICS perspective how well your CICS transactions are meeting their response time goals.

The Workload Activity List report is a cross-system report that correlates CMF performance class data from single or multiple CICS systems for each network unit-of-work. Importantly, this report ties MRO and function shipping tasks to their originating task so that their impact on response time can be assessed.

The Workload Activity Summary report summarizes response time by WLM service and report classes.

The report processes all CMF transaction performance class records for network units-of-work containing multiple performance records as well as those with only a single performance record.

You can request a report from all available records, or you can specify selection criteria to request a report from only the records that meet specific requirements.

Report command

The Workload Activity report can be requested from a Report Set in the CICS PA dialog. Select the **Workload Activity** report in the **Performance Reports** category.

In batch, the `WORKLOAD` or `WLM` command is used to request the Workload Activity report.

You can request a detailed list of transaction activity, a summary report, or both.

The command to produce the default report, a summary of BTE transactions, is:

```
CICSPA WORKLOAD
```

or

```
CICSPA WORKLOAD(SUMMARY)
```

To produce a summary report of BTE and EXE Y transactions:

```
CICSPA WORKLOAD(SUMMARY(EXE))
```

To produce a list report detailing BTE, EXE Y, and EXE N transactions:

```
CICSPA WORKLOAD(LIST)
```

To tailor the report, you can specify report options as follows:

```
CICSPA WORKLOAD(
              [OUTPUT(ddname),]
              [EXTERNAL(ddname),]
              [SUMMARY[(EXE)],]
              [LIST,]
              [PEAK(percentile),]
              TASKORDER(START|STOP)
              [LINECount(nnn),]
```

```
[TITLE1('...up to 64 characters...'),]
[TITLE2('...up to 64 characters...'),]
[SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
                    ...))])
```

Report content

The Workload Activity report consists of a List report and a Summary report. For the List report, each line is printed from a single CMF performance class record. Records that are part of the same network unit-of-work are printed sequentially in groups, each group separated by a blank line. The printed information allows you to find the corresponding records in the Performance List report. The Summary report summarizes the information by Service Class and by Report Class.

The Workload Activity report is produced using an external SORT facility. An External Work Data Set is required to store the records before they are sorted. This data set is either specified explicitly using **EXTERNAL(ddname),** or CICS PA assigns one from the External Work File pool.

Note: If only the Summary report is requested, without EXE and without the List report, no external SORT is required.

The records are sorted in the following order:

1. Network unit-of-work NETNAME
2. Network unit-of-work ID
3. Syncpoint count concatenated with either:
   - Task stop time in descending (reverse) order

     or
   - Task start time in ascending order

In the third sort field, the syncpoint count is used to resolve unsynchronized STORE CLOCK (STCK) values between systems. The syncpoint count and stop time (or start time) show the sequence of tasks within the network unit-of-work. In some cases (for example, where user event monitor points (EMPs) are used), the syncpoint count does not reflect the sequence of events within a network unit-of-work. For these instances, all the task records are printed, but not necessarily in the order they happened. You can tell that this situation exists if the stop times are not in descending order (or the start times are not in ascending order).

For more information on correlating the performance class data by network unit-of-work ID, see “Correlating performance class data” on page 299.

List report

The Workload Activity report shown in Figure 35 on page 90 was created using the command:

```
CICSPA WORKLOAD(LIST,OUTPUT(ddname))
```

Workload Activity report

```
 V2R1M0                                                  CICS Performance Analyzer
                                                        Workload Manager Activity List

WKLD0001 Printed at 13:33:29  2/04/2005 Data from 15:47:53  2/01/2005 to 15:58:53  2/01/2005                          Page       1

                                        Request          Fcty  Conn Service  Report                   R                  Response A
Tran Userid   SC TranType Term  LUName   Type   Program  T/Name Name Class    Class    APPLID     Task T  P  C  Stop Time   Time   B

FINA STEVEP   TP          <AAK CICPTOR1 AP:     FINANCE  S/0005 53T1 FINSCLAS FINRCLAS CICPAOR1     44 T EXE Y 15:57:53.92   .5239
FINS STEVEP   TP          0005 TCP00005 TR:AOR1          T/0005      FINSCLAS FINRCLAS CICPTOR1     73 T BTE   15:57:53.93   .5612

STOA SHIRLEY  TP          <AAK CICPTOR1 AP:     STOCK    S/0006 53T1 STOSCLAS STORCLAS CICPAOR1     46 T EXE Y 15:57:54.01   .8574
STOS SHIRLEY  TP          0006 TCP00006 TR:AOR1          T/0006      STOSCLAS STORCLAS CICPTOR1     78 T BTE   15:57:54.02   .9123

ORDQ SYLVIA   TO          0011 TCP00011 AP:     ORDRINQ  T/0011      QUIKSERV QUIKSERV CICPAOR1     79 T BTE   15:57:55.12   .3762

ORDQ JOHNX    TO          0012 TCP00012 AP:     ORDRINQ  T/0012      QUIKSERV QUIKSERV CICPAOR1     82 T BTE   15:50:55.23   .4321

ORDU SYLVIA   TO          0011 TCP00011 AP:     ORDRUPD  T/0011      LONGSERV LONGSERV CICPAOR1     98 T BTE   15:54:56.13  1.4581

ORDU JOHNX    TO          0012 TCP00012 AP:     ORDRUPD  T/0012      LONGSERV LONGSERV CICPAOR1    109 T BTE   15:58:56.17  1.2394
```

Figure 35. Workload Activity List report

The following fields are shown on the Workload Activity List report. For more information on these fields, see “CMF performance class data fields” on page 239.

Tran
The Transaction ID (field: TRAN, owner: DFHTASK, field ID: 001) identifies the name of the transaction that this performance class record represents. Applications that are using Distributed Program Link (DPL) requests should use the TRANSID('xxxx') parameter on the EXEC CICS LINK PROGRAM('xxxxxxxx') command to enable better transaction/application analysis from the monitoring performance class data. If the TRANSID('xxxx') parameter is not specified, all the performance class records on the target system for a Distributed Program Link (DPL) mirror transaction will have the same transaction ID. For example, 'CSMI' for a Distributed Program Link (DPL) request from another connected CICS system.

Userid
The User identifier of the transaction (owner: DFHCICS, field ID: 089).

SC
Type of transaction start or start code (owner: DFHTASK, field ID: 004).

TranType
This column describes the transaction type:

```
S          System transaction
U          User transaction
 M         Mirror transaction
  D        DPL Mirror transaction
   O       ONC RPC Alias transaction
    W      WEB Alias transaction
     B     Bridge transaction
      -    Reserved
       R   CICS BTS Run (ACQPROCESS or activity) transaction synchronous
```

The transaction type is represented as an interpretation of byte 1 of the transaction flags field (owner: DFHTASK, field ID: 164).

Term
The Terminal ID (field: TERM, owner: DFHTERM, field ID: 002) is either the terminal ID or the session ID. This field is blank if the transaction was not associated with a terminal or session facility.

LUName
The LUname (field: LUNAME, owner: DFHTERM, field ID: 111) is either the VTAM netname of the terminal ID (if the Access Method for the terminal is

VTAM) or the VTAM APPLID of the connection for the session ID. For an EXCI connection, this field will be blank. The transaction's terminal or session type can be identified from the NATURE field (byte 0) within the terminal information field (field: TERMINFO, owner: DFHTERM, field ID: 165). This field is blank if the transaction was not associated with a terminal or session facility.

Request Type
This field describes the type of request that the performance record represents:

	Description
AP:	An application program request. The **Program** field will identify the initial application program name invoked for the transaction. **Note:** Function shipped Distributed Program Link (DPL) requests are interpreted as application requests. In this case the **AP:** is followed by the '----' (as for other function shipping requests) to indicate the types of requests issued by the application program.
FS:----	A function shipping request. The '----' indicate the types of function shipping request: **F** File Control **I** Interval Control **D** Transient Data **S** Temporary Storage
TR:xxxx	A transaction routing request from a terminal-owning region. The *xxxx* is the transaction routing sysid from the RSYSID field (owner: DFHCICS, field ID: 130) and identifies the connection name (sysid) of the remote system to which the transaction was routed.

Program
The Initial Program Name (field: PGMNAME, owner: DFHPROG, field ID: 071) identifies the initial application program invoked for the transaction. Depending on the type of transaction, this field contains either the application program name as defined in the transaction definition, the program name returned by a user written dynamic routing program, the application program name passed on a function shipped Dynamic Program Link (DPL) request, the initial application program name of an ONC RPC Alias Transaction, or the initial application program name of a WEB Alias Transaction. A program name of **########** indicates that the transaction was invoked using the definition of the transaction ID specified by the DTRTRAN system initialization parameter.

Fcty T
This field is an interpretation of byte 0 of the transaction flags field (owner: DFHTASK, field ID: 164) and describes the transaction's facility type:

Type	Description
blank	None
T	Terminal or Session
S	Surrogate
D	Transient Data queue
B	Bridge Terminal

Fcty Name
The transaction's facility name (owner: DFHTASK, field ID: 163).

Conn Name
The terminal session connection name (owner: DFHTERM, field ID: 169). If the

terminal facility associated with this transaction is a session, then this field is the name of the owning connection (sysid).

Service Class
The MVS Workload Manager (WLM) service class for this transaction. This field is blank if there are no transaction classification rules defined for CICS subsystems in the active MVS Workload Manager (WLM) service policy or the transaction was WLM-classified in another CICS region.

For an EXE Y transaction, the Service Class is derived from the related BTE transaction. For an EXE N transaction, the Service Class is blank since it cannot be determined as the transaction was not complete.

Report Class
The MVS Workload Manager (WLM) report class for this transaction. This field is blank if there are no transaction classification rules defined for CICS subsystems in the active MVS Workload Manager (WLM) service policy or the transaction was WLM-classified in another CICS region.

For an EXE Y transaction, the Report Class is derived from the related BTE transaction. For an EXE N transaction, the Report Class is blank since it cannot be determined as the transaction was not complete.

APPLID
The APPLID of the CICS system upon which the CMF performance record was created. This field indicates the CICS system that performed the work recorded in the record.

Task
The transaction identification number (owner: DFHTASK, field ID: 031). This is printed for all records to help identify the corresponding records on a Performance List report.

R T
The performance class record type (field: RTYPE, owner: DFHCICS, field ID: 112):

C Record output for a terminal converse.

D Record output by a user event monitoring point (EMP) DELIVER request.

F Record output for a long running transaction.

S Record output for a syncpoint request.

T Record output for a transaction termination (detach).

P This field describes the MVS Workload Manager phase as reported by CICS. It can be either:

BTE The *begin-to-end phase* takes place in the first region to begin processing a transaction.

EXE The *execution phase* takes place in an application owning region (AOR) and a file owning region (FOR). However, only the *execution phase* that takes place in an application owning region (AOR) is reported to the MVS Workload Manager.

For a detailed explanation about Workload Manager state information, refer to *OS/390 MVS Workload Management Services.*

C This field indicates the completion status of an *execution phase* of the work request as reported by CICS to the MVS Workload Manager. It can be either:

blank This performance class record is part of the *begin-to-end phase* of a transaction.

Y The entire *execution phase* of the work request, a transaction, has now completed.

N Only a portion of the *execution phase* of the work request, a transaction, has completed.

Stop Time or **Start Time**
Stop or start time (hh:mm:ss.thm) of the transaction (owner: DFHCICS, field ID: 005 for start, 006 for stop). The transactions within the same network unit-of-work are generally displayed in either descending stop time or ascending start time sequence. This may not always be true, however, due to syncpointing within the transaction, and to the difficulties involved in synchronizing the STORE CLOCK (STCK) values between different CPUs.

Response Time
The transaction response time. This field is calculated by subtracting the transaction start time (owner: DFHCICS, field ID: 005) from the transaction stop time (owner: DFHCICS, field ID: 006).

A B
Y in this column indicates that the transaction abended.

Summary report

The Workload Activity Summary report provides summaries by Service Class and by Report Class of the transaction data detailed in the Workload Activity List report.

```
 V2R1M0                                          CICS Performance Analyzer
                                        Workload Manager Activity Summary by Service Class

WKLD0001 Printed at 13:33:29  2/04/2005 Data from 15:47:53  2/01/2005 to 15:58:53  2/01/2005                    Page    1

Service                                      -------------- Response Time --------------
Class      APPLID      Phase         #Tasks     Average     Std Dev     90% Peak    Maximum

FINSCLAS   CICPTOR1    BTE              176       .5665       .4369       .8753      1.3745
           CICPAOR1    EXE              169       .5239       .4564       .8280      1.1684
STOSCLAS   CICPTOR1    BTE             2123       .9265       .3981      1.2675      2.0246
           CICPAOR1    EXE             2078       .8639       .3627      1.1927      1.8327
           CICPTOR2    BTE                2       .9265       .3981      1.2675      1.0040
STOSCLAS   *Total*     BTE             2125       .9265       .3981      1.2675      2.0246
           *Total*     EXE             2078       .8639       .3627      1.1927      1.8327
QUIKSERV   CICPAOR1    BTE             5476       .3846       .1976       .4673       .6571
LONGSERV   CICPAOR1    BTE             1958      1.5861       .8392      2.2179      5.5094
*  Grand Total   *     BTE             9735       .9488       .4012      1.0079      5.5094
*  Grand Total   *     EXE             2247       .7689       .6211      1.0040      1.8327

 V2R1M0                                          CICS Performance Analyzer
                                        Workload Manager Activity Summary by Report Class

WKLD0001 Printed at 15:35:15  8/19/2004 Data from 09:32:04  8/21/2001 to 10:43:39  8/21/2001                    Page    2

Report                                       -------------- Response Time --------------
Class      APPLID      Phase         #Tasks     Average     Std Dev     90% Peak    Maximum

FINSCLAS   CICPTOR1    BTE              176       .5665       .4369       .8753      1.3745
           CICPAOR1    EXE              169       .5239       .4564       .8280      1.1684
STOSCLAS   CICPTOR1    BTE             2123       .9265       .3981      1.2675      2.0246
           CICPAOR1    EXE             2078       .8639       .3627      1.1927      1.8327
           CICPTOR2    BTE                2       .9265       .3981      1.2675      1.0040
STOSCLAS   *Total*     BTE             2125       .9265       .3981      1.2675      2.0246
           *Total*     EXE             2078       .8639       .3627      1.1927      1.8327
QUIKSERV   CICPAOR1    BTE             5476       .3846       .1976       .4673       .6571
LONGSERV   CICPAOR1    BTE             1958      1.5861       .8392      2.2179      5.5094
*  Grand Total   *     BTE             9735       .9488       .4012      1.0079      5.5094
*  Grand Total   *     EXE             2247       .7689       .6211      1.0040      1.8327
```

Figure 36. Workload Activity Summary report

The following columns appear on the report:

Service Class
The MVS Workload Manager (WLM) service class. ***Other**** indicates the service class is not available.

Report Class
The MVS Workload Manager (WLM) report class. ***Other**** indicates the report class is not available.

APPLID
The APPLID of the CICS system upon which the CMF performance records were created. This field indicates the CICS system that performed the work recorded in the records.

Phase
This field describes the MVS Workload Manager phase as reported by CICS. It can be either:

BTE For those transactions that completed a *begin-to-end* phase.

EXE For those transactions that completed an entire *execution* phase where work executes in a non-originating region.

#Tasks
The total number of transactions completed.

Average Response Time
The average response time.

Std Dev Response Time
The standard deviation of the response times. If this value is greater than or nearing the average response time, the distribution of response times will probably not be a normal distribution; for example, possibly skewed or with multiple peaks.

nnn% Peak Response Time
nnn% of transactions have a response time less than or equal to this response time. This is a statistical estimate assuming a normal distribution.

Maximum Response Time
The maximum response time for any transaction within this Service Class or Report Class.

Required CMF fields

If you are using the CICS Monitoring Control Table (MCT) Exclude/Include parameters to reduce the size of the performance class record, you must ensure that the data fields required for the Workload Activity report are not excluded.

The following table lists the fields that must be collected in the performance class records to ensure correct correlation of the data records for the Workload Activity report.

Table 4. Workload Activity report: Required CMF fields

Owner	Field ID	CICS Informal Name
DFHCICS	112	RTYPE
DFHCICS	130	RSYSID
DFHCICS	167	SRVCLASS
DFHCICS	168	RPTCLASS

Table 4. Workload Activity report: Required CMF fields (continued)

Owner	Field ID	CICS Informal Name
DFHDEST	091	TDTOTCT
DFHFILE	093	FCTOTCT
DFHPROG	071	PGMNAME
DFHTASK	031	TRANNUM
DFHTASK	066	ICTOTCT
DFHTASK	097	NETUOWPX
DFHTASK	098	NETUOWSX
DFHTASK	163	FCTYNAME
DFHTASK	164	TRANFLAG
DFHTEMP	092	TSTOTCT
DFHTERM	111	LUNAME
DFHTERM	169	TERMCNNM

Chapter 3. Exception reports

The Exception reports are produced from CMF exception class data.

Exception class monitoring data is information on CICS resource shortages that are suffered by a transaction. This data highlights possible problems in CICS system operation and is intended to help you identify system constraints that affect the performance of your transactions. There is one exception record for each type of exception condition. The exception records are produced and written to SMF as soon as the resource constraint encountered by the transaction has been resolved.

The reports in this category are:
- Exception List report
- Exception Summary report

Exception List report

The Exception List report provides two types of information:

- The cause of the exception condition
- The information necessary to relate this record to the performance class record on the Performance List report.

You can request a report that uses all the exception records, or you can provide criteria to select only the records that meet specific requirements.

Report command

The Exception List report can be requested from a Report Set in the CICS PA dialog. Select the **List** report in the **Exception Reports** category.

In batch, the `LISTEXCeption` command is used to request the Exception List report.

The command to produce the default report is:

```
CICSPA LISTEXCEPTION
```

To tailor the report, you can specify report options as follows:

```
CICSPA LISTEXC(
          [OUTPUT(ddname),]
          [LINECOUNT(nnn),]
          [TITLE1('...sub-heading left ...'),]
          [TITLE2('...sub-heading right...'),]
          [SELECT(EXCEPTION(INCLUDE|EXCLUDE(field1(values1),...),
                                ...))])
```

Report content

In this report, one line is printed for every exception record written by the CICS Monitoring Facility (CMF). Selected data within the exception record is displayed on this line. The reported information allows you to find the corresponding records in the Performance List report.

Exception List report

```
 V2R1M0                                              CICS Performance Analyzer
                                                          Exception List

XLST0001 Printed at  8:26:51  2/17/2005     Data from 08:08:37  2/16/2005                        APPLID              Page       1

                                Tran     Service  Report          Exp ..... Time ..... Current  Resource                  Exception
Tran Term LUName   Userid   SC Class    Class    Class     Taskno Seq Start    Elapsed Program    Type   Resource ID      Type

ABRW P045 IG2ZP045 CBAKER   TP                                834   1 08:08:37  10.189 DFHSABRW FILE     FILEA            STRING
ABRW S205 IGCS205  BRENNER  TP                                835   1 08:08:47   7.245 DFHSABRW FILE     FILEA            STRING
ABRW S220 IGCS220  BRENNER  TP                                837   1 08:08:52   2.996 DFHSABRW FILE     FILEA            STRING
CECI S220 IGCS220  BRENNER  TO                               1151   1 08:12:10    .005 DFHECID  TEMPSTOR CACA             BUFFER
CECI S220 IGCS220  BRENNER  TO                               1151   2 08:12:10    .002 DFHECID  TEMPSTOR CACA             BUFFER
CECI S220 IGCS220  BRENNER  TO                               1151   3 08:12:10    .002 DFHECID  TEMPSTOR CACA             BUFFER
CECI P045 IG2ZP045 CBAKER   TO                               1149   1 08:12:10    .004 DFHECID  TEMPSTOR LONGTSNAME       BUFFER
CECI P045 IG2ZP045 CBAKER   TO                               1149   2 08:12:10    .004 DFHECID  TEMPSTOR LONGTSNAME       BUFFER
CECI P045 IG2ZP045 CBAKER   TO                               1149   3 08:12:10    .002 DFHECID  TEMPSTOR LONGTSNAME       BUFFER
CECI P045 IG2ZP045 CBAKER   TO                               1149   4 08:12:10    .004 DFHECID  TEMPSTOR LONGTSNAME       BUFFER
CECI P045 IG2ZP045 CBAKER   TO                               1149   5 08:12:10    .004 DFHECID  TEMPSTOR LONGTSNAME       BUFFER
CECI P045 IG2ZP045 CBAKER   TO                               1149   6 08:12:10    .004 DFHECID  TEMPSTOR LONGTSNAME       BUFFER
CECI P045 IG2ZP045 CBAKER   TO                               1149   7 08:12:10    .002 DFHECID  TEMPSTOR LONGTSNAME       BUFFER
CECI P045 IG2ZP045 CBAKER   TO                               1149   8 08:12:10    .003 DFHECID  TEMPSTOR LONGTSNAME       BUFFER
CECI P045 IG2ZP045 CBAKER   TO                               1149   9 08:12:10    .003 DFHECID  TEMPSTOR LONGTSNAME       BUFFER
CECI P045 IG2ZP045 CBAKER   TO                               1149  10 08:12:11    .002 DFHECID  TEMPSTOR LONGTSNAME       BUFFER
CECI P045 IG2ZP045 CBAKER   TO                               1149  11 08:12:11    .002 DFHECID  TEMPSTOR LONGTSNAME       BUFFER
CECI P045 IG2ZP045 CBAKER   TO                               1149  12 08:12:11    .004 DFHECID  TEMPSTOR LONGTSNAME       BUFFER
CECI P045 IG2ZP045 CBAKER   TO                               1149  13 08:12:11    .002 DFHECID  TEMPSTOR LONGTSNAME       BUFFER
CECI P045 IG2ZP045 CBAKER   TO                               1149  14 08:12:11    .002 DFHECID  TEMPSTOR LONGTSNAME       BUFFER
CECI P045 IG2ZP045 CBAKER   TO                               1149  15 08:12:11    .002 DFHECID  TEMPSTOR LONGTSNAME       BUFFER
CECI P045 IG2ZP045 CBAKER   TO                               1149  16 08:12:11    .002 DFHECID  TEMPSTOR LONGTSNAME       BUFFER
CECI P045 IG2ZP045 CBAKER   TO                               1149  17 08:12:11    .002 DFHECID  TEMPSTOR LONGTSNAME       BUFFER
CECI P045 IG2ZP045 CBAKER   TO                               1149  18 08:12:11    .004 DFHECID  TEMPSTOR LONGTSNAME       BUFFER
CECI S220 IGCS220  BRENNER  TO                               1151   4 08:12:11    .002 DFHECID  TEMPSTOR CACA             BUFFER
CECI S220 IGCS220  BRENNER  TO                               1151   5 08:12:11    .002 DFHECID  TEMPSTOR CACA             BUFFER
CECI S220 IGCS220  BRENNER  TO                               1151   6 08:12:11    .003 DFHECID  TEMPSTOR CACA             BUFFER
CECI S220 IGCS220  BRENNER  TO                               1151   7 08:12:11    .003 DFHECID  TEMPSTOR CACA             BUFFER
CECI S220 IGCS220  BRENNER  TO                               1151   8 08:12:11    .002 DFHECID  TEMPSTOR CACA             BUFFER
CECI S220 IGCS220  BRENNER  TO                               1151   9 08:12:11    .003 DFHECID  TEMPSTOR CACA             BUFFER
CECI S220 IGCS220  BRENNER  TO                               1151  10 08:12:11    .003 DFHECID  TEMPSTOR CACA             BUFFER
CECI S220 IGCS220  BRENNER  TO                               1151  11 08:12:11    .003 DFHECID  TEMPSTOR CACA             BUFFER
CECI S220 IGCS220  BRENNER  TO                               1151  12 08:12:12    .004 DFHECID  TEMPSTOR CACA             BUFFER
CECI S220 IGCS220  BRENNER  TO                               1151  13 08:12:12    .003 DFHECID  TEMPSTOR CACA             BUFFER
CECI S220 IGCS220  BRENNER  TO                               1151  14 08:12:12    .004 DFHECID  TEMPSTOR CACA             BUFFER
CECI S205 IGCS205  BRENNER  TO                               1150   1 08:12:12    .002 DFHECID  TEMPSTOR FRED             BUFFER
CECI S220 IGCS220  BRENNER  TO                               1151  15 08:12:12    .004 DFHECID  TEMPSTOR CACA             BUFFER
CECI S205 IGCS205  BRENNER  TO                               1150   2 08:12:12    .004 DFHECID  TEMPSTOR FRED             BUFFER
CECI S220 IGCS220  BRENNER  TO                               1151  16 08:12:12    .004 DFHECID  TEMPSTOR CACA             BUFFER
CECI S205 IGCS205  BRENNER  TO                               1150   3 08:12:12    .004 DFHECID  TEMPSTOR FRED             BUFFER
CECI S220 IGCS220  BRENNER  TO                               1151  17 08:12:12    .004 DFHECID  TEMPSTOR CACA             BUFFER
CECI S205 IGCS205  BRENNER  TO                               1150   4 08:12:12    .004 DFHECID  TEMPSTOR FRED             BUFFER
CECI S220 IGCS220  BRENNER  TO                               1151  18 08:12:12    .005 DFHECID  TEMPSTOR CACA             BUFFER
CECI S205 IGCS205  BRENNER  TO                               1150   5 08:12:12    .006 DFHECID  TEMPSTOR FRED             BUFFER
CECI S205 IGCS205  BRENNER  TO                               1150   6 08:12:12    .002 DFHECID  TEMPSTOR FRED             BUFFER
CECI S205 IGCS205  BRENNER  TO                               1150   7 08:12:12    .002 DFHECID  TEMPSTOR FRED             BUFFER
CECI S205 IGCS205  BRENNER  TO                               1150   8 08:12:12    .002 DFHECID  TEMPSTOR FRED             BUFFER
CECI S205 IGCS205  BRENNER  TO                               1150   9 08:12:12    .002 DFHECID  TEMPSTOR FRED             BUFFER
CECI S205 IGCS205  BRENNER  TO                               1150  10 08:12:12    .002 DFHECID  TEMPSTOR FRED             BUFFER
CECI S205 IGCS205  BRENNER  TO                               1150  11 08:12:12    .002 DFHECID  TEMPSTOR FRED             BUFFER
```

Figure 37. Exception List report

The leftmost columns in this report contain similar information as reported in the Performance List report to identify the exception transaction. The rightmost columns provide additional information about the actual exception.

For detailed information on the exception class data fields shown in the Exception List report, see “CMF exception class data fields” on page 303.

The following columns are the same as the Performance List report:

Tran
The Transaction ID (field: TRAN, owner: DFHTASK, field ID: 001) identifies the name of the transaction that this performance class record represents. Applications that are using Distributed Program Link (DPL) requests should use the TRANSID('xxxx') parameter on the EXEC CICS LINK PROGRAM('xxxxxxxx') command to enable better transaction/application

analysis from the monitoring performance class data. If the TRANSID('xxxx') parameter is not specified all the performance class records on the target system for a Distributed Program Link (DPL) mirror transaction will have the same transaction ID. For example, 'CSMI' for a Distributed Program Link (DPL) request from another connected CICS system.

Term
The Terminal ID (field: TERM, owner: DFHTERM, field ID: 002) is either the terminal ID or the session ID. This field is blank if the transaction was not associated with a terminal or session facility.

LUName
The LUname (field: LUNAME, owner: DFHTERM, field ID: 111) is either the VTAM netname of the terminal ID (if the Access Method for the terminal is VTAM) or the VTAM APPLID of the connection for the session ID. For an EXCI connection, this field will be blank. The transaction's terminal or session type can be identified from the NATURE field (byte 0) within the terminal information field (field: TERMINFO, owner: DFHTERM, field ID: 165). This field is blank if the transaction was not associated with a terminal or session facility.

Userid
The User identifier of the transaction (owner: DFHCICS, field ID: 089).

SC
The transaction start type (field: STYPE, owner: DFHTASK, field ID: 004).

Tran Class
The transaction class for this transaction (owner: DFHTASK, field ID: 166). If the transaction is not in a transaction class then this field is blank.

Service Class
The MVS Workload Manager (WLM) service class (owner: DFHCICS, field ID: 167) for the transaction (CICS Transaction Server Version 1.1 or later only).

Report Class
The MVS Workload Manager (WLM) report class (owner: DFHCICS, field ID: 168) for the transaction (CICS Transaction Server Version 1.1 or later only).

Taskno
The transaction identification number (owner: DFHTASK, field ID: 031).

Exp Seq
The sequence number of this exception within the transaction.

Start
The Start time of the exception condition.

Elapsed
The Elapsed time of the exception condition.

The following columns provide additional information about the exception:

Resource Type
The exception resource type:

CFDTLRSW	The exception resource ID is a CFDTPOOL name.
CFDTPOOL	The exception resource ID is a CFDTPOOL name.
FILE	The exception resource ID is a file name.
LSRPOOL	The exception resource ID is an LSRPOOL ID.
STORAGE	The exception resource ID is CICS storage.

TEMPSTOR The exception resource ID is temporary storage queue name.

Resource ID
The exception resource ID.

Exception Type
The exception type:

WAIT Exception is due to a wait.

BUFFER Exception is due to a buffer wait.

STRING Exception is due to a string wait.

Table 5 shows the exception types and the corresponding resource type and resource ID values along with a brief description of the exception condition.

Table 5. Exception types

Exception Type	Resource Type	Resource ID	Meaning
WAIT	CFDTLRSW	CFDTPOOL name	Wait for CF (coupling facility) data table locking request slot
WAIT	CFDTPOOL	CFDTPOOL name	Wait for CF (coupling facility) data table non-locking request slot
WAIT	STORAGE	CDSA	Wait for CDSA storage
WAIT	STORAGE	ECDSA	Wait for ECDSA storage
WAIT	STORAGE	GCDSA	Wait for GCDSA storage
WAIT	STORAGE	UDSA	Wait for UDSA storage
WAIT	STORAGE	EUDSA	Wait for EUDSA storage
WAIT	STORAGE	SDSA	Wait for SDSA storage
WAIT	STORAGE	ESDSA	Wait for ESDSA storage
WAIT	TEMPSTOR	TS Qname	Wait for temporary storage
STRING	FILE	filename	Wait for VSAM string associated with a file
STRING	LSRPOOL	filename	Wait for VSAM string associated with an LSRPOOL
STRING	TEMPSTOR	TS Qname	Wait for VSAM string associated with DFHTEMP
BUFFER	LSRPOOL	LSRPOOL	Wait for VSAM buffer associated with an LSRPOOL
BUFFER	TEMPSTOR	TS Qname	Wait for VSAM buffer associated with DFHTEMP

To obtain the number of exception records written for each transaction, look at the Count component of the exception wait time (field: EXWTTIME, owner: DFHCICS, field ID: 103) on the Performance List report or Performance List Extended report. Note that this field is not in the default reports. You'll need to request the **EXWAIT** field in a Report Form or FIELDS operand.

Exception Summary report

The Exception Summary report summarizes the exception records collected by the CICS Monitoring Facility (CMF). Records are summarized by transaction identifier code. The report provides the total number of exceptions for each transaction, according to the following:

- For auxiliary temporary storage VSAM buffer and string wait conditions
- For coupling facility data table pool wait conditions
- For VSAM LSRPOOL buffer and string wait conditions
- For VSAM file string wait conditions
- For temporary storage wait conditions
- For main storage wait conditions

You can request a report that summarizes all available records, or you can provide selection criteria to summarize only the data that meets specific requirements.

Report command

The Exception Summary report can be requested from a Report Set in the CICS PA dialog. Select the **Summary** report in the **Exception Reports** category.

In batch, the `SUMEXCeption` command is used to request the Exception List report.

The command to produce the default report is:

```
CICSPA SUMEXCEPTION
```

To tailor the report, you can specify report options as follows:

```
CICSPA SUMEXC(
         [OUTPUT(ddname),]
         [LINECOUNT(nnn),]
         [TITLE1('...sub-heading left ...'),]
         [TITLE2('...sub-heading right...'),]
         [SELECT(EXCEPTION(INCLUDE|EXCLUDE(field1(values1),...),
                                    ...))])
```

Report content

Each line on the report represents the summarized information for a single Transaction ID, and is printed in alphanumeric order by Transaction ID.

```
 V2R1M0                                              CICS Performance Analyzer
                                                        Exception Summary

XSUM0001 Printed at  8:26:51  2/17/2005     Data from 08:08:37  2/16/2005 to 08:12:36  2/16/2005                      Page       1

Tran   Total    TS-Buffer-Wait   TS-String-Wait  Pool-Buffr-Wait  Pool-Strng-Wait  File-Strng-Wait  ..Temp Storage.  ..Main Storage.
 ID   Excepts  Average   Count  Average   Count  Average   Count  Average   Count  Average   Count  Average   Count  Average   Count

ABRW        3                                                                        6.810       3
CEBR       16                      .003      16
CECI      257     .006     256     .003       1
      -------  ------- -------  ------- -------  ------- -------  ------- -------  ------- -------  ------- -------  ------- -------
TOTAL     276     .006     256     .003      17                                     6.810       3
```

Figure 38. Exception Summary report

For detailed information on the exception class data fields shown in the Exception Summary report, see “CMF exception class data fields” on page 303.

The Exception Summary report contains the following information:

Tran
The Transaction ID.

Total Excepts
The total number of exceptions for the transaction.

The average elapsed time **(Average)** and number of exceptions **(Count)** for the following exception resource types:

TS-Buffer-Wait
Waits for an auxiliary temporary storage VSAM buffer.

TS-String-Wait
Waits for an auxiliary temporary storage VSAM string.

Pool-Buffr-Wait
Waits for a VSAM LSRPOOL buffer.

Pool-Strng-Wait
Waits for a VSAM LSRPOOL string.

File Strng-Waits
Waits for a VSAM file string.

Temp Storage
Waits for auxiliary temporary storage (NOSPACE).

Main Storage
Waits for storage from a CICS dynamic storage area (DSA).

Chapter 4. Transaction Resource Usage reports

The Transaction Resource Usage reports are produced from CMF performance class and transaction resource class data. The reports in this category are:

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

File Usage Summary report

The File Usage Summary report provides a detailed analysis of CMF transaction resource class data for Files.

Two reports can be requested:

1. **Transaction File Usage Summary.** This report summarizes File usage by Transaction ID. For each Transaction ID, it gives Transaction Identification and File Control statistics followed by a breakdown of File usage for each File used by the Transaction.
2. **File Usage Summary.** This report summarizes File activity. For each File, it gives a breakdown of File usage by Transaction ID.

Note: The File Usage Summary report is only supported for CMF transaction resource class data from CICS Transaction Server Versions 1.3 and 2.2 or later.

You can request a report that summarizes all available records, or you can provide selection criteria to summarize only the data that meets specific requirements. The selection criteria filters both performance class data and transaction resource class data. However, only some selection criteria fields apply to transaction resource class records. For the selection criteria fields applicable to File Usage processing, refer to the File Usage Summary report in the *CICS Performance Analyzer for z/OS User's Guide.*

Report command

The File Usage Summary report can be requested from a Report Set in the CICS PA dialog. Select the **File Usage Summary** report in the **Transaction Resource Usage Reports** category.

In batch, the `RESUSAGE` command is used to request the File Usage Summary report.

The command to produce the default report is:

```
CICSPA RESUsage
```

This produces the two File Usage summary reports and the two Temporary Storage Usage summary reports. For the File Usage summary reports, this is the same as specifying:

```
CICSPA RESUSAGE(TRANSUMM(FILE),        Transaction File Usage Summary
                FILESUMM(              File Usage Summary
                         BYTRAN,       - break down by Transaction ID
                         TOTAL))       - include transaction totals
```

To tailor the report, you can specify report options as follows:

```
CICSPA RESUSAGE(
          [OUTPUT(ddname),]
          [TRANSUMMARY(FILE),]
          [FILESUMMARY(BYTRAN,TOTAL),]
          [LINECOUNT(nnn),]
          [TITLE1('...sub-heading left ...'),]
          [TITLE2('...sub-heading right...'),]
          [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(value1),...),...))])
```

Report content

The File Usage Summary report provides a detailed analysis of CMF transaction resource class data for Files. Reports break down individual File usage by Transaction. You can request one or both of the following:

- "Transaction File Usage Summary report"
- "File Usage Summary report" on page 106

Transaction File Usage Summary report

The Transaction File Usage Summary report provides a summary of File usage by Transaction ID. For each Transaction ID, it gives Transaction Identification and File Control statistics followed by a breakdown of File usage for each File used by the Transaction. See the sample report in Figure 39 created with the command:

```
CICSPA RESUSAGE(TRANSUMM(FILE),OUTPUT(ddname))
```

```
 V2R1M0                                          CICS Performance Analyzer
                                                Transaction File Usage Summary
FILE0001 Printed at 11:00:52  7/26/2004    Data from 07:30:47  5/29/2004 to 08:35:48  5/29/2004    APPLID CICSPA1     Page   1

                                     ********************** FC Calls ********************** ******** I/O Waits *******  AccMeth
Tran                  #Tasks            Get      Put     Browse    Add    Delete   Total     File      RLS     CFDT   Requests
----                 -------        -------- -------- -------- -------- -------- -------- -------- -------- -------- --------
STOK                       9 Elapse Avg                                                      .2452    .0000    .0000
                             Max                                                           1.5718    .0000    .0000
                           Count  Avg       48        0      506        2        1      568       65        0        0      595
                                  Max      369        7     4354        9        4     4739      426        0        0     4925

                                     ********************** FC Calls ********************** ******** I/O Waits *******  AccMeth
      File            #Tasks            Get      Put     Browse    Add     Delete   Total     File     RLS      CFDT   Requests
     ---------------- -------        -------- -------- -------- -------- -------- -------- -------- -------- -------- --------
     STOCKF1                9 Elapse Avg    .1907    .0045    .0170    .0154    .0094    .2544    .2452    .0000    .0000
                                  Max   1.4601    .0110    .1195    .0458    .0358   1.6370   1.5718    .0000    .0000
                           Count  Avg       48        0      506        2        1      568       65        0        0      595
                                  Max      369        2     4354        8        4     4739      426        0        0     4925

     STOCKF2                9 Elapse Avg    .0261    .0054    .0036    .0113    .0068    .0712    .0690    .0000    .0000
                                  Max    .0352    .0065    .0042    .0176    .0098    .1029    .0837    .0000    .0000
                           Count  Avg        0        0       12        0        0       13        1        0        0       34
                                  Max        0        0       15        0        0       17        2        0        0      765
```

Figure 39. Transaction File Usage Summary report

The report consists of two sections:

1. The Identification section that identifies the CICS Transaction ID. This section consists of a summary of performance group DFHFILE fields. Note that data in this section is obtained from CMF performance class records, not transaction resource class records.

   Tran The Transaction ID identifies the name of the transaction that this transaction resource class record represents. See the performance class data field TRAN (owner: DFHTASK, field ID: 001).

   #Tasks
   Task count (CMF performance class).

2. The Files section associated with the Transaction ID immediately above it.

File The name of the File used by the Transaction.

#Tasks
Task count (CMF transaction resource class).

The Files section provides **average** and **maximum** values for each of the following fields. For more information on these fields, see “File entry fields” on page 312.

FC Calls
File Control statistics.

Get Elapse
The elapsed time that the user task waited for completion of GET requests issued by the user task for this file.

Get Count
The number of GET requests issued against the file by the user task.

Put Elapse
The elapsed time that the user task waited for completion of PUT requests issued by the user task for this file.

Put Count
The number of PUT requests issued against the file by the user task.

Browse Elapse
The elapsed time that the user task waited for completion of BRO requests issued by the user task for this file.

Browse Count
The number of BRO requests issued against the file by the user task.

Add Elapse
The elapsed time that the user task waited for completion of ADD requests issued by the user task for this file.

Add Count
The number of ADD requests issued against the file by the user task.

Delete Elapse
The elapsed time that the user task waited for completion of DEL requests issued by the user task for this file.

Delete Count
The number of DEL requests issued against the file by the user task.

Total Elapse
The total elapsed time that the user task waited for completion of all requests issued by the user task for this file.

Total Count
The total number of all requests issued against the file by the user task.

I/O Waits

File Elapse
The total I/O wait time on this file by the user task.

File Count
The number of I/O waits on this file by the user task.

RLS Elapse
The elapsed time that the user task waited for RLS file I/O on this file.

RLS Count
The number of times that the user task waited for RLS file I/O on this file.

CFDT Elapse
The elapsed time that the user task waited for a data table access request to the coupling facility data table server to complete for this file.

CFDT Count
The number of times that the user task waited for a data table access request to the coupling facility data table server to complete for this file.

AccMeth Requests Count
The number of times the user task invoked file access-method interfaces.

File Usage Summary report

The File Usage Summary report summarizes File activity. For each File, it gives a breakdown of File usage by Transaction ID. Optionally, the report can include individual transaction statistics or total transaction statistics or both. See the sample report in Figure 40 created with the command:

```
CICSPA RESUSAGE(FILESUMM(BYTRAN,TOTAL),OUTPUT(ddname))
```

```
 V2R1M0                                              CICS Performance Analyzer
                                                        File Usage Summary

FILE0001 Printed at 11:00:52  7/26/2004    Data from 07:30:47  5/29/2004 to 08:35:48  5/29/2004    APPLID CICSPA1       Page     2

                                        ********************** FC Calls ********************** ******** I/O Waits *******  AccMeth
 File            Tran  #Tasks              Get       Put    Browse    Add     Delete   Total     File     RLS      CFDT   Requests
--------         ---- -------            -------- -------- -------- -------- -------- -------- -------- -------- -------- --------
STOCK1           STOK       9 Elapse Avg    .1907    .0045    .0170    .0154    .0094    .2544    .2452    .0000    .0000
                                    Max   1.4601    .0110    .1195    .0458    .0358   1.6370   1.5718    .0000    .0000
                                Count  Avg      48        0      506        2        1      568       65        0        0      595
                                       Max     369        7     4354        9        4     4739      426        0        0     4925

                 ORDR       4 Elapse Avg    .6174    .0000 10139.51    .0000    .0000 10140.44   1.2854    .0000    .0000
                                    Max    .8421    .0000 40557.78    .0000    .0000 40557.78   1.3365    .0000    .0000
                                Count  Avg     162        0     3273        0        0     3600      356        0        0     3754
                                       Max     217        0     3273        0        0     3710      356        0        0     3754

                 Totl      13 Elapse Avg    .3220    .0031 3119.862    .0107    .0065 3120.313    .5653    .0000    .0000
                                    Max   2.4697    .0401 40558.06    .1390    .0842 40561.78   5.1415    .0000    .0000
                                Count  Avg      83        0     1357        1        0     1501      154        0        0     1567
                                       Max     651        7    13092       23       12    14403     1424        0        0    15016
```

Figure 40. File Usage Summary report

The report consists of one section:

1. The File/Transaction ID section which shows for each File, a File usage summary per Transaction.

The File Usage Summary report provides **average** and **maximum** values for each field in the report. For an explanation of these fields, refer to “Transaction File Usage Summary report” on page 104.

Temporary Storage Usage Summary report

The Temporary Storage Usage Summary report provides a detailed analysis of CMF transaction resource class data for temporary storage queues.

Two reports can be requested:

1. **Transaction Temporary Storage Usage Summary.** This report summarizes Temporary Storage usage by Transaction ID. For each Transaction ID, it gives Transaction Identification and Temporary Storage Control statistics followed by a breakdown of Temporary Storage usage for each Temporary Storage Queue used by the Transaction.
2. **Temporary Storage Usage Summary.** This report summarizes Temporary Storage activity. For each Temporary Storage Queue, it gives a breakdown of Temporary Storage usage by Transaction ID.

Note: The Temporary Storage Usage Summary report is only supported for CMF transaction resource class data from CICS Transaction Server Versions 1.3 and 2.2 or later.

You can request a report that summarizes all available records, or you can provide selection criteria to summarize only the data that meets specific requirements. The selection criteria filters both performance class data and transaction resource class data. However, only some selection criteria fields apply to transaction resource class records. For the selection criteria fields applicable to Temporary Storage Usage processing, refer to the Temporary Storage Usage Summary report in the *CICS Performance Analyzer for z/OS User's Guide.*

Report command

The Temporary Storage Usage Summary report can be requested from a Report Set in the CICS PA dialog. Select the **Temporary Storage Usage Summary** report in the **Transaction Resource Usage Reports** category.

In batch, the `RESUsage` command is used to request the Temporary Storage Usage Summary report.

The command to produce the default report is:

```
CICSPA RESUSAGE
```

This produces the two File Usage summary reports and the two Temporary Storage Usage summary reports. For the Temporary Storage Usage summary reports, this is the same as specifying:

```
CICSPA RESUSAGE(TRANSUMM(TEMPSTOR),    Transaction Temporary Storage Usage Summary
                TEMPSTORSUMM(          Temporary Storage Usage Summary
                         BYTRAN,       - break down by Transaction ID
                         TOTAL))       - include transaction totals
```

To tailor the report, you can specify report options as follows:

```
CICSPA RESUSAGE(
          [OUTPUT(ddname),]
          [TRANSUMMARY(TEMPSTOR),]
          [TEMPSTORSUMMARY(BYTRAN,TOTAL),]
          [LINECOUNT(nnn),]
          [TITLE1('...sub-heading left ...'),]
          [TITLE2('...sub-heading right...'),]
          [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(value1),...),...))])
```

Report content

The Temporary Storage Usage Summary report provides a detailed analysis of CMF transaction resource class data for Temporary Storage Queues. Reports break down individual Temporary Storage Queue usage by Transaction. You can request one or both of the following:

- "Transaction Temporary Storage Usage Summary report"
- "Temporary Storage Usage Summary report" on page 110

Transaction Temporary Storage Usage Summary report

The Transaction Temporary Storage Usage Summary report summarizes Transactions that use Temporary Storage queues. The report consists of Transaction Identification and Temporary Storage statistics from the CMF Performance class records. In addition, there is one sub-section for each TSQueue that this Transaction has used from the CMF transaction resource class records.

See the sample report in Figure 41 created with the command:

```
CICSPA RESUSAGE(TRANSUMM(TEMPSTOR),OUTPUT(ddname))
```

```
 V2R1M0                                          CICS Performance Analyzer
                                                 Transaction Temporary Storage Usage Summary

TEMP0001 Printed at 11:00:52  7/26/2004    Data from 07:30:47  5/29/2004 to 08:35:48  5/29/2004    APPLID CICSPA1      Page     1

                                      ************ TS Calls ************ *** I/O Waits ***
Tran                  #Tasks              Get    Put_Aux Put_Main  Total      TS     Shr_TS
----                  -------         --------- -------- -------- -------- -------- --------
CECI                       3 Elapse Avg                                      .0000    .0139
                             Max                                             .0000    .0139
                           Count  Avg         2        0        6        8        0       10
                                  Max         3        0       12       12        0       17

                                      ************** TS Calls *********** *** I/O Waits ***          ******** TS Item *********
      TSQueue         #Tasks            Get    Put_Aux  Put_Main  Total      TS     Shr_TS           Get    Put_Aux  Put_Main
      --------------- -------         -------- -------- -------- -------- -------- --------         -------- -------- --------
      TS_Queue1            2 Elapse Avg    .0104    .0000    .0002    .0106    .0000    .0139
                                    Max    .0104    .0000    .0002    .0104    .0000    .0139
                                  Count  Avg       2        0        6        8        0       10               56       44      378
                                         Max       3        0       12       12        0       17  Length       112       88      756

      TS_Queue2            1 Elapse Avg    .0104    .0000    .0002    .0000    .0000    .0139
                                    Max    .0104    .0000    .0002    .0000    .0000    .0139
                                  Count  Avg       2        0        6        8        0      104               56       44      378
                                         Max       2        0        6        8        0      104  Length       112       88      756

      Total                2 Elapse Avg    .0104    .0000    .0002    .0000    .0000    .0139
                                    Max    .0104    .0000    .0002    .0104    .0000    .0139
                                  Count  Avg       2        0        6        8        0       10               56       44      378
                                         Max       3        0       12       12        0       17  Length       112       88      756

                                      ************ TS Calls ************ *** I/O Waits ***
Tran                  #Tasks              Get    Put_Aux Put_Main  Total      TS     Shr_TS
----                  -------         --------- -------- -------- -------- -------- --------
CEDA                       9 Elapse Avg                                      .0000    .0139
                             Max                                             .0000    .0139
                           Count  Avg        48        0      506        2        1      568
                                  Max       369        2     4354        8        4     4739

                                      ************** TS Calls *********** *** I/O Waits ***          ******** TS Item *********
      TSQueue         #Tasks            Get    Put_Aux  Put_Main  Total      TS     Shr_TS           Get    Put_Aux  Put_Main
      --------------- -------         -------- -------- -------- -------- -------- --------         -------- -------- --------
      TS_Queue3            9 Elapse Avg    .0104    .0000    .0002    .0106    .0000    .0139
                                    Max    .0104    .0000    .0002    .0104    .0000    .0139
                                  Count  Avg       2        0        6        8        0       10               56       44      378
                                         Max       3        0       12       12        0       17  Length       112       88      756
```

Figure 41. Transaction Temporary Storage Usage Summary report

The report consists of two sections:

1. The Identification section that identifies the CICS Transaction ID. This section consists of a summary of performance group DFHTEMP fields. Note that data in this section is obtained from CMF performance class records, not transaction resource class records.

   Tran The Transaction ID identifies the name of the transaction that this transaction resource class record represents. See the performance class data field TRAN (owner: DFHTASK, field ID: 001).

   #Tasks
   Task count (CMF performance class).

2. The Temporary Storage section associated with the Transaction ID immediately above it.

   TSQueue
   The name of the Temporary Storage Queue used by the Transaction. If the TSQueue name contains unprintable characters, the hexadecimal representation is reported immediately below the character name.

   #Tasks
   Task count (CMF transaction resource class).

The Temporary Storage section provides **average** and **maximum** values for each of the following fields. For more information on these fields, see “Temporary storage queue entry fields” on page 314.

TS Calls
Temporary Storage Control statistics.

Get Elapse
The elapsed time that the user task waited for completion of temporary storage GET requests issued by the user task against this temporary storage queue.

Get Count
The number of temporary storage GET requests issued by the user task against this temporary storage queue.

Put_Aux Elapse
The elapsed time that the user task waited for completion of PUT requests to auxiliary temporary storage.

Put_Aux Count
The number of PUT requests to auxiliary temporary storage issued by the user task.

Put_Main Elapse
The elapsed time that the user task waited for completion of PUT requests to main temporary storage.

Put_Main Count
The number of PUT requests to main temporary storage issued by the user task.

Total Elapse
The total elapsed time that the user task waited for completion of all requests issued by the user task against this temporary storage queue.

Total Count
The total number of all requests issued by the user task against this temporary storage queue.

I/O Waits

TS Elapse
The total elapsed time that the user task waited for temporary storage I/O.

TS Count
The number of I/O waits on this temporary storage queue by the user task.

Shr_TS Elapse
The elapsed time that the user task waited for an asynchronous request against this shared temporary storage queue to complete.

Shr_TS Count
The number of times that the user task waited for I/O on this shared temporary storage queue.

TS Item

Get Length
The total length of all items obtained from this temporary storage queue by the user task.

Put_Aux Length
The total length of all items written to the auxiliary temporary storage queue by the user task.

Put_Main Length
The total length of all items written to the main temporary storage queue by the user task.

Temporary Storage Usage Summary report

The Temporary Storage Usage Summary report summarizes Temporary Storage activity, breaking down individual TSQueue usage by Transaction ID. Optionally, you can request to include one or both of the following:

- Break down by Transaction ID to include individual Transaction statistics.
- Transaction Totals to include total Transaction statistics.

See the sample report in Figure 42 created with the command:

```
CICSPA RESUSAGE(TEMPSTORSUMM(BYTRAN,TOTAL),OUTPUT(ddname))
```

```
 V2R1M0                                          CICS Performance Analyzer
                                                Temporary Storage Usage Summary

TEMP0001 Printed at 11:00:52  7/26/2004    Data from 07:30:47  5/29/2004 to 08:35:48  5/29/2004    APPLID CICSPA1        Page    1

                                    ************ TS Calls ************ *** I/O Waits ***          ******** TS Item *********
 TSQueue         Tran  #Tasks             Get    Put_Aux  Put_Main  Total      TS     Shr_TS            Get   Put_Aux  Put_Main
---------------- ---- -------           -------- -------- -------- -------- -------- --------         -------- -------- --------
TS_QUEUE1        CEDA       9 Elapse Avg    .0104    .0000    .0002    .0106    .0000    .0139
                                    Max    .0104    .0000    .0002    .0104    .0000    .0139
                                Count  Avg       2        0        6        8        0       10              56       44       378
                                       Max       3        0       12       12        0       17  Length      112       88       756

                 CSSY       4 Elapse Avg    .0104    .0000    .0002    .0000    .0000    .0139
                                    Max    .0104    .0000    .0002    .0000    .0000    .0139
                                Count  Avg       2        0        6        8        0       10              56       44       378
                                       Max       3        0       12       12        0       17  Length      112       88       756

                 Totl      13 Elapse Avg    .0104    .0000    .0002    .0000    .0000    .0139
                                    Max    .0104    .0000    .0002    .0000    .0000    .0139
                                Count  Avg       2        0        6        8        0       10              56       44       378
                                       Max       3        0       12       12        0       17  Length      112       88       756
```

Figure 42. Temporary Storage Usage Summary report

The report consists of one section:

1. The TSQueue/Transaction ID section which shows for each temporary storage queue, a temporary storage usage summary per transaction.

Temporary Storage Usage Summary report

The Temporary Storage Usage Summary report provides **average** and **maximum** values for each field in the report. For an explanation of these fields, refer to “Transaction Temporary Storage Usage Summary report” on page 108.

Transaction Resource Usage List report

The Transaction Resource Usage List report provides a detailed list of CMF transaction resource class data. The records are reported in the sequence that they appear in the SMF file. The report only processes transaction resource class records, it does not process performance class records. The report can list File Usage records, Temporary Storage Usage records, or both.

The report gives Transaction information together with statistics by Transaction of File usage or Temporary Storage usage or both.

Note: The Transaction Resource Usage List report is only supported for CMF transaction resource class data from CICS Transaction Server Versions 1.3 and 2.2 or later.

You can request a report that lists all available records, or you can provide selection criteria to list only the data that meets specific requirements. Only some selection criteria fields apply to transaction resource class records. For the selection criteria fields applicable to File Usage processing, refer to the File Usage Summary report in the *CICS Performance Analyzer for z/OS User's Guide.* For the selection criteria fields applicable to Temporary Storage Usage processing, refer to the Temporary Storage Usage Summary report in the *CICS Performance Analyzer for z/OS User's Guide.*

Report command

The Transaction Resource Usage List report can be requested from a Report Set in the CICS PA dialog. Select the **Transaction Resource Usage List** report in the **Transaction Resource Usage Reports** category.

In batch, the `RESUsage(TRANLIST)` command is used to request the Transaction Resource Usage List report.

The command to produce the default report is:

```
CICSPA RESUSAGE(TRANLIST)
```

This produces the Transaction Resource Usage List report for both File and Temporary Storage usage, and is the same as specifying:

```
CICSPA RESUSAGE(TRANLIST(            Transaction Resource Usage List
                         FILE,       - include File usage statistics
                         TEMPSTOR))  - include Temporary Storage usage statistics
```

To tailor the report, you can specify report options as follows:

```
CICSPA RESUSAGE(
          [OUTPUT(ddname),]
          [TRANLIST(FILE,TEMPSTOR),]
          [LINECOUNT(nnn),]
          [TITLE1('...sub-heading left ...'),]
          [TITLE2('...sub-heading right...'),]
          [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(value1),...),...))])
```

Report content

The Transaction Resource Usage List report provides a detailed list of transaction resource class records showing individual transaction File usage or Temporary Storage usage or both. See the sample report in Figure 43 on page 113 created with the command:

```
CICSPA RESUSAGE(TRANLIST,OUTPUT(ddname))
```

```
 V2R1M0                                          CICS Performance Analyzer
                                               Transaction Resource Usage List

RESU0001 Printed at 11:00:52  7/26/2004    Data from 07:30:47  5/29/2004                                             Page       1

                                         Request           Fcty  Conn                                   UOW R               Response
Tran  Userid  SC TranType Term   LUName   Type   Program  T/Name Name      NETName       APPLID    Task Seq T   Stop Time    Time
---- -------- -- -------- ----  -------- ------- -------- ------ ---- ----------------- --------   ---- --- - ------------ --------
CEDA CBAKER   TO U        0015  IG2Z0015 AP:     DFHEDAP  T/0015      GBIBMIYA.IG2Z0015 IYK2Z1V1     68   1 T  8:23:18.514  86.2698

                                ********************** FC Calls ********************* ******* I/O Waits ********  AccMeth
      File                        Get      Put     Browse    Add     Delete   Total     File     RLS      CFDT   Requests
     --------                   -------- -------- -------- -------- -------- -------- -------- -------- -------- --------
     DFHCSD             Elapse  1.4601    .0062    .1195    .0239    .0122   1.6370   1.5718    .0000    .0000
                        Count      369        1     4354        4        2     4739      426        0        0     4925

                                ************* TS Calls ************ *** I/O Waits ***         ********* TS Item ********
      TSQueue                     Get    Put_Aux Put_Main  Total      TS     Shr_TS             Get    Put_Aux Put_Main
     ----------------           -------- -------- -------- -------- -------- --------         -------- -------- --------
     TS_QUEUE1          Elapse   .0104    .0000    .0002    .0000    .0000    .0139
                        Count        3        0       12        0        0       17  Length       112       88      756

---- -------- -- -------- ----  -------- ------- -------- ------ ---- ----------------- --------   ---- --- - ------------ --------
CEDA CBAKER   TO U        0015  IG2Z0015 AP:     DFHECIP  T/0015      GBIBMIYA.IG2Z0015 IYK2Z1V1     83   1 T  8:27:58.141 103.0988

                                ********************** FC Calls ********************* ******* I/O Waits ********  AccMeth
      File                        Get      Put     Browse    Add     Delete   Total     File     RLS      CFDT   Requests
     --------                   -------- -------- -------- -------- -------- -------- -------- -------- -------- --------
     CBFILEA            Elapse   .0000    .0000    .0000    .0000    .0000    .0000    .0000    .0000    .0000
                        Count        0        0        0        0        0        1        0        0        0        2

     CBFILEB            Elapse   .0000    .0000    .0000    .0000    .0000    .0000    .0000    .0000    .0000
                        Count        0        0        0        0        0        1        0        0        0        2

     CBFILEC            Elapse   .0000    .0000    .0000    .0000    .0000    .0000    .0000    .0000    .0000
                        Count        0        0        1        0        0        2        0        0        0        3

     Total              Elapse   .0000    .0000    .0000    .0000    .0000    .0000    .0000    .0000    .0000
                        Count        0        0        1        0        0        4        0        0        0        7

                                ************* TS Calls ************ *** I/O Waits ***         ********* TS Item ********
      TSQueue                     Get    Put_Aux Put_Main  Total      TS     Shr_TS             Get    Put_Aux Put_Main
     ----------------           -------- -------- -------- -------- -------- --------         -------- -------- --------
     TS_QUEUE2          Elapse   .0104    .0000    .0002    .0000    .0000    .0139
                        Count        3        0       12        0        0       17  Length       112       88      756

     TS_QUEUE3          Elapse   .0104    .0000    .0002    .0000    .0000    .0139
                        Count        3        0       12        0        0       17  Length       100       10      700

     Total              Elapse   .0208    .0000    .0004    .0000    .0000    .0278
                        Count        6        0       24        0        0       34  Length       212       98     1456
```

Figure 43. Transaction Resource Usage List report

The report consists of two sections:

1. The Task Identification section that identifies the CICS task. The column headings match the Cross-System Work report (see Figure 29 on page 71) to enable easy cross reference between the reports
2. The Resource sections associated with the CICS task immediately above it. Currently, only File and Temporary Storage entries are available.

If applicable, the following message appears after the File statistics:

`CPA0375W Transaction` *`xxxx`* `has used additional Files and exceeded the File Resource Limit of` *`nn`*

If applicable, the following message appears after the Temporary Storage statistics:

`CPA0375W Transaction` *`xxxx`* `has used additional TSQueues and exceeded the TSQueue Resource Limit of` *`nn`*

The maximum number of files and temporary storage queues monitored for each transaction is limited by the FILE and TSQUEUE parameters on the DFHMCT TYPE=INITIAL macro. The default is FILE=8 for files and TSQUEUE=4 for

temporary storage queues. Therefore, you may need to assemble an MCT that specifies either or both FILE and TSQUEUE options if the default values are insufficient.

Task identification

The Task identification section provides the following fields. For more information on these fields, see “Task identification fields” on page 311.

Tran
The Transaction ID identifies the name of the transaction that this transaction resource class record represents. See the performance class data field TRAN (owner: DFHTASK, field ID: 001).

Userid
The User identifier of the transaction. See the performance class data field USERID (owner: DFHCICS, field ID: 089).

SC
Type of transaction start or start code. See the performance class data field SC (owner: DFHTASK, field ID: 004).

TranType
This column describes the transaction type:

```
S           System transaction
U           User transaction
 M          Mirror transaction
  D         DPL Mirror transaction
   O        ONC RPC Alias transaction
    W       WEB Alias transaction
     B      Bridge transaction
      -     Reserved
       R    CICS BTS Run (ACQPROCESS or activity) transaction synchronous
```

The transaction type is represented as an interpretation of byte 1 of the transaction flags field. See the performance class data field TRANFLAG (owner: DFHTASK, field ID: 164).

Term
The Terminal ID is either the terminal ID or the session ID. This field is blank if the transaction was not associated with a terminal or session facility. See the performance class data field TERM (owner: DFHTERM, field ID: 002).

LUName
The LUname is either the VTAM netname of the terminal ID (if the Access Method for the terminal is VTAM) or the VTAM APPLID of the connection for the session ID. This field is blank if the transaction was not associated with a terminal or session facility. See the performance class data field LUNAME (owner: DFHTERM, field ID: 111).

Request Type
This field describes the type of request that the transaction resource record represents:

	Description
AP:	An application program request. The **Program** field will identify the initial application program name invoked for the transaction.
	Note: Function shipped Distributed Program Link (DPL) requests are interpreted as application requests. In this case the **AP:** is followed by the **----** (as for other function shipping requests) to indicate the types of requests issued by the application program.

FS:---- A function shipping request. The **----** indicate the types of function shipping request:

F	File Control
I	Interval Control
D	Transient Data
S	Temporary Storage

TR:xxxx
A transaction routing request from a terminal-owning region. The *xxxx* is the transaction routing SYSID and identifies the connection name (SYSID) of the remote system to which the transaction was routed. See the performance class data field RSYSID (owner: DFHCICS, field ID: 130).

Program
The initial program name (field: PGMNAME, owner: DFHPROG, field ID: 071). This identifies the initial application program invoked for the transaction. Depending on the type of transaction, this field contains either the application program name as defined in the transaction definition, the program name returned by a user written dynamic routing program, the application program name passed on a function shipped Dynamic Program Link (DPL) request, the initial application program name of an ONC RPC Alias Transaction, or the initial application program name of a WEB Alias Transaction. A program name of **########** indicates that the transaction was invoked using the definition of the transaction ID specified by the DTRTRAN system initialization parameter.

FCTY T
This field is an interpretation of byte 0 of the transaction flags field (field: TRANFLAG, owner: DFHTASK, field ID: 164). It describes the transaction's facility type:

Type	Description
blank	None
T	Terminal or Session
S	Surrogate
D	Transient Data queue
B	Bridge Terminal

FCTY Name
The transaction's facility name (owner: DFHTASK, field ID: 163).

Conn Name
The terminal session connection name (field: TERMCNNM, owner: DFHTERM, field ID: 169). If the terminal facility associated with this transaction is a session, then this field is the name of the owning connection (SYSID).

NETName
This column is the network unit-of-work ID from the system where the network unit-of-work ID originated. This name is constant within each network unit-of-work ID. See the performance class data field NETUOWPX (owner: DFHTASK, field ID: 097) on page 264.

APPLID
The APPLID of the CICS system upon which the CMF transaction resource record was created. This field indicates the CICS system that performed the work recorded in the record.

Task
The transaction identification number (field: TRANNUM, owner: DFHTASK, field ID: 031). This is printed for all records to help identify the corresponding records on a Performance List report.

UOW Seq
This column is the syncpoint sequence number from the network unit-of-work ID that was assigned at transaction attach time. See the performance class data NETUOWSX (owner: DFHTASK, field ID: 098) on page 265.

R T
The performance class record type (field: RTYPE, owner: DFHCICS, field ID: 112):

C Record output for a terminal converse.

D Record output by a user event monitoring point (EMP) DELIVER request.

F Record output for a long running transaction.

S Record output for a syncpoint request.

T Record was output for a transaction termination (detach).

For transaction resource class data, this field is always **T**.

Stop Time
Stop time (hh:mm:ss.thm) of the transaction (field: STOP, owner: DFHCICS, field ID: 006).

Response Time
The transaction response time. This field is calculated by subtracting the transaction Start Time (field: START, owner: DFHCICS, field ID: 005) from the transaction Stop Time (field: STOP, owner: DFHCICS, field ID: 006).

File entries

The File entry provides the following fields. For more information on these fields, see “File entry fields” on page 312.

File
The file name of the file used by the transaction.

FC Calls
File Control statistics.

Get Elapse
The elapsed time that the user task waited for completion of GET requests issued for this file.

Get Count
The number of GET requests issued against the file.

Put Elapse
The elapsed time that the user task waited for completion of PUT requests issued for this file.

Put Count
The number of PUT requests issued against the file.

Browse Elapse
The elapsed time that the user task waited for completion of BRO requests issued for this file.

Browse Count
The number of BRO requests issued against the file.

Add Elapse
The elapsed time that the user task waited for completion of ADD requests issued for this file.

Add Count
The number of ADD requests issued against the file.

Delete Elapse
The elapsed time that the user task waited for completion of DEL requests issued for this file.

Delete Count
The number of DEL requests issued against the file.

Total Elapse
The total elapsed time that the user task waited for completion of all requests issued for this file.

Total Count
The total number of all requests issued against the file.

I/O Waits

File Elapse
The total I/O wait time on this file.

File Count
The number of I/O waits on this file.

RLS Elapse
The elapsed time that the user task waited for RLS file I/O on this file.

RLS Count
The number of times that the user task waited for RLS file I/O on this file.

CFDT Elapse
The elapsed time that the user task waited for a data table access request to the coupling facility data table server to complete for this file.

CFDT Count
The number of times that the user task waited for a data table access request to the coupling facility data table server to complete for this file.

AccMeth Requests Count
The number of times the user task invoked file access-method interfaces.

Temporary Storage entries

The Temporary Storage section provides the following fields. For more information on these fields, see “Temporary storage queue entry fields” on page 314.

TSQueue
The name of the temporary storage queue used by the transaction.

TS Calls
Temporary Storage Control statistics.

Get Elapse
The elapsed time that the user task waited for completion of temporary storage GET requests issued against this temporary storage queue.

Get Count
The number of temporary storage GET requests issued against this temporary storage queue.

Put_Aux Elapse
The elapsed time that the user task waited for completion of PUT requests to auxiliary temporary storage.

Put_Aux Count
The number of PUT requests to auxiliary temporary storage issued.

Put_Main Elapse
The elapsed time that the user task waited for completion of PUT requests to main temporary storage.

Put_Main Count
The number of PUT requests to main temporary storage issued.

Total Elapse
The total elapsed time that the user task waited for completion of all requests issued against this temporary storage queue.

Total Count
The total number of all requests issued against this temporary storage queue.

I/O Waits

TS Elapse
The total elapsed time that the user task waited for temporary storage I/O.

TS Count
The number of I/O waits on this temporary storage queue.

Shr_TS Elapse
The elapsed time that the user task waited for an asynchronous request against this shared temporary storage queue to complete.

Shr_TS Count
The number of times that the user task waited for I/O on this shared temporary storage queue.

TS Item

Get Length
The total length of all items obtained from this temporary storage queue.

Put_Aux Length
The total length of all items written to the auxiliary temporary storage queue.

Put_Main Length
The total length of all items written to the main temporary storage queue.

Chapter 5. Subsystem reports

The Subsystem reports are produced from database subsystem accounting data stored in SMF files. The reports in this category are:

- DB2 report
- WebSphere MQ report
- OMEGAMON reports

DB2 report

The DB2 report processes CICS CMF performance class (SMF 110) records and DB2 accounting (SMF 101) records to produce a consolidated and detailed view of DB2 usage by your CICS systems. The DB2 report enables you to view CICS and DB2 resource usage statistics together in a single report.

The DB2 List report shows detailed information of DB2 activity for each transaction. The DB2 Summary reports summarize DB2 activity by transaction:

- For CMF records: by APPLID/transaction/program
- For DB2 records: by APPLID/transaction/program/SSID/plan

The reports include the following DB2 information:

- DB2 Thread Identification, for easy cross-reference to DB2 PM
- Class 1 Thread elapsed and CPU times
- Class 2 In-DB2 elapsed and CPU times
- Class 3 Suspend times
- Buffer Manager statistics
- Locking statistics
- SQL DML statistics

A Recap report showing processing statistics is always printed at the end.

Report command

The DB2 report can be requested from a Report Set in the CICS PA dialog. Select the **DB2** report in the **Subsystem Reports** category.

In batch, the `DB2` command is used to request the DB2 report.

The command to produce the default report, a short summary showing average values, is:

```
CICSPA DB2
```

or

```
CICSPA DB2(SHORTSUM)
```

To produce a long summary giving average and maximum values:

```
CICSPA DB2(LONGSUM)
```

To produce a detailed listing of all network units-of-work with DB2 activity:

```
CICSPA DB2(LIST)
```

To tailor the report, you can specify report options as follows:

```
CICSPA DB2(
             [OUTPUT(ddname),]
             [EXTERNAL(ddname),]
             [LIST(
                CLASS1,CLASS2,CLASS3,BUFFER,LOCKING,DML1,DML2|ALL),]
             [LONGSUMMARY(
                CLASS1,CLASS2,CLASS3,BUFFER,LOCKING,DML1,DML2|ALL),]
             [SHORTSUMMARY,]
             [SSID(id1,id2,...),]
             [CMFONLY,]
             [LISTZERO,]
             [MAXLONGSUM|NOMAXLONGSUM,]
             [LINECOUNT(nnn),]
             [TITLE1('...sub-heading left ...'),]
             [TITLE2('...sub-heading right...'),]
             [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
                                 ...))])
```

The report processes all CMF transaction performance class records for network units-of-work containing multiple performance records as well as those with only a single performance record.

You can request a report from all available records, or you can specify selection criteria to request a report from only the records that meet specific requirements.

Report content

You can request up to three reports:

1. `DB2(LIST)` requests the DB2 List report (see “List report” on page 121).
2. `DB2(LONG)` requests the DB2 Long Summary report (see “Long Summary report” on page 125).
3. `DB2(SHORTSUM)` requests the DB2 Short Summary report (see “Short Summary report” on page 129). This is the default.

The Recap report is always produced at the end of DB2 report processing (see “Recap report” on page 131).

In the DB2 report, all numeric fields are formatted to 8 bytes.

The following mnemonics can appear in numeric fields:

N/A Occurs when the field is not applicable. For example, DB2 Connection Wait Time is not applicable when DB2REQCT=0. Also, in the Recap report, various DB2 record and matching statistics are not applicable when no DB2 records are selected, hence no record matching takes place.

N/C Occurs when a value cannot be calculated. For example, in the Recap report, when the ‘% of Total’ field cannot be calculated because the total is zero.

N/P Occurs when the data is not present. For example, in the DB2 List or Long Summary reports, when DB2 details are requested that are not present in the DB2 Accounting records. For example, you requested Class 3 details when only DB2 Accounting Classes 1 and 2 were traced.

List report

The DB2 List report provides a detailed list of all network units-of-work with DB2 activity. This report consolidates CICS CMF performance class records and DB2 accounting statistics from a single or multiple CICS systems.

The following command produces a List report like that in Figure 44.

```
CICSPA DB2(LIST(ALL),LISTZERO)
```

```
 V2R1M0                                          CICS Performance Analyzer
                                                      DB2 - List

DB2R0001 Printed at 14:22:11  7/15/2004    Data from 15:41:19  7/12/2004 to 16:19:15  7/12/2004                      Page       1

Tran/ Userid/ Program/                UOW R               ..DB2 Wait Time..   DB2    User CPU                              Response A
SSID  Authid  Planname  APPLID    Task Seq T Term  LUName   Connect  Thread   ReqCnt    Time     Start Time    Stop Time    Time   B

CRD8 CICSUSER CORD08P  CICPAOR1     53   2 T <AAK CICPTOR1    .0000    .0000       22    .0185  15:49:40.023 15:49:40.105    .0827
CRD5 CICSUSER CORD05P  CICPAOR1     52   2 T <AAK CICPTOR1    .0000    .0000       12    .0137  15:49:39.960 15:49:40.016    .0566
CRDD CICSUSER CORD13P  CICPTOR1     45   1 T 0013 TCP00013      N/A      N/A        0    .0390  15:49:39.521 15:49:40.121    .6006

DB2P CICSUSER CPAPLAN  CICPAOR1     52  Thread Identification   ID=POOLCRD50001  NETName=P390.TCP00013      UOWID=1F7D3A6472BA
                                                                Begin Time: 15:49:39.969  7/12/04  End Time: 15:49:40.007  7/12/04
                                        Class1: Thread Time     Elapsed=   .0379  CPU= .019536
                                        Class2: In-DB2 Time     Elapsed=   .0184  CPU= .014040
                                        Class3: Suspend Time    Total  =     N/P  I/O=     N/P  Lock/Latch=     N/P  Other=     N/P
                                        Buffer Manager Summary  GtPgRq=       2  SyPgUp=       0
                                        Locking Summary         Suspnd=       0  DeadLk=       0  TmeOut=       0  MxPgLk=       1
                                        SQL DML Query/Update    Sel=       0  Ins=       0  Upd=       0  Del=       0
                                        SQL DML 'Other'         Des=       0  Pre=       0  Ope=       1  Fet=      10  Clo=       1

DB2P CICSUSER CPAPLAN  CICPAOR1     53  Thread Identification   ID=POOLCRD50001  NETName=P390.TCP00013      UOWID=1F7D3A6472BA
                                                                Begin Time: 15:49:40.032  7/12/04  End Time: 15:49:40.097  7/12/04
                                        Class1: Thread Time     Elapsed=   .0654  CPU= .031185
                                        Class2: In-DB2 Time     Elapsed=   .0231  CPU= .021452
                                        Class3: Suspend Time    Total  =     N/P  I/O=     N/P  Lock/Latch=     N/P  Other=     N/P
                                        Buffer Manager Summary  GtPgRq=       2  SyPgUp=       0
                                        Locking Summary         Suspnd=       0  DeadLk=       0  TmeOut=       0  MxPgLk=       1
                                        SQL DML Query/Update    Sel=       0  Ins=       0  Upd=       0  Del=       0
                                        SQL DML 'Other'         Des=       0  Pre=       0  Ope=       1  Fet=      20  Clo=       1
```

Figure 44. DB2 List report

In the DB2 List report, two types of data are presented:

1. The first is a single data line (in column format) for each CMF performance class record
2. The second is a block of data lines (in row format) for each associated DB2 accounting record

Records that are part of the same network unit-of-work are printed sequentially in groups separated by blank lines. A network unit-of-work will only be presented if it involved some DB2 activity.

The DB2 List report contains the following information:

CMF performance class based fields: Each CMF-based line of the report represents a CMF data record, not necessarily a task. It is possible for CMF data to be written at Syncpoint, on a Frequency basis (long running applications), at each terminal Converse (conversational), or at user-specified Event Monitoring Points (EMPs) using a Deliver request. The Task Number, UOW Sequence, and Record Type fields are provided to clarify what the line of data represents.

By default, only CMF performance class records with DB2 Request Count greater than zero (DB2REQCT>0) are included in the report. You can specify **LISTZERO** to also include those with DB2REQCT=0.

Tran
Transaction ID (field: TRAN, owner: DFHTASK, field ID: 001).

Userid
User Identifier of the transaction (owner: DFHCICS, field ID: 089).

Program
Initial Program Name (field: PGMNAME, owner: DFHPROG, field ID: 071).

APPLID
APPLID of the CICS system where the CMF record was created.

Task
Transaction identification number (owner: DFHTASK, field ID: 031).

UOW Seq
Syncpoint sequence number from the Network UOWID (field: NETUOWSX, owner: DFHTASK, field ID: 098).

RT
Performance class record type (owner: DFHCICS, field ID: 112). The record types are:

- **C** Converse record; Conversational transaction terminal converse
- **D** Deliver record; Deliver request at a user EMP
- **F** Frequency record; Long running transaction
- **S** Syncpoint record
- **T** Termination (detach) record

Term
Terminal ID (field: TERM, owner: DFHTERM, field ID: 002).

LUName
LU name (field: LUNAME, owner: DFHTERM, field ID: 111).

DB2 Wait Time: Connect
DB2 Connection Wait time; wait for DB2 subtask to become available (owner: DFHDATA, field ID: 188).

DB2 Wait Time: Thread
DB2 Ready Queue Wait time; wait for DB2 thread to become available (owner: DFHDATA, field ID: 187).

DB2 ReqCnt
DB2 Request Count (EXEC SQL and IFI) (field: DB2REQCT, owner: DFHDATA, field ID: 180).

User CPU Time
Transaction CPU time (owner: DFHTASK, field ID: 008).

Start Time
Start Time (hh:mm:ss.thm) of the transaction (owner: DFHCICS, field ID: 005).

Stop Time
Stop Time (hh:mm:ss.thm) of the transaction (owner: DFHCICS, field ID: 006).

Response Time
Transaction response time, derived from Stop-Start time (owner: DFHCICS, field IDs: 006-005).

A B
Y in this column indicates that the transaction abended.

DB2 accounting based fields: A block of data lines is presented for each DB2 Accounting record associated with the CMF performance record. This data is not present if **CMFONLY** is specified.

SSID
DB2 Subsystem ID (field: QWHSSSID). The values are filtered by the **SSID** operand.

Authid
Authorization ID (field: QWHCAID).

Planname
Plan name (field: QWHCPLAN).

APPLID
Connection name (field: QWHCCN, when connecting system type QWHCATYP is CICS attach QWHCCICS).

Task
Transaction identification number which, when combined with the APPLID field, identifies the CICS task to which the DB2 Accounting data relates.

This number is derived by CICS PA:

- If CICS PA matches the DB2 Accounting record to a single CICS task, the CMF task number is printed against the DB2 Accounting record details, otherwise the task number is **N/C** (cannot be calculated).
- If this field is N/C, then either the DB2 Accounting data could not be correlated to a task, or it was found to relate to more than one task in the Network UOW. This can occur, for example, if thread reuse occurs within a Network UOW and ACCOUNTREC(TASK) is being used. CICS PA will not apportion statistics. If this field is N/C, then the DB2 data will not be included in the Summary reports.

Thread Identification:
This is always present.

Thread ID
Correlation ID value (field: QWHCCV).

CICS NETName
To correlate to DB2 PM reports.

CICS UOWID
To correlate to DB2 PM reports.

Begin Time
Begin time (hh:mm:ss.thm mm/dd/yy) of the DB2 accounting period (STCK field: QWACBSC).

End Time
End time (hh:mm:ss.thm mm/dd/yy) of the DB2 accounting period (STCK field: QWACESC).

Note: When you run the DB2 report on a system with a different time zone setting to that of the SMF data, the DB2 time stamps can be out of sync with the CMF time stamps. Every CMF record includes a time zone conversion factor. CICS PA uses this to convert the time stamps to reflect the local time of the SMF data. DB2 records, however, do not have a time zone conversion factor. CICS PA uses the reporting system's time zone. To synchronize the CMF and DB2 time stamps, specify the **ZONE** operand to match the time zone of the SMF data. The

ZONE specification will be used to convert both CMF and DB2 time stamps to local time, keeping them in sync.

Any combination of the following DB2 data lines can be requested, or you can specify **ALL** to request all of them. If none are specified, the default is **CLASS1, CLASS2, BUFFER, LOCKING.**

Class1: Thread Time
This line is present only if **CLASS1** is specified.

Elapsed
Elapsed time covered by the DB2 Accounting record; derived from End Time minus Begin Time. It gives the time from when the DB2 thread is obtained (at the first SQL call) to the time it is terminated or reused by another sign-on (which may be well after the task completes if it is a protected thread).

CPU TCB CPU time used by the thread; derived from QWACEJST minus QWACBJST.

Class2: In-DB2 Time
This is only available when DB2 Class 2 Accounting Trace data is present. This line is present only if **CLASS2** is specified.

Elapsed
Accumulated elapsed time used in DB2 (field: QWACASC).

CPU Accumulated TCB CPU time used in DB2 (field: QWACAJST).

Class3: Suspend Time
This is only available when DB2 Class 3 Accounting Trace data is present. This line is present only if **CLASS3** is specified.

Total Total Class 3 suspend time.

I/O Accumulated elapsed I/O wait time (field: QWACAWTI).

Lock/Latch
Accumulated lock and latch time (field: QWACAWTL).

Other Total of the other nine Class 3 suspend clocks:
1. Log Write I/O (field: QWACAWLG)
2. Page Latch contention (field: QWACAWTP)
3. Send Message to other DB2 members in the data sharing group (field: QWACAWTG)
4. Global contention for parent L-Locks (field: QWACAWTJ)
5. Stored Procedure waiting for available TCB (field: QWACCAST)
6. User-defined function waiting for available TCB (field: QWACUDST)
7. Read I/O done under another Thread (field: QWACAWTR)
8. Write I/O done under another Thread (field: QWACAWTW)
9. Synchronous Execution Unit Switch for DB2 Commit, Abort, or Deallocation processing (field: QWACAWTE)

Buffer Manager Summary
These fields will give the total for all buffer pools. This line is present only if **BUFFER** is specified.

GtPgRq
Number of Get Page requests issued (field: QBACGET).

SyPgUp
Number of system page (buffer) updates (field: QBACSWS).

Locking Summary
This line is present only if **LOCKING** is specified.

Suspnd
Number of suspends due to lock conflict (field: QTASLOC).

DeadLk
Number of deadlocks (field: QTXADEA).

TmeOut
Number of timeouts (field: QTXATIM).

MxPgLk
Maximum number of page locks held (field: QTXANPL).

SQL DML Query/Update
This line is present only if **DML1** is specified.

Sel Number of SELECTs (field: QXSELECT).

Ins Number of INSERTs (field: QXINSRT).

Upd Number of UPDATEs (field: QXUPDTE).

Del Number of DELETEs (field: QXDELET).

SQL DML 'Other'
This line is present only if **DML2** is specified.

Des Number of DESCRIBEs (field: QXDESC).

Pre Number of PREPAREs (field: QXPREP).

Ope Number of OPENs (field: QXOPEN).

Fet Number of FETCHes (field: QXFETCH).

Clo Number of CLOSEs (field: QXCLOSE).

Example: The following DB2 List report provides an example of Class 3 Suspend time.

```
 V2R1M0                                          CICS Performance Analyzer
                                                        DB2 - List

DB2R0001 Printed at 15:02:45  4/07/2004    Data from 22:27:36  3/10/2004 to 22:30:36  3/10/2004                      Page       1


Tran/ Userid/ Program/               UOW R              ..DB2 Wait Time..   DB2    User CPU                              Response A
SSID  Authid  Planname  APPLID    Task Seq T Term  LUName   Connect  Thread   ReqCnt    Time     Start Time    Stop Time    Time   B

W001 CICSUSER MSHC301  HMASW1A1     50   2 T <AAU HMASW1T1    .0000    .0000        4    .0076  22:27:36.062 22:27:36.732    .6702

DBH1 DIR      PWH0001  HMASW1A1     50  Thread Identification   ID=ENTRW0010002  NETName=NETINET1.HMASW1T1  UOWID=19C06A2949C5
                                                               Begin Time: 22:27:36.237  3/10/04  End Time: 22:27:36.729  3/10/04
                                        Class1: Thread Time     Elapsed=   .4915  CPU= .002217
                                        Class2: In-DB2 Time     Elapsed=   .0202  CPU= .001300
                                        Class3: Suspend Time    Total  =   .0100  I/O=   .0085  Lock/Latch=   .0000  Other=   .0015
                                        Buffer Manager Summary  GtPgRq=      10  SyPgUp=       3
                                        Locking Summary         Suspnd=       0  DeadLk=       0  TmeOut=       0  MxPgLk=       1
                                        SQL DML Query/Update    Sel=       3  Ins=       1  Upd=       0  Del=       0
                                        SQL DML 'Other'         Des=       0  Pre=       0  Ope=       0  Fet=       0  Clo=       0
```

Figure 45. DB2 List report showing Class 3 Suspend time

Long Summary report

The DB2 Long Summary report provides a summary of DB2 activity by transaction and program within APPLID, giving average and maximum values for each.

DB2 report

The Summary report represents a subset of the total data presented in the DB2 List report. It includes DB2 data that can be matched within a network unit-of-work to a *single* task, or multiple tasks that all used the same transaction and program. There is no data apportioning by CICS PA.

The DB2 report shown in Figure 46 was created using the command:

```
CICSPA DB2(LONG(ALL))
```

```
V2R1M0                                          CICS Performance Analyzer
                                                  DB2 - Long Summary

DB2R0001 Printed at 14:22:11  7/15/2004    Data from 15:41:19  7/12/2004 to 16:19:15  7/12/2004    APPLID CICPAOR1     Page       1

                            Avg      Max       Avg      Max       Avg      Max       Avg      Max       Avg      Max
Tran/ Program/ #Tasks/   DB2ConWt DB2ConWt  DB2ThdWt DB2ThdWt   DB2Rqst  DB2Rqst   UserCPU  UserCPU  Response Response   #Abends
SSID  Planname #Threads      Time     Time      Time     Time     Count    Count      Time     Time      Time     Time

CRDE  CORD14P         2     .0000    .0000     .0000    .0000      24.0       24   .036896  .052480     .3141    .5208         0

DB2P  CPAPLAN         4  Thread Utilization       Entry=       0  Pool=       4  Command=       0
                         Class1: Thread Time      Avg: Elapsed=   .0369  CPU= .020809
                                                  Max: Elapsed=   .0395  CPU= .024879
                         Class2: In-DB2 Time      Avg: Elapsed=   .0166  CPU= .015381
                                                  Max: Elapsed=   .0201  CPU= .019369
                         Class3: Suspend Time     Avg: Total  =     N/P  I/O=     N/P  Lock/Latch=     N/P  Other=     N/P
                                                  Max: Total  =     N/P  I/O=     N/P  Lock/Latch=     N/P  Other=     N/P
                         Buffer Manager Summary   Avg: GtPgRq=     3.3  SyPgUp=      .0
                                                  Max: GtPgRq=       7  SyPgUp=       0
                         Locking Summary          Avg: Suspnd=      .0  DeadLk=      .0  TmeOut=      .0  MxPgLk=     1.0
                                                  Max: Suspnd=       0  DeadLk=       0  TmeOut=       0  MxPgLk=       1
                         SQL DML Query/Update     Avg: Sel=       .0  Ins=       .0  Upd=       .0  Del=       .0
                                                  Max: Sel=        0  Ins=        0  Upd=        0  Del=        0
                         SQL DML 'Other'          Avg: Des=       .0  Pre=       .0  Ope=      1.0  Fet=     10.0  Clo=     1.0
                                                  Max: Des=        0  Pre=        0  Ope=        1  Fet=       10  Clo=       1

CRD4  CORD04P         3     .0000    .0000     .0000    .0000    3075.3     9178  1.593973 4.693520    8.5758  24.9328         0

DB2P  CPAPLAN         4  Thread Utilization       Entry=       0  Pool=       4  Command=       0
                         Class1: Thread Time      Avg: Elapsed=   .0569  CPU= .025045
                                                  Max: Elapsed=   .0850  CPU= .029168
                         Class2: In-DB2 Time      Avg: Elapsed=   .0205  CPU= .018777
                                                  Max: Elapsed=   .0241  CPU= .022986
                         Class3: Suspend Time     Avg: Total  =     N/P  I/O=     N/P  Lock/Latch=     N/P  Other=     N/P
                                                  Max: Total  =     N/P  I/O=     N/P  Lock/Latch=     N/P  Other=     N/P
                         Buffer Manager Summary   Avg: GtPgRq=     3.3  SyPgUp=      .0
                                                  Max: GtPgRq=       7  SyPgUp=       0
                         Locking Summary          Avg: Suspnd=      .0  DeadLk=      .0  TmeOut=      .0  MxPgLk=     1.0
                                                  Max: Suspnd=       0  DeadLk=       0  TmeOut=       0  MxPgLk=       1
                         SQL DML Query/Update     Avg: Sel=       .0  Ins=       .0  Upd=       .0  Del=       .0
                                                  Max: Sel=        0  Ins=        0  Upd=        0  Del=        0
                         SQL DML 'Other'          Avg: Des=       .0  Pre=       .0  Ope=      1.0  Fet=     10.0  Clo=     1.0
                                                  Max: Des=        0  Pre=        0  Ope=        1  Fet=       10  Clo=       1
 . . .

*** Total ***        23     .0000    .0000     .0000    .0000     417.3     9178   .227745 4.693520    1.2403  24.9328         0

DB2P                 26  Thread Utilization       Entry=       0  Pool=      26  Command=       0
                         Class1: Thread Time      Avg: Elapsed=   .0702  CPU= .025824
                                                  Max: Elapsed=   .5211  CPU= .055524
                         Class2: In-DB2 Time      Avg: Elapsed=   .0204  CPU= .018508
                                                  Max: Elapsed=   .0471  CPU= .040673
                         Class3: Suspend Time     Avg: Total  =     N/P  I/O=     N/P  Lock/Latch=     N/P  Other=     N/P
                                                  Max: Total  =     N/P  I/O=     N/P  Lock/Latch=     N/P  Other=     N/P
                         Buffer Manager Summary   Avg: GtPgRq=     2.8  SyPgUp=      .0
                                                  Max: GtPgRq=      11  SyPgUp=       0
                         Locking Summary          Avg: Suspnd=      .0  DeadLk=      .0  TmeOut=      .0  MxPgLk=     1.0
                                                  Max: Suspnd=       0  DeadLk=       0  TmeOut=       0  MxPgLk=       1
                         SQL DML Query/Update     Avg: Sel=       .0  Ins=       .0  Upd=       .0  Del=       .0
                                                  Max: Sel=        0  Ins=        0  Upd=        0  Del=        0
                         SQL DML 'Other'          Avg: Des=       .0  Pre=       .0  Ope=      1.2  Fet=     13.8  Clo=     1.2
                                                  Max: Des=        0  Pre=        0  Ope=        2  Fet=       30  Clo=       2
```

Figure 46. DB2 Long Summary report

In the DB2 Long Summary report, two types of data are presented for each APPLID:

1. The first is a single data line (in column format) for the CMF performance class data summarized by transaction and program
2. The second is a block of data lines (in row format) for the associated DB2 accounting data summarized by SSID and planname

The DB2 Long Summary report provides the following information:

CMF Performance based fields: A data line is presented for the CMF performance class data summarized by transaction and program.

APPLID
(In the report heading.) The APPLID of the CICS system where the CMF records were created.

Tran
Transaction ID (field: TRAN, owner: DFHTASK, field ID: 001).

Program
Initial Program Name (field: PGMNAME, owner: DFHPROG, field ID: 071).

#Tasks
The number of tasks summarized.

Each CMF-based line of the List report represents a CMF data record. For the purpose of accumulating for the Summary report, a record is considered to represent a task, that is, for each CMF performance record included in the Summary report, #Tasks increments by 1. Only records with DB2REQCT>0 are included.

For each of the following fields (except #Abends), two values are presented:
Average
The task average for the field.
Maximum
The maximum value of the field over the reporting period.

DB2ConWt Time
DB2 Connection Wait time; wait for DB2 subtask to become available.

DB2ThdWt Time
DB2 Ready Queue Wait time; wait for DB2 thread to become available.

DB2Rqst Count
DB2 Request Count (EXEC SQL and IFI).

UserCPU Time
CICS task CPU time (does not include DB2 CPU). This can be added to the Class1: Thread CPU Time to get a reasonable picture of the overall CPU utilization.

Response Time
Task response time.

#Abends
Total number of abends for the transaction in the reporting period.

DB2 accounting based fields: For each APPLID, a block of data lines is presented for the DB2 accounting records associated with the CMF performance records. This data is not present if **CMFONLY** is specified.

SSID
DB2 Subsystem ID (field: QWHSSSID). The values are filtered by the **SSID** operand.

Planname
Plan name (field: QWHCPLAN). Note that there may be multiple plans associated with a Tran/Program if Dynamic Plan Selection or Dynamic Plan Switching is used, or if an application is modified within the reporting period.

#Threads
The number of threads summarized where DB2 data has been included for the given plan.

This gives the total number of matched DB2 threads used (for this APPLID/transaction/program and SSID/plan) in the reporting period. For simple transactions with default performance monitoring and ACCOUNTREC(TASK), this total would be expected to be equal to the #Tasks. Where a transaction has multiple UOWs however, the total number of threads used can be greater than the #Tasks, depending on thread reuse.

Thread Utilization
This data line is always present.

Entry The number of DB2Entry threads used in the reporting period.

Note: Transactions associated with a DB2Entry will generally run against a DB2Entry thread. However, it is possible for a transaction to overflow to a pool thread should the number of active DB2Entry threads reach the THREADLimit number defined for the DB2Entry.

Pool The number of Pool threads used in the reporting period.

Command
The number of Command threads used in the reporting period.

Note: Command threads are reserved by the CICS DB2 attachment facility for issuing commands to DB2 using the DSNC transaction. When the demand is great, commands overflow to the pool, and use a pool thread.

Any combination of the following DB2 data lines can be requested, or you can specify **ALL** to request all of them. If none are specified, the default is **CLASS1, CLASS2, BUFFER, LOCKING.** See the DB2 List report's "DB2 accounting based fields" on page 123 for an explanation of these DB2 data lines:

Class1: Thread Time
Specify **CLASS1** to request this line.

Class2: In-DB2 Time
Specify **CLASS2** to request this line.

Class3: Suspend Time
Specify **CLASS3** to request this line.

Buffer Manager Summary
Specify **BUFFER** to request this line.

Locking Summary
Specify **LOCKING** to request this line.

SQL DML Query/Update
Specify **DML1** to request this line.

SQL DML 'Other'
Specify **DML2** to request this line.

For each of the DB2 data lines, two values are presented:

Average The thread average for the field.

Maximum The maximum value of the field encountered for all threads within the reporting period. If **NOMAXLONGSUM** is specified, the maximum values are omitted from the report.

Total statistics are reported for each DB2 SSID and CICS APPLID.

Example: The following DB2 Long Summary report provides an example of Class 3 Suspend time.

```
V2R1M0                                              CICS Performance Analyzer
                                                       DB2 - Long Summary

DB2R0001 Printed at 12:07:33  4/08/2004    Data from 22:27:36  3/10/2004 to 22:27:36  3/10/2004    APPLID HMASW1A1     Page       1


                              Avg      Max       Avg      Max       Avg      Max       Avg      Max       Avg      Max
Tran/ Program/ #Tasks/   DB2ConWt DB2ConWt  DB2ThdWt DB2ThdWt   DB2Rqst  DB2Rqst   UserCPU  UserCPU  Response Response   #Abends
SSID  Planname #Threads      Time     Time      Time     Time     Count    Count      Time     Time      Time     Time

W001  MSHC301         1     .0000    .0000     .0000    .0000       4.0        4   .018432  .018432     .6679    .6679         0

DBH1  PWH0001         1  Thread Utilization       Entry=       1  Pool=       0  Command=       0
                         Class1: Thread Time      Avg: Elapsed=   .5509  CPU= .002450
                                                  Max: Elapsed=   .5509  CPU= .002450
                         Class2: In-DB2 Time      Avg: Elapsed=   .0145  CPU= .001930
                                                  Max: Elapsed=   .0145  CPU= .001930
                         Class3: Suspend Time     Avg: Total  = .003368  I/O= .003368  Lock/Latch= .000000  Other= .000000
                                                  Max: Total  = .003368  I/O= .003368  Lock/Latch= .000000  Other= .000000
                         Buffer Manager Summary   Avg: GtPgRq=    10.0  SyPgUp=     3.0
                                                  Max: GtPgRq=      10  SyPgUp=       3
```

Figure 47. DB2 Long Summary report showing Class 3 Suspend time

Short Summary report

The DB2 Short Summary report is an abridged version of the Long Summary Report. It provides a summary of DB2 activity by transaction and program within APPLID giving averages for each (no maximums).

The following command produces the default report like that shown in Figure 48 on page 130. The default report is a Short Summary with both CMF performance records and DB2 Accounting records included. CMF performance records with DB2REQCT=0 are not included.

```
CICSPA DB2
```

or

```
CICSPA DB2(SHORTSUM)
```

DB2 report

```
 V2R1M0                                          CICS Performance Analyzer
                                                   DB2 - Short Summary

DB2R0001 Printed at 14:22:11  7/15/2004    Data from 15:41:19  7/12/2004 to 16:19:15  7/12/2004    APPLID CICPAOR1     Page       1

Tran/ Program/ #Tasks/  ............Average Elapsed Time............  .....Average CPU Time.....  .....Average Count..... #Abends
SSID  Planname #Threads Response  Thread   In-DB2  DB2ConWt DB2ThdWt    User    Thread   In-DB2   DB2Reqs  GetPage SysPgUpd

CRD7  CORD07P         2    .4043                    .0000    .0000   .031008                      3.0                        0
DB2P  CPAPLAN         2            .0631    .0106                                .011408  .009811              4.0       .0

CRD9  CORD09P         2    .4091                    .0000    .0000   .030680                      3.0                        0
DB2P  CPAPLAN         2            .0776    .0104                                .011478  .009870              4.0       .0

SALE  DFH0SAL2       10    .2271                    .0000    .0000   .038147                      1.0                        0
DB2P  CPAPLAN        10            .1394    .0033                                .003865  .003136              N/P       N/P

SAL1  DFH0SAL1        2   1.0268                    .0000    .0000   .038656                      1.0                        0
DB2P  CPAPLAN         2            .7898    .0033                                .003843  .003114              N/P       N/P

*** Total ***        16    .3720                    .0000    .0000   .036385                      1.5                        0
DB2P                 16            .2034    .0051                                .005757  .004809              4.0       .0
```

Figure 48. DB2 Short Summary report

In the DB2 Short Summary report, two lines of data are presented for each APPLID:

1. The first line is for the CMF performance class data summarized by transaction and program
2. The second line is for the associated DB2 accounting data summarized by SSID and planname

The DB2 Short Summary report contains the following information:

CMF Performance based fields:

APPLID
(In the report heading.) The APPLID of the CICS system where the CMF records were created.

Tran
Transaction ID (field: TRAN, owner: DFHTASK, field ID: 001).

Program
Initial Program Name (field: PGMNAME, owner: DFHPROG, field ID: 071).

#Tasks
The number of tasks summarized.

Average Elapsed Response Time
Average task response time.

Average Elapsed DB2ConWt Time
Average task DB2 Connection Wait time; wait for DB2 subtask to become available.

Average Elapsed DB2ThdWt Time
Average task DB2 Ready Queue Wait time; wait for DB2 thread to become available.

Average CPU Time: User
Average CICS task CPU time (does not include DB2 CPU).

Average Count: DB2Reqs
Average task DB2 Request Count (EXEC SQL and IFI).

#Abends
Total number of abends for the transaction in the reporting period.

DB2 accounting based fields:

SSID
DB2 Subsystem ID (field: QWHSSSID).

Planname
Plan name (field: QWHCPLAN). Note that there may be multiple plans associated with a Tran/Program if Dynamic Plan Selection or Dynamic Plan Switching is used, or if an application is modified within the reporting period.

#Threads
The number of threads summarized where DB2 data has been included for the given plan.

This gives the total number of matched DB2 threads used (for this APPLID/transaction/program and SSID/plan) in the reporting period. For simple transactions with default performance monitoring and ACCOUNTREC(TASK), this total would be expected to be equal to the #Tasks. Where a transaction has multiple UOWs however, the total number of threads used can be greater than the #Tasks, depending on thread reuse.

Average Elapsed Thread Time
Average elapsed time covered by the DB2 accounting period. included for the given plan.

Average Elapsed In-DB2 Time
Average In-DB2 elapsed time. This field is only available when Class 2 data is present.

Average CPU Time: Thread
Average CPU time accumulated for the CICS-DB2 thread.

Average CPU Time: In-DB2
Average In-DB2 CPU time used, derived from the accumulated TCB time. This field is only available when Class 2 data is present.

Average Count: GetPage
Average task Get Page request count.

Average Count: SysPgUpd
Average task system page (buffer) update count.

Total statistics are reported for each DB2 SSID and CICS APPLID.

Recap report

An example of the Recap report which is always printed at the end of processing is shown in Figure 49 on page 132. This report provides statistics on the record processing and matching.

DB2 report

```
 V2R1M0                                              CICS Performance Analyzer
                                                            DB2 - Recap

DB2R0001 Printed at 14:22:11  7/15/2004    Data from 15:41:19  7/12/2004 to 16:19:15  7/12/2004                    Page       1

Records processed by the DB2 report processor:
                                                          Count     % of Total
  CMF performance class records:                        ---------   ----------
    Included  . . . . . .                                   120        .6%
    Excluded:
      CICS PA record selection  . . . . . .              20,670      99.4%
      No DB2 activity . . . . . .                             0        .0%
      Other . . . . . .                                       0        .0%
    Total . . . . . .                                    20,790

  DB2 accounting records:
    Included  . . . . . .                                    30        .5%
    Excluded:
      CICS PA record selection  . . . . . .                   0        .0%
      Not CICS Attach . . . . . .                           368       6.6%
      Accounting Token not set  . . . . . .               5,196      92.9%
      Other . . . . . .                                       0        .0%
    Total . . . . . .                                     5,594


Network units-of-work with DB2 activity:
                                                          Count    % of Total
  Network units-of-work where:                          ---------  ----------
    DB2 accounting records were resolved  . . . . . .          30     100.0%
    DB2 accounting records were not resolved  . . . .           0        .0%
    DB2 accounting records were not present . . . . .           0        .0%
    Total . . . . . .                                          30

  CMF performance class records with DB2 activity:
    Matched to a DB2 accounting record  . . . . . .            30     100.0%
    Not matched to any DB2 accounting records . . . .           0        .0%
    Total . . . . . .                                          30

  CMF performance class records with no DB2 activity:
    Total . . . . . .                                           0

  DB2 accounting records:
    Eligible for summary reporting  . . . . . .                30     100.0%
    Matched to a single CICS task   . . . . . .                30     100.0%
    Matched to two or more CICS tasks . . . . . .               0        .0%
    Not matched to any CICS tasks . . . . . .                   0        .0%
    Total . . . . . .                                          30
```

Figure 49. DB2 Recap report

The statistics reported are:

Records processed by the DB2 report processor: This section of the report indicates the effect of basic record selection, and the effect of the LISTZERO and CMFONLY report options in terms of the volume of sort data.

Also, if DB2 connection options ACCOUNTREC(TASK) or ACCOUNTREC(UOW) were not set, this will be clearly evident by the number of DB2 accounting records that are excluded.

If no CMF performance data is selected for the report, only this section of the Recap report is produced.

CMF performance class records:
The results of CMF performance class record selection.

Included
The number of CMF performance class records from the input file selected for report processing, and subsequently passed to Sort.

Excluded
The number of CMF performance class records from the input file excluded from report processing for any of the following reasons:

1. They do not satisfy the Record Selection Criteria.
2. There was no DB2 activity. Using the report default, not-LISTZERO, CMF performance class records with DB2REQCT=0 will be excluded. If only the Summary reports are requested, not-LISTZERO is assumed since the Summary reports only report on CMF performance class records with DB2REQCT>0.
3. Other reasons, such as missing required fields. See “Required CMF fields” on page 134 for a list of the fields that must be present in the CMF performance record.

Total
The total number of CMF performance class records passed to the DB2 record processor from the input file.

DB2 accounting records:
The results of DB2 accounting record selection.

Included
The number of DB2 accounting records from the input file selected for report processing, and subsequently passed to Sort (provided at least one CMF record was included).

Excluded
The number of DB2 accounting records from the input file excluded from report processing for any of the following reasons:

1. They do not satisfy the Record Selection Criteria.
2. They are not generated by ‘CICS Attach’.
3. The accounting token in the Correlation Header is not set. The accounting token is only set if ACCOUNTREC(TASK) or ACCOUNTREC(UOW) is specified.
4. Other reasons, such as records from unsupported DB2 releases.

Total
The total number of DB2 accounting records passed to the DB2 record processor from the input file.

Network units-of-work with DB2 activity: This section of the report provides details on the results of CMF-DB2 record matching and therefore indicates the value of the Summary reports. This is performed for each network unit-of-work that has at least one CMF performance class record indicating DB2 activity (DB2REQCT>0).

The various CMF-DB2 matching statistics are marked **N/A** (not applicable) when no DB2 records are selected, so no record matching takes place (for example, when CMFONLY).

Network units-of-work where:
The results of CMF-DB2 record matching for network units-of-work with DB2 activity.

DB2 accounting records were resolved
The number of network units-of-work where CMF-DB2 record matching was able to fully resolve the relationship between the data records, and at least one DB2 accounting record was present.

DB2 accounting records were not resolved
The number of network units-of-work where CMF-DB2 record matching was *not* able to fully resolve the relationship between the data records, and at least one DB2 accounting record was present.

DB2 accounting records were not present
The number of network units-of-work where no DB2 accounting records were present.

Total
The total number of network units-of-work.

CMF performance class records with DB2 activity:
The results of CMF-DB2 record matching for the CMF performance class records with DB2 activity that are within network units-of-work with DB2 activity.

Matched to a DB2 accounting record
The number of CMF performance class records with DB2REQCT>0 that were able to be matched to a DB2 accounting record.

Not matched to any DB2 accounting records
The number of CMF performance class records with DB2REQCT>0 that were *not* able to be matched to any DB2 accounting records, that is, there is 'missing' DB2 accounting data.

Total
The total number of CMF performance class records with DB2REQCT>0.

Total CMF performance class records with no DB2 activity:
The total number of CMF performance class records with DB2REQCT=0.

When LISTZERO is specified (explicitly or implicitly because only Summary reports are requested), this count is marked **N/A** (not applicable) because *all* CMF performance class records with DB2REQCT=0 are excluded.

DB2 accounting records:
The results of CMF-DB2 record matching for the DB2 accounting records.

Eligible for summary reporting
The number of DB2 accounting records eligible for summary reporting. To be eligible, a DB2 accounting record must have been matched to either a single CICS task, or multiple tasks which were all related to the same APPLID, transaction, and program.

Matched to a single CICS task
The number of DB2 accounting records matched to a single CICS task.

Matched to two or more CICS task
The number of DB2 accounting records matched to more than one CICS task. This can occur in a network unit-of-work that utilizes the DPL function.

Not matched to any CICS tasks
The number of DB2 accounting records that were not able to be matched to any CMF performance class records within the network unit-of-work, that is, there is 'missing' CMF data.

Total
The total number of DB2 accounting records.

Required CMF fields

If you are using the CICS Monitoring Control Table (MCT) Exclude/Include parameters to reduce the size of the performance class record, you must ensure that the data fields required for the DB2 report are not excluded.

The following table lists the fields that must be collected in the performance class records so they are eligible for the DB2 report.

Table 6. DB2 report: Required CMF fields

Owner	Field ID	CICS Informal Name	Description
DFHCICS	005	START	Store clock start time
DFHCICS	006	STOP	Store clock stop time
DFHCICS	089	USERID	User ID
DFHCICS	112	RTYPE	Record type
DFHDATA	180	DB2REQCT	DB2 request count
DFHDATA	187	DB2RDYQW	DB2 ready queue wait time
DFHDATA	188	DB2CONWT	DB2 connection wait time
DFHPROG	071	PGMNAME	Program name
DFHPROG	113	ABCODEO	Original abend code
DFHPROG	114	ABCODEC	Current abend code
DFHSYNC	060	SPSYNCCT	Syncpoint count for task
DFHTASK	001	TRAN	Transaction name
DFHTASK	008	USRCPUT	User CPU time
DFHTASK	031	TRANNUM	Transaction sequence number
DFHTASK	097	NETUOWPX	Network UOW - PX
DFHTASK	098	NETUOWSX	Network UOWID - SX
DFHTASK	164	TRANFLAG	Transaction flags
DFHTERM	002	TERM	Terminal ID
DFHTERM	111	LUNAME	LU name

How CICS PA builds the DB2 report

CICS PA processes CMF performance data from multiple CICS systems along with associated DB2 Accounting data, correlating the data by network unit-of-work. For each network unit-of-work with DB2 activity, CICS PA attempts to match each DB2 Accounting record to a CMF task.

In the DB2 List report, a data line is presented for each CMF performance class record (column format), and a block of data lines is presented for each associated DB2 Accounting record (row format). Records that are part of the same network unit-of-work are printed sequentially in groups separated by blank lines. A network unit-of-work will only be presented if it involved some DB2 activity, that is, at least one CMF record is present with DB2 Request Count greater than zero (DB2REQCT>0).

The DB2 List report is presented in the same sequence as the Cross-System Work report so you can correlate the two reports. Also, the printed information allows you to find the corresponding records in the CICS PA Performance List report and the DB2 PM reports.

Two summary reports (Long Summary and Short Summary) offer a summary of the CMF performance and DB2 Accounting data presented in the DB2 List report. The data is collated by APPLID, transaction and program for CMF data, and additionally by SSID and plan for DB2 data. Generally there is only one DB2 plan per APPLID/transaction/program combination, but it is possible for there to be more than one (via Dynamic Plan Switching), or for multiple plans to be used over time

(via Dynamic Plan Selection, or system modification). Only DB2 Accounting data that matches a single CMF task is accumulated for the summary reports. There is no attempt to statistically apportion DB2 Accounting data that represents more than one CMF task.

The DB2 report is produced from the following process:

1. Record Selection. CMF performance records that are part of a network unit-of-work that involves DB2 activity are selected. Associated DB2 Accounting records are selected. See "CMF-DB2 record selection."
2. Sort. The selected records are sorted using an EXTERNAL sort process. See "Sorting the CMF-DB2 records" on page 137.
3. Group by Network UOW. Records are grouped by network unit-of-work NETNAME and network unit-of-work ID.
4. Match CMF-DB2 Records within Network UOW. For each network unit-of-work, DB2 Accounting records are matched (where possible) to CMF tasks. See "Matching CMF-DB2 records for a Network UOW" on page 137.
5. Report/Summarize.
   - If requested, the DB2 List report is produced. For each network unit-of-work, one line is presented per CMF performance class record followed by the DB2 Accounting data for that network unit-of-work.
   - If requested, the DB2 Summary reports accumulate statistics for each APPLID, transaction, and program combination. Then the DB2 statistics are accumulated for each SSID and plan used by the APPLID/transaction/program. The Summary reports are produced after the List report (if requested) is complete.

CMF-DB2 record selection

For the DB2 report, CMF record selection is the same as for all CMF Performance reports, with an additional criterion:

- **LISTZERO.** List CMF performance class records that do not involve DB2 activity (DB2REQCT=0) when they are part of a network unit-of-work that involves some DB2 activity.

DB2 accounting record selection is based on:

1. **CMFONLY.** Suppress DB2 record processing.
2. **SMFSTART, SMFSTOP.** Like the CMF performance records, filter the DB2 Accounting records based on the SMF time stamp.
3. **SELECT(PERFORMANCE.** INCLUDE or EXCLUDE DB2 Accounting records based on whether the DB2 thread Begin-End times are within the specified FROM-TO report intervals. Also you can filter the DB2 Accounting records based on UOWID field values.
4. **APPLID.** Select by CICS generic APPLID.
5. **SSID.** Select by DB2 Subsystem ID.

Note: DB2 end time can be after CMF stop time if thread protection is in place. Consequently, if you specify SMFSTOP when protected threads are in use, it is possible that DB2 Accounting records are excluded that relate to CMF records that are included. In normal circumstances, 5 minutes (the initial DB2 thread PURGECYCLE delay after CICS startup) is expected to be the longest period an inactive DB2 thread will be present before it is terminated by a PURGECYCLE. To allow for this, you should specify the SMFSTOP time at least 5 minutes after the 'required stop time' specified in the FROM/TO report interval in the SELECT statement.

Sorting the CMF-DB2 records

The DB2 report is produced using an external SORT facility. An External Work data set is required to store the records before they are sorted. This data set is either specified explicitly using **EXTERNAL(ddname),** or CICS PA assigns one from the External Work File pool.

The records are sorted in the following order (the same as that used in the Cross-System Work report):

1. Network unit-of-work NETNAME
2. Network unit-of-work ID
3. Syncpoint count concatenated with the task stop time in reverse (descending) order
4. APPLID

Note: The syncpoint count is used to resolve unsynchronized STORE CLOCK (STCK) values between systems. The syncpoint count and stop time, sorted in reverse (descending) order, shows the sequence of tasks within the network unit-of-work. In some cases (for example, where user event monitor points (EMPs) are used), the syncpoint count does not reflect the sequence of events within a network unit-of-work. For these instances, all the task records are printed, but not necessarily in the order they happened. You can tell that this situation exists if the stop times are not in descending order.

For more information on correlating the performance class data by network unit-of-work ID, see “Correlating performance class data” on page 299.

For DB2 records:

- Network unit-of-work NETNAME and ID are derived from the Accounting Token (field: QWHCTOKN).
- Syncpoint count and task stop time are not applicable. Thread ID and DB2 Begin time (in ascending order) are used.
- APPLID is the CICS generic APPLID taken from the Connection Name (field: QWHCACCN).

Considerations for processing efficiency:

1. If **LISTZERO** is specified, CMF records without DB2 activity are passed to the sort as they may be part of a network unit-of-work that involved DB2 activity. Use of this option can dramatically *increase* the volume of sort data. This option is only applicable to the DB2 List report.
2. If **CMFONLY** is specified, only CMF performance records are processed. Use of this option can dramatically *reduce* the volume of sort data as all DB2 Accounting records are excluded.

Matching CMF-DB2 records for a Network UOW

For each network unit-of-work with DB2 activity, CICS PA attempts to match each DB2 Accounting record to a CMF task.

The CICS-DB2 record relationship is usually one-to-one. However, it is possible that one DB2 thread serviced more than one CICS task. Conversely, it is possible that a single CICS task was associated with multiple DB2 threads (since threads are released at syncpoint). Also, with ACCOUNTREC(TASK), it is possible to get a network unit-of-work where the CMF-DB2 records cannot be correlated because the information available in the data records is insufficient.

DB2 Accounting data is accumulated for the Summary reports only if:

- It matches a single CMF task, or
- It matches multiple CMF tasks with the same APPLID/transaction/program, as the thread statistics are not apportioned in this case.

WebSphere MQ report

The WebSphere MQ report processes WebSphere MQ SMF accounting (SMF 116) records to produce a detailed view of WebSphere MQ usage by your CICS systems.

The WebSphere MQ List reports display, depending on the WebSphere MQ accounting traces that are active, details about Transactions, WebSphere MQ Queues that were referenced, WebSphere MQ global (not Transaction-specific or Queue-specific) statistics and WebSphere Queue-specific commands issued by Transactions. These can be sorted and aggregated by any one of the following:

- Transaction ID
- Queue name
- Transaction ID, then Queue name
- Queue name, then Transaction ID

WebSphere MQ accounting traces

WebSphere MQ accounting records are produced when the Accounting Trace component of WebSphere MQ is activated. If the MQ accounting trace is active, CLASS(1) subtype 0 records are always produced, but subtypes 1 and 2 are only produced if CLASS(3) is specified when the trace is activated.

Report command

The WebSphere MQ report can be requested from a Report Set in the CICS PA dialog. Select the **WebSphere MQ** report in the **Subsystem Reports** category.

In batch, the `MQ` command is used to request the WebSphere MQ report.

The command to produce the default report, a Class 1 Summary report, is:

```
CICSPA MQ
```

or

```
CICSPA MQ(SUMMARY,CLASS1)
```

To produce a Class 3 Summary report:

```
CICSPA MQ(SUMMARY,CLASS3)
```

To produce a Class 1 List report:

```
CICSPA MQ(LIST,CLASS1)
```

To produce a Class 3 List report:

```
CICSPA MQ(LIST,CLASS3)
```

To tailor the report, you can specify report options as follows:

```
CICSPA MQ(
         [OUTPUT(ddname),]
         [LIST,]
         [SUMMARY,]
         [CLASS1,]
         [CLASS3,]
         [SORT([TRAN,][QUEUE]),]
         [QNAME(name),]
         [SSID(id1,id2,...),]
         [LINECount(nnn),]
```

```
[TITLE1('...sub-heading left ...'),]
[TITLE2('...sub-heading right...'),]
[SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
                    ...))])
```

Note: MQ accounting records do not have a time zone conversion factor. CICS PA uses the reporting system's time zone to convert the MQ time stamps to local time. However, when you run the WebSphere MQ report on a system with a different time zone setting to that of the SMF data, you will need to specify the **ZONE** operand to match the time zone of the SMF data.

MQ record selection

The report processes MQ accounting (SMF 116) records. You can request a report from all available records, or you can specify one or more of the following filtering commands to select only the records of interest:

- Specify QNAME to select records for a particular WebSphere MQ queue name. You can specify a pattern such as CICSMQ* to include more than one queue name. The queue name is case-sensitive.
- Specify SSID to identify the WebSphere MQ subsystems that you want to report against. A Subsystem ID is up to 4 characters. Masking characters are allowed.
- Specify SELECT statements to include or exclude records based on time and field values. The fields that can be specified in Selection Criteria are:
  START
  STOP
  ACTIVE
  TRAN (owner: DFHTASK, field ID: 001)
  TASKNO (owner: DFHTASK, field ID: 031)

You can also specify the global APPLID operand to filter on CICS APPLID:

```
CICSPA APPLID(applid1,applid2,...)
```

Report content MQ Class 1

You can request one or both of the following reports for WebSphere MQ Class 1 data:

1. WebSphere MQ Class 1 List report
2. WebSphere MQ Class 1 Summary report

The Class 1 reports extract information from Subtype 0 MQ accounting records (SMF 116).

The reports consist of 2 sections:

1. Task identification.
   - SSID – extracted from the Instrumentation Standard Header Data (macro CSQDQWHS)
   - APPLID, Tran, Task – extracted from the Instrumentation Correlation Data (macro CSQDQWHC)
2. Summary statistics.
   - CPU and Call count statistics – extracted from the Message Manager Accounting Data (macro CSQDQMAC)

WebSphere MQ Class 1 List report

The WebSphere MQ Class 1 List report provides a detailed list of MQ accounting class 1 records.

The following command produces a Class 1 List report like that in Figure 50

```
CICSPA MQ(LIST,CLASS1)
```

```
V2R1M0                                          CICS Performance Analyzer
                                                WebSphere MQ Class 1 List

MQ000001 Printed at 14:42:16  8/13/2004  Data from 14:50:34 07/13/2004                                        Page       1

SSID  APPLID  Tran  Time         Task          CPU  ---------- GET Counts ------------ ------------ PUTx Counts ------------
                                                      <=99     <=999    <=9999   >=10000      <=99     <=999    <=9999   >=10000

MQMD CICS53A1 CKCN  14:50:34.88      35    0.000747          0         0         0         0         0         0         0         0
MQMD CICS53A1 MQA1  14:51:13.27      41    0.064342          0         0         0         0        60         0         0         0
MQMD CICS53A1 CKTI  14:51:24.52      37    0.001541          0         0         0         0         0         0         0         0
```

Figure 50. WebSphere MQ Class 1 List report

The WebSphere MQ Class 1 List report contains information in two sections:
1. Task identification
2. Summary statistics

Section 1 Task identification:

SSID Subsystem name (field: QWHSSSID).

APPLID
Network identifier (field: QWHCNID).

Tran CICS Transaction ID, extracted from the MQ Correlation ID (field: QWHCCV).

Time SMF record time stamp.

Task CICS Task number, extracted from the MQ Correlation ID (field: QWHCCV).

Section 2 Summary statistics:

CPU CPU Time used (field: QMACCPUT).

GET Counts

<=99 Number of GET calls for length 0-99 bytes (field: QMACGETA).

<=999 Number of GET calls for length 100-999 bytes (field: QMACGETB).

<=9999 Number of GET calls for length 1000-9999 bytes (field: QMACGETC).

>=10000 Number of GET calls for length 10000 bytes or more (field: QMACGETD).

PUTx Counts

<=99 Number of PUT and PUT1 calls for length 0-99 bytes (field: QMACPUTA).

<=999 Number of PUT and PUT1 calls for length 100-999 bytes (field: QMACPUTB).

<=9999 Number of PUT and PUT1 calls for length 1000-9999 bytes (field: QMACPUTC).

>=10000 Number of PUT and PUT1 calls for length 10000 bytes or more (field: QMACPUTD).

WebSphere MQ Class 1 Summary report

The WebSphere MQ Class 1 Summary report provides a summary of MQ accounting class 1 records.

The following command produces a Class 1 Summary report like that in Figure 51

```
CICSPA MQ(SUMMARY,CLASS1)
```

```
V2R1M0                                          CICS Performance Analyzer
                                               WebSphere MQ Class 1 Summary

MQ000003 Printed at 14:42:16  8/13/2004  Data from 14:50:34 07/13/2004 to 14:51:24 07/13/2004                    Page       1


                              ----- Average -----  --------- Average GET Counts ---------   -------- Average PUTx Counts ---------
SSID  APPLID    TRAN     Count        CPU     Calls      <=99     <=999    <=9999   >=10000       <=99     <=999    <=9999   >=10000

MQMD  CICS53A1  CKCN         1   0.000747       0.0       0.0       0.0       0.0       0.0        0.0       0.0       0.0       0.0
MQMD  CICS53A1  CKTI         1   0.001541       0.0       0.0       0.0       0.0       0.0        0.0       0.0       0.0       0.0
MQMD  CICS53A1  MQA1         1   0.064342      60.0       0.0       0.0       0.0       0.0       60.0       0.0       0.0       0.0
```

Figure 51. WebSphere MQ Class 1 Summary report

The WebSphere MQ Class 1 Summary report contains information in two sections:
1. Task identification
2. Summary statistics

Section 1 Task identification:

SSID Subsystem Name (field: QWHSSSID).

APPLID
Network identifier (field: QWHCNID).

Tran CICS Transaction ID, extracted from the MQ Correlation ID (field: QWHCCV).

Section 2 Summary statistics:

Count Total number of transactions.

Average CPU
Average CPU time per thread (field: QMACCPT/Number of threads).

Average Calls
Average GET/PUT calls (field: QMACGET(A,B,C,D)+QMACPUT(A,B,C,D)/ Number of threads).

Average GET Counts

<=99 Average number of GET calls for length 0-99 bytes per thread (QMACGETA/Number of threads).

<=999 Average number of GET calls for length 100-999 bytes per thread (QMACGETB/Number of threads).

<=9999 Average number of GET calls for length 1000-9999 bytes per thread (QMACGETC/Number of threads).

>=10000 Average number of GET calls for length 10000 or more bytes per thread (QMACGETD/Number of threads).

Average PUTx Counts

<=99 Average number of PUT and PUT1 calls for length 0-99 bytes per thread (QMACPUTA/Number of threads).

<=999	Average number of PUT and PUT1 calls for length 100-999 bytes per thread (QMACPUTB/Number of threads).
<=9999	Average number of PUT and PUT1 calls for length 1000-9999 bytes per thread (QMACPUTC/Number of threads).
>=10000	Average number of PUT and PUT1 calls for length 10000 or more bytes per thread (QMACPUTD/Number of threads).

Report content MQ Class 3

You can request one or both of the following reports for WebSphere MQ Class 3 data:

1. WebSphere MQ Class 3 List report
2. WebSphere MQ Class 3 Summary report

The Class 3 reports extract information from Subtypes 1 and 2 MQ accounting records (SMF 116).

The reports consist of 5 sections:

1. Task Identification.
   - SSID – extracted from the Instrumentation Standard Header Data (macro CSQDQWHS)
   - APPLID, Tran, Task – extracted from the Instrumentation Correlation Data (macro CSQDQWHC)
   - Userid, Netname, NETUOW, Channel, Channel Connection – extracted from the Task Identification Block (macro CSQDWTID)
2. Task related statistics.
   - Commit, Backout, Journal and Logging, Page Set 00 logging, DB2 Manager, CF Manager and 'Other' statistics – extracted from the Task related statistics (macro CSQDWTAS)
3. Queue identification.
   - Queue name, type and other identifiers – extracted from the Identification section at the start of the Queue Statistics (macro CSQDWQ)
4. Queue call statistics.
   - OPEN, CLOSE, GET, PUT, PUT1, INQ, SET and OTHER statistics – extracted from the Queue Statistics (macro CSQDWQ)
5. Queue Get/Put summary.
   - Additional summary information about GET and PUT calls – extracted from the end of the Queue Statistics (macro CSQDWQ)

WebSphere MQ Class 3 List report

The WebSphere MQ Class 3 List report provides a detailed list of MQ accounting class 3 records.

The following command produces a Class 3 List report like that in Figure 52 on page 144

```
CICSPA MQ(LIST,CLASS3)
```

WebSphere MQ report

```
V2R1M0                                              CICS Performance Analyzer
                                                    WebSphere MQ Class 3 List

MQ000002 Printed at 12:15:27  3/15/2005  Data from 09:54:55  2/20/2005                                                    Page       1

SSID: MQMD APPLID: CICS53A1 Tran: MQAK  Task:     38  UserID: CICSUSER  NetName: N/A              UOWID: N/A
Channel:                    Channel Connection:                                                   Start:  2/20/2005 09:54:51.76

  Other    Total Calls           1  Avg Elapsed   0.000470   Avg CPU      0.000170
           #Old Pages          127  #New Pages           2

  Queue: CPPX.MQS520.TEST.TEMPQUEUE.070
  QType: LOCAL    IType: NONE       GDisp: Q_MGR    Date:  2/20/2005  Time: 09:54:51  P/Set No:        0  BufferPool No:        0
  First Opened:  2/20/2005 09:49:51.09   Last Closed:  2/20/2005 09:54:55.35   CF Structure Name:

               Count     Elapsed      CPU      Susp Elp  JnlWrt Elp   PS Req's  PS Rd Elp   Expired   Page Skip  Msgs Skip
             _________  _________  _________  _________  _________  _________  _________  _________  _________  _________
    CLOSE            1   0.000132   0.000131
    GET              1   0.000241   0.000236   0.000000    0.000000        0.0   0.000000        0.0        0.0        0.0
     DES ANY         1

    GET      Total Bytes           0  #GET w/Data             0  Min Msg Size        10  Max Msg Siz         20

SSID: MQMD APPLID: CICS53A1 Tran: CKTI  Task:     34  UserID: CICSUSER  NetName: N/A              UOWID: N/A
Channel:                    Channel Connection:                                                   Start:  2/20/2005 09:52:51.17

  Other    Total Calls           1  Avg Elapsed   0.000716   Avg CPU      0.000396

  Queue: CICSA1.INITQ
  QType: LOCAL    IType: NONE       GDisp: Q_MGR    Date:  2/20/2005  Time: 09:52:51  P/Set No:        0  BufferPool No:        0
  First Opened:  2/20/2005 09:49:42.03   Last Closed:  2/20/2005 09:59:20.63   CF Structure Name:
```

Figure 52. WebSphere MQ Class 3 List report

The WebSphere MQ Class 3 List report contains information in five sections:

1. Task identification
2. Task related statistics
3. Queue identification
4. Queue call statistics
5. Queue Get/Put summary

Section 1 Task identification:

```
SSID: MQMD APPLID: CICS53A1 Tran: MQAK  Task:     38  UserID: CICSUSER  NetName: N/A              UOWID: N/A
Channel:                    Channel Connection:                                                   Start:  2/20/2005 09:54:51.76
```

SSID Subsystem Name (field: QWHSSSID).

APPLID
Network Identifier for RRS connections (field: WTIDNID).

Tran CICS Transaction ID, extracted from the MQ Correlation ID (field: QWHCCV).

Task CICS Task number, extracted from the MQ Correlation ID (field: QWHCCV).

UserID
User (or Operator) ID (field: WTIDOPID).

NetName
Network name, extracted from the MQ Accounting Token (field: WTIDACCT).

UOWID
Network Unit of Work ID, extracted from the MQ Accounting Token (field: WTIDACCT).

Channel
Channel name for MVS mover (field: WTIDCHL).

Channel Connection
Long connection name for MVS mover (field: WTIDCHLC).

Start MQ thread start time stamp.

Section 2 Task related statistics:

```
Other    Total Calls          1  Avg Elapsed   0.000470   Avg CPU      0.000170
         #Old Pages         127  #New Pages           2
```

Commit

Count	Number of Commit requests (field: WTASCMN).
Avg Elapsed	Average Commit elapsed time (field: WTASCMET/WTASCMN).
Avg CPU	Average Commit CPU time (field: WTASCMCT/WTASCMN).

Backout

Count	Number of Backout calls (field: WTASBAN).
Avg Elapsed	Average Backout elapsed time (field: WTASBAET/WTASBAN).
Avg CPU	Average Backout CPU time (field: WTASBACT/WTASBAN).

P/S 0
Page Set 00 logging activity

Count	Number of logging requests (field: WTASPSN0).
Avg Elapsed	Average logging request elapsed time (WTASPSE0/ WTASPSN0).

Latch

Count Max	Maximum number of times a latch wait occurred (field: WTASLWN).
Elapsed Max	Average maximum latch wait time (field: WTASMLW/ WTASLWN).

Other
Non-queue other statistics.

Total Calls	Total number of 'Other' calls (field: WTASOTN).
Av Elapsed	Average elapsed time per 'Other' call (field: WTASOTET/WTASOTN).
Av CPU	Average CPU time per 'Other' call (field: WTASOTCT/ WTASOTN).
#Old Pages	Number of old pages retrieved (field: WTASGPO).
#New Pages	Number of new pages retrieved (field: WTASGPN).

Jnl/Log

Bytes	Total number of bytes written to the Journal (field: WTASJWB).
FORCEs	Total number of times the log was forced (field: WTASJCN).

Avg WAIT Elp Average elapsed time waiting for the log to be forced (field: WTASJCET/WTASJCN).

Avg SUSPEND Elp
Average suspend time (field: WTASSUSE/WTASJCN).

DB2 Mgr

Requests Total number of DB2 calls (field: WTASDBCT).

Avg Jnl/Log Thread Elapsed
Average elapsed time per DB2 call (field: WTASDBET/ WTASDBCT).

Avg Jnl/Log Server Elapsed
Average server elapsed time per DB2 call (field: WTASDBES/WTASDBCT).

Jnl/Log Thd Elp (Max)
Maximum DB2 thread elapsed time (field: WTASDBMT).

Jnl/Log Svr Elp (Max)
Maximum DB2 server elapsed time (field: WTASDBMS).

Section 3 Queue identification:

```
Queue: CPPX.MQS520.TEST.TEMPQUEUE.070
QType: LOCAL    IType: NONE       GDisp: Q_MGR    Date:  2/20/2005  Time: 09:54:51  P/Set No:        0  BufferPool No:        0
First Opened:  2/20/2005 09:49:51.09   Last Closed:  2/20/2005 09:54:55.35   CF Structure Name:
```

Queue Queue name as specified in OD of MQOPEN request (field: OBJNAME).

QType Type of queue (field: QTYPE).

IType Index type of queue (field: INDXTYPE).

GDisp Queue-sharing-Group disposition (field: QSGDISP).

Date Date from the SMF record time stamp.

Time Time from the SMF record time stamp.

P/Set No Page Set number (field: NPS).

Bufferpool No
Buffer pool number (field: NBUFFPOOL).

First Opened Time queue was first opened (field: OPENTIME).

Last Closed Time queue was last closed (field: CLOSTIME).

CF Structure Name
Coupling Facility structure name (field: CFSTRUCNAME).

Section 4 Queue call statistics:

	Count	Elapsed	CPU	Susp Elp	JnlWrt Elp	PS Req's	PS Rd Elp	Expired	Page Skip	Msgs Skip
CLOSE	1	0.000132	0.000131							
GET	1	0.000241	0.000236	0.000000	0.000000	0.0	0.000000	0.0	0.0	0.0
DES ANY	1									

OPEN

Count
Total number of OPEN calls (field: OPENN).

Elapsed
Average elapsed time per OPEN call (field: OPENET/OPENN).

CPU
Average CPU time per OPEN call (field: OPENCT/OPENN).

CLOSE

Count
Total number of CLOSE calls (field: CLOSEN).

Elapsed
Average elapsed time per CLOSE call (field: CLOSECT/CLOSEN).

CPU
Average CPU time per CLOSE call (field: CLOSEET/CLOSEN).

GET

Count
Total number of GET calls (field: GETN). This is broken down by the type of GET call:

DES ANY Destructive GET ANY
DES SPE Destructive GET SPECIFIC
BRW ANY BROWSE ANY
BRW SPE BROWSE SPECIFIC

Elapsed
Average elapsed time per GET call (field: GETET/GETN).

CPU
Average CPU time per GET call (field: GETCT/GETN).

Susp Elap
Average suspend time per GET call (field: GETSUSET/GETN).

JnlWrt Elp
Average elapsed time waiting for a journal write per GET call (field: GETJWET/GETN).

PS Req's
Average number of reads from a Page Set per GET call (field: GETPSN/GETN).

PS RD Elp
Average elapsed time waiting for a read from a Page Set per GET call (field: GETPSET/GETN).

Expired
Average number of expired messages (field: GETEXMSG/GETN).

Page Skip
Average number of pages skipped processing a GET (field: GETEPAGE/GETN).

Msgs Skip
Average number of messages skipped processing a GET (field: GETSMSG/GETN).

PUT

Count
Total number of PUT calls (field: PUTN)

Elapsed Average elapsed time per PUT call (field: PUTET/PUTN).

CPU Average CPU time per PUT call (field: PUTCT/PUTN).

Susp Elap Average suspend time per PUT call (field: PUTSUSET/PUTN).

JnlWrt Elp Average elapsed time waiting for a journal write per PUT call (field: PUTJWET/PUTN).

PS Req's Average number of PUT calls from a Page Set per PUT call (field: PUTPSN/PUTN)

PS RD Elp Average elapsed time waiting for a read from a Page Set per PUT call (field: PUTPSET/PUTN).

PUT1

Count Total number of PUT1 calls (field: PUT1N).

Elapsed Average elapsed time per PUT1 call (field: PUT1ET/PUT1N).

CPU Average CPU time per PUT1 call (field: PUT1CT/PUT1N).

Susp Elap Average suspend time per PUT1 call (field: PUT1SUSET/PUT1N).

JnlWrt Elp Average elapsed time waiting for a Journal write per PUT1 call (field: PUT1JWET/PUT1N).

PS Req's Average number of PUT1 calls from a Page Set per PUT1 call (field: PUT1PSN/PUT1N).

PS RD Elp Average elapsed time waiting for a read from a Page Set per PUT1 call (field: PUT1PSET/PUT1N).

INQ

Count Total number of INQ calls (field: INQN).

Elapsed Average elapsed time per INQ call (field: INQET/INQN).

CPU Average CPU time per INQ call (field: INQCT/INQN).

SET

Count Total number of SET calls (field: SETN).

Elapsed Average elapsed time per SET call (field: SETET/SETN).

CPU Average CPU time per SET call (field: SETCT/SETN).

Section 5 Queue Get/Put summary:

```
GET      Total Bytes          0  #GET w/Data           0  Min Msg Size       10  Max Msg Siz        20
```

GET

Total Bytes Total number of data bytes read during MQGET (field: GETBYTES).

#GET w/Data Total number of successful GET calls (field: VALIDGET).

Min Msg Size Minimum message size retrieved by GET calls (field: GETMINMS).

Max Msg Size Maximum message size retrieved by GET calls (field: GETMAXMS).

PUT

Total Bytes Total number of data bytes written during PUT1 (field: PUTBYTES).

#GET w/Data Total number of successful PUT calls (field: VALIDPUT).

Min Msg Size Minimum message size retrieved by PUT calls (field: PUTMINMS).

Max Msg Size Maximum message size retrieved by PUT calls (field: PUTMAXMS).

WebSphere MQ Class 3 Summary report

The WebSphere MQ Class 3 Summary report provides a summary of MQ accounting class 3 records.

You can request 4 sort options to summarize data in the required sequence: TRAN, QUEUE, TRAN/QUEUE (Queues referenced by a Transaction) and QUEUE/TRAN (Transactions that reference a Queue).

In all cases, the report is divided into two sections:

1. A static header section.
2. A variable length information section. In the variable section, data lines are omitted if they have no activity against them (typically, the count value is zero).

The following command produces a Class 3 Summary report (sorted by Transaction ID) like that in Figure 53

```
CICSPA MQ(SUMMARY,CLASS3,SORT(TRAN))
```

```
 V2R1M0                                          CICS Performance Analyzer
                                        WebSphere MQ Class 3 Summary     (By TRAN)

MQ000004 Printed at 14:42:16  8/13/2004  Data from 14:50:34 07/13/2004 to 14:51:24 07/13/2004                    Page       1


SSID: MQMD  APPLID: CICS53A1  Tran: CKTI  Threads:         1
  Other     Avg Count               1.0   Avg Elapsed    0.000895  Avg CPU      0.000370

SSID: MQMD  APPLID: CICS53A1  Tran: MQA1  Threads:         1
  Other     Avg Count               1.0   Avg Elapsed    0.018721  Avg CPU      0.000258
            Avg #Old Pages        120.0   Avg #New Pages      0.0
```

Figure 53. WebSphere MQ Class 3 Summary report (by TRAN)

The following command produces a Class 3 Summary report (sorted by Queue name) like that in Figure 54 on page 150

```
CICSPA MQ(SUMMARY,CLASS3,SORT(QUEUE))
```

```
 V2R1M0                                                CICS Performance Analyzer
                                                WebSphere MQ Class 3 Summary     (By QUEUE)

MQ000005 Printed at 14:42:16  8/13/2004  Data from 14:50:34 07/13/2004 to 14:51:24 07/13/2004                    Page       1


Queue: CPPX.MQS520.TEST.TEMPQUEUE.001
QType: LOCAL    IType: NONE       GDisp: Q_MGR    QCount:         1

            Count     Elapsed      CPU      Susp Elp  JnlWrt Elp   PS Req's  PS Rd Elp   Expired   Page Skip  Msgs Skip
          _______  _________  _________  _________  __________  _________  _________  _________  _________  _________
  OPEN        1.0   0.000480   0.000472
  CLOSE       1.0   0.000122   0.000121
  PUT         1.0   0.000657   0.000562   0.000000    0.000000        0.0   0.000000        0.0        0.0        0.0

  PUT      Avg Bytes          10.0  Avg #PUT w/Data      1.0   Min Msg Size        10  Max Msg Size        10

Queue: CPPX.MQS520.TEST.TEMPQUEUE.002
QType: LOCAL    IType: NONE       GDisp: Q_MGR    QCount:         1

            Count     Elapsed      CPU      Susp Elp  JnlWrt Elp   PS Req's  PS Rd Elp   Expired   Page Skip  Msgs Skip
          _______  _________  _________  _________  __________  _________  _________  _________  _________  _________
  OPEN        1.0   0.000274   0.000270
  CLOSE       1.0   0.000053   0.000052
  PUT         1.0   0.000489   0.000484   0.000000    0.000000        0.0   0.000000        0.0        0.0        0.0

  PUT      Avg Bytes          10.0  Avg #PUT w/Data      1.0   Min Msg Size        10  Max Msg Size        10
```

Figure 54. WebSphere MQ Class 3 Summary report (by QUEUE)

The following command produces a Class 3 Summary report (sorted by Transaction ID, then Queue name) like that in Figure 55

```
CICSPA MQ(SUMMARY,CLASS3,SORT(TRAN,QUEUE))
```

```
 V2R1M0                                                CICS Performance Analyzer
                                                WebSphere MQ Class 3 Summary     (By TRAN,QUEUE)

MQ000006 Printed at 14:42:16  8/13/2004  Data from 14:50:34 07/13/2004 to 14:51:24 07/13/2004                    Page       1


SSID: MQMD  APPLID: CICS53A1  Tran: CKTI  Threads:         1
  Other     Avg Count               1.0   Avg Elapsed    0.000895  Avg CPU      0.000370

SSID: MQMD  APPLID: CICS53A1  Tran: MQA1  Threads:         1
  Other     Avg Count               1.0   Avg Elapsed    0.018721  Avg CPU      0.000258
            Avg #Old Pages        120.0   Avg #New Pages      0.0

  Queue: CPPX.MQS520.TEST.TEMPQUEUE.001
  QType: LOCAL    IType: NONE       GDisp: Q_MGR    QCount:         1

              Count     Elapsed      CPU      Susp Elp  JnlWrt Elp   PS Req's  PS Rd Elp   Expired   Page Skip  Msgs Skip
            _______  _________  _________  _________  __________  _________  _________  _________  _________  _________
    OPEN        1.0   0.000480   0.000472
    CLOSE       1.0   0.000122   0.000121
    PUT         1.0   0.000657   0.000562   0.000000    0.000000        0.0   0.000000        0.0        0.0        0.0

    PUT      Avg Bytes          10.0  Avg #PUT w/Data      1.0   Min Msg Size        10  Max Msg Size        10
```

Figure 55. WebSphere MQ Class 3 Summary report (by TRAN,QUEUE)

The following command produces a Class 3 Summary report (sorted by Queue name, then Transaction ID) like that in Figure 56 on page 151

```
CICSPA MQ(SUMMARY,CLASS3,SORT(QUEUE,TRAN))
```

```
 V2R1M0                                              CICS Performance Analyzer
                                          WebSphere MQ Class 3 Summary     (By QUEUE,TRAN)
MQ000007 Printed at 14:42:16  8/13/2004  Data from 14:50:34 07/13/2004 to 14:51:24 07/13/2004                    Page       6

Queue: CPPX.MQS520.TEST.TEMPQUEUE.023
QType: LOCAL    IType: NONE       GDisp: Q_MGR    QCount:         1

             Count     Elapsed      CPU      Susp Elp  JnlWrt Elp   PS Req's  PS Rd Elp   Expired   Page Skip  Msgs Skip
           _________  _________  _________  _________  __________  _________  _________  _________  _________  _________
  OPEN           1.0   0.000272   0.000267
  CLOSE          1.0   0.000114   0.000113
  PUT            1.0   0.000502   0.000495   0.000000    0.000000        0.0   0.000000        0.0        0.0        0.0

  PUT      Avg Bytes          10.0  Avg #PUT w/Data      1.0   Min Msg Size        10  Max Msg Size        10

  SSID: MQMD  APPLID: CICS53A1  Tran: MQA1  Threads:         1
    Other     Avg Count              1.0   Avg Elapsed    0.018721  Avg CPU      0.000258
              Avg #Old Pages       120.0   Avg #New Pages      0.0
```

Figure 56. WebSphere MQ Class 3 Summary report (by QUEUE,TRAN)

The WebSphere MQ Class 3 Summary report contains information in five sections:

1. Task identification
2. Task related statistics
3. Queue identification
4. Queue call statistics
5. Queue Get/Put summary

Section 1 Task identification:

```
  SSID: MQMD  APPLID: CICS53A1  Tran: MQA1  Threads:         1
```

SSID Subsystem name (field: QWHSSSID).

APPLID
Network identifier (field: QWHCNID).

Tran CICS Transaction ID, extracted from the MQ Correlation ID (field: QWHCCV).

Threads
Thread count (field: QWHCCV). The number of MQ accounting records for this SSID/APPLID/TRAN key.

Section 2 Task related statistics:

```
    Other     Avg Count              1.0   Avg Elapsed    0.018721  Avg CPU      0.000258
              Avg #Old Pages       120.0   Avg #New Pages      0.0
```

Commit

Count Average Commit requests per thread (field: WTASCMN/Number of threads).

Avg Elapsed Average Commit elapsed time per thread (field: WTASCMET/Number of threads).

Avg CPU Average Commit CPU time per thread (field: WTASCMCT/Number of threads).

Backout

Count Average Backout calls per thread (field: WTASBAN/Number of threads).

Avg Elapsed Average Backout elapsed time per thread (field: WTASCBAET/Number of threads).

Avg CPU Average Backout CPU time per thread (field: WTASCBACT/Number of threads).

P/S 0

Page Set 00 logging activity.

Count Average number of P/S 0 logging requests per thread (field: WTASPSN0/Number of threads).

Avg Elapsed Average P/S 0 logging elapsed time per thread (field: WTASPSE0/Number of threads).

Latch

Count Max The highest latch class for which the longest waiting elapsed time occurred.

Elapsed Max Average elapsed time processing commit requests per thread (field: WTASCMET/Number of threads).

Other

Non-queue other statistics.

Total Calls Average number of 'Other' calls per thread (field: WTASOTN/Number of threads).

Av Elapsed Average 'Other' calls elapsed time per thread (field: WTASOTET/Number of threads).

Av CPU Average 'Other' calls CPU time per thread (field: WTASOTCT/Number of threads).

#Old Pages Average number of old pages retrieved per thread (field: WTASGPO/Number of threads).

#New Pages Average number of new pages retrieved per thread (field: WTASGPN/Number of threads).

Jnl/Log

Bytes Average number of bytes written to the Journal per thread (field: WTASJWB/Number of threads).

FORCEs Average number of times the log was forced per thread (field: WTASJCN/Number of threads).

Avg WAIT Elp Average elapsed time waiting for the log to be forced per thread (field: WTASJWET/Number of threads)

Avg SUSPEND Elp

Average suspend time per thread (field: WTASSUSE/Number of threads).

DB2 Mgr

Requests Average number of DB2 calls per thread (field: WTASDBCT/Number of threads).

Avg Jnl/Log Thread Elapsed
Average DB2 calls elapsed time per thread (field: WTASCDBET/Number of threads).

Avg Jnl/Log Server Elapsed
Average DB2 calls server elapsed time per thread (field: WTASCDBES/Number of threads).

Jnl/Log Thd Elp (Max)
Maximum DB2 thread elapsed time.

Jnl/Log Svr Elp (Max)
Maximum DB2 server elapsed time.

CF Mgr

Avg Count (IXLLSTE)
Average number of IXLLSTE calls per thread (field: WTASCSEC/Number of threads).

Avg Redrives (IXLLSTE)
Average number of IXLLSTE redrives per thread (field: WTASRSEC/Number of threads).

Avg Count (IXLLSTM)
Average number of IXLLSTM calls per thread (field: WTASCMEC/Number of threads).

Avg Redrives (IXLLSTM)
Average number of IXLLSTM redrives per thread (field: WTASRMEC/Number of threads).

Section 3 Queue identification:

```
Queue: CPPX.MQS520.TEST.TEMPQUEUE.023
QType: LOCAL    IType: NONE       GDisp: Q_MGR    QCount:         1
```

Queue Queue name as specified in OD of MQOPEN request (field: OBJNAME).

QType Type of queue (field: QTYPE).

IType Index type of queue (field: INDXTYPE).

GDisp Queue-sharing-Group disposition (field: QSGDISP).

QCount Number of MQ accounting records in which a transaction referenced the Key for this Queue.

Section 4 Queue call statistics:

	Count	Elapsed	CPU	Susp Elp	JnlWrt Elp	PS Req's	PS Rd Elp	Expired	Page Skip	Msgs Skip
OPEN	1.0	0.000272	0.000267							
CLOSE	1.0	0.000114	0.000113							
PUT	1.0	0.000502	0.000495	0.000000	0.000000	0.0	0.000000	0.0	0.0	0.0

OPEN

Count Average number of OPEN calls per Queue count (field: OPENN/QCount).

Elapsed Average elapsed time per OPEN call (field: OPENET/OPENN).

CPU Average CPU time per OPEN call (field: OPENCT/OPENN).

CLOSE

Count Average number of CLOSE calls per Queue count (field: CLOSEN/QCount).

Elapsed Average elapsed time per CLOSE call (field: CLOSEET/CLOSEN).

CPU Average CPU time per CLOSE call (field: CLOSECT/CLOSEN).

GET

Count Average number of GET calls per Queue Count (field: GETN/QCount). This is broken down by the type of GET call:

DES ANY Destructive GET ANY
DES SPE Destructive GET SPECIFIC
BRW ANY BROWSE ANY
BRW SPE BROWSE SPECIFIC

Elapsed Average elapsed time per GET call (field: GETET/GETN).

CPU Average CPU time per GET call (field: GETCT/GETN).

Susp Elap Average suspend time per GET call (field: GETSUSET/GETN).

JnlWrt Elp Average elapsed time waiting for a journal write per GET call (field: GETJWET/GETN).

PS Req's Average number of reads from a Page Set per GET call (field: GETPSN/GETN).

PS RD Elp Average elapsed time waiting for a read from a Page Set per GET call (field: GETPSET/GETN).

Expired Average number of expired messages (field: GETEXMSG/GETN).

Page Skip Average number of pages skipped processing a GET (field: GETEPAGE/GETN).

Msgs Skip Average number of messages skipped processing a GET (field: GETSMSG/GETN).

PUT

Count Average number of PUT calls per Queue count (field: PUTN/QCount).

Elapsed Average elapsed time per PUT call (field: PUTET/PUTN).

CPU Average CPU time per PUT call (field: PUTCT/PUTN).

Susp Elap Average suspend time per PUT call (field: PUTSUSET/PUTN).

JnlWrt Elp Average elapsed time waiting for a journal write per PUT call (field: PUTJWET/PUTN).

PS Req's Average number of PUT calls from a Page Set per PUT call (field: PUTPSN/PUTN)

PS RD Elp Average elapsed time waiting for a read from a Page Set per PUT call (field: PUTPSET/PUTN).

PUT1

Count Average number of PUT1 calls per Queue count (field: PUT1N/QCount).

Elapsed Average elapsed time per PUT1 call (field: PUT1ET/PUT1N).

CPU Average CPU time per PUT1 call (field: PUT1CT/PUT1N).

Susp Elap Average suspend time per PUT1 call (field: PUT1SUSET/PUT1N).

JnlWrt Elp Average elapsed time waiting for a Journal write per PUT1 call (field: PUT1JWET/PUT1N).

PS Req's Average number of PUT1 calls from a Page Set per PUT1 call (field: PUT1PSN/PUT1N).

PS RD Elp Average elapsed time waiting for a read from a Page Set per PUT1 call (field: PUT1PSET/PUT1N).

INQ

Count Average number of INQ calls per Queue count (field: INQN/QCount).

Elapsed Average elapsed time per INQ call (field: INQET/INQN).

CPU Average CPU time per INQ call (field: INQCT/INQN).

SET

Count Average number of SET calls per Queue count (field: SETN/QCount).

Elapsed Average elapsed time per SET call (field: SETET/SETN).

CPU Average CPU time per SET call (field: SETCT/SETN).

Section 5 Queue Get/Put summary:

```
PUT      Avg Bytes          10.0  Avg #PUT w/Data      1.0   Min Msg Size        10  Max Msg Size        10
```

GET

Total Bytes Average number of data bytes read during MQGET per Queue count (field: GETBYTES/QCount).

#GET w/Data Average number of successful GET calls per Queue count (field: VALIDGET/QCount).

Min Msg Size Minimum message size retrieved by GET calls (field: GETMINMS).

Max Msg Size Maximum message size retrieved by GET calls (field: GETMAXMS).

PUT

Total Bytes Average number of data bytes written during PUT1 per Queue count (field: PUTBYTES/QCount).

#GET w/Data Average number of successful PUT calls per Queue count (field: VALIDPUT/QCount).

Min Msg Size Minimum message size retrieved by PUT calls (field: PUTMINMS).

Max Msg Size Maximum message size retrieved by PUT calls (field: PUTMAXMS).

OMEGAMON reports

The OMEGAMON reports process OMEGAMON XE for CICS (SMF 112) records to produce a detailed view of how CICS transactions use the following types of database management system (DBMS):

- Adabas
- CA-Datacom
- CA-IDMS
- Supra

For each type of DBMS, you can request up to three reports:

- A List report, showing database usage for each transaction.
- A Transaction Summary report, showing database usage summarized by transaction ID.
- A Database Summary report, showing database usage summarized by database.

The information in each report varies depending on the type of DBMS, but typically includes elapsed times and counts for each of the methods that transactions use to access a database, such as read, write, add, update, and delete.

Report command

The OMEGAMON reports can be requested from a Report Set in the CICS PA dialog. Select the **OMEGAMON** report in the **Subsystem Reports** category.

In batch, the `OMEGAMON` command is used to request the OMEGAMON reports.

The command to produce the default reports is:

```
CICSPA OMEGAMON
```

or, equivalently:

```
CICSPA OMEGAMON(OUTPUT(OMEG0001),DBMS(ADABAS,DATACOM,IDMS,SUPRA),
                SUMMARY(TRAN,DATABASE,AVG,MAX),PRINT(TOTALS,DB))
```

The default reports consist of a Transaction Summary report and a Database Summary report for each of the four types of DBMS.

If there are no input records for a type of DBMS, then no reports are produced for it (not even report headings), even when that type of DBMS is specified by the command.

To tailor the report, you can specify report options as follows:

```
CICSPA OMEGAMON[(
             [OUTPUT(ddname|OMEG0001),]
             [LINECNT(nnn),]
             [DBMS(ADABAS,DATACOM,IDMS,SUPRA),]
             [LIST,]
             [SUMMARY(TRAN,DATABASE,AVG,MAX,MIN,TOT,DEV,PEAK(percentile)),]
             [PRINT(TOTALS,DB),]
             [TITLE1('...sub-heading left ...'),]
             [TITLE2('...sub-heading right...')]
             [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
                                 ...))])]
```

You can request a report from all available records, or you can specify selection criteria to request a report from only the records that meet specific requirements.

Report content

You can request up to twelve reports with a single command. For example:

- `OMEGAMON(DBMS(dbms),LIST)` requests up to four List reports, where *dbms* is any combination of: ADABAS, DATACOM, IDMS, or SUPRA).
- `OMEGAMON(DBMS(dbms),SUMMARY(TRAN))` requests up to four Transaction Summary reports.
- `OMEGAMON(DBMS(dbms),SUMMARY(DATABASE))` requests up to four Database Summary reports.
- `OMEGAMON` (with no operands) requests up to eight Summary reports.

List reports appear in the output first, followed by Transaction Summary reports, and then Database Summary reports. The List reports for each type of DBMS do not appear in a fixed order: if the first input record is for Adabas, then the Adabas List report will appear in the output first. The Summary reports appear in the order: Adabas, CA-Datacom, CA-IDMS, Supra.

The List, Transaction Summary, and Database Summary reports for a particular type of DBMS all contain the same information, with the same column headings. The difference between the List report and the Summary reports is that the List report contains information for each individual transaction, whereas the Summary reports summarize all transactions that started in the specified reporting period. The difference between the Transaction Summary and Database Summary reports is the grouping of information: the Transaction Summary report groups information by transaction ID, whereas the Database Summary report groups information by database. Also, the Transaction Summary report may include totals sections (containing information from totals segments of the input records); these sections do not appear in the Database Summary report.

If you request multiple reports with a single command, then CICS PA writes all the reports to the same DDname. To separate the reports into different output files (for example, List reports in one file, Summary reports in another), specify separate commands.

List reports

A List report has the following structure, repeated for each input record:

- A header section, containing: transaction start time, transaction code, task number, CICS APPLID, unit of work (OUW) sequence, OUW ID, and originating system VTAM network name (netname).
- If the `PRINT(TOTALS)` operand is specified: a totals section, containing fields from the input record's totals segment for the selected type of DBMS.
- If the `PRINT(DB)` operand is specified: one database section per database (belonging to the selected type of DBMS) accessed by the transaction. This section contains fields from the detail segments of the input record.

  CA-IDMS only: For consistency with CA-IDMS terminology, the database sections in the CA-IDMS reports are labelled under the column heading “File Name” rather than “Database”.

The content of the totals and database sections depends on the type of DBMS. For details, see “Report content for each type of DBMS” on page 160.

```
 V2R1M0                                                CICS Performance Analyzer
                                                        OMEGAMON - Adabas List
                                                       ________________________________________________
OMEG0001 Printed at 15:11:10 12/04/2006                                                                  Page       1

 Start Time  Tran Task No   APPLID  UOW Seq    UOWID           Netname
------------ ---- -------- -------- ------- ------------ --------------------
20.41.14.963 ADA5       54 CICSXX64       1 6D0ADE5C4E91 USCACO01.CICSXX64

Totals             Opn User Proc ISN  Search  File Opr CHKPT/RS Misc Req End Tran Cls User
------             -------- -------- -------- -------- -------- -------- -------- --------
            Elapse 4271.571 4277.600 4855.497 4295.033 4295.295 4294.443 4295.950 4106.945
            Count          1        1        1        1        1        1        1        1

Database           Proc ISN  Search  Read Rec Read Fld Read Des   Hold      Add    Update   Delete   Release
-----------        -------- -------- -------- -------- -------- -------- -------- -------- -------- --------
00054-00084 Elapse 4277.600 4855.497    .0000    .0000    .0000    .0000    .0000 4295.033    .0000    .0000
            Count          1        1        0        0        0        0        0        1        0        0
```

Figure 57. OMEGAMON Adabas List report

Summary reports

A Transaction Summary report has the following structure, repeated for each transaction ID:

- If the `PRINT(TOTALS)` operand is specified: a totals section, containing summarized information from the totals segments of the input records for that transaction ID, for the selected type of DBMS.
- If the `PRINT(DB)` operand is specified: one database section per database (for the selected type of DBMS) accessed by the transaction. This section contains summarized information from the detail segments of the input records.
- If the `PRINT(DB)` operand is specified: a subtotal section (identified by the marker "*Total*" under the Database column), summarizing the information for that transaction ID across all databases (for the selected type of DBMS).

A Database Summary report has the following structure, repeated for each database (for the selected type of DBMS):

- One transaction section for each transaction ID that has accessed that database. This section contains summarized information from the detail segments of the input records.
- A subtotal section (identified by the marker "*Tot" under the Tran column), summarizing the information for that database across all transaction IDs.

The content of the totals, database, and subtotal sections depends on the type of DBMS. For details, see "Report content for each type of DBMS" on page 160.

```
 V2R1M0                                          CICS Performance Analyzer
                                              OMEGAMON - CA-DATACOM Transaction Summary

OMEG0001 Printed at 12:35:04 12/12/2006    Data from 20:41:14 18/09/2006 to 23:01:08 18/09/2006                    Page       1


Tran #Tasks   Totals                Add    Backout   Count   Delete  Get Next  Get Set  Loc Gen Loc Spec
---- -------- ------          -------- -------- -------- -------- -------- -------- -------- --------
DCO1     1022          Elapse Avg   8.0748    .3218    .2696    .2683    .2879   1.3106    .1756    .1304
                             Max 219.9388  31.9160  15.7942  10.2236   6.1604  64.1597  27.1319  56.1644
                       Count  Avg        1        1        1        1        1        1        1        1
                             Max        1        1        1        1        1        1        1        1

                                 Log Oper   Read    Release  Select   Sel Set Sys/Othr  Update
                                 -------- -------- -------- -------- -------- -------- --------
                       Elapse Avg    .1059    .0851    .1009    .2673    .1338    .0733    .0934
                             Max  18.5467  19.4642   7.1434  70.1891  34.6685   2.9491   3.8011
                       Count  Avg        1        1        1        1        1        1        1
                             Max        1        1        1        1        1        1        1

     #Tasks   Database              Add     Count   Delete  Get Next  Get Set Loc Spec   Read    Release  Select   Sel Set  Update
     -------- --------        -------- -------- -------- -------- -------- -------- -------- -------- -------- -------- --------
            1 TBL998   Elapse Avg    .0655    .0000    .0000    .0000    .0000    .0000    .0000    .0000    .3277    .0000    .0000
                             Max    .0655    .0000    .0000    .0000    .0000    .0000    .0000    .0000    .3277    .0000    .0000
                       Count  Avg        1        1        1        1        1        1        1        1        1        1        1
                             Max        1        1        1        1        1        1        1        1        1        1        1

⋮
(other databases for this transaction)
⋮

     #Tasks   Database              Add     Count   Delete  Get Next  Get Set Loc Spec   Read    Release  Select   Sel Set  Update
     -------- --------        -------- -------- -------- -------- -------- -------- -------- -------- -------- -------- --------
         1022 *Total*  Elapse Avg   8.0748    .2696    .2683    .2879   1.3106    .1304    .0851    .1009    .2673    .1338    .0934
                             Max 219.9388  15.7942  10.2236   6.1604  64.1597  56.1644  19.4642   7.1434  70.1891  34.6685   3.8011
                       Count  Avg        1        1        1        1        1        1        1        1        1        1        1
                             Max        1        1        1        1        1        1        1        1        1        1        1
⋮

(other transactions for this DBMS)
```

Figure 58. OMEGAMON CA-Datacom Transaction Summary report

Report content for each type of DBMS

The structure of the OMEGAMON reports are similar regardless of which DBMS the report is for; however, the detailed contents depend on the DBMS. The following topics describe the report content for each type of DBMS. Each of these topics contains two tables:

- The first table describes the contents of the totals sections in a report, based on information from the totals segments in the input records.
- The second table describes the contents of the database sections in a report, based on information from the detail segments in the input records.

Adabas report content: The following tables describe the content of OMEGAMON reports for Adabas.

Table 7. OMEGAMON report contents for Adabas: totals section

Column heading	Row heading	OMEGAMON field	Description
Opn User	Elapse	ADABAS_T_CLOCK1	Elapsed time of the Open User (Adabas OP) requests executed by this task.
	Count	ADABAS_T_COUNT1	Total Open User requests executed by this task.
Proc ISN	Elapse	ADABAS_T_CLOCK2	Elapsed time of the Process ISN requests (Adabas S8 and S9) executed by this task.
	Count	ADABAS_T_COUNT2	Total Process ISN requests executed by this task.

Table 7. OMEGAMON report contents for Adabas: totals section (continued)

Column heading	Row heading	OMEGAMON field	Description
Search	Elapse	ADABAS_T_CLOCK3	Elapsed time of the Search (Adabas S1, S2, S3, S4, and S5) requests executed by this task.
	Count	ADABAS_T_COUNT3	Total Search requests executed by this task.
File Opr	Elapse	ADABAS_T_CLOCK4	Elapsed time of the File Operation requests executed by this task. Individual File Operation requests are recorded in the detail portion of the SMF type 112 record.
	Count	ADABAS_T_COUNT4	Total File Operation requests executed by this task.
CHKPT/RS	Elapse	ADABAS_T_CLOCK5	Elapsed time of the Checkpoint/Restart (Adabas C1, C2, and C3) requests executed by this task.
	Count	ADABAS_T_COUNT5	Total Checkpoint/Restart requests executed by this task.
Misc Req	Elapse	ADABAS_T_CLOCK6	Elapsed time of Miscellaneous (Adabas BT, C5, RC, and RE) requests executed by this task.
	Count	ADABAS_T_COUNT6	Total Miscellaneous requests executed by this task.
End Tran	Elapse	ADABAS_T_CLOCK7	Elapsed time of the End Transaction (Adabas ET) requests executed by this task.
	Count	ADABAS_T_COUNT7	Total End Transaction requests executed by this task.
Cls User	Elapse	ADABAS_T_CLOCK8	Elapsed time of the Close User (Adabas CL) requests executed by this task.
	Count	ADABAS_T_COUNT8	Total Close User requests executed by this task.

Table 8. OMEGAMON report contents for Adabas: database section

Column heading	Row heading	OMEGAMON field	Description
Proc ISN	Elapse	ADABAS_F_CLOCK1	Elapsed time of the Process ISN (Adabas S8) requests executed by this task.
	Count	ADABAS_F_COUNT1	Total Process ISN requests executed by this task.
Search	Elapse	ADABAS_F_CLOCK2	Elapsed time of the Search (Adabas S1, S2, S3, S4, and S5) requests executed by this task.
	Count	ADABAS_F_COUNT2	Total Search requests executed by this task.
Read Rec	Elapse	ADABAS_F_CLOCK3	Elapsed time of the Read Record (Adabas L1, L2, L3, L4, L5, and L6) requests executed by this task.
	Count	ADABAS_F_COUNT3	Total Read Record requests executed by this task.
Read Fld	Elapse	ADABAS_F_CLOCK4	Elapsed time of the Read Field (Adabas LF) requests executed by this task.
	Count	ADABAS_F_COUNT4	Total Read Field requests executed by this task.
Read Des	Elapse	ADABAS_F_CLOCK5	Elapsed time of the Read Descriptor (Adabas L9) requests executed by this task.
	Count	ADABAS_F_COUNT5	Total Read Descriptor requests executed by this task.

Table 8. OMEGAMON report contents for Adabas: database section (continued)

Column heading	Row heading	OMEGAMON field	Description
Hold	Elapse	ADABAS_F_CLOCK6	Elapsed time of Hold (Adabas HI) requests executed by this task.
	Count	ADABAS_F_COUNT6	Total Hold requests executed by this task.
Add	Elapse	ADABAS_F_CLOCK7	Elapsed time of the Add (Adabas N1 and N2) requests executed by this task.
	Count	ADABAS_F_COUNT7	Total Add requests executed by this task.
Update	Elapse	ADABAS_F_CLOCK8	Elapsed time of the Update (Adabas A1 and A4) requests executed by this task.
	Count	ADABAS_F_COUNT8	Total Update requests executed by this task.
Delete	Elapse	ADABAS_F_CLOCK9	Elapsed time of the Delete (Adabas E1 and E4) requests executed by this task.
	Count	ADABAS_F_COUNT9	Total Delete requests executed by this task.
Release	Elapse	ADABAS_F_CLOCK10	Elapsed time of the Release (Adabas RI) requests executed by this task.
	Count	ADABAS_F_COUNT10	Total Release requests executed by this task.

The following table summarizes how CICS PA maps the data for each Adabas command to the column headings in the report.

Table 9. Mapping of Adabas commands to OMEGAMON report column headings

	Column headings	
Adabas commands	**Database section**	**Totals section**
A1, A4	Update	File Opr
BT	Misc Req	Misc Req
CL	Cls User	Cls User
C1 - C3	CHKPT/RS	CHKPT/RS
C5	Misc Req	Misc Req
ET	Misc Req	Misc Req
E1, E4	Delete	File Opr
HI	Hold	File Opr
LF	Read Fld	File Opr
L1 - L6	Read Rec	File Opr
L9	Read Des	File Opr
N1, N2	Add	File Opr
OP	Opn User	Opn User
RC	Misc Req	Misc Req
RE	Misc Req	Misc Req
RI	Release	File Opr
S1 - S5	Search	Search
S8, S9	Proc ISN	Proc ISN

CA-Datacom report content: The following tables describe the content of OMEGAMON reports for CA-Datacom.

Table 10. OMEGAMON report contents for CA-Datacom: totals section

Column heading	Row heading	OMEGAMON field	Description
Add	Elapse	DATACOM_T_CLOCK1	Elapsed time of the Add (CA-Datacom ADDIT) requests executed by this task.
	Count	DATACOM_T_COUNT1	Total Add requests executed by this task.
Backout	Elapse	DATACOM_T_CLOCK2	Elapsed time of the Backout requests executed by this task.
	Count	DATACOM_T_COUNT2	Total Backout requests executed by this task.
Count	Elapse	DATACOM_T_CLOCK3	Elapsed time of the Count requests executed by this task.
	Count	DATACOM_T_COUNT3	Total Count requests executed by this task.
Delete	Elapse	DATACOM_T_CLOCK4	Elapsed time of the Delete (CA-Datacom DELET) requests executed by this task.
	Count	DATACOM_T_COUNT4	Total Delete requests executed by this task.
Get Next	Elapse	DATACOM_T_CLOCK5	Elapsed time of the Get Next (CA-Datacom GETIT and GETPS) requests executed by this task.
	Count	DATACOM_T_COUNT5	Total Get Next requests executed by this task.
Get Set	Elapse	DATACOM_T_CLOCK6	Elapsed time of Get Set (CA-Datacom GSETL and GSETP) requests executed by this task.
	Count	DATACOM_T_COUNT6	Total Get Set requests executed by this task.
Loc Gen	Elapse	DATACOM_T_CLOCK7	Elapsed time of the Locate Generic requests executed by this task. Locate Generic and Locate Specific requests consist of CA-Datacom requests LOCBR, LOCKG, LOCKI, LOCKL, LOCKR, LOCKX, LOCKY, LOCNE, LOCNK, LOCNR, and LOCNX.
	Count	DATACOM_T_COUNT7	Total Locate Generic requests executed by this task.
Loc Spec	Elapse	DATACOM_T_CLOCK8	Elapsed time of the Locate Specific requests executed by this task.
	Count	DATACOM_T_COUNT8	Total Locate Specific requests executed by this task.
Log Oper	Elapse	DATACOM_T_CLOCK9	Elapsed time of the Log Operation requests executed by this task.
	Count	DATACOM_T_COUNT9	Total Log Operation requests executed by this task.
Read	Elapse	DATACOM_T_CLOCK10	Elapsed time of the Read requests executed by this task. Read requests consist of CA-Datacom requests REDBR, RDUBR, REDID, RDUID, REDKG, RDUKG, REDKL, RDUKL, REDKR, RDUKR, REDKX, RDUKX, REDKY, RDUKY, REDLE, RDULE, REDNE, RDUNE, REDNK, RDUNK, REDNR, RDUN, REDNX, and RDUNX.
	Count	DATACOM_T_COUNT10	Total Read requests executed by this task.
Release	Elapse	DATACOM_T_CLOCK11	Elapsed time of the Release requests executed by this task.
	Count	DATACOM_T_COUNT11	Total Release requests executed by this task.

Table 10. OMEGAMON report contents for CA-Datacom: totals section (continued)

Column heading	Row heading	OMEGAMON field	Description
Select	Elapse	DATACOM_T_CLOCK12	Elapsed time of the Select requests executed by this task. Select requests consist of CA-Datacom requests SELNR, SELSM, SELCN, SELFR, and SELST.
	Count	DATACOM_T_COUNT12	Total Select requests executed by this task.
Sel Set	Elapse	DATACOM_T_CLOCK13	Elapsed time of the Select Set requests executed by this task.
	Count	DATACOM_T_COUNT13	Total Select Set requests executed by this task.
Sys/Other	Elapse	DATACOM_T_CLOCK14	Elapsed time of the System/Other requests executed by this task. System/Other requests consist of CA-Datacom requests LOGTB, CNTKR, CNTKY, CNTTB, LOGCP, LOGCR, LOGDR, LOGDW, LOGIT, LOGLB, RELES, RELFL, SELPR, ABEND, CLOSE, INQIN, NOOPS, OPEN, and TEST.
	Count	DATACOM_T_COUNT14	Total System/Other requests executed by this task.
Update	Elapse	DATACOM_T_CLOCK15	Elapsed time of the Update (CA-Datacom UPDAT) requests executed by this task.
	Count	DATACOM_T_COUNT15	Total Update requests executed by this task.

Table 11. OMEGAMON report contents for CA-Datacom: database section

Column heading	Row heading	OMEGAMON field	Description
Add	Elapse	DATACOM_F_CLOCK1	Elapsed time of the Add (CA-Datacom ADDIT) requests executed by this task.
	Count	DATACOM_F_COUNT1	Total Add requests executed by this task.
Count	Elapse	DATACOM_F_CLOCK3	Elapsed time of the Count (CA-Datacom CNTKR, CNTKY, and CNTTB) requests executed by this task.
	Count	DATACOM_F_COUNT3	Total Count requests executed by this task.
Delete	Elapse	DATACOM_F_CLOCK4	Elapsed time of the Delete (CA-Datacom DELET) requests executed by this task.
	Count	DATACOM_F_COUNT4	Total Delete requests executed by this task.
Get Next	Elapse	DATACOM_F_CLOCK5	Elapsed time of the Get Next (CA-Datacom GETIT and GETPS) requests executed by this task.
	Count	DATACOM_F_COUNT5	Total Get Next requests executed by this task.
Get Set	Elapse	DATACOM_F_CLOCK6	Elapsed time of Get Set (CA-Datacom GSETL and GSETP) requests executed by this task.
	Count	DATACOM_F_COUNT6	Total Get Set requests executed by this task.

Table 11. OMEGAMON report contents for CA-Datacom: database section (continued)

Column heading	Row heading	OMEGAMON field	Description
Loc Spec	Elapse	DATACOM_F_CLOCK8	Elapsed time of the Locate Specific requests executed by this task. Locate Specific requests consist of CA-Datacom requests LOCBR, LOCKG, LOCKI, LOCKL, LOCKR, LOCKX, LOCKY, LOCNE, LOCNK, LOCNR, and LOCNX.
	Count	DATACOM_F_COUNT8	Total Locate Specific requests executed by this task.
Read	Elapse	DATACOM_F_CLOCK10	Elapsed time of the Read requests executed by this task. Read requests consist of CA-Datacom FREEX, CNTRL, COMIT, ENDLG, ENDTO, MARKL, QMARK, QUIET, RESET, and RSTAT requests.
	Count	DATACOM_F_COUNT10	Total Read requests executed by this task.
Release	Elapse	DATACOM_F_CLOCK11	Elapsed time of the Release requests executed by this task. Release requests consist of CA-Datacom requests GETIT, GETPS, GSETL, GSETP, REDBR, RDUBR, REDID, RDUID, REDKG, RDUKG, REDKL, RDUKL, REDKR, RDUKR, REDKX, RDUKX, REDKY, RDUKY, REDLE, RDULE, REDNE, RDUNE, REDNK, RDUNK, REDNR, RDUN, REDNX, and RDUNX.
	Count	DATACOM_F_COUNT11	Total Release requests executed by this task.
Select	Elapse	DATACOM_F_CLOCK12	Elapsed time of the Select (CA-Datacom SELNR and SELSM) requests executed by this task.
	Count	DATACOM_F_COUNT12	Total Select requests executed by this task.
Sel Set	Elapse	DATACOM_F_CLOCK13	Elapsed time of the Select Set (CA-Datacom SELCN, SELFR, and SELST) requests executed by this task.
	Count	DATACOM_F_COUNT13	Total Select Set requests executed by this task.
Update	Elapse	DATACOM_F_CLOCK15	Elapsed time of the Update (CA-Datacom UPDAT) requests executed by this task.
	Count	DATACOM_F_COUNT15	Total Update requests executed by this task.

CA-IDMS report content: The following tables describe the content of OMEGAMON reports for CA-IDMS.

Table 12. OMEGAMON report contents for CA-IDMS: totals section

Column heading	Row heading	OMEGAMON field	Description
Bind RU	Elapse	IDMS_T_CLOCK1	Elapsed time of the Bind RU (request unit) requests executed by this task. Bind RU requests consist of CA-IDMS 2, 48, and 59 requests.
	Count	IDMS_T_COUNT1	Total Bind RU requests executed by this task.

Table 12. OMEGAMON report contents for CA-IDMS: totals section (continued)

Column heading	Row heading	OMEGAMON field	Description
Rec Opr	Elapse	IDMS_T_CLOCK2	Elapsed time of the Record Operation requests executed by this task. Record Operation requests consist of CA-IDMS requests 3, 4, 6, 7, 10-13, 18, 19, 22, 23, 32-35, 42-46, 50-53, 75-77, 89, and 90.
	Count	IDMS_T_COUNT2	Total Record Operation requests executed by this task.
Area Opr	Elapse	IDMS_T_CLOCK3	Elapsed time of the Area Operation requests executed by this task. Area Operation requests consist of CA-IDMS requests 9, 15, 17, 21, 25, 36-41, 79, 93, and 94.
	Count	IDMS_T_COUNT3	Total Area Operation requests executed by this task.
Set Opr	Elapse	IDMS_T_CLOCK4	Elapsed time of the Set Operation requests executed by this task. Set Operation requests consist of CA-IDMS requests 8, 14, 16, 20, 24, 31, 60, 62, 64, 65, 78, 80-86, 91 and 92.
	Count	IDMS_T_COUNT4	Total Set Operation requests executed by this task.
Com/Rlbk	Elapse	IDMS_T_CLOCK5	Elapsed time of the Commit/Rollback requests executed by this task. Commit/Rollback requests consist of CA-IDMS requests 66, 67, 95, and 96.
	Count	IDMS_T_COUNT5	Total Commit/Rollback requests executed by this task.
Acc Stat	Elapse	IDMS_T_CLOCK6	Elapsed time of Accept Statistics requests executed by this task.
	Count	IDMS_T_COUNT6	Total Accept Statistics requests executed by this task.
AcCurKey	Elapse	IDMS_T_CLOCK7	Elapsed time of the Accept Key / Current Key (CA-IDMS 54-57, 76-72, 87, and 88) requests executed by this task.
	Count	IDMS_T_COUNT7	Total Accept Key / Current Key requests executed by this task.
LRF	Elapse	IDMS_T_CLOCK8	Elapsed time of the Logical Record Facility) LRF requests executed by this task.
	Count	IDMS_T_COUNT8	Total LRF requests executed by this task.
ProcLogic	Elapse	IDMS_T_CLOCK9	Elapsed time of the Proc / Logic requests executed by this task.
	Count	IDMS_T_COUNT9	Total Proc / Logic requests executed by this task.
FinishRU	Elapse	IDMS_T_CLOCK10	Elapsed time of the Finish RU (CA-IDMS 2, 48, and 59) requests executed by this task.
	Count	IDMS_T_COUNT10	Total Finish RU requests executed by this task.

Table 13. OMEGAMON report contents for CA-IDMS: database section (Record operations)

Column heading	Row heading	OMEGAMON field	Description
Bind Rec	Elapse	IDMS_F_CLOCK1	Elapsed time of the Bind Record (CA-IDMS 48,6-25, 30-34, 43, 50, 51, and 75-79) requests executed by this task.
	Count	IDMS_F_COUNT1	Total Bind Record requests executed by this task.
Gt/Fn/Ob	Elapse	IDMS_F_CLOCK2	Elapsed time of the Get/Find/Obtain requests executed by this task. Get/Find/Obtain requests consist of CA-IDMS requests 6-25, 30-34, 43, 50, 51, 75-79, 54-57, 68-70, 72, and 80-86.
	Count	IDMS_F_COUNT2	Total Get/Find/Obtain requests executed by this task.
Acc/Retn	Elapse	IDMS_F_CLOCK3	Elapsed time of the Accept/Return requests executed by this task. Accept/Return requests consist of CA-IDMS requests 54-57, 68-70, 72, 80-86, and 87-94.
	Count	IDMS_F_COUNT3	Total Accept/Return requests executed by this task.
Keep	Elapse	IDMS_F_CLOCK4	Elapsed time of the Keep requests executed by this task. Keep consist of CA-IDMS requests 36-41, 60-65, and 87-94.
	Count	IDMS_F_COUNT4	Total Keep requests executed by this task.
Stor Rec	Elapse	IDMS_F_CLOCK5	Elapsed time of the Store Records (CA-IDMS 42) requests executed by this task.
	Count	IDMS_F_COUNT5	Total Store Records requests executed by this task.
Modify	Elapse	IDMS_F_CLOCK6	Elapsed time of Modify (CA-IDMS 35) requests executed by this task.
	Count	IDMS_F_COUNT6	Total Modify requests executed by this task.
Erase Perm	Elapse	IDMS_F_CLOCK7	Elapsed time of the Erase Perm (CA-IDMS 3) requests executed by this task.
	Count	IDMS_F_COUNT7	Total Erase Perm requests executed by this task.
Eras Sel	Elapse	IDMS_F_CLOCK8	Elapsed time of the Erase Select (CA-IDMS 53) requests executed by this task.
	Count	IDMS_F_COUNT8	Total Erase Select requests executed by this task.
Eras All	Elapse	IDMS_F_CLOCK9	Elapsed time of the Erase All (CA-IDMS 4) requests executed by this task.
	Count	IDMS_F_COUNT9	Total Erase All requests executed by this task.
Eras Unq	Elapse	IDMS_F_CLOCK10	Elapsed time of the Erase Unqualified (CA-IDMS 52) requests executed by this task.
	Count	IDMS_F_COUNT10	Total Erase Unqualified requests executed by this task.
Con/Disc	Elapse	IDMS_F_CLOCK11	Elapsed time of the Connect/Disconnect (CA-IDMS 44 and 46) requests executed by this task.
	Count	IDMS_F_COUNT11	Total Connect/Disconnect requests executed by this task.

Table 14. OMEGAMON report contents for CA-IDMS: database section (Area, Noname, or Set operations)

Column heading	Row heading	OMEGAMON field	Description
Gt/Fn/Ob	Elapse	IDMS_F_CLOCK1	Elapsed time of the Get/Find/Obtain requests executed by this task. Get/Find/Obtain requests consist of CA-IDMS requests 48, 6-25, 30-34, 43, 50, 51 and 75-79.
	Count	IDMS_F_COUNT1	Total Get/Find/Obtain requests executed by this task.
Acc/Retn	Elapse	IDMS_F_CLOCK2	Elapsed time of the Accept/Return requests executed by this task. Accept/Return requests consist of CA-IDMS requests 6-25, 30-34, 43, 50, 51, 75-79, 54-57, 68-70, 72, and 80-86.
	Count	IDMS_F_COUNT2	Total Accept/Return requests executed by this task.
Keep	Elapse	IDMS_F_CLOCK3	Elapsed time of the Keep requests executed by this task. Keep requests consist of CA-IDMS requests 54-57, 68-70, 72, 80-86, and 87-94.
	Count	IDMS_F_COUNT3	Total Keep requests executed by this task.
Rdy Area	Elapse	IDMS_F_CLOCK4	Elapsed time of the Ready Area (Type A) or If Sets (Type S) requests executed by this task. Ready Area or If Sets requests consist of CA-IDMS requests 36-41, 60-65, and 87-94. Not applicable to Type N.
	Count	IDMS_F_COUNT4	Total Ready Area (Type A) or If Sets (Type S) requests executed by this task. Not applicable to Type N.

Supra report content: The following tables describe the content of OMEGAMON reports for Supra.

Table 15. OMEGAMON report contents for Supra: totals section

Column heading	Row heading	OMEGAMON field	Description
Add	Elapse	SUPRA_T_CLOCK1	Elapsed time of the Add requests executed by this task. Add requests consist of Supra requests ADD-M, ADDVA, ADDVB, ADDVC and ADDVR.
	Count	SUPRA_T_COUNT1	Total Add requests executed by this task.
Close	Elapse	SUPRA_T_CLOCK2	Elapsed time of the Close (Supra CLOSX) requests executed by this task.
	Count	SUPRA_T_COUNT2	Total Close requests executed by this task.
Delete	Elapse	SUPRA_T_CLOCK3	Elapsed time of the Delete (Supra DEL-M and DELVD) requests executed by this task.
	Count	SUPRA_T_COUNT3	Total Delete requests executed by this task.
Find	Elapse	SUPRA_T_CLOCK4	Elapsed time of the Find (Supra FINDX) requests executed by this task.
	Count	SUPRA_T_COUNT4	Total Find requests executed by this task.
Open	Elapse	SUPRA_T_CLOCK5	Elapsed time of the Open (Supra OPENX) requests executed by this task.
	Count	SUPRA_T_COUNT5	Total Open requests executed by this task.

Table 15. OMEGAMON report contents for Supra: totals section (continued)

Column heading	Row heading	OMEGAMON field	Description
Read	Elapse	SUPRA_T_CLOCK6	Elapsed time of Read requests executed by this task. The Read count is comprised of Supra requests RDNXT, READD, READM, READR, READV, and READX.
	Count	SUPRA_T_COUNT6	Total Read requests executed by this task.
Release	Elapse	SUPRA_T_CLOCK7	Elapsed time of the Release requests executed by this task.
	Count	SUPRA_T_COUNT7	Total Release requests executed by this task.
Signoff	Elapse	SUPRA_T_CLOCK8	Elapsed time of the Signoff (Supra SINOF) requests executed by this task.
	Count	SUPRA_T_COUNT8	Total Signoff requests executed by this task.
Signon	Elapse	SUPRA_T_CLOCK9	Elapsed time of the Signon (Supra SIGNON) requests executed by this task.
	Count	SUPRA_T_COUNT9	Total Signon requests executed by this task.
Sys/Other	Elapse	SUPRA_T_CLOCK10	Elapsed time of the System/Other requests executed by this task. System/Other requests consists of Supra requests FREEX, CNTRL, COMIT, ENDLG, ENDTO, MARKL, QMARK, QUIET, RESET, and RSTAT.
	Count	SUPRA_T_COUNT10	Total System/Other requests executed by this task.
Write	Elapse	SUPRA_T_CLOCK11	Elapsed time of the Write (Supra WRITD, WRITM, and WRITV) requests executed by this task.
	Count	SUPRA_T_COUNT11	Total Write requests executed by this task.

Table 16. OMEGAMON report contents for Supra: database section

Column heading	Row heading	OMEGAMON field	Description
Add	Elapse	SUPRA_F_CLOCK1	Elapsed time of the Add requests executed by this task. Add requests consist of Supra requests ADD-M, ADDVA, ADDVB, ADDVC, and ADDVR.
	Count	SUPRA_F_COUNT1	Total Add requests executed by this task.
Delete	Elapse	SUPRA_F_CLOCK2	Elapsed time of the Delete (Supra DEL-M and DELVD) requests executed by this task.
	Count	SUPRA_F_COUNT2	Total Delete requests executed by this task.
Find	Elapse	SUPRA_F_CLOCK3	Elapsed time of the Find (Supra FINDX) requests executed by this task.
	Count	SUPRA_F_COUNT3	Total Find requests executed by this task.
Read	Elapse	SUPRA_F_CLOCK4	Elapsed time of the Read requests executed by this task. Read requests consist of Supra requests RDNXT, READD, READM, READR, READV, and READX.
	Count	SUPRA_F_COUNT4	Total Read requests executed by this task.
Write	Elapse	SUPRA_F_CLOCK5	Elapsed time of the Write requests executed by this task. Write requests consist of Supra requests WRITD, WRITM, and WRITV.
	Count	SUPRA_F_COUNT5	Total Write requests executed by this task.

Chapter 6. System reports

The System reports are produced from system data stored in SMF files. The report in this category is:

- System Logger report

System Logger report

The System Logger report processes System Logger (SMF 88) records to provide information on the System Logger logstreams and coupling facility structures that are used by CICS Transaction Server for logging, recovery, and backout operations. The report can assist with measuring the effects of tuning changes and identifying Logstream or Structure performance problems.

The System Logger List report shows information on Logstream writes, deletes, and events, as well as Structure Alter events for each SMF recording interval.

The System Logger Summary report summarizes Logstream and Structure statistics so you can measure Logger performance over a longer period of time.

These reports, when used in conjunction with the CICS Logger reports produced from the standard CICS statistics reporting utilities, provide a comprehensive analysis of the logstream activity for all your CICS systems.

Report command

The System Logger report can be requested from a Report Set in the CICS PA dialog. Select the **System Logger** report in the **System Reports** category.

In batch, the `LOGGER` command is used to request the System Logger report.

You can request a detailed list of transaction activity, a summary report, or both.

The command to produce the default report, a summary report of System Logger activity by Logstream name, is:

```
CICSPA LOGGER
```

or

```
CICSPA LOGGER(SUMMARY)
```

To produce a detailed list of System Logger activity:

```
CICSPA LOGGER(LIST)
```

To produce a detailed list of System Logger activity with Alter records:

```
CICSPA LOGGER(LIST(ALTER))
```

To tailor the report, you can specify report options as follows:

```
CICSPA LOGGER(
            [OUTPUT(ddname),]
            [EXTERNAL(ddname),]
            [SUMMARY[(SUMMARYINTERVAL(hh:mm))],]
            [LIST[(ALTER,TIMESEQ)],]
            [INTERVAL(minutes),]
            [SORT(LOGSTREAM|STRUCTURE),]
            [TITLE1('...up to 64 characters...'),]
```

```
|                                  [TITLE2('...up to 64 characters...'),]
|                                  [SELECT(LOGGER(INCLUDE|EXCLUDE(field1(values1),...), ...))]
|                                  [LOGSTREAM('name.or.pattern'),]
|                                  [STRUCTURE('name.or.pattern'),])
```

Report content

The System Logger report examines SMF 88 records.

The report is produced using an external SORT facility. An External Work data set is required to store the records before they are sorted. This data set is either specified explicitly using the **EXTERNAL(ddname)** operand or CICS PA assigns one from the External Work File pool.

The records are sorted in the following order:

- If **SORT(LOGSTREAMNAME)** is specified, the data is sorted by Logstream name, MVS ID, Structure name, then time stamp. This is the default.
- If **SORT(STRUCTURENAME)** is specified, the data is sorted by Structure name, Logstream name, MVS ID, then time stamp.

If **TIMESEQ** is specified for the List report, the data is sorted by Logstream or Structure name within Interval expiry period.

You can filter on Logstream name or Structure name or both by specifying a name or pattern in the **LOGSTREAMNAME** or **STRUCTURENAME** operands.

List report

The following command produces a System Logger List report like that shown in Figure 59 on page 173.

```
CICSPA NOAPPLID,
       LOGGER(OUTPUT(LOGR0001),
              EXTERNAL(CPAXW001),
              LIST,
              SORT(LOGSTREAM))
```

```
                                                  CICS Performance Analyzer
                                                System Logger report - List

LOGR0001 Printed at 10:51:02  4/07/2006     Data from 14:00:00:01  5/27/2004 to 14:30:00:12  5/27/2004                 Page       1


Logstream name                   Structure name         MVSID       Flag        Interval expired at      Level
IYOT1.DFHLOG                     LOG_JG                 MV55        Staging     09:00:00.00  6/20/2004   SP7.0.4

           ----------- IXGWRITES ----------             ---------------- DELETIONS -----------------
                                              Bytes       Count       Count       Bytes       Bytes
                                           Writn to        With     Without       After    Int Stor
                      Total     Average     Interim        DASD        DASD     Offload    w/o DASD
              Count   Bytes       Bytes     Storage       Write       Write     w. DASD       Write
           --------  --------   --------   --------    --------    --------    --------    --------
              11248   4348827        386    6768128           0        9327           0     3348643

           --------------------------------------------------- EVENTS -----------------------------------------------------
                                 Demand                                             Demand     Minimum     Maximum     Staging
                      Staging      DASD     Staging       Entry      Struct     Init'd       Block       Block    DS Async
           Offloads   Threshld    Shifts        Full        Full        Full    Offloads      Length      Length    Buf Full
           --------   --------  --------    --------    --------    --------    --------    --------    --------    --------
                  3          0         0           0           0           0           0         116        1422           0

           ---------------------- EVENTS ------------------------    --------------- DASD Writes ----------------
                                             Struct      Struct
                                           Rebuilds    Rebuilds                       Total
              Type1      Type2      Type3     Init'd    Complt'd       Count        Bytes     Average       Waits
           --------   --------   --------   --------    --------    --------    --------    --------    --------
              11216         32          0          0           0           0           0           0           0

Logstream name                   Structure name         Flag          MVSID     Level
*ALTER RECORD*                   LOG_JG                 Staging       MV55      SP7.0.2

------------ STRUCTURE ALTER ----------------
SMF record time stamp   19:15:00:23 10/07/2002

            Current                Current   Targeted      Struct         Log         Log
              Bytes                Average    Average        Size        Data     Streams
            Written   Offloads       Bufsz      Bufsz    (Blocks)      Writes    Connectd
           --------   --------   --------   --------    --------    --------    --------
                  0          2        768        768        5056           0           0
```

Figure 59. System Logger List report

The following fields are shown on the System Logger List report:

Logstream Name
The name of the logstream.

Structure Name
The name of the structure.

MVSID
MVS System ID.

Flag
Staging. If the SMF88LFT flag is set, this logstream used the staging data set during this interval.

Disconnect. If SMF88LDS is on, this SMF record was generated as a result of a logstream disconnect.

Interval expired at
The time of day when the current SMF interval expired.

Note: When you run the Logger report on a system with a different time zone setting to that of the SMF data, you must specify the **ZONE** operand to convert the System Logger time stamps from GMT to local time. By default, CICS PA will use the reporting system’s time zone settings and the Logger report time stamps will not reflect the local time of the data.

Specify ZONE to match the time zone of the SMF data and the Logger report time stamps will reflect the local time of the data.

Level
MVS Release level.

Information on **IXGWRITES:**

Count
The number of IXGWRITE requests.

Total Bytes
Bytes written by IXGWRITE requests.

Average Bytes
The average number of bytes written by IXGWRITE requests.

Bytes Writn to Interim Storage
The number of bytes written to interim storage.

Information on **DELETIONS:**

Count With DASD Write
The number of deletes from interim storage written to DASD.

Count Without DASD Write
Number of deletes from interim storage without having been written to the log data set.

Bytes After Offload w. DASD
Bytes deleted after data was offloaded to DASD log data sets. If SMF88SIB is high and the SMF88SAB is low, CICS is successfully using interim storage to avoid the I/O incurred by offloading to DASD log data sets.

Bytes Int Stor w/o DASD Write
Count of bytes deleted instead of being written to DASD. Due to CICS tail trimming, that is, deletion of records which are no longer required for recovery. It shows how successfully CICS avoids offloads for data that it intends to delete from interim storage.

Information on **EVENTS:**

Offloads
Number of times the log stream was offloaded.

Staging Threshld
Number of times system logger detected a Staging Data Set Threshold Hit condition (HIGHOFFLOAD reached) for the staging data set.

Demand DASD Shifts
Number of log stream DASD shifts (additional log data set allocates) initiated by this system. For DFHLOG and DFHSHUNT this value should be small, otherwise too much data is being offloaded. (the LS_SIZE parameter for the IXCMIAPU logstream definition utility should be checked).

Staging Full
Number of times staging data set was full. The cause of any non-zero condition should be investigated.

Entry Full
Number of times all log streams connected to the structure are offloaded by IXLOGR due to 90% of the structure's list entries being full.

Struct Full
Number of times a structure full condition was reached. The cause of any non-zero condition should be investigated.

Demand Init'd Offloads
Number of demand initiated offloads.

Staging DS Async Buf Full
Number of times the system logger detected a Staging Data Set Async Buffer Full condition for this log stream on this system for this SMF interval.

Minimum Block Length
Minimum block length. If set to **7FFFFFFF** then there was no activity for this interval.

Maximum Block Length
Maximum block length.

Type1
Type 1 CF event. Normal write. Indicates that, after the write completed, the percentage of resource in use by the structure was less than the high offload threshold, meaning that system logger is using the coupling facility successfully. This number should be high.

Type2
Type 2 CF event. Indicates that, after the write completed, the percentage of the logstream in use was greater than or equal to the high off load threshold. This can happen at the point where the offload value is reached or the offload is already in progress.

Type3
Type 3 CF event. Indicates that a given log stream is close to consuming 90% of the coupling facility resource allocated to it. A type-3 completion can occur if there is a failure which prevents system logger from promptly moving data from the coupling facility structure to DASD log data sets or if the system logger configuration is tuned incorrectly. For example, system logger's access to its DASD log data sets would be slowed if those data sets reside on the same device as some other heavily-used data sets. A type-3 can also occur if many log streams are defined to share the same structure, because each newly defined log stream causes system logger to dynamically repartition storage among the existing logstreams. If a log stream has a large proportion of type-3 completions, system logger is getting dangerously close to the STRUCTURE FULL condition.

Struct Rebuilds Init'd
Number of structure rebuild events initiated for this log stream, as seen by this system. Excessive structure rebuilds should be investigated. Structures are rebuilt in the event of logstream connectivity failure in accordance with the REBUILDPERCENT parameter of the IXCMIAPU utility.

Struct Rebuilds Compl'd
Number of structure rebuild events completed for this log stream, as seen by this system. Excessive structure rebuilds should be investigated. Structures are rebuilt in the event of logstream connectivity failure in accordance with the REBUILDPERCENT parameter of the IXCMIAPU utility.

Information on **DASD Writes:**

Count
No. of DASD write requests.

Total Bytes
Total bytes written to DASD (offload data sets).

Average
Average number of bytes written to DASD (offload data sets).

Waits
No. of times System Logger had to suspend processing before writing to DASD because a previous DASD write request had not completed.

Information on **STRUCTURE ALTER:**

SMF record time stamp
The time of day when this SMF record was written.

Current Bytes Written
Current WRITTEN-Bytes-Structure. Count of bytes written to the structure on this system.

Offloads
The number of offloads that occurred for this structure.

Current Average Bufsz
Current allocated average buffer size for the structure.

Targeted Average Bufsz
Targeted average buffer size. Average buffer size System Logger attempted to achieve, by altering the element to entry ratio.

Struct Size (Blocks)
Structure Size. Represented in the number of 4K blocks.

Log Data Writes
Total number of log data writes at the time of the recording interval.

Log Streams Connectd
Total number of log streams connected to the structure on this system at the time of the recording interval.

Summary report

The following command produces the Logstream and Structure Summary reports like that shown in Figure 60 on page 177. The report is sorted by Logstream name, without Alter events, and uses the system default interval.

```
CICSPA LOGGER
```

or

```
CICSPA LOGGER(SUMMARY,SORT(LOGSTREAMNAME))
```

```
                                                    CICS Performance Analyzer
                                                 System Logger - Logstream Summary

LOGR0001 Printed at 10:51:02  4/07/2006     Data from 06:45:00.00  6/20/2004 to 09:30:00.00  6/20/2004                 Page      20

Logstream name            MVSID  Structure name         First interval start    Last interval stop      Total Interval
IYOT1.IYO1.DFHJ03         MV55   *DASDONLY*             06:45:00.00  6/20/2004  09:00:00.00  6/20/2004      0002:15:00
      ----------- IXGWRITES ----------                ---------------- DELETIONS -----------------
                                                 Bytes     Count     Count     Bytes     Bytes
                                              Writn to      With   Without     After  Int Stor
                              Total   Average  Interim      DASD      DASD   Offload  w/o DASD
                 Count        Bytes     Bytes  Storage     Write     Write   w. DASD     Write
              --------     --------  --------  --------  --------  --------  --------  --------
Total               45      2506582     55702   2543616        20         0   1130496         0
Rate(/Sec)           0          309                 314         0         0       140         0
Minimum             45      2506582             2543616        20         0   1130496         0
Maximum             45      2506582             2543616        20         0   1130496         0

           ------------------------------------------------ EVENTS ------------------------------------------------
                                 Demand                                                    Demand    Staging
                     Staging       DASD     Block   Staging     Entry    Struct    Init'd   DS Async
           Offloads  Threshld    Shifts    Length      Full      Full      Full  Offloads   Buf Full
           --------  --------  --------  --------  --------  --------  --------  --------   --------
Total             2         6         6                   0         0         0         0          0
Rate(/Sec)        0         0         0                   0         0         0         0          0
Minimum           2         0         6     16998         0         0         0         0          0
Maximum           2         0         6     65372         0         0         0         0          0

           ---------------------- EVENTS -------------------------    --------------- DASD Writes ----------------
                                               Struct    Struct
                                             Rebuilds  Rebuilds                 Total
              Type1     Type2     Type3    Init'd  Complt'd     Count     Bytes   Average      Waits
           --------  --------  --------  --------  --------  --------  --------  --------   --------
Total            12         0         0         0         0         8   1114992         0          0
Rate(/Sec)        0         0         0         0         0         0       138                    0
Minimum           0         0         0         0         0         8   1114992                    0
Maximum          12         0         0         0         0         8   1114992                    0
```

Figure 60. System Logger Summary report (Part 1 of 2)

System Logger report

```
                                                 CICS Performance Analyzer
                                               System Logger - Structure Summary

LOGR0001 Printed at 10:51:02  4/07/2006     Data from 07:00:00.00  6/20/2004 to 09:30:00.00  6/20/2004                 Page      39


Structure name        MVSID      First interval start    Last interval stop                 Total Interval
LOG_JG                MVS55      07:00:00.00  6/20/2004  09:00:00.00  6/20/2004                 0002:15:00

           ----------- IXGWRITES ----------              ---------------- DELETIONS -----------------
                                               Bytes       Count       Count       Bytes       Bytes
                                            Writn to        With     Without       After    Int Stor
                           Total    Average  Interim        DASD        DASD     Offload    w/o DASD
              Count        Bytes      Bytes  Storage       Write       Write     w. DASD       Write
           --------     --------   --------  --------    --------    --------    --------    --------
Total          9025      2549654        283   4622848        4892        3484     1379383      984662
Rate(/Sec)        1          315                  571           0           0         170         122
Minimum           0            0                    0           0           0           0           0
Maximum        9025      2549654              4622848        4891        3484     1379383      984662

           ----------------------------------------------- EVENTS ----------------------------------------------
                                 Demand                                                     Demand     Staging
                      Staging      DASD       Block     Staging       Entry      Struct     Init'd    DS Async
           Offloads   Threshld    Shifts      Length       Full        Full        Full   Offloads    Buf Full
           --------   --------  --------    --------   --------    --------    --------   --------    --------
Total             3        257         1                      0           0           0          0           0
Rate(/Sec)        0          0         0                      0           0           0          0           0
Minimum           0          0         0         116          0           0           0          0           0
Maximum           2        257         1       63930          0           0           0          0           0

           ---------------------- EVENTS ------------------------    --------------- DASD Writes ----------------
                                              Struct      Struct
                                            Rebuilds    Rebuilds                   Total
              Type1      Type2     Type3     Init'd    Complt'd       Count        Bytes    Average       Waits
           --------   --------  --------   --------    --------    --------     --------   --------    --------
Total          9028          0         0          0           0           9      1575063          0           5
Rate(/Sec)        1          0         0          0           0           0          194                      0
Minimum           0          0         0          0           0           0            0                      0
Maximum        9022          0         0          0           0           8      15749.7                      5
```

Figure 60. System Logger Summary report (Part 2 of 2)

These reports summarize SMF 88 Subtype 1 and Subtype 11 record data. There are two types of summary report:

1. **Summary by Logstream.** Data is sorted by Logstream, MVS ID, Structure, then time stamp. The second row of result data represents the rate per second (for example, IXGWRITEs per second) calculated from the estimated beginning time of the lowest expiry interval to the end of the highest expiry interval. The beginning time of the lowest expiry interval is calculated by subtracting the first expired TOD from the second expired TOD and subtracting the result from the first expired TOD. If the report data contains only one expiry interval, rates per second are omitted, since the length of the expired interval cannot be estimated.
2. **Summary by Structure.** Data is sorted by Structure, Logstream, MVS ID, then time stamp.

These reports have the same fields as the System Logger List report. For more information, see “List report” on page 172.

The summary statistics reported are:

Total Total for this field across all intervals

Rate(/Sec)
Activity Rate per second for this field.

Minimum
Minimum value seen for this field in any interval

Maximum
Maximum value seen for this field in any interval

Chapter 7. Performance Graph reports

There are two Transaction Measurement graph reports available from CMF performance class data:

- "Transaction Rate Graph report" on page 181. This report shows the number of transactions completed in the time period and the rate at which the CICS system is running or is able to run.
- "Transaction Response Time Graph report" on page 182. This report shows the service level (response time) for completed transactions.

These graphs are useful as daily indicators of system activity.

You can request a graph using all available records, or you can provide selection criteria to report only the data that meets specific requirements.

The following conditions may prevent the production of complete graph reports:

- If all of the CMF performance class record fields providing data for the graph program are excluded during installation, the graph does not print. A message is issued indicating that the data could not be found.
- If only part of the data for the graph can be located, the graph report prints with an error message indicating that the graph is incomplete.

Report command

The Performance Graph reports can be requested from a Report Set in the CICS PA dialog. Select the **Transaction Rate** report or the **Transaction Response Time** report in the **Performance Graphs** category.

In batch, the `GRAPH` command is used to request the Performance Graph reports.

To create a graph report, use the command:

```
CICSPA GRAPH(graphname)
```

where *graphname* is one of the following operands to designate the type of graph desired:

TRANRATE for the Transaction Rate graph

RESPONSE for the Transaction Response Time graph

To tailor the report, you can specify report options as follows:

```
CICSPA GRAPH(RESPONSE|TRANRATE,
            [OUTPUT(ddname),]
            [RANGE1(nnnnn),]
            [RANGE2(nnnnn),]
            [INTERVAL(hh:mm:ss),]
            [LINECount(nnn),]
            [TITLE1('...up to 64 characters...'),]
            [TITLE2('...up to 64 characters...'),]
            [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
                                ...))])
```

Report content

All the graphs produced by CICS PA have a similar structure. Data from the CMF performance class records is collected and time-stamped based on the Stop Time from the CICS CMF performance class records. Once the entire input data is processed, the graphing facility of CICS PA is used to print the data. Each line on a graph represents activity for transactions that stopped between the time marked on the current line and the time marked on the previous line.

The default is to print one line for each 5-minute period. The **INTERVAL** operand can be used to accumulate data spanning from 1 second to 24 hours. The data is presented as a single line on a graph. For example:

```
CICSPA GRAPH(RESPONSE,INTERVAL(00:00:03))
```

This example generates the Transaction Response Time graph with each line containing data for each 3-second interval.

To limit the range of the y-axis, use **SELECT(PERFORMANCE** statements. For example, if the input file contains a week's worth of data, the command:

```
CICSPA SELECT(PERFORMANCE(INCLUDE(
              START(FROM(2005/02/13,08:00),
              STOP(TO(2005/02/13,18:00))))),
       GRAPH(RESPONSE)
```

generates the Response Time graph, with the y-axis of the graph beginning at 8:00 in the morning and ending at 6:00 in the evening on February 13, 2005.

The default range for the x-axis of the graph is from zero to the highest value reported. Operands **RANGE1** and **RANGE2** can be used to set the high-value range of the x-axis of the left and right graphs, respectively. For example, if the service level for response time is defined as a maximum of four seconds, the command:

```
CICSPA GRAPH(RESPONSE,RANGE1(4),RANGE2(4))
```

generates the Transaction Response Time graph using the entire acceptable service level as the range of the x-axis. If a line's data exceeds the x-axis range for a graph, the line is printed with an arrow (->) at the right.

The CMF performance class records may be reported in intervals which differ from the intervals in which the data was written. The data is written either:

- in the case of conversational transactions, when CMF can write a performance record at the end of a conversation (specified by MNCONV=YES in the SIT), or
- when a transaction issues a syncpoint and the monitoring syncpoint option has been requested (specified by MNSYNC=YES in the SIT), or
- when a transaction has resided in the system longer than the monitoring frequency interval (specified by MNFREQ=hhmmss in the SIT), or
- when a user event monitoring point (EMP) with the DELIVER option specified is invoked by an application program, or
- when the transaction finishes (is detached).

For example, if there are long-running transactions such as transactions which span entire monitor intervals, the data from these records for these transactions is reflected in the graph of the interval in which the transaction finishes. This data may be different from the intervals in which the data is collected.

For more information, see “Interpreting performance class data” on page 287.

Transaction Rate Graph report

The Transaction Rate Graph helps you understand other graphs and reports by showing the number of transactions on which the reported data is based. It is also useful in understanding the rate at which the CICS system is running or is able to run.

The command to produce the default graph report is:

```
CICSPA GRAPH(TRANRATE)
```

```
 V2R1M0                                                CICS Performance Analyzer
                                                           Transaction Rate

GRTE0002 Printed at 11:41:17  3/15/2005    Data from  11:10:51  3/14/2005 to 11:35:00  3/14/2005                    Page       1
  3/14/2005

  Time     Value |       Average Response Time in  Secs            |     Value |     Number of Transactions Completed            |
HH.MM.SS         |  1.10 2.19 3.29 4.39 5.48 6.58 7.67 8.77 9.87 10.9          |   80   160  240  320  400  480  560  640  720  800
11:10:52         |----|----|----|----|----|----|----|----|----|----|          |----|----|----|----|----|----|----|----|----|----|
11:15:00     3.9 |******************                                      51 |***
11:20:00     3.0 |**************                                          67 |****
11:25:00     4.0 |******************                                      78 |*****
11:30:00     3.6 |***************                                         37 |**
11:35:00    10.9 |************************************************      713 |*********************************************
```

Figure 61. Transaction Rate Graph report

Average Response Time (left graph)
The average response time in each time interval is plotted against the y-axis using asterisks (***).

This value is computed by subtracting the Start Time (DFHCICS T005) from the Stop Time (DFHCICS T006) for all transactions completed in this time interval. These times are summed and then divided by the Task Count at the end of the interval. The result is the average response time of those transactions that completed within the time interval.

For detailed information on these performance class data fields, see “CMF performance class data fields” on page 239.

Number of Transactions Completed (right graph)
The number of transactions completed in each time interval is plotted against the y-axis using asterisks (***).

This value is a count of all the CMF performance class records written during the interval.

Transaction Response Time Graph report

The Transaction Response Time Graph can be requested daily to determine, over a period of time, the level of service (response time).

The command to produce the default graph report is:

```
CICSPA GRAPH(RESPONSE)
```

```
 V2R1M0                                                CICS Performance Analyzer
                                                            Response Time

GRSP0001 Printed at 11:41:17  3/15/2005    Data from  11:10:51  3/14/2005 to 11:35:00  3/14/2005                      Page       1
  3/14/2005

  Time     Value |       Average Response Time in  Secs            |     Value |     Maximum Response Time in  Secs              |
HH.MM.SS         |  1.10 2.19 3.29 4.39 5.48 6.58 7.67 8.77 9.87 10.9          |   140  280  420  560  700  840  980 1120 1260 1400
11:10:52         |----|----|----|----|----|----|----|----|----|----|          |----|----|----|----|----|----|----|----|----|----|
11:15:00     3.9 |******************                                    81.3 |***
11:20:00     3.0 |**************                                        95.1 |***
11:25:00     4.0 |******************                                   308.9 |**********
11:30:00     3.6 |****************                                      61.0 |**
11:35:00    10.9 |************************************************  1,386.7 |**************************************************
```

Figure 62. Transaction Response Time Graph report

Average Response Time (left graph)
The average response time in each time interval is plotted against the y-axis using asterisks (***).

This value is computed by subtracting the start time (DFHCICS T005) from the stop time (DFHCICS T006) for all transactions completed in this time interval. These times are summed and then divided by the task count at the end of the interval. The result is the average response time of those transactions that completed within the time interval.

For detailed information on these performance class data fields, see “CMF performance class data fields” on page 239.

Maximum Response Time (right graph)
The maximum response time in each time interval is plotted against the y-axis using asterisks (***).

This value is the same as the value in the left graph, except that the maximum response time is used instead of an average value. This value represents the transaction with the longest response time among those completed during the interval.

Chapter 8. Extracts

The Extract data sets are produced from CMF performance class records. The Record Selection extract also processes DB2 accounting data and MQ accounting data if requested. The extracts in this category are:

- Cross-System Work extract
- Exported Performance Data extract
- Record Selection extract
- System Logger extract

Historical Database facilities are also available in this category:

- HDB Load

Cross-System Work extract

The Cross-System Work Extract accepts performance class data from a single or multiple CICS systems and correlates the data by network unit-of-work. A single performance class record is then written to the Extract data set. That one record represents all the work done on behalf of the network unit-of-work.

The default is to extract only the CMF performance class records that are contained in a unique network unit-of-work that includes multiple performance records.

Note: The Cross-System Work Extract will also include multiple performance class records from a single system.

You can request an extract that processes all available input records, or you can specify criteria for record selection to extract only the data that meets specific requirements.

After a Cross-System Work Extract data set has been created, it can be used as input to CICS PA for further processing. For example, the Performance List, Performance List Extended, Performance Summary, and Performance Totals Reports can be run against this data set.

Note: If you are using conversational transactions, and you have specified MNCONV=YES in your system initialization parameters to get separate CMF records for each pair of terminal I/O requests, or you have specified MNSYNC=YES in your system initialization parameters to get separate CMF records for each unit-of-work, or you have applications that are using user event monitoring points (EMPs) with the DELIVER option, all records will still be part of the same network unit-of-work. Since they are part of the same network unit-of-work, they will all be merged into one record in the Cross-System Work Extract Data Set. If you, for example, run the Performance Summary Report against this data set, the response time does not represent the response time of an individual screen display, but the complete lifetime of this conversational transaction. The AVE, DEV, MAX, MIN, and TOT statistics may also be skewed in the same way.

Extract command

The Cross–System Work extract can be requested from a Report Set in the CICS PA dialog. Select the **Cross-System Work** extract in the **Extracts** category.

Cross-System Work extract

In batch, the CROSSsystem command is used to request the Cross-System Work extract:

```
CICSPA CROSSSYSTEM
```

This is the basic command which produces the default Cross-System Work extract data set. When the extract data set is created, the default is to create a new performance record for a network unit-of-work only when there were multiple records within the same network unit-of-work. A network unit-of-work containing a single performance record is not written to the extract data set unless it is requested. It is possible to request that all tasks, single and multiple, or any other variation, be used to create the extract. For more information on how to do this, see the *CICS Performance Analyzer for z/OS User's Guide,* which also discusses how user fields can be included when creating the data set.

To tailor the extract data set, specify extract options as follows:

```
CICSPA CROSSSYSTEM(
              [DDNAME(ddname),]
              [EXTERNAL(ddname),]
              [SYSID(applid,mvsid),]
              [WRITEMULTIPLE,]
              [NOWRITEMULTIPLE,]
              [WRITESINGLE,]
              [NOPRINT,]
              [CHARACTER(OWNER(owner),LENGTH(nnn),HEADER(header)),]
              [CLOCK(OWNER(owner),NUMBER(nnn),HEADER(header)),]
              [COUNT(OWNER(owner),NUMBER(nnn),HEADER(header)),]
              [COMPRESS|NOCOMPRESS,]
              [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
                                  ...))])
```

Notes:

1. The DDname used for the cross-system work data set defaults to **CPAOCROS.** The CICS PA dialog generates DDnames in the format **CPAOXSnn** where nn is a sequence number **01-99**. The DDname can be overridden by specifying the **DDNAME** operand.
2. When extract records are written, CICS PA sets the APPLID and MVS SMF ID in the new record to your specification in the SYSID operand. The defaults are **MULTIPLE** and **CICS** respectively. The APPLID and MVS ID you specify can then be defined in SMF Input in the CICS PA dialog, along with the Extract data set name. This enables you to use the Extract data set for reporting from the CICS PA dialog.

Required CMF fields

If you are using the CICS Monitoring Control Table (MCT) Exclude/Include parameters to reduce the size of the performance class record, you must ensure that the data fields required for the Cross-System Work report and extract are not excluded.

The following table lists the fields that must be collected in the performance class records to ensure correct correlation of the data records for the Cross-System Work report and extract.

Table 17. Cross-System Work report and extract: Required CMF fields

Owner	Field ID	CICS Informal Name
DFHCICS	112	RTYPE

Table 17. Cross-System Work report and extract: Required CMF fields (continued)

Owner	Field ID	CICS Informal Name
DFHCICS	130	RSYSID
DFHDEST	091	TDTOTCT
DFHFILE	093	FCTOTCT
DFHPROG	071	PGMNAME
DFHPROG	113	ABCODEO
DFHTASK	031	TRANNUM
DFHTASK	066	ICTOTCT (*CICS TS V1.2 or later*)
DFHTASK	097	NETUOWPX
DFHTASK	098	NETUOWSX
DFHTASK	163	FCTYNAME
DFHTASK	164	TRANFLAG
DFHTEMP	092	TSTOTCT
DFHTERM	111	LUNAME
DFHTERM	169	TERMCNNM

How CICS PA creates Cross-System records

The records that make up the Cross-System Work extract are created by combining records, that is, by combining corresponding fields in the records, of the input data sets. How the fields are combined depends on both the type of record and the type of field.

The types of records that can be combined are:
- Normal Application records
- Terminal Owning Region (TOR) records
- Function Shipping request records.

Note: Function Shipped Distributed Program Link (DPL) records are interpreted as normal Application records.

The types of fields that can be combined are:
- Character fields
- Packed decimal fields (transaction sequence number)
- Time of day fields (start and stop times)
- Stopwatch (elapsed time) fields
- Accumulators (counters)
  - Normal
  - High-Water Marks (program storage and user storage)
  - Error flags
  - Terminal information flags
  - Transaction definition and status flags.

The following paragraphs describe how the different field types are combined to create the fields for the Cross-System extract records:

Character Fields

Character fields are normally taken from the application records, except for the following special fields:

DFHCBTS C202 PRCSID	The CICS-assigned identifier of the CICS BTS root activity (process ID).
DFHCBTS C203 ACTVTYID	The CICS-assigned identifier of the CICS BTS activity.
DFHTASK C082 TRNGRPID	The transaction group ID.
DFHTASK C190 RRMSURID	The RRMS/MVS Unit-of-Recovery ID (URID).
DFHTASK C194 OTSTID	The Object Transaction Service (OTS) Transaction ID (Tid).

The CICS BTS process ID and activity ID are taken from application records only. If no application record is found, the process ID and activity ID fields appear as hexadecimal zeros.

The transaction group ID is taken from application records only. If no application record is found, the transaction group ID field appears as hexadecimal zeros.

The RRMS/MVS unit-of-recovery ID (URID) is taken from application records only. If no application record is found, the unit-of-recovery ID (URID) field appears as hexadecimal zeros.

The OTS Tid is taken from application records only. If no application record is found or the record is not part of an OTS transaction, the OTS transaction ID (OTSTID) field appears as hexadecimal zeros.

All other character fields are processed as follows:

1. If no application record is found, the character fields appear as hexadecimal zeros.
2. If multiple application records are found, the character fields are taken from the first one in the sort order. Because the sort order within the network unit-of-work is in reverse stop time, the first one in the sort order is usually the one with the latest stop time.

If the field is shorter in the output data than in the input data, only the left-hand bytes that fit are saved. Also, if the field is shorter in the input data than in the output data, it is padded on the right in the output record with hexadecimal zeros.

Packed Fields

The only packed decimal field is the transaction sequence number. It is treated in the same way as a character field and is usually taken from the application records. However:

1. If no application record is found, the packed decimal field appears as packed decimal zeros.
2. If multiple application records are found, the packed decimal field is taken from the first one in the sort order. Because the sort order within the network unit-of-work is in reverse stop time, the first one in the sort order is usually the one with the latest stop time.

Time of Day Fields

Time of day fields include the task start time and the task stop time. The earliest start time of any record and the latest stop time of any record are used. (Exception: if a time is incorrectly set to hexadecimal zero, it is not used). Normally, the difference between the start and stop time is the length of time it took to complete the entire unit-of-work (response time). This may not be accurate due to unsynchronized STCK values across multiple systems.

The only other time of day field is processed as a special field:

DFHTASK T132 RMUOWID The identifier of the local unit of work (unit of recovery) for this task.

The local unit of work (unit of recovery) is taken from application records only. If no application record is found, the local unit of work field appears as hexadecimal zeros.

Stopwatch Fields

Stopwatch fields are the fields that CICS uses to measure elapsed time such as dispatch time, CPU time, or terminal control wait time. These fields are added together. However, each stopwatch is actually a combination of the three different components of the stopwatch field described below:

- The first component is the elapsed time measured, and is calculated by adding all of the field time values in the input records.
- The second field is one byte of flags CICS uses to indicate errors. The field is OR'd together so that the result contains any flags that were turned on in any of the input records.
- The third field is a three-byte counter that counts the number of intervals that were timed, and is calculated by adding all of the field count values in the input records.

Note: Whenever fields are added together, it is possible to get an overflow. If an overflow condition occurs, CICS PA catches the error and forces the result to remain as the highest value that will fit within the field.

Accumulator Fields

The accumulator fields are calculated by adding all of the field values in the input records, except eighteen special fields, which are:

DFHSOCK A292 SONPSHWM
The non-persistent socket high-water mark.

DFHSOCK A293 SOPSHWM The persistent socket high-water mark.

DFHSTOR A033 SCUSRHWM
The high-water mark of USER storage below 16MB.

DFHSTOR A106 SCUSRHWM
The high-water mark of USER storage above 16MB.

DFHSTOR A116 SCUSRHWM The high-water mark of CICS storage below 16MB.

DFHSTOR A119 SCUSRHWM The high-water mark of CICS storage above 16MB.

DFHSTOR A087 PCSTGHWM The program storage high-water mark.

DFHSTOR A108 PC24BHWM The program storage high-water mark below 16MB.

DFHSTOR A139 PC31AHWM The program storage high-water mark above 16MB.

DFHSTOR A143 PC24CHWM The CDSA program storage high-water mark below 16MB.

DFHSTOR A142 PC31CHWM The ECDSA program storage high-water mark above 16MB.

DFHSTOR A160 PC24SHWM The SDSA program storage high-water mark below 16MB.

DFHSTOR A161 PC31SHWM The ESDSA program storage high-water mark above 16MB.

DFHSTOR A162 PC24RHWM The RDSA program storage high-water mark below 16MB.

DFHSTOR A122 PC31RHWM The ERDSA program storage high-water mark above 16MB.

DFHTASK A064 TASKFLAG The transaction error flags for this transaction.

DFHTASK A164 TRANFLAG The CICS transaction definition and status information flags for the transaction.

DFHTERM A165 TERMINFO The CICS terminal information for the transaction.

For the high-water mark fields, the highest value from ***any*** record within the network unit-of-work is used.

Note: This provides a true high-water mark except for one condition: if two tasks within the same network unit-of-work execute concurrently, it is not possible to determine the total high-water mark. The tasks peak at different times.

The transaction error flags special accumulator field is a fullword field used as an indicator of error conditions. Instead of being added together, this field is OR'd together. The result has a flag turned on if it was turned on in any record within that network unit-of-work.

The transaction definition and status information flags field is taken from application records only. If no application record is found, the transaction flags field appears as hexadecimal zeros.

The terminal information is a four byte field containing terminal or session information for the task's principal facility. This information is taken from terminal owning records (TOR) only; if no terminal owning record is found, the terminal information field appears as hexadecimal zeros.

User Fields

The five user fields added by CICS PA are:

CICSPA A001 TOTRECS The total number of input records that were added to produce this record

CICSPA A002 APPLRECS The total number of application program records that were added to produce this record

CICSPA A003 TRANROUT The total number of terminal-owning region records that were added to produce this record

CICSPA A004 FUNCSHIP The total number of function shipping request records that were added to produce this record

CICSPA A005 DPLRECS The total number of function shipping distributed program link (DPL) request records that were added into this record. This field is a subset of the total number of function shipping requests field.

These CICS PA user fields are always present.

User-Specified

User fields can also be specified on the `CROSSsystem` command. When specified, these user fields are added to the dictionary and the cross-system output record.

Note: It is possible that the input data may not include the standard CICS fields or the user fields that you requested. If this occurs, the cross-system performance records created by CICS PA will still contain these fields. However, the values within the fields are null (hexadecimal zeros).

APPLID Limitations

Because the input data sets typically contain CMF records from many CICS systems, the APPLID of the output data set cannot be made to match the input data. Instead, it is set to **MULTIPLE** to indicate that this data contains information from multiple CICS systems with different APPLIDs. You can override this by specifying the `SYSID` operand.

Note: Do ***not*** use the APPLID of *MULTIPLE* for any of your online systems. This allows you to determine if the data you are processing is from CMF or from CICS PA simply by checking the APPLID.

CMF Requirements

Because only CMF performance class records contain the token field that associates the record with a network unit-of-work, only CMF performance records are processed by the cross-system function of CICS PA.

Within a single logical record, CMF can block several types of data. Within each type of data, CMF can block many data rows. CICS PA does not block the data within the logical record. This means that for every record there is a single unit of data.

Note: A user typically concatenates, as input for the Cross-System Work Extract, two or more unloaded SMF data sets containing CMF performance class records. An example of this would be data sets from a terminal owning region, an application owning region, and a data base owning region.

You should not merge a Cross-System Work Extract data set with another CMF data set, as the resulting records would not contain useful data. However, if you do, be aware of the following:

- The five user fields added to the Cross-System record will no longer accurately reflect the overall total for that network unit-of-work. The totals in the Cross-System record are lost and will only reflect the totals from the additional CMF data set.
- Any user fields included in the original Cross-System extract are not included in the final Cross-System data set unless they are specified on the command input.
- Due to the manner in which the different field types are combined, some of the final Cross-System records may not be correct. See “How CICS PA creates Cross-System records” on page 185 to understand the possible results when combining CMF records with cross-system records.

Recommendation

It is recommended that the Cross-System Work Extract created from the CMF performance class records from two or more systems should ***not*** be concatenated with other CMF files. The results of such a concatenation are questionable as to their use. The Cross-System Extract data set ***can*** be used by itself as input to the CICS PA Performance Reports (especially the List, List Extended, Summary, and Totals reports) to monitor the total amount of resources used by a transaction within a single or across multiple CICS systems.

Cross-System Extract record format

The record format of the Cross-System Work Extract Data Set is variable blocked and the block size has to be large enough to contain a performance class record plus the fields CICS PA adds and any other user fields specified. CICS PA will assign default DCB attributes of `RECFM=VB,LRECL=8188,BLKSIZE=8192` if they are not specified.

The Cross-System Work Extract that is created is fully compatible with the CICS Monitoring Facility (CMF) performance data format. However, there are some important differences between the data created by CICS PA and the data collected by CMF. Still, any program that fully exploits the self-defining data format of CMF should have no problem in processing the data created. The important considerations are:

- Fields
  - Five user fields are in the extract (see page 188).
  - Additional user fields are in the extract if requested.
  - All standard CICS CMF fields are in the extract. If a field was missing in the input data, it is set to hexadecimal zeros.
- Records
  - The records from each network unit-of-work ID are combined into one record.
  - Only performance class records are created.
  - Each SMF (CMF) record created contains only one performance class record.
  - The records are not written in time sequence.
- IDs and TIME STAMPs
  - The APPLID of the new data is set to **MULTIPLE** unless overridden by the **SYSID** operand.
  - The SMF time stamp is set to the latest Stop Time of records in the UOW.
  - The Dictionary START and STOP time stamps are set to the earliest start and latest stop time of records in the UOW.

Two factors make it difficult to create a DSECT for the Cross-System record:

1. User fields may be added to the record. This adds additional information to the middle of the record, and also adds to data for these fields at the end of the record.
2. With a maintenance change to CICS PA, the record format can change as long as it remains compatible with the CICS CMF format using the dictionary record supplied at the front of the data set.

The format of the Cross-System Work Extract record is the same as that of a standard CMF performance class record. It corresponds to the default dictionary

record for the latest release of CICS. The default is **650.** For a complete description of each field and to understand how the fields are collected, see the *CICS Performance Guide*.

All the CICS fields listed in the table are the “standard” fields included in every data record written to the Cross-System Work Extract data set. In addition, five user fields, as shown in Figure 63, are always written after the CICS fields.

```
*
* User fields are after the Standard CICS fields.
*
* The following user count fields are always present:
*
CMF Field ID   Length  Connector Offset    CMF Field Name
-------------  ------- --------- -------   --------------
CICSPA  A001      4    X'011F'   X'0734'   TOTRECS
CICSPA  A002      4    X'0120'   X'0738'   APPLRECS
CICSPA  A003      4    X'0121'   X'073C'   TRANROUT
CICSPA  A004      4    X'0122'   X'0740'   FUNCSHIP
CICSPA  A005      4    X'0123'   X'0744'   DPLRECS
*
* Any additional user fields requested are inserted here.
* For each additional user field, there is also an
* additional halfword inserted. The halfword contains a hex value
* that increments for each additional field.
* This increases the offset to each field by 2 for each user field
* that is requested and increases the size of the record.
*
```

Figure 63. Cross-System Work Extract record format: standard user fields

Additional user fields can be requested and are placed in the output record following the listed fields. These additional fields cause the variable information in the dictionary to change, and affect the length of the records. The length of each additional field depends on the type of the field (and the specified range for character fields).

The Cross-System Work Extract data set is normally in *network unit-of-work ID* sequence. Because the records must be sorted by their network unit-of-work, before they are combined, they are not in the same time sequence as when they were created. It is possible to sort the data set by time sequence if required. Simply use any SORT program and sort the time and date in the SMF header. This field is set to the stop time of the data recorded for each data record. To ensure that the dictionary is the first record in a sorted data set, the time and date in its SMF header is set to the earliest start time of any CMF record in the original data.

Exported Performance Data extract

An Exported Performance Data Extract is created as a delimited text file for the purpose of importing the CMF performance class data into PC spreadsheet or database tools for further detailed analysis and reporting.

You can export all the CMF performance class records in the input file, or you can specify criteria for data selection to export a subset of the records which meet specific requirements.

Once transferred to a workstation file the exported performance class data is available to PC applications such as Lotus 1-2-3 or Microsoft® Excel.

Extract command

The Exported Performance Data extract can be requested from a Report Set in the CICS PA dialog. Select the **Export** extract in the **Extracts** category.

In batch, the `EXPORT` command is used to request the default format of the Export extract records. The `LIST` or `SUMMARY` commands can be used to tailor the record format.

Default Export

The command to create the default export file is:

```
CICSPA EXPORT
```

To tailor the export file, specify extract options as follows:

```
CICSPA EXPORT(
         [OUTPUT(ddname),]
         [DDNAME(ddname),]
         [DELIMIT('field-delimiter'),]
         [LABELS|NOLABELS,]
         [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),
                             ...))])
```

The exported performance data extract is created using a subset of the CMF performance class data. The CMF exception class data is not used.

CICS PA extracts the data values from the CMF performance class records, formats them, and then adds a field delimiter after each field. The default field delimiter is a semicolon (**;**) but can be changed by specifying the `DELIMIT` operand.

If any of the required data fields were not collected by the CICS Monitoring Facility, a message is issued and the field in the extract record contains zeros or `Missing.`

The DDname for the Export data set defaults to **CPAOEXPT**. The CICS PA dialog generates DDnames in the format **CPAOEXnn** where nn is a sequence number **01-99.** The DDname can be overridden by using the **DDNAME** operand.

List Export

To tailor the format of the export file like the Performance List report, see “List Export” on page 20.

Summary Export

To tailor the format of the export file like the Performance Summary report, see “Summary Export” on page 37.

Extract record format

Three record formats are available:

1. The EXPORT command is used to request the default format of the Export extract records (see “Default Export”).
2. The LIST command is used to request the List Export (see “List Export” on page 194).
3. The SUMMARY command is used to request the Summary Export (see “Summary Export” on page 195).

Default Export

The following table shows the fields in the extract file.

Table 18. Export record format (default)

Data Field	Length	Description
APPLID	8	Generic APPLID
TRAN	4	Transaction ID
TERM	4	Terminal ID
USERID	8	User ID
TASKNO	8	Transaction sequence number
STOP DATE	10	Transaction stop date (yyyy-mm-dd)
STOP TIME	12	Transaction stop time (hh:mm:ss.thm)
RESPONSE	8	Transaction response time
Clocks	8	All 70 clock fields, elapsed time in seconds with a precision of 0.0001 second

Note that the clock field MAXHTDLY (owner: DFHTASK, field ID: 278) is not available from CICS Transaction Server V3.1 and is omitted from the Export record.

The format of the Exported Performance Data record is static and contains fixed-length blocked records with a record size of 700 bytes. Each field in the record is followed by a text file field delimiter. The default field delimiter is a semicolon (**;**).

```
APPLID  ;TRAN;TERM;USERID  ;  TASKNO; STOP DATE;  STOP TIME ;RESPONSE;DISPATCH;CPU     ;SUSPEND ;DISPWAIT;QRDISPT ;QRCPU   ; . . .
IYK2Z1V1;CSSY;    ;CBAKER  ;      14;2002-05-23; 9:00:11.306;   .4796;   .0837;   .0145;   .3958;   .2169;   .0763;   .0136;
IYK2Z1V1;CSSY;    ;CBAKER  ;      11;2002-05-23; 9:00:11.596;   .7716;   .1924;   .0164;   .5791;   .3425;   .0212;   .0093;
IYK2Z1V1;CSSY;    ;CBAKER  ;      10;2002-05-23; 9:00:11.600;   .7756;   .1598;   .0169;   .6158;   .5744;   .0087;   .0041;
IYK2Z1V1;CPLT;    ;CBAKER  ;       7;2002-05-23; 9:00:27.503; 16.8286;   .8059;   .0279; 16.0227;   .0082;   .0095;   .0039;
IYK2Z1V1;CSSY;    ;CBAKER  ;     III;2002-05-23; 9:00:28.310; 17.4857; 10.3468;  1.9987;  7.1389;   .7171;  2.8730;  1.6315;
    . . .
IYK2Z1V1;CMAC;0031;CBAKER  ;      72;2002-05-23; 9:03:04.207;   .0007;   .0007;   .0006;   .0000;   .0000;   .0007;   .0006;
IYK2Z1V1;CMAC;0031;CBAKER  ;      73;2002-05-23; 9:03:05.908;   .0008;   .0007;   .0006;   .0000;   .0000;   .0007;   .0006;
IYK2Z1V1;CMAC;0031;CBAKER  ;      74;2002-05-23; 9:03:06.410;   .0007;   .0007;   .0006;   .0000;   .0000;   .0007;   .0006;
IYK2Z1V1;CSHQ;    ;CBAKER  ;      23;2002-05-23; 9:03:15.659; 167.394;   .2466;   .0246; 167.147;   .0012;   .0573;   .0046;
IYK2Z1V1;CESD;    ;CBAKER  ;      76;2002-05-23; 9:03:15.699;   .0387;   .0307;   .0042;   .0080;   .0026;   .0016;   .0015;
IYK2Z1V1;CSNC;    ;CBAKER  ;      21;2002-05-23; 9:03:17.527; 175.828;  1.0305;   .0056; 174.797;   .0071;  1.0053;   .0020;
```

Figure 64. Export file (default format)

```
 V2R1M0                                                CICS Performance Analyzer
                                                          Export

EXPT0001 Printed at  1:09:50  7/31/2004     Data from 09:00:09  5/23/2004 to 09:03:22  5/23/2004                    Page   1

CPAOEX01 Extract has completed successfully
         Data Set Name   . . . . . CICSPA.DEFAULT.EXPORT
         Record count  . . . . . .          74
```

Figure 65. Export Recap report (default export)

List Export

The following command produces a List Export file like that in Figure 66.

```
CICSPA LIST(OUTPUT(EXPT0001),
           DDNAME(CPAOEX01),
           DELIMIT(';'),
           LABELS,
           FIELDS(TRAN,STYPE,TERM,USERID,RSYSID,
                  PROGRAM,TASKNO,
                  STOP(TIMET),RESPONSE,
                  DISPATCH(TIME),
                  CPU(TIME),
                  SUSPEND(TIME),
                  DISPWAIT(TIME),
                  FCWAIT(TIME),FCAMCT,
                  IRWAIT(TIME)))
```

To use the CICS PA dialog to request this extract, simply specify a LIST or LISTX Report Form for the Export extract.

```
Tran;SC;Term;Userid;RSID;Program;TaskNo;Stop Time;Response;Dispatch Time;User CPU Time;Suspend Time;DispWait Time;;FC Wait Ti . . .
CPLT;U ;    ;CICSUSER;    ;DFHSIPLT;       6;15:41:29.169;   .5196;   .1771;   .0316;   .3425;   .3422;   .0000;        0;   .0000
CSSY;U ;    ;CICSUSER;    ;DFHAPATT;      15;15:41:30.057;   .4595;   .0036;   .0033;   .4558;   .0000;   .0000;        0;   .0000
CSSY;U ;    ;CICSUSER;    ;DFHAPATT;      16;15:41:30.570;   .9663;   .0069;   .0088;   .9594;   .0795;   .0000;        0;   .0000
CSSY;U ;    ;CICSUSER;    ;DFHAPATT;      17;15:41:33.624;  4.0131;   .1379;   .0311;  3.8752;  1.7449;   .0000;        0;   .0000
CSSY;U ;    ;CICSUSER;    ;DFHAPATT;      12;15:41:33.783;  4.2133;   .1621;   .0494;  4.0511;  2.5906;   .0000;        0;   .0000
CGRP;U ;    ;CICSUSER;    ;DFHZCGRP;      11;15:41:34.307;  5.1156;   .1956;   .0603;  4.9199;  1.9401;   .0000;        0;   .0000
CSSY;U ;    ;CICSUSER;    ;DFHAPATT;      14;15:41:34.388;  4.7978;   .1880;   .0652;  4.6098;  2.3487;   .0000;        0;   .0000
CSSY;U ;    ;CICSUSER;    ;DFHAPATT;      10;15:41:34.452;  5.2738; 1.4746;   .2259;  3.7992;   .6720;   .0000;        0;   .0000
CSSY;U ;    ;CICSUSER;    ;DFHAPATT;       9;15:41:34.513;  5.3366;   .7647;   .1494;  4.5719;  1.6657;   .0000;        0;   .0000
CSSY;U ;    ;CICSUSER;    ;DFHAPATT;      13;15:41:34.868;  5.2787;   .7009;   .1740;  4.5778;  2.0694;   .0000;        0;   .0000
CLQ2;U ;    ;CICSUSER;    ;DFHLUP  ;      19;15:42:31.258;  7.2473;   .2907;   .0416;  6.9566;  1.9555;   .0000;        0;  3.7840
CSSY;U ;    ;CICSUSER;    ;DFHAPATT;     III;15:42:43.811; 74.6388; 48.6230; 18.0249; 26.0158;  7.7521;   .6756;     1506;   .0000
CLR2;TO;<AAK;CICSUSER;    ;DFHLUP  ;      20;15:42:43.847;   .4513;   .0130;   .0128;   .4383;   .0215;   .0000;        0;   .4363
CSFU;S ;    ;CICSUSER;    ;DFHFCU  ;      25;15:42:45.071;   .3998;   .3770;   .0234;   .0228;   .0184;   .0000;        0;   .0000
CRSQ;S ;    ;CICSUSER;    ;DFHCRQ  ;      24;15:42:45.437;   .7659;   .0740;   .0247;   .6919;   .6893;   .0000;        0;   .0000
CXRE;S ;    ;CICSUSER;    ;DFHZXRE ;      26;15:42:45.919;   .8530;   .4739;   .0316;   .3791;   .3788;   .0000;        0;   .0000
CWBG;S ;    ;CICSUSER;    ;DFHWBGB ;      23;15:42:46.342;  1.6720;   .4074;   .0248;  1.2645;  1.2634;   .0000;        0;   .0000
```

Figure 66. List Export file

```
 V2R1M0                                              CICS Performance Analyzer
                                                        Performance List

EXPT0001 Printed at  2:29:25  7/14/2004    Data from 15:41:29  7/12/2004                      APPLID CICPAOR1      Page      1

CPAOEX01 Extract has completed successfully
         Data Set Name . . . . CICSPA.LIST.EXPORT
         Record count  . . . .         119
```

Figure 67. List Export Recap report

Summary Export

The following command produces a Summary Export file like that in Figure 68.

```
CICSPA SUMMARY(OUTPUT(EXPT0001),
               DDNAME(CPAOEX01),
               DELIMIT(';'),
               LABELS,
               EXTERNAL(CPAXW001),
               INTERVAL(00:01:00),
               FIELDS(TRAN,TASKCNT,
                      RESPONSE(AVE,MAX),DISPATCH(TIME(AVE)),
                      CPU(TIME(AVE)),SUSPEND(TIME(AVE)),
                      QRCPU(TIME(AVE)),MSCPU(TIME(AVE)),
                      ROCPU(TIME(AVE)),KY8CPU(TIME(AVE)),
                      J8CPU(TIME(AVE)),L8CPU(TIME(AVE)),
                      S8CPU(TIME(AVE))),
               TITLE1('Transaction CICS TCB CPU Analysis - Summary'))
```

To use the CICS PA dialog to request this extract, simply specify a SUMMARY Report Form for the Export Extract. You could use the sample Report Forms. This example is the same as using the sample Report Form CPUSUM.

```
Tran;#Tasks;Response Avg;Response Max;Dispatch Time Avg;User CPU Time Avg;Suspend Time Avg;QR CPU Time Avg;MS CPU Time Avg; . . .
CATA    ;       2;   .5038;   .5107;   .4635;   .1050;   .0403;   .0339;   .0711;Missing ;Missing ;   .0000;   .0000;   .0000
CATR    ;       2;   .3946;   .4069;   .2240;   .0281;   .1706;   .0058;   .0223;Missing ;Missing ;   .0000;   .0000;   .0000
CEMT    ;       2;  6.2161;  7.2793;  2.8673;   .7499;  3.3488;   .2549;   .4950;Missing ;Missing ;   .0000;   .0000;   .0000
CESD    ;       2;   .9081;   .9702;   .1021;   .0411;   .8061;   .0163;   .0249;Missing ;Missing ;   .0000;   .0000;   .0000
CEX2    ;       2; 1937.94; 1957.76;   .3062;   .0843; 1937.64;   .0582;   .0262;Missing ;Missing ;   .0000;   .0000;   .0000
CGRP    ;       2;  5.3068;  5.4980;   .4944;   .0608;  4.8124;   .0372;   .0236;Missing ;Missing ;   .0000;   .0000;   .0000
CLQ2    ;       2; 12.7568; 18.2664;   .6439;   .0430; 12.1129;   .0152;   .0278;Missing ;Missing ;   .0000;   .0000;   .0000
CLR2    ;       2;   .4497;   .4513;   .0131;   .0124;   .4366;   .0124;   .0000;Missing ;Missing ;   .0000;   .0000;   .0000
CPLT    ;       2;   .4568;   .5196;   .1276;   .0321;   .3291;   .0030;   .0290;Missing ;Missing ;   .0000;   .0000;   .0000
CQRY    ;       2;   .4066;   .4157;   .0955;   .0321;   .3110;   .0075;   .0246;Missing ;Missing ;   .0000;   .0000;   .0000
CRDB    ;       2;  2.8808;  3.5474;   .0676;   .0256;  2.8132;   .0108;   .0148;Missing ;Missing ;   .0000;   .0000;   .0000
CRDC    ;       2;   .3234;   .5345;   .2274;   .0243;   .0960;   .0096;   .0148;Missing ;Missing ;   .0000;   .0000;   .0000
CRDD    ;       2;   .3828;   .6006;   .0551;   .0241;   .3277;   .0098;   .0144;Missing ;Missing ;   .0000;   .0000;   .0000
CRDE    ;       2;   .3141;   .5208;   .0670;   .0369;   .2470;   .0227;   .0142;Missing ;Missing ;   .0000;   .0000;   .0000
CRD3    ;       2;   .5020;   .8081;   .0604;   .0229;   .4416;   .0078;   .0150;Missing ;Missing ;   .0000;   .0000;   .0000
```

Figure 68. Summary Export file

```
 V2R1M0                                              CICS Performance Analyzer
                                                        Performance Summary

EXPT0001 Printed at  2.43.23  7-24-2004     Data from 15.41.19  7-12-2004 to 16.19.15  7-12-2004                    Page  1
Transaction CICS TCB CPU Analysis - Summary

CPAOEX01 Extract has completed successfully
         Data Set Name . . . . CICSPA.SUMMARY.EXPORT
         Record count  . . . .          41
```

Figure 69. Summary Export Recap report

Importing into Lotus 1-2-3

To import the exported performance data into Lotus 1-2-3, follow these steps:

1. In 1-2-3, click the **Import** SmartIcon or choose **File - New.** 1-2-3 opens the File dialog box.
2. Select a text type of **Text - Delimited (*.TXT).**
3. Select the file to be opened. You may have to go to another folder or drive to find it.
4. Click **Open.** 1-2-3 displays the Text File Options dialog box.
5. Either click the option button **start a new column at each Semicolon** to indicate the character that separates the data fields, or type the separator character in the **Other characters** text box.
6. Click **OK.** After a few seconds of processing, 1-2-3 imports the data into records in the worksheet.

Importing into Lotus Approach

To import the exported text file performance data set into Lotus Approach®, switch to the Approach Browse environment, and follow these steps:

1. In Approach, click the **Import** SmartIcon or choose **File - Import Data.** Approach opens the Import Data dialog box.
2. Select a text type of **Text - Delimited (*.TXT).**
3. Select the file to be imported. You may have to go to another folder or drive to find it.
4. Click **Import.** Approach displays the Text File Options dialog box.
5. Either click the option button to indicate the character that separates the data fields or type the separator character in the **Other** text box.
6. Place a checkmark in the **First Row Contains Field Names** checkbox. A checked checkbox is the default.
7. Click **OK.** Approach opens the Import Setup dialog box.
8. Drag the fields on the right side of the dialog box to match the related fields on the left side.
9. Click **OK.** After a few seconds of processing, Approach imports the data into records at the end of the file.
10. Edit the new records as needed.

Record Selection extract

The Record Selection Extract is a facility that allows you to create a small extract file containing only the records of interest to you. The extract file can then be used as input to CICS PA, allowing more efficient reporting.

The Record Selection Extract filters large SMF Files, writing only SMF records that match the following criteria:

- CICS, DB2, MQ, and Logger System Selection
- Selected record types, being any of:
  - Performance
  - Exception
  - Resource
  - Statistics
  - OMEGAMON
  - DB2
  - WebSphere MQ
  - System Logger
- Performance Selection Criteria
- Exception Selection Criteria
- Logger Selection Criteria
- Run-time SMF reporting interval

A Recap report containing processing statistics is always printed at the end of extract processing.

Extract command

The Record Selection extract can be requested from a Report Set in the CICS PA dialog. Select the **Record Selection** extract in the **Extracts** category.

In batch, the `RECORDSELECTION` or `RECSEL` command is used to request the Record Selection extract.

The command to create the default extract file is:

```
CICSPA RECSEL
```

or

```
CICSPA RECORDSELECTION
```

To tailor the extract file, specify extract options as follows:

```
[CICSPA APPLID(applid1,applid2,...)]
 CICSPA RECSEL(
             [OUTPUT(ddname),]
             [DDNAME(ddname),]
             [PERFORMANCE,]
             [EXCEPTION,]
             [RESOURCE,]
             [STATISTICS,]
             [LOGGER,]
             [OMEGAMON,]
             [DB2,]
             [MQ,]
             [SSID(id1,id2,...),]
             [COMPRESS|NOCOMPRESS,]
             [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(value1),...),...),]
             [SELECT(EXCEPTION(INCLUDE|EXCLUDE(field1(value1),...),...))]
```

```
                                [SELECT(LOGGER(INCLUDE|EXCLUDE(field1(values1),...), ...))]
                                [LOGSTREAM('name.or.pattern'),]
                                [STRUCTURE('name.or.pattern'),])
```

Extract format

The extract file contains any of the following requested records:

- CMF performance, exception, or resource class records (SMF 110, subtype 1)
- DB2 accounting records (SMF 101)
- MQ accounting records (SMF 116)
- Logger records (SMF 88)
- CICS statistics (SMF 110, subtype 2) and server statistics records (SMF 110, subtypes, 3, 4, and 5)
- OMEGAMON XE for CICS records (SMF 112)

Recap report

A Recap report is always produced at the end of extract processing.

```
 V2R1M0                                              CICS Performance Analyzer
                                                      Record Selection Extract

RSEL0001 Printed at 11:49:18  7/27/2004     Data from 15:41:28  7/12/2004 to 14:43:47  7/21/2004                Page  1

CPAORS01 Extract has completed successfully
         Data Set Name   . . . . . CICSPA.RECSEL.EXTRACT
         Record Counts:
           Performance Dictionary  .           8
           Performance Class     . .         573
           Exception Class . . . . .           0
           Resource Class  . . . . .           0
           Statistics  . . . . . .             0
           DB2 Accounting  . . . . .         172
           MQ Accounting   . . . . .           0
           Logger  . . . . . .                 0
           OMEGAMON  . . . . . .               0
           SMF Records . . . . . .            20
```

Figure 70. Record Selection extract (Recap report)

The report contains the following information:

RSEL0001
This is the DDname for the Recap output specified in the `OUTPUT(ddname)` operand. If not specified, the default is **RECSnnnn** where nnnn is **0001-9999** to uniquely identify it.

CPAORS01
This is the DDname of the extract data set specified in the `DDNAME(ddname)` operand. If not specified, the default is **CPA0RSEL.** The CICS PA dialog generates the DDnames **CPARSnn** where nn is the extract sequence number **01-99.**

Data Set Name
The is the name of the extract data set. Your usual CICS PA reporting can now occur using this data set as input.

Record Counts
The number of records written to the extract data set.

Performance Dictionary
The number of Dictionary records written.

Performance Class
The number of CMF performance class data records written. The `APPLID` operand provides a filter on CICS generic APPLID. The `SELECT(PERFORMANCE` statement selects only those records with data

fields that match the selection criteria. If these operands are not specified, then all CMF performance records are written.

Exception Class
The number of CMF exception class data records written. The APPLID operand provides a filter on CICS generic APPLID. The SELECT(EXCEPTION statement selects only those records with data fields that match the selection criteria. If these operands are not specified, then all CMF exception records are written.

Resource Class
The number of CMF performance class data records written. The APPLID operand provides a filter on CICS generic APPLID. The SELECT(PERFORMANCE statement selects only those records with data fields that match the selection criteria. If these operands are not specified, then all CMF resource class records are written.

Statistics
The number of CICS Statistics and Server Statistics records written. The APPLID operand provides a filter on CICS generic APPLID.

DB2 Accounting
The number of DB2 accounting records written. The SSID operand indicates that DB2 accounting data is required. Only records for DB2 Subsystems that match the ID or pattern are written. If the SSID operand is not specified, no DB2 accounting records are written.

MQ Accounting
The number of MQ accounting records written. The SSID operand indicates that MQ accounting data is required. Only records for WebSphere MQ Subsystems that match the ID or pattern are written. If the SSID operand is not specified, no MQ accounting records are written.

Logger
The number of MVS Logger records written. The LOGGER operand indicates that Logger records are required.

OMEGAMON
The number of OMEGAMON XE for CICS records written. The OMEGAMON operand indicates that OMEGAMON records are required.

SMF Records
The total number of SMF records written to the extract data set. There is only one Dictionary record per SMF record. There is only one DB2 Accounting record per SMF record. However there may be many performance class records contained in one SMF record.

By comparing the numbers in the End of File Record Counts (see Figure 73 on page 207) and the Record Selection Extract report you can see the effect of filtering on the extract process.

HDB Load

The HDB Load is a facility that loads SMF data into a Historical Database (HDB). This same facility is available from Primary Menu option 5 Historical Database. However, from Report Sets you have the advantages of:

- Reports and HDB Load in the one job
- Multiple load requests supported in the one job
- One pass of the data

A Recap report containing processing statistics is always printed at the end of load processing.

HDB Load command

The HDB Load can be requested from a Report Set in the CICS PA dialog. Select **HDB Load** in the **Extracts** category.

In batch, the `HDB(LOAD(hdbname))` operand requests CICS PA to load CMF Performance or CICS Statistics data from SMF data sets into the specified HDB.

The command format is:

```
CICSPA HDB(LOAD(hdbname),
         [OUTPUT(ddname))]
```

where *hdbname* is the name of the HDB in the HDB Register identified in the JCL by DDname **CPAHDBRG** and *ddname* (default **HDBL0001**) identifies the Recap report output.

HDB format

The format of the HDB is as defined using Primary Menu option 5 Historical Database.

Recap report

Successful completion of the Load request generates a Recap report that provides information about the HDB Load, including a list of Container data sets created by the Load process.

```
 V2R1M0                                              CICS Performance Analyzer
                                                       HDB Load Recap Report

HDBL0001 Printed at 9:28:48 3/17/2005  Data from 09:02:00 3/17/2005 to 16:29:00 3/17/2005  Page  1


LOAD requested for HDB: CICSP1H   Register DSN: USER.CICSPA.HDB.REGISTER


The following Containers were created and loaded:
  Container DSN: JOHN.CICSP1H.D03219.T092846.HDB              No of Records: 54,567
    Start Time Stamp: 2005-03-17-09.00.00       End Time Stamp: 2005-03-17-16.00.00

LOAD process complete.
```

Figure 71. HDB Load Recap report

In this example, CICS PA created Container data set JOHN.CICSP1H.D03219.T092846.HDB for HDB CICSP1H. It contains 54,567 records for the period 9:00am to 4:00pm on March 17, 2005.

System Logger extract

A System Logger extract is created as a delimited text file for the purpose of importing System Logger (SMF 88) data into PC spreadsheet tools or database tools (such as DB2) for further detailed analysis and reporting. Once transferred to a workstation file the extracted System Logger data is available to PC applications such as Lotus 1-2-3.

Extract command

The command format for the System Logger extract is:

```
CICSPA LOGGER(
            [OUTPUT(ddname),]
            [DDNAME(ddname),]
            [DELIMIT('field-delimiter'),]
            [LABELS|NOLABELS,]
            [FLOAT,]
            [SELECT(LOGGER(INCLUDE|EXCLUDE(field1(values1),...), ...))]
            [LOGSTREAM('name.or.pattern'),]
            [STRUCTURE('name.or.pattern'),])
```

Extract content

The following table describes the format of each line in the System Logger extract, including the extract labels (which occupy the first line of the extract, if you chose to include labels), the name of the original SMF 88 field, and the length of the data in the extract.

Table 19. System Logger extract content (and Logger Selection Criteria fields)

Extract label	Field	Length	Description
RecType	SMF88PNM, SMF88STP	8	Concatenated value of field SMF88PNM (product name, SCLOG) and field SMF88STP (record subtype). For example, SCLOG01.
Interval Date	SMF88LTD	10	TOD-time when SMF global interval expired (from parameter list of ENF event 37, which requested this SMF record from logger). Time is reported in GMT. Appears in the extract as two separate fields: date (*yyyy-mm-dd*) and time (*hh.mm.ss*).
Interval Time		8	
Logstream name	SMF88LSN	26	Logstream name.
Structure name	SMF88STN	16	Name of structure used for this logstream.
MVSID	SMF88SID	4	MVS system ID.
MVS Level	SMF88OSL	8	MVS product level.
Group	SMF88GRP	8	GROUP value for this logstream. Either PROD (production) or TEST.
Flag	SMF88LFT, SMF88LDS	10	Values in the extract can be: **Staging** This log stream used staging data sets during the expiring SMF interval. **Disconnect** The SMF record has been generated when the logstream disconnected from the system. **Stag/Disc** Both of the above.
IXGWRIT Count	SMF88LWI	8	IXGWRITE invocations for this logstream issued during the expiring SMF interval.

Table 19. System Logger extract content (and Logger Selection Criteria fields) (continued)

Extract label	Field	Length	Description
IXGWRIT BLOCKLEN Min	SMF88LIB	8	Minimum BLOCKLEN value of IXGWRITE seen during the expiring SMF interval. Initialized to X'7FFFFFFF' if no SMF activity occurs within the SMF interval.
IXGWRIT BLOCKLEN Max	SMF88LAB	8	Maximum BLOCKLEN value of IXGWRITE seen by this log stream during the expiring SMF interval Initialized to zero if no SMF activity occurs within the SMF interval.
IXGWRIT Bytes Requested	SMF88LWB	8	Bytes REQUESTED by user application(s) on IXGWRITE invocations for this log stream during the expiring SMF interval (format: long floating point).
IXGWRIT Bytes Written	SMF88LDB	8	Count of bytes written to DASD during the expiring SMF interval (format: long floating point). SMF88LDB = SMF88SAB + storage-for-LOGGR-internal-requirements (ex, rounding, internally-required control information.)
DASD Writes	SMF88LIO	8	Number of times a request was made by System Logger to write logstream data to DASD during the expiring SMF interval.
DASD Write Waits	SMF88LIS	8	Number of times System Logger had to suspend before writing logstream data to DASD because a previously initiated write to DASD had not yet completed during the expiring SMF interval.
DASD Shifts	SMF88EDS	8	Number of logstream DASD-shifts initiated by this system during the expiring SMF interval.
Struct Rebuilds Initiated	SMF88ERI	8	Number of Structure Rebuild events initiated for this logstream during the expiring SMF interval.
Struct Rebuilds Completed	SMF88ERC	8	Number of Structure Rebuild events completed for this logstream during the expiring SMF interval.
Struct Full	SMF88ESF	8	Number of times Logger detected “Structure full” condition for this logstream on this system during the expiring SMF interval.
Staging Threshold	SMF88ETT	8	Number of times IXGLOGR detected “Staging-Dataset-Threshold-Hit” condition for this logstream on this system during the expiring SMF interval.
Staging Full	SMF88ETF	8	Number of times IXGLOGR detected “Staging-Dataset-FULL” condition for this logstream on this system during the expiring SMF interval.
Offloads	SMF88EO	8	Number of times IXGLOGR performed successful offload (>1 byte of data) for this logstream on this system during the expiring interval
Entry Full	SMF88EFS	8	Number of times IXGLOGR performed an offload for all the logstreams connected on this system to the structure due to the structure’s total in-use list entries reaching 90% of the total available entries for the structure. This count is the number of occurances of this condition for the expiring interval.
Demand Offloads	SMF88EDO	8	Number of times a demand initiated offload was requested (via IXGOFFLD) for this logstream on this system during the expiring interval.
Staging DS Async Buf Full	SMF88EAF	8	Number of times IXGLOGR detected “Staging-Dataset-Async-Buffer_Full” condition for this logstream on this system during the expiring SMF interval.
Written Bytes	SMF88SWB	8	Current WRITTEN-Bytes-Structure. Count of bytes written to interim storage for this logstream for this interval (format: long floating point).

Table 19. System Logger extract content (and Logger Selection Criteria fields) (continued)

Extract label	Field	Length	Description
Instead Bytes	SMF88SIB	8	Current INSTEAD-Bytes count. Count of bytes deleted from interim storage during this interval INSTEAD OF being moved to DASD (format: long floating point). This field is only incremented due to user ?IXGDELET invocations when the data had not yet been migrated from interim storage to DASD.
After Bytes	SMF88SAB	8	Current AFTER-Bytes count. Count of bytes deleted from interim storage during this interval AFTER being moved to DASD (format: long floating point). This field is only incremented due to LOGGR internal management of interim storage.
Instead Count	SMF88SII	8	Current INSTEAD-Invoc count. Count of times a deletion from interim storage was performed during this interval, where the data was NOT first migrated to DASD.
After Count	SMF88SAI	8	Current AFTER-Invoc count. Count of times a deletion from interim storage was performed during this interval, AFTER being migrated to DASD (occurs due to LOGGR management of interim storage.)
Type-1 Completions	SMF88SC1	8	Count of type-1 completions during the expired SMF interval. Logstream contents can remain in interim storage. No need to move data from interim storage to DASD.
Type-2 Completions	SMF88SC2	8	Count of type-2 completions during the expired SMF interval. Logstream is filling interim storage but space is not critical. Logger must move data from interim storage to DASD.
Type-3 Completions	SMF88SC3	8	Count of type-3 completions during the expired SMF interval. Space used in interim storage (by this logstream) is critical but does not exceed 100 percent. Undefined for DASDONLY logstreams.

Chapter 9. End of processing reports

Two reports are always produced at the end of CICS PA batch reporting to provide summary processing statistics:

- Dispatcher Tables Summary report
- End of File Record Counts report

Dispatcher Tables Summary report

The Dispatcher Tables Summary Report provides a summary of the processing performed by CICS PA. It can provide valuable information for problem determination. If no records are being processed for your requested reports and extracts, there is an excellent chance that the Dispatcher Tables Summary provides all the information needed to resolve the problem.

Report command

The report is automatically produced prior to report and extract processing. It cannot be explicitly requested.

Report content

```
 V2R1M0    07:49:07  3/12/2005                  CICS Performance Analyzer
                                                Dispatcher Tables Summary

SMF File    Off PreScan   Routine   Output       EOF     ParmName  Codes
SMFIN001+    4  CPAPRSMF  CPALSTMF  LIST0001      Y      LIST0001  31
                          CPALSXMF  LSTX0001      Y      LSTX0001  31
                          CPASUMMF  SUMM0001      Y      SUMM0001  31
                          CPAFNLMF  TOTL0001      Y      TOTL0001  31
                          CPATRUMF  RESU0001      Y      RESU0001  31,35

SMFIN002     4  CPAPRSMF* CPALOGMF* LOGR0002      Y      LOGR0002  58

SMFIN003     4  CPAPRSMF  CPADB2MF  DB2R0003      Y      DB2R0001  31,65

SMFIN004+    4  CPAPRSMF* CPAMROMF* CROS0001*     Y      CROS0003  31
                          CPAMROMF* CROS000M*     Y      CROS0004  31
                          CPAMROMF* CROS0001*     Y      CROS0005  31
                          CPAMROMF* CROS000M*     Y      CROS0006  31
                          CPAMROMF* CROS0001*     Y      CROS0007  31
                          CPAMROMF* CROS000M*     Y      CROS0008  31
```

Figure 72. Dispatcher Tables Summary report

The Dispatcher Tables Summary as shown in Figure 72 contains the following information:

SMF File
The DDname of the SMF input file, followed by a plus (+) sign if more than one DDname was specified in the `INPUT` operand.

Off
This is the offset into the data record that the CICS PA scan program uses to determine whether or not the record should be processed.

PreScan
The CICS PA module name that pre-processes each CMF record before they are passed to the record processors.

Routine
This is the name of the record processing module. Each specification of the program causes a separate use of the module. However, only one copy of the module is loaded.

Output
The output file DDname that was either specified in the `OUTPUT` operand or assigned by CICS PA. The name is followed by a **(NO)** if the file failed to open. It can also be followed by a **(DY)** if the file is a DUMMY data set.

EOF
A **Y** in this column indicates that the record processor is invoked at End of File of the input file.

ParmName
This name is assigned by CICS PA to uniquely identify each invocation of a record processing module.

Codes
This field represents the CMF record codes which are checked at the offset location (**Off**) in the data record.

An asterisk (*****) next to the PreScan routine, Record Processing routine or Output DDname signifies that this entry has been used by a previous report. Try to avoid reusing Output DDnames, as the report output may be merged or difficult to distinguish.

End of File Record Counts report

The End of File Record Counts report provides a summary of the input records processed. It can provide valuable information for problem determination.

Report command

The report is automatically produced at the end of report and extract processing. It cannot be explicitly requested.

Report content

V2R1M0 16:26:54 7/23/2004 CICS Performance Analyzer
End of File Record Counts

DDname	RecID	Record Type	Count	Pct of Total
SMFIN001+	X'30'	Performance Dictionary	18	0.06%
	X'31'	Performance Class	1,277	4.29%
	X'35'	Resource Usage	306	1.02%
	X'51'	CICS Statistics	26,829	90.13%
	X'58'	MVS System Logger	733	2.46%
	X'65'	DB2 Accounting	304	1.02%
	X'74'	MQ Accounting	305	1.02%
SMFIN001+	Total		29,772	100.00%
	Total	SMF Records	2,092	
SMFIN002	X'30'	Performance Dictionary	3	0.04%
	X'31'	Performance Class	250	3.18%
	X'51'	CICS Statistics	7,596	96.73%
	X'54'	CICS Server Statistics	4	0.05%
SMFIN002	Total		7,853	100.00%
	Total	SMF Records	3,419	
SMFIN003	X'30'	Performance Dictionary	3	0.01%
	X'31'	Performance Class	126	0.22%
	X'41'	Exception Class	8	0.01%
	X'51'	CICS Statistics	57,294	99.76%
SMFIN003	Total		57,431	100.00%
	Total	SMF Records	2,462	

Figure 73. End of File Record Counts report

The information shown in the End of File Record Counts report in Figure 73 is:

DDname
This is the name associated with the SMF input file.

RecID
This is the hexadecimal ID of each CMF record in the input data set. This value was found at the offset (**Off**) shown in the Dispatcher Tables Summary. The Record ID values are:

X'30' CMF performance class dictionary
X'31' CMF performance class data
X'35' CMF transaction resource class data
X'41' CMF exception class data
X'51' CICS statistics data
X'52' CICS temporary storage server statistics data
X'53' CICS coupling facility data table server statistics data
X'54' CICS named counter server statistics data
X'58' MVS System Logger data
X'65' DB2 Accounting data
X'70' OMEGAMON XE for CICS data
X'74' MQ Accounting data

Record Type
This is the name associated with the record type defined in the **RecID** field.

"Total SMF Records" is the total number of SMF records in the input file.

Count
This is a count of the number of records of the particular type in the input file.

The **"Total SMF Records"** is usually different from the **"100% Total"** because the one SMF record can contain many CMF performance class records.

Pct of Total
This value represents the percentage of the records of the specified type against the total number of records in the file.

Part 3. Historical Database reports and extracts

The chapter in this part describes the reports that you can create from a Historical Database (HDB).

In addition, but not described in this book, CICS PA provides a Historical Database Export facility to export HDB data to DB2 tables. For more information on Historical Database facilities and creating HDB export data sets, refer to the *CICS Performance Analyzer for z/OS User's Guide*.

Chapter 10. Historical Database (HDB)

CICS PA Historical Database (HDB) is a repository of SMF data related to CICS system performance.

CICS PA Historical Database builds a history of transaction activity from your CMF performance class data (“Performance HDB”), and a history of CICS statistics and server data (“Statistics HDB”), that can be customized to meet your various reporting requirements. Your Historical Database environment is controlled from the CICS PA ISPF dialog. It provides a fully managed environment from where you can control all aspects of CICS performance data and CICS statistics data, including collection and reporting.

Initially, your HDB environment requires a minimal one-time setup. On the Historical Database Menu, specify the name of the **HDB Register.** This is a VSAM KSDS where HDB definitions are saved.

The Historical Database Menu provides a pathway to the eight steps for defining and using HDBs:

Step 1. **Template.** (Performance HDB only, not applicable to Statistics HDB)

Defining a Performance HDB is a two step process: first define a Template and then define an HDB based on that Template. The Template identifies which CMF performance class fields to be kept in the HDB.

Step 2. **Definition.**

After the Template is defined, then define the HDB and its options, such as the characteristics of the HDB data sets and the retention period of the data.

Step 3. **Load.**

Loading data into the HDB is performed by the standard CICS PA batch reporting utility. The command that requests the utility to load an HDB is:

```
HDB(LOAD(...
```

CICS PA reads the SMF data and builds the HDB data sets. Because the HDB Load process is part of the normal batch reporting process, you can run CICS PA reports and load HDBs together with a single pass of the SMF data.

Step 4. **Report.**

Reporting against a Performance HDB is performed by the standard CICS PA batch reporting utility. The command that requests the utility to report against a Performance HDB is:

```
HDB(REPORT(...
```

You can tailor Performance HDB reporting by using a Report Form. This allows you to select which fields in the HDB are reported and how they are presented.

Statistics HDB reporting is done interactively using the CICS PA dialog.

Step 5. **Export.**

Export allows you to load HDB data into a DB2 table. CICS PA automates this process with two simple steps:

a. First define the DB2 table to house the data. CICS PA generates JCL to do this for you by creating the necessary DDL to define the table.

b. Then load the data into the table. CICS PA generates JCL to do this for you by creating the necessary DB2 Load Utility statements to load the data.

Step 6. **Extract.**

The HDB Extract facility allows you to export data from your HDB data sets to an extract data set in CSV format, suitable for import into PC-based spreadsheet applications for further analysis.

Step 7. **Maintain.**

HDB maintenance allows you to change your HDB definition and manage the HDB container data sets.

Step 8. **Housekeeping.**

HDB housekeeping should be run periodically to clean-up your HDB environment. Housekeeping performs two tasks:

a. Deletes HDB container data sets that have expired.

b. Removes definitions from the HDB Register that are no longer required.

Batch processes are associated with four of these steps:

Step 3 on page 211 Load HDB
Step 4 on page 211 HDB reporting
Step 6 HDB extract to CSV
Step 8 HDB housekeeping

This chapter presents the commands and sample output for these batch processes.

HDB Load

Option 3 **Load** from the Historical Database Menu is where you request to generate JCL to load historical performance data (List or Summary) or Statistics data into your HDB.

HDB Load command

The **HDB(LOAD)** operand requests CICS PA to load CMF performance or CICS statistics data from SMF data sets into an HDB.

The command format is:

```
CICSPA HDB(LOAD(hdbname)
         [,OUTPUT(ddname)])
```

The options are:

LOAD Specifies the name of the HDB to be loaded. The HDB must be defined in the HDB Register (DDname **CPAHDBRG**).

OUTPUT
DDname for the Recap report output. CICS PA records the results of the Load operation in this File. If not specified, CICS PA assigns a DDname of **HDBLnnnn** where nnnn is the numerical sequence number **0001-9999.**

HDB Load Recap report

Successful completion of the Load request generates a Recap report that provides information about the HDB Load, including a list of Container data sets created by the Load process.

```
 V2R1M0                                              CICS Performance Analyzer
                                                       HDB Load Recap Report

HDBL0001 Printed at 9:28:48 8/07/2004  Data from 09:02:00 8/07/2004 to 16:29:00 8/07/2004  Page  1


LOAD requested for HDB: CICSP1H   Register DSN: USER.CICSPA.HDB.REGISTER

The following Containers were created and loaded:
  Container DSN: JOHN.CICSP1H.D03219.T092846.HDB              No of Records: 54,567
    Start Time Stamp: 2004-08-07-09.00.00       End Time Stamp: 2004-08-07-16.00.00

LOAD process complete.
```

Figure 74. HDB Load Recap report

In this example, CICS PA created Container data set JOHN.CICSP1H.D03219.T092846.HDB for HDB CICSP1H. It contains 54,567 records for the period 9:00am to 4:00pm on August 7, 2004.

Performance HDB Reporting

Option 4 **Report** from the Historical Database Menu is where you request to run reports against your HDB.

There are three types of HDB reports:

1. **List**
   A LIST HDB contains data records for individual transactions. Typically, List HDB reports are used for the detailed analysis of recent transaction events and the data typically has a short life span (retention).
2. **Summary**
   A SUMMARY HDB contains data records that summarize transaction activity over a specified time interval. Typically, Summary HDB reports are used for long term trend analysis and capacity planning.
3. **Statistics**
   A STATS HDB contains data records from CICS Statistics class SMF records. Statistics HDB reporting is not described here. It is done interactively using the CICS PA dialog and is described in the *CICS Performance Analyzer for z/OS User's Guide*.

HDB Report command

The **HDB(REPORT)** operand requests CICS PA to generate reports from HDB data. The command applies to both List and Summary HDBs.

The command format is:

```
CICSPA HDB(REPORT(hdbname),
          [OUTPUT(ddname),]
          [TOTALS(n)|NOTOTALS,]
          [INTERVAL(hh:mm:ss),]
          [FIELDS(field1[(options)],...),]
          [LINECount(nnn),]
          [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
          [SELECT2(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))])
```

The options are:

REPORT
Specifies the name of the HDB to report against. The HDB must be defined in the HDB Register (DDname **CPAHDBRG**).

OUTPUT
DDname for the report output. If not specified, CICS PA assigns a DDname

in the format **HDBRnnnn** where nnnn is the report sequence number **0001-9999** to uniquely identify the output.

TOTALS(n) | NOTOTALS
This option applies only to the Summary HDB report. Specify NOTOTALS if you do not want to include total lines in the report.

Specify TOTALS(n) to accumulate subtotals for up to 8 sort fields, print the subtotals when the sort field changes, and print a grand total at the end of the report. If TOTALS(0) is specified, there will be no subtotals, but the grand total will still be printed. TOTALS(8) is the default.

INTERVAL
Specify an optional Time Interval when reporting Summary HDBs. The default is the Time Interval used to create the data (as defined in the Template). In our example, Template PRODSUM used to create the HDB data specified 15 minutes.

You can specify any interval greater than or equal to the Template Interval. For example, if you are reviewing many days worth of data then you might specify 24:00:00 (24 hours) so that you can view the daily trend. In the example above, the Interval has been changed to 1 hour.

FIELDS
Specifies which fields are reported, the order in which they appear in the report, and their summarization presentation. Only fields that are specified in the HDB Template can be specified. Fields not contained in the HDB are reported as **Missing**.

LINECount
Controls the number of lines per page in the HDB report.

SELECT, SELECT2
Specifies what data to include or exclude from the report based on data field values.

SELECT and SELECT2 can both be specified to perform record filtering. The CICS PA dialog generates SELECT2 statements in the command deck when you use a Report Form that has active Selection Criteria. If both SELECT and SELECT2 are specified, then the record must pass selection by both specifications for it to be included in the report.

HDB List report

The HDB List report is produced from a List HDB.

The following report shows the HDB List report for a default List HDB (uses the default List Template). The report was generated by the command:

```
CICSPA HDB(OUTPUT(HDBR0001),REPORT(HDBLIST1))
```

```
V2R1M0                                          CICS Performance Analyzer
                                                Historical Database List

HDBR0001 Printed at 14:19:58  8/08/2004    Data from 15:41:28  8/07/2004                                          Page       1

Start        MVS  APPLID   Tran Userid   Program    TaskNo Response Dispatch User CPU  Suspend DispWait  FC Wait   FCAMRq  IR Wait
Time                                                      Time     Time     Time     Time     Time     Time               Time
15:41:28.649 P390 CICS53A1 CPLT CICSUSER DFHSIPLT        6    .5196    .1771    .0316    .3425    .3422    .0000        0    .0000
15:41:29.598 P390 CICS53A1 CSSY CICSUSER DFHAPATT       15    .4595    .0036    .0033    .4558    .0000    .0000        0    .0000
15:41:29.604 P390 CICS53A1 CSSY CICSUSER DFHAPATT       16    .9663    .0069    .0088    .9594    .0795    .0000        0    .0000
15:41:29.610 P390 CICS53A1 CSSY CICSUSER DFHAPATT       17   4.0131    .1379    .0311   3.8752   1.7449    .0000        0    .0000
15:41:29.570 P390 CICS53A1 CSSY CICSUSER DFHAPATT       12   4.2133    .1621    .0494   4.0511   2.5906    .0000        0    .0000
15:41:29.191 P390 CICS53A1 CGRP CICSUSER DFHZCGRP       11   5.1156    .1956    .0603   4.9199   1.9401    .0000        0    .0000
15:41:29.591 P390 CICS53A1 CSSY CICSUSER DFHAPATT       14   4.7978    .1880    .0652   4.6098   2.3487    .0000        0    .0000
15:41:29.178 P390 CICS53A1 CSSY CICSUSER DFHAPATT       10   5.2738   1.4746    .2259   3.7992    .6720    .0000        0    .0000
15:41:29.177 P390 CICS53A1 CSSY CICSUSER DFHAPATT        9   5.3366    .7647    .1494   4.5719   1.6657    .0000        0    .0000
15:41:29.590 P390 CICS53A1 CSSY CICSUSER DFHAPATT       13   5.2787    .7009    .1740   4.5778   2.0694    .0000        0    .0000
15:42:24.011 P390 CICS53A1 CLQ2 CICSUSER DFHLUP         19   7.2473    .2907    .0416   6.9566   1.9555    .0000        0   3.7840
15:41:29.172 P390 CICS53A1 CSSY CICSUSER DFHAPATT      III  74.6388  48.6230  18.0249  26.0158   7.7521    .6756     1506    .0000
15:42:43.395 P390 CICS53A1 CLR2 CICSUSER DFHLUP         20    .4513    .0130    .0128    .4383    .0215    .0000        0    .4363
```

Figure 75. HDB List report

The fields in the default report are the fields defined in the default List Template (in order). Customized wider reports can generated by using a Report Form.

You can use a List Report Form to tailor the report or to report other fields in the HDB.

The HDB List report is very similar to the Performance List report (see Figure 2 on page 21).

HDB Summary report

The HDB Summary report is produced from a Summary HDB.

The following report shows the HDB Summary report for a default Summary HDB (uses the default Summary Template). The report was generated by the command:

```
CICSPA HDB(OUTPUT(HDBR0001),REPORT(HDBSUMM1))
```

```
V2R1M0                                            CICS Performance Analyzer
                                                  Historical Database Summary

HDBR0001 Printed at 14:20:18  8/08/2004     Data from 15:41:00 8/07/2004 to 16:19:00 8/07/2004                  Page       1

                                                Avg      Avg      Avg      Avg      Avg      Avg      Avg      Avg      Avg
Start            MVS  APPLID   Tran   #Tasks Response Dispatch User CPU  Suspend DispWait  FC Wait   FCAMRq  IR Wait SC24UHWM
Interval                                  Time     Time     Time     Time     Time     Time               Time
2004/08/07 15:41 P390 CICS53A1 CGRP        1   5.1156    .1956    .0603   4.9199   1.9401    .0000        0    .0000        0
2004/08/07 15:41 P390 CICS53A1 CPLT        1    .5196    .1771    .0316    .3425    .3422    .0000        0    .0000        0
2004/08/07 15:41 P390 CICS53A1 CSSY        9  11.6642   5.7846   2.0813   5.8796   2.1025    .0751      167    .0000        0
2004/08/07 15:41 P390 CICS53A1            11  10.0557   4.7668   1.7113   5.2890   1.9277    .0614      137    .0000        0
2004/08/07 15:41 P390 CICS53T1 CGRP        1   5.4980    .7931    .0613   4.7049   3.7141    .0000        0    .0000        0
2004/08/07 15:41 P390 CICS53T1 CPLT        1    .3939    .0782    .0325    .3158    .3149    .0000        0    .0000        0
2004/08/07 15:41 P390 CICS53T1 CSSY        9  11.1753   5.7900   2.0359   5.3853   2.5363    .2112      167    .0000        0
2004/08/07 15:41 P390 CICS53T1            11   9.6790   4.8164   1.6743   4.8626   2.4415    .1728      137    .0000        0
2004/08/07 15:41 P390                     22   9.8674   4.7916   1.6928   5.0758   2.1846    .1171      137    .0000        0
2004/08/07 15:41                          22   9.8674   4.7916   1.6928   5.0758   2.1846    .1171      137    .0000        0
```

Figure 76. HDB Summary report

The fields in the default report are the fields defined in the default Summary Template (in order). Fields that cause the report to exceed the maximum page width are not reported. If no Report Form is specified, all fields in the HDB will be reported to the maximum page width of 8000 characters. The report can be customized by specifying a Report Form.

You can use a Summary Report Form to tailor the report or to report other fields in the HDB.

The HDB Summary report is very similar to the Performance Summary report (see Figure 13 on page 38):

- The key fields are reported in the left hand columns.
- The Task count (**#Tasks** or **#TTasks**) is the number of CICS transactions (tasks) that ran in the report interval. Specify one or both. The first one specified is used in the statistical calculations.
- The HDB statistics are reported to the right of the key fields.
- Maximum and minimum values will not be reported because they cannot be accurately determined from the summarized data.

HDB Statistics report

The HDB Statistics reports are produced from Statistics HDBs. They are requested using the dialog and in contrast to the List and Summary reports, cannot be requested using the HDB(REPORT batch command. For more information, see Chapter 11, “Statistics reporting,” on page 223.

HDB Export

Option 5 **Export** from the Historical Database Menu is where you request to export data from your HDB into DB2 tables.

CICS PA automates this process with two simple steps:

1. First define the DB2 table to house the data. CICS PA generates JCL to do this for you by creating the necessary DDL to define the table.
2. Then load the data into the table. CICS PA generates JCL to do this for you by creating the necessary DB2 Load Utility statements to load the data.

For more information on using the dialog, refer to the *CICS Performance Analyzer for z/OS User's Guide*.

For more information on working with DB2, refer to the *DB2 UDB for z/OS Administration Guide*.

HDB Extract

The HDB Extract facility allows you to export data from your HDB data sets to an extract data set in CSV (comma separated values) format, suitable as input into PC-based spreadsheet applications.

Option 6 **Extract** from the Historical Database Menu is where you request to run extracts to CSV from your HDB.

There are three types of HDB extracts:

1. **List**
   A List HDB contains data records for individual transactions. Typically, List HDB extracts are used for the detailed analysis of recent transaction events and the data typically has a short life span (retention).
2. **Summary**
   A Summary HDB contains data records that summarize transaction activity over a specified time interval. Typically, Summary HDB extracts are used for long term trend analysis and capacity planning.

3. **Statistics**
   A Statistics HDB contains collections of CICS statistics and server statistics over a specified time interval.

HDB Extract command

The **HDB(EXTRACT)** operand requests CICS PA to generate extract data sets from HDB data.

The command format is:

```
CICSPA HDB(EXTRACT(hdbname),
          [OUTPUT(ddname),]
          [DDNAME(ddname),]
          [INTERVAL(hh:mm:ss),]
          [DELIMIT('field-delimiter'),]
          [LABELS|NOLABELS,]
          [NOFLOAT|FLOAT,]
          [FIELDS(field1[(options)],...),]
          [SELECT(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...)),]
          [SELECT2(PERFORMANCE(INCLUDE|EXCLUDE(field1(values1),...),...))])
```

The options are:

EXTRACT
The name of the HDB. The HDB must be defined in the HDB Register (DDname **CPAHDBRG**).

OUTPUT
DDname for the Recap report output. The CICS PA dialog assigns the default DDname **HXTS0001.**

DDNAME
DDname for the extract data set. The CICS PA dialog assigns the default DDname **HDBX0001.**

INTERVAL
Applicable to Summary HDBs. Optionally, specify the time interval for summarizing transaction activity. The default is the Time Interval used to create the data (as defined in the Template).

You can specify any interval greater than or equal to the Template Interval in the range 00:00:01 (1 second) to 24:00:00 (24 hours). For example, if you are reviewing many days worth of data then you might specify 24:00:00 so that you can analyze the daily trend.

DELIMIT
The field delimiter used to separate each data field in the extract records. Note that the specified delimiter is enclosed in quotes. The default field delimiter is a semicolon (**;**).

CICS PA extracts the data values from the HDB records, formats them, and then adds a field delimiter after each field.

LABELS|NOLABELS
LABELS indicates that the first record to be written to the extract data set is to be a field labels record. This is the default.

NOLABELS indicates that you do not want field labels written.

FLOAT|NOFLOAT
Specify FLOAT format to write numeric fields to the extract data set in S390 FLOAT format. This is necessary if you plan to import the extract into a DB2

table. When the DB2 Load Utility is used, it will interpret all numerical fields reliably and consistently in FLOAT format.

If FLOAT is not specified, the numeric fields will be written in a mixture of integer, real and exponential using character digits. This is the default and is suitable when importing the extract data into a PC spreadsheet tool.

FIELDS

Specifies which fields are exported to the extract data set, the order in which they appear in the extract record, and their summarization presentation. If any of the requested data fields were not collected in the HDB, a message is issued and the field in the extract record contains blanks (List HDB) or **Missing** (Summary HDB).

SELECT, SELECT2

Specifies what data to include or exclude from the extract based on data field values.

SELECT and SELECT2 can both be specified to perform record filtering. The CICS PA dialog generates SELECT2 statements in the command deck when you use a Report Form that has active Selection Criteria. If both SELECT and SELECT2 are specified, then the record must pass selection by both specifications for it to be included in the report.

HDB Extract record format

The format of the HDB Extract record is determined by the particular HDB and the run time options. Here are some examples. Each field in the record is separated by a text file field delimiter, which by default is a semicolon (**;**). Optionally, the first record contains the field labels.

```
Start Time;MVS;APPLID;Tran;Userid;Program;TaskNo;Response Time;Dispatch Time;User CPU Time;Suspend Time;DispWait Time; . . .
07:41:29.998;MV2C;IYK3Z4  ;CSSY;CICSUSER;DFHAPATT;      17;   .1413;   .0708;   .0082;   .0705;   .0680;   .0000;
07:41:29.995;MV2C;IYK3Z4  ;CSSY;CICSUSER;DFHAPATT;      14;   .2025;   .0195;   .0022;   .1830;   .1808;   .0000;
07:41:29.995;MV2C;IYK3Z4  ;CSSY;CICSUSER;DFHAPATT;      11;   .3219;   .0658;   .0096;   .2562;   .2487;   .0000;
07:41:29.995;MV2C;IYK3Z4  ;CSSY;CICSUSER;DFHAPATT;      12;   .4355;   .0976;   .0116;   .3379;   .2886;   .0000;
07:41:29.999;MV2C;IYK3Z4  ;CSSY;CICSUSER;DFHAPATT;      19;   .4625;   .0669;   .0056;   .3956;   .3856;   .0000;
07:41:29.999;MV2C;IYK3Z4  ;CSSY;CICSUSER;DFHAPATT;      18;   .5860;   .0998;   .0071;   .4862;   .4820;   .0000;
07:41:29.997;MV2C;IYK3Z4  ;CSSY;CICSUSER;DFHAPATT;      16;   .7682;   .1838;   .0131;   .5844;   .5694;   .0000;
07:41:29.995;MV2C;IYK3Z4  ;CGRP;CICSUSER;DFHZCGRP;      13;   .8097;   .0244;   .0026;   .7852;   .7827;   .0000;
```

Figure 77. List HDB Extract file

```
Start Date;Start Time;MVS;APPLID;Tran;#Tasks;Response Time Avg;Dispatch Time Avg;User CPU Time Avg;Suspend Time . . .
2004/12/15 15:00:00;MV2C    ;IYK3ZAC1;CSHQ    ;       1;55155.62;   .2103;   .0212;55155.41;   .0331;   .0001;
2004/12/15 15:00:00;MV2C    ;IYK3ZAC1;CSNC    ;       1;55159.06;   .3379;   .0041;55158.72;   .0356;   .0001;
2004/12/15 15:00:00;MV2C    ;IYK3ZAC1;CSNE    ;       1;55153.97;   .0881;   .0060;55153.88;   .0042;   .0001;
2004/12/15 18:00:00;MV2C    ;IYK2ZFV1;CEX2    ;       1;50237.83;   .5030;   .2717;50237.33;   .1800;   .0001;
2004/12/15 18:00:00;MV2C    ;IYK2ZFV1;CSHQ    ;       1;50234.95;   .3105;   .0190;50234.64;   .5761;   .0001;
2004/12/15 18:00:00;MV2C    ;IYK2ZFV1;CSNC    ;       1;50393.54;   .4259;   .0058;50393.12;   .0026;   .0001;
2004/12/15 18:00:00;MV2C    ;IYK2ZFV1;CSNE    ;       1;50389.87;   .1321;   .0177;50389.74;   .0074;   .0001;
2004/12/15 18:00:00;MV2C    ;IYK2ZFV2;CEX2    ;       1;50241.24;   .2630;   .1828;50240.98;   .2255;   .0001;
2004/12/15 18:00:00;MV2C    ;IYK2ZFV2;CKAM    ;       1;50239.91;   .0875;   .0044;50239.82;   .0522;   .0001;
2004/12/15 18:00:00;MV2C    ;IYK2ZFV2;CSHQ    ;       1;50238.49;   .3122;   .0197;50238.18;   .8023;   .0001;
2004/12/15 18:00:00;MV2C    ;IYK2ZFV2;CSNC    ;       1;50248.39;   .4899;   .0051;50247.90;   .0064;   .0001;
```

Figure 78. Summary HDB Extract file

```
CPA.STAT01.STAT060A

Start Time;APPLID;MVSID;Global_Statistics_Length;CICS_TCB_MODEs;CICS_TCB_POOLs;Current_ICV_Time;C . . .
2004-12-16-07.39.30;IYK3ZAC1;MV2C    ;128;18;4;5000;5000;500;32768;0;1;34;54;2004-12-15-16.20.19;
2004-12-16-07.42.00;IYK3Z4  ;MV2C    ;128;18;4;5000;5000;500;32768;0;1;16;44;2004-12-16-07.41.38;
2004-12-16-07.44.00;IYK3Z4  ;MV2C    ;128;18;4;5000;5000;500;32768;0;1;16;17;2004-12-16-07.41.38;
2004-12-16-07.44.24;IYK3Z4A1;MV2C    ;128;18;4;5000;5000;500;32768;0;1;14;44;2004-12-16-07.41.33;


CPA.STAT01.STAT060B

Start Time;APPLID;MVSID;TCB_Mode_Name;TCB_Mode_Open;TCB_Pool;TCB_Attaches;TCB_Attach_Failu . . .
2004-12-16-07.39.30;IYK3ZAC1;MV2C    ;QR;NOTOPEN ;NA      ;0;0;1;1;1;1;0;0;0;0;0;0;0;5787;
2004-12-16-07.39.30;IYK3ZAC1;MV2C    ;RO;NOTOPEN ;NA      ;0;0;1;1;1;1;0;0;0;0;0;0;0;24;15
2004-12-16-07.39.30;IYK3ZAC1;MV2C    ;CO;UNKNOWN ;NA      ;0;0;0;0;0;0;0;0;0;0;0;0;0;00.
2004-12-16-07.39.30;IYK3ZAC1;MV2C    ;SZ;UNKNOWN ;NA      ;0;0;0;0;0;0;0;0;0;0;0;0;0;00.
2004-12-16-07.39.30;IYK3ZAC1;MV2C    ;D2;UNKNOWN ;NA      ;0;0;0;0;0;0;0;0;0;0;0;0;0;00.
2004-12-16-07.39.30;IYK3ZAC1;MV2C    ;JM;NOTOPEN ;NA      ;0;0;0;0;0;0;0;0;0;0;0;0;0;00.
```

Figure 79. Statistics HDB Extract file

HDB Extract Recap report

Successful completion of the HDB Extract generates a Recap report that provides information about the records processed and written to the extract data set.

Example 1:

```
V2R1M0                                              CICS Performance Analyzer
                                                   Historical Database Summary

HXTS0001 Printed at 20:31:03  3/09/2005     Data from 05:17:00 11/17/2004 to 21:31:00 01/17/2005                    Page       1


HDBX0001 Extract has completed successfully
         Data Set Name . . . . CICSPA.SUMMARY.HDB.EXTRACT
         Record count  . . . .         850
```

Figure 80. Summary HDB Extract Recap report

In this example, 850 records were written in CSV format to data set CICSPA.SUMMARY.HDB.EXTRACT. The record count does not include the field labels record.

Example 2:

```
V2R1M0                                                 CICS Performance Analyzer
                                                     Historical Database Statistics

HXTS0002 Printed at 21:17:38  3/09/2005    Data from 07:39:23 12/16/2004 to 11:45:34 02/28/2005                  Page       1


STAT067A Extract has completed successfully
        Data Set Name . . . .  CICSPA.HDB.EXTRACT.STAT067A
        Statistics ID . . . .                   067A
        Record count  . . . .                 5,905
```

Figure 81. Statistics HDB Extract Recap report

In this example, 5,905 statistics records were written in CSV format to data set CICSPA.HDB.EXTTACT.STAT067A. The records are for Statistics ID 067 which is the Files report in category Files and Databases.

HDB Housekeeping

Option 8 **Housekeeping** from the Historical Database Menu is where you request to perform HDB housekeeping. HDB Housekeeping performs tasks to re-organize and clean up your HDB environment:

1. **Submit HDB Housekeeping JCL.**

   Run HDB Housekeeping periodically to delete expired HDB data sets and to re-organize the HDB Register.

2. **Repair HDB Register using VERIFY command.**

   The IDCAMS VERIFY command is used to repair the end-of-data-set information in the VSAM Catalog for the HDB Register. Use repair if message IEC161I is being issued repeatedly. This condition is usually caused by a prior HDB dialog or batch request that failed.

   This function is only available from the dialog.

HDB Housekeeping command

The **HDB(HKEEP)** operand requests CICS PA to perform housekeeping on the HDB Register (DDname **CPAHDBRG**). Housekeeping deletes expired HDB container data sets and removes definitions from the HDB Register that are no longer required.

The command format is:

```
CICSPA HDB(HKEEP)
```

HDB Housekeeping report

Successful completion of the Housekeeping request generates a report that provides information about the list of Container data sets that were deleted.

```
 V2R1M0                                              CICS Performance Analyzer
                                                      HDB Housekeeping Report

Housekeeping is being performed against HDB Register CICSPROD.CICSPA.HDB.REGISTER                                  Page  1


The following Containers were deleted from the Register:
  Container DSN: CICSPA.HISTORY.CICSWEEK.D03208.T193605.HDB    Reason: Expired   No of Records: 1,323
    Created: 2004-07-27-19.36.07.575656  ;  Record Range is from 2002-08-05-08.09.56.246647  to  2002-08-05-08.13.30.750026
  Container DSN: CICSPA.HISTORY.CICSWEEK.D03208.T200611.HDB    Reason: Expired   No of Records: 1,323
    Created: 2004-07-27-20.06.13.182143  ;  Record Range is from 2002-08-05-08.09.56.246647  to  2002-08-05-08.13.30.750026

Housekeeping process complete.
```

Figure 82. HDB Housekeeping report

In this example, CICS PA deleted two Container data sets for HDB CICSWEEK in Register CICSPROD.CICSPA.HDB.REGISTER.

Part 4. Statistics reports

The chapter in this part gives some examples of reports that you can produce from CICS statistics and server statistics. Statistics reporting is primarily an interactive reporting facility.

For more information on how to use the dialog for statistics reporting, refer to the *CICS Performance Analyzer for z/OS User's Guide*.

For information on understanding and interpreting the statistics data in the reports, refer to Chapter 5 "Using CICS statistics" in the *CICS Transaction Server for z/OS Performance Guide*.

Chapter 11. Statistics reporting

CICS PA provides comprehensive reporting for CICS statistics and server statistics in SMF 110 records with the following subtypes:

2 CICS Statistics
3 Shared Temporary Storage Server Statistics
4 Coupling Facility Data Table Server Statistics
5 Named Counter Sequence Number Server Statistics

Short-term in-depth analysis or long-term trend analysis for your CICS statistics is available via the CICS PA Historical Database (HDB) and Statistics Reporting facilities.

The CICS PA statistics reporting complements the CICS utilities DFH0STAT and DFHSTUP. CICS PA presents CICS statistics in a similar way to DFH0STAT, the CICS sample statistics program. It does not accumulate and report statistics intervals like DFHSTUP.

All statistics reporting is available from the dialog. The procedure is:

1. Specify an SMF File or HDB. A list of CICS statistics intervals for all systems is displayed.
2. Select the desired interval. A menu of statistics categories and reports is displayed.
3. Select the desired report. The statistics report is displayed. There are two types of reports: label reports or tabular reports:
   - In label-based reports, fields are reported vertically. This is used when there is only one record for the report, typically an overview report.
   - In tabular reports, fields are reported horizontally. This format is displayed when there can be multiple records in the report, typically for CICS resources.
4. Sort on any column in the report, ascending or descending, using point-and-shoot column heading underlines.
5. Hyperlink to related reports using point-and-shoot field values.
6. Press Help (F1) to display descriptions of all fields in the report, together with their CICS field name and DB2 column name.
7. Press Form (F6) to edit the Report Form which controls the fields that are displayed in the report.

For more information in using the dialog for HDB and statistics reporting, refer to the *CICS Performance Analyzer for z/OS User's Guide.*

For information on understanding and interpreting the statistics data, refer to Chapter 5 "Using CICS statistics" in the *CICS Transaction Server for z/OS Performance Guide*.

Statistics intervals

CICS PA scans specified SMF Files for statistics intervals and presents the list of intervals for further analysis.

```
  File  Edit  Filter  Options  Help
--------------------------------------------------------------------------------
                            Statistics Intervals              Row 1 from 2028
Command ===>                                                 Scroll ===> PAGE

Select the required CICS Statistics interval.

/   System    Image  VRM  Type  --- Collection Time ---   Reset    Duration
_   IYK3ZAC1  MV2C   640  USS   2004/12/16 07:39:23 Thu  00:00:07
_   IYK3ZAC1  MV2C   640  USS   2004/12/16 07:39:26 Thu  00:00:07
_   IYK3ZAC1  MV2C   640  USS   2004/12/16 07:39:27 Thu  00:00:07
_   IYK3ZAC1  MV2C   640  USS   2004/12/16 07:39:30 Thu  00:00:07
_   IYK3ZAC1  MV2C   640  EOD   2004/12/16 07:39:30 Thu  00:00:07
_   IYK3Z4A1  MV2C   640  USS   2004/12/16 07:41:25 Thu  07:41:14
_   IYK3Z4A1  MV2C   640  USS   2004/12/16 07:41:27 Thu  07:41:14
_   IYK3Z4A1  MV2C   640  USS   2004/12/16 07:41:30 Thu  07:41:14
_   IYK3Z4    MV2C   640  USS   2004/12/16 07:41:31 Thu  07:41:20
_   IYK3Z4    MV2C   640  USS   2004/12/16 07:41:32 Thu  07:41:20
_   IYK3Z4    MV2C   640  USS   2004/12/16 07:41:33 Thu  07:41:20
S   IYK3Z4    MV2C   640  INT   2004/12/16 07:42:00 Thu  07:41:20  00:02:00
_   IYK3Z4    MV2C   640  USS   2004/12/16 07:42:10 Thu  07:42:00
_   IYK3Z4    MV2C   640  USS   2004/12/16 07:42:52 Thu  07:42:00
_   IYK3Z4A1  MV2C   640  USS   2004/12/16 07:42:57 Thu  07:41:14
_   IYK3Z4A1  MV2C   640  USS   2004/12/16 07:42:58 Thu  07:41:14
_   IYK3Z7DA  MV2C   640  USS   2004/12/16 07:43:01 Thu  07:42:53
_   IYK3Z7DA  MV2C   640  USS   2004/12/16 07:43:03 Thu  07:42:53
_   IYK3Z7DA  MV2C   640  USS   2004/12/16 07:43:08 Thu  07:42:53
_   IYK3Z7DD  MV2C   640  USS   2004/12/16 07:43:12 Thu  07:43:02
_   IYK3Z7DD  MV2C   640  USS   2004/12/16 07:43:13 Thu  07:43:02
_   IYK3Z7DD  MV2C   640  USS   2004/12/16 07:43:17 Thu  07:43:02
_   IYK3Z4A1  MV2C   640  USS   2004/12/16 07:43:31 Thu  07:41:14
_   IYK3Z4A1  MV2C   640  USS   2004/12/16 07:43:52 Thu  07:41:14
_   IYK3Z4A1  MV2C   640  USS   2004/12/16 07:43:53 Thu  07:41:14
_   IYK3Z4    MV2C   640  INT   2004/12/16 07:44:00 Thu  07:42:00  00:02:00
_   IYK3Z4A1  MV2C   640  EOD   2004/12/16 07:44:24 Thu  07:41:14
_   IYK3Z4A1  MV2C   640  USS   2004/12/16 07:44:24 Thu  07:44:24
_   IYK3Z4A1  MV2C   640  USS   2004/12/16 07:44:31 Thu  07:44:31
_   IYK3Z4A1  MV2C   640  USS   2004/12/16 07:45:07 Thu  07:44:31
_   IYK3Z4A1  MV2C   640  USS   2004/12/16 07:45:08 Thu  07:44:31
_   IYK3Z4A1  MV2C   640  USS   2004/12/16 07:45:50 Thu  07:44:31
```

Figure 83. CICS Statistics Intervals

Select a collection interval for reporting.

Statistics categories and reports

For a selected interval, CICS Statistics are displayed in a tree structure of categories and reports. The menu is release-specific. There are slight differences between the reports that are available in each CICS release.

CICS PA supports statistics reporting for CICS VRM 620 and above (CICS Transaction Server Versions 2.2, 2.3, 3.1, and 3.2).

Table 20. Statistics categories and reports

Category	Subcategory or Report	ID	Minimum CICS Version (620, unless otherwise stated)
Regions			
	Transaction Manager	010	
	CICS Dispatcher		
	Dispatcher Overview	060	
	Dispatcher TCB Modes	060	
	Dispatcher TCB Pools	060	
	MVS TCB Overview	064	
	MVS TCBs	065	
	CICS Storage		
	Storage Overview	002/014 [1]	
	DSAs	002/014 [1]	
	Domain Subpools	005	
	Task Subpools	006	
	CICS Dumps		
	Transaction Dump Overview	087	
	Transaction Dumps	085	
	System Dump Overview	090	
	System Dumps	088	
	Enqueue Pools	097	
Connectivity			
	VTAM	021	
	Terminal Autoinstall	024	
	Terminals	034	
	ISC/MRO Connections	052	
	LU62 Mode Names	076	
	ISC Security	054	
	TCP/IP Overview	107	
	TCPIPSERVICE Resources	108	
	IPCONN Resources	109	650
	FEPI Connections	017	
	FEPI Pools	016	
	FEPI Targets	018	
Files and Databases			
	Files	067	
	VSAM LSR Pools	039	
	VSAM LSR Pool Buffers	039	
	VSAM LSR Pool Files	040	

Table 20. Statistics categories and reports (continued)

Category	Subcategory or Report	ID	Minimum CICS Version (620, unless otherwise stated)
	DB2 Connections	102	
	DB2 Entries	103	
	IMS DBCTL Subsystems	028	
	WebSphere MQ Connections	074	650
Logging			
	Logstream Overview	092	
	MVS Logstreams	094	
	Journal Names	093	
	Recovery Manager	099	
Queues			
	Temporary Storage Overview	048	
	Transient Data Overview	045	
	Transient Data Queues	042	
Transactions			
	Transactions	011	
	Transaction Classes	012	
	Request Models	111	
Programs			
	Programs	025	
	Program Autoinstall	023	
	Loader Activity	030	
	Loader DSAs	030	
	LIBRARY Resources	031	650
	LIBRARY Data Set Names **2**	031	650
CICS Web Support			
	URIMAP Global	101	640
	URIMAP Resources	104	640
	PIPELINE Resources	105	640
	WEBSERVICE Resources	106	640
	DOCTEMPLATE Resources	112	650
Enterprise Java			
	CorbaServers	114	
	JVM Pool and Class Cache	117	
	JVM Profiles	118	630
	JVM Profile Modes	118	630
	JVM Programs	119	630
	Enterprise Java Beans	115	630
Miscellaneous			
	Monitoring	081	
	Statistics	066	
	Table Manager	063	
	User Domain	061	
CICS Server			
	Temporary Storage		

Table 20. Statistics categories and reports (continued)

Category	Subcategory or Report	ID	Minimum CICS Version (620, unless otherwise stated)
	List Structures	121	
	Queue Buffer Pools	122	
	Server Storage	123	
	Named Counters		
	List Structures	124	
	Server Storage	125	
	Coupling Facility Data Tables		
	List Structures	126	
	Table Access	127	
	Requests	128	
	Server Storage	129	

1 Statistics record ID 002 applies only to CICS version 640 and earlier.

2 The Library Data Set Names statistics report appears in the tree structure only when you are selecting the reports you want to collect in an HDB or export to DB2. This report does not appear in the tree structure for viewing or printing reports. To view this report:

1. View the LIBRARY Resources report.
2. Move the cursor to a library name, and then press Enter (the library name is a point-and-shoot field). The report displays the data set names in the concatenation for that library.

Label reports for global statistics

In label-based reports, fields are reported vertically. This is used when there is only one record for the report, typically an overview report.

```
REPORT    Storage Overview                                        Line 00000001
Command ===>                                                    Scroll ===> PAGE

System: IYK3Z4/MV2C        Type: INT  Interval: 2004/12/16 07:42:00 Thursday

Page Pools  . . . . . . . . . . :                  8
Storage Protection  . . . . . . :                 NO
Reentrant Programs Protected  . :                YES
Transaction Isolation . . . . . :                 NO
Current Unique Subspace Users . :                  0
Total Unique Subspace Users . . :                  0
Peak Unique Subspace Users  . . :                  0
Current Common Subspace Users . :                  0
Total Common Subspace Users . . :                  0
Peak Common Subspace Users  . . :                  0
Current DSA Limit . . . . . . . :              5120K
Current EDSA Limit  . . . . . . :             40960K
Current DSA Total . . . . . . . :              1280K
Current EDSA Total  . . . . . . :             23552K
Peak DSA Total  . . . . . . . . :              1280K
Peak EDSA Total . . . . . . . . :             23552K
MVS Storage Wait Time . . . . . :     00.00.00.000000
MVS Storage Request Waits . . . :                  0
```

Figure 84. Statistics report (label format): Storage Overview

Tabular reports for resource statistics

In tabular reports, fields are reported horizontally. This format is displayed when there can be multiple records in the report, typically for CICS resources.

```
REPORT    Domain Subpools                          Line 00000001 Col 002 008   >
Command ===>                                                    Scroll ===> PAGE

System: IYK3Z4/MV2C        Type: INT  Interval: 2004/12/16 07:42:00 Thursday


Subpool   DSA       Element        Fixed  Element      Element
Name      Name      Type          Length  Chaining    Boundary  Location  Acces

>LGJMC    ECDSA     FIXED             60  NO                 4  ABOVE     CICS
AITM_TAB  ECDSA     FIXED            584  NO                 8  ABOVE     CICS
AP_TCA24  CDSA      FIXED           1536  NO               128  BELOW     CICS
AP_TCA31  ECDSA     FIXED           1536  NO               128  ABOVE     CICS
AP_TXDEX  ECDSA     FIXED             72  NO                 8  ABOVE     CICS
APAID31   ECDSA     FIXED            152  NO                 8  ABOVE     CICS
APBMS     ECDSA     VARIABLE           0  YES               16  ABOVE     CICS
APCOMM31  ECDSA     VARIABLE           0  NO                16  ABOVE     CICS
APDWE     ECDSA     FIXED             32  NO                 8  ABOVE     CICS
APECA     SDSA      FIXED              8  NO                 8  BELOW     CICS
APICE31   ECDSA     FIXED            208  NO                 8  ABOVE     CICS
APURD     ECDSA     VARIABLE           0  NO                16  ABOVE     CICS
ASYNCBUF  ECDSA     FIXED           4096  NO                 4  ABOVE     CICS
BAGENRAL  ECDSA     VARIABLE           0  NO                16  ABOVE     CICS
BAOFBUSG  ECDSA     FIXED             24  NO                 8  ABOVE     CICS
BAOFT_ST  ECDSA     FIXED            136  NO                 8  ABOVE     CICS
BR_BFBE   ECDSA     FIXED             80  NO                16  ABOVE     CICS
BR_BFNB   ECDSA     FIXED             96  NO                16  ABOVE     CICS
```

Figure 85. Statistics report (tabular format): Domain Subpools

Statistics Report Form

The Statistics Report Form is used to tailor the Statistics report. Each line in the Form represents a row heading in the label report or a column heading in the tabular report.

```
FORM      Transaction Manager                                  Line 1 of 12
Command ===> _____________________________________________ Scroll ===> PAGE

/  Heading                                        Usage
_  Transactions                                   _____
_  Current MAXTASK                                _____
_  Current Active User Transactions               _____
_  Current Queued User Transactions               _____
_  Times at MAXTASK                               _____
_  Peak Active User Transactions                  _____
_  Peak Queued User Transactions                  _____
_  Total Active User Transactions                 _____
_  Total Delayed User Transactions                _____
_  Total Queuing Time for MAXTASK                 OMIT_
_  Current Queuing Time for MAXTASK               OMIT_
_  Total Transactions to Last Reset               _____
******************************** End of Form ********************************
```

Figure 86. Statistics Report Form (label format): Transaction Manager

```
FORM      TCP/IP Services                                      Line 1 of 23
Command ===> _____________________________________________ Scroll ===> PAGE

                                                      ------ Width ------
/  Heading                                        Usage Column   Max Report
_  TCP/IP Service                                 FIX__            8      8
_  Transactions Attached                          _____           12     22
_  Current Connections                            _____           11     35
_  Peak Connections                               _____           11     48
_  Time Opened GMT                                _____           19     69
_  Time Opened Local                              _____           19     90
_  Time Closed GMT                                _____           19    111
_  Time Closed Local                              _____           19    132
_  Port Number                                    _____           10    144
_  SSL Support Level                              _____            8    154
_  Port Backlog                                   _____           10    166
_  Send Requests                                  _____           10    178
_  Bytes Sent                                     _____           10    190
_  Receive Requests                               _____           10    202
_  Bytes Received                                 _____           10    214
_  IP Address                                     _____  ___15     15    231
_  WLM DNS Group                                  _____  ___18     18    251
_  Protocol                                       _____            8    261
_  Authenticate                                   _____  ___12     12    275
_  Privacy                                        _____            8    285
_  Attachsec                                      _____            9    296
_  TSQ Prefix                                     _____            8    306
_  MAXDATA Length                                 _____           10    318
******************************** End of Form ********************************
```

Figure 87. Statistics Report Form (tabular format): TCP/IP Services

The order of the fields in the Form dictates the order of the fields in the report. You can **OMIT** fields that you do not want reported. You can also **FIX** fields at the start of the report so that they remain in view when horizontally scrolling the report. For

long character fields in tabular reports, you can truncate the field in the report by specifying a **column width.**

Statistics field help

Field descriptions are available for all statistics reports.

```
                  Field Descriptions for Statistics Report

Category  : Files and Databases                  Macro . . : DFHA17DS
Report  . : Files                                DSECT . . : DFHA17DS
_____________________________________________________________________________
                                                                    More:     +
File Name

CICS field name: A17FNAM               DB2 column name: FILE_NAME

The name you specified in the DEFINE FILE command of resource definition
online.

Reset characteristic: Not reset
_____________________________________________________________________________

File Location

CICS field name: A17FLOC               DB2 column name: FILE_LOCATION

The file is defined as being local to this CICS system, or resides on a remote
CICS system. The field is one byte long, and is set to "R" if remote.

Reset characteristic: Not reset
_____________________________________________________________________________

Data Table Fields

CICS field name: A17DT                 DB2 column name: DATA_TABLE_FIELDS

A one-byte field that contains the value R, S, T, L, K, or X, if data table
statistics fields are present in the record. The values indicate:
R    This is a remote file for which table read and source read statistics are
     present.
S    The resource was not opened as a table but was able to access data from a
     table associated with the same data set.
T    The resource is a shared data table.
L    The resource is a coupling facility data table (locking model).
K    The resource is a coupling facility data table (contention model).
X    The resource has been opened with a source data set which has an
     associated CICS maintained data table and the resource has been updated
     which has caused the data table to also be updated.

Reset characteristic: Not reset
```

Figure 88. Statistics field help: Files (Statistics ID 067)

The field help provides a description of each statistic, together with the CICS field name and the CICS PA DB2 column name.

Part 5. CICS-related SMF data

The chapters in this part describe the Shared System Takeup Recap report and provide a detailed description of the CMF data to help you understand and interpret CICS PA reports and extracts.

Chapter 12. Shared System Definitions

The systems and data files that you want to report against must first be defined to CICS PA. The dialog provides two ways to do this:

Personal System Definitions
: System definitions that are typically maintained by you and used by you for reporting. The definitions are saved in your Personal Profile Library in CICS PA Settings.

Shared System Definitions
: System definitions that are typically maintained by a central administrator and used by all permitted users for reporting. The definitions are saved in the HDB Register.

Shared System Definitions can be maintained in a number of ways:

1. Individually specify systems and their related files
2. Individually specify groups and their related systems
3. Take-up systems, files, and groups from personal System Definitions
4. Take-up systems and files from SMF Files

```
   File  Options  Help
 ------------------------------------------------------------------------------
                     Shared System Definitions Menu
Command ===> ____________________________________________________________

Select an option then press Enter

1  1. Define Systems and their SMF Files
   2. Maintain Group definitions
   3. Take-up from personal System Definitions
   4. Take-up from SMF File

Enter "/" to select option
_  Always go directly to Systems View

HDB Register . . . 'CICSPA.HDB.REGISTER'_____________________  +

 F1=Help     F3=Exit     F4=Prompt   F6=Resize  F10=Actions F12=Cancel
```

Figure 89. Shared System Definitions Menu

Only the Take-up from SMF Files has a batch component described in this book. The other maintenance processes are dialog processes described in the *CICS Performance Analyzer for z/OS User's Guide*.

Take-up from SMF Files

Option 4 **Take-up from SMF File** from the Shared System Definitions Menu provides the facility to take-up system and file information from one SMF File.

Data Take-up from SMF File is a two-step process. First the system details are extracted from the file, then used to automatically update your Shared System Definitions. Successful completion of the first step generates a Recap report that provides information about all the systems contained on the SMF Files.

The batch command is:

```
    HDB(TAKEUP,                    analyze SMF file contents
       [SYSTEMS,]                    load systems
       [FILEIMAGE|FILESYSTEM,]       load files, connect to either image or system
       [OUTPUT(ddname)])             DDname for Recap report output
```

The following batch JCL illustrates how you can process multiple SMF Files. It runs the first step only to analyze the contents of the SMF files.

```
//CICSPA JOB ,CLASS=A,REGION=6M,MSGCLASS=T,MSGLEVEL=(1,1)
//*
//CICSPA EXEC PGM=CPAMAIN
//STEPLIB  DD DSN=CICSPA.V2R1M0.SCPALINK,DISP=SHR
//CPAHDBRG DD DSN=CICSPA.HDB.REGISTER,DISP=SHR
//SYSPRINT DD SYSOUT=*
//* SMF FILES
//SMFIN001 DD DISP=SHR,DSN=CICPRO.SMF(-2)
//         DD DISP=SHR,DSN=CICPRO.SMF(-1)
//         DD DISP=SHR,DSN=CICPRO.SMF(0)
//SYSIN DD *
    CICSPA IN(SMFIN001),
       HDB(TAKEUP)
/*
```

The following example shows part of the Recap report that is generated at the end of file processing. It shows the contents of the SMF files.

With this information you can elect to take-up Systems or Files or both, and specify whether to connect the Files to the System or the Image.

Note that the Recap report is showing what is available for take-up from the SMF files, it is ***not*** showing the results of take-up. Review the Shared System Definitions in the dialog to see the results of take-up.

```
 V2R1M0                                          CICS Performance Analyzer
                                        Shared System Take-up Recap Report By Data Set

HDB00001 Printed at 15:54:54  3/14/2005    Data from 16:30:00 03/13/2005 to 12:00:11 03/14/2005                      Page    1
                                          -------Start-------  --------Stop-------  -------System-------    Record
 DDname  Data Set Name                       Date      Time       Date      Time    Name     Type   Imag     Count
SMFIN001 CICPRO.SMF.G1443V00                 2005-03-13 20.30.00  2005-03-14 12.00.00  SCLOG    Logger FTS2        64
                                                                                      FTS2     Image              64
         CICPRO.SMF.G1442V00                 2005-03-14 11.10.38  2005-03-14 12.00.11  CCVT22T  CICS   FTS1      3030
                                                                                      FTS1     Image           29390
                                                                                      CCVT31M  CICS   FTS1        68
                                                                                      CCVT22C  CICS   FTS1     12122
                                                                                      CCVT31T  CICS   FTS1       122
                                                                                      CCVT31C  CICS   FTS1       323
                                                                                      CCVT23C  CICS   FTS1      6426
                                                                                      CCVT13C  CICS   FTS1       432
                                                                                      CCVT23T  CICS   FTS1      3747
                                                                                      CCVT31CX CICS   FTS1        51
                                                                                      CCVT23CX CICS   FTS1        72
                                                                                      CCVT13CX CICS   FTS1        72
                                                                                      CCVT22CX CICS   FTS1       228
                                                                                      CCVT22M  CICS   FTS1       201
                                                                                      CCVT13M  CICS   FTS1        72
                                                                                      SCLOG    Logger FTS1       102
         CICPRO.SMF.G1441V00                 2005-03-14 10.02.16  2005-03-14 11.10.13  CCVT22T  CICS   FTS1      8470
                                                                                      FTS1     Image           34229
                                                                                      CCVT31M  CICS   FTS1       272
                                                                                      CCVT22C  CICS   FTS1      4655
                                                                                      CCVT31T  CICS   FTS1       375
                                                                                      CCVT31C  CICS   FTS1       374
                                                                                      CCVT23C  CICS   FTS1     12852
                                                                                      CCVT13C  CICS   FTS1       360
                                                                                      CCVT23T  CICS   FTS1      3600

 V2R1M0                                          CICS Performance Analyzer
                                        Shared System Take-up Recap Report By System

HDB00001 Printed at 15:54:54  3/14/2005    Data from 16:30:00 03/13/2005 to 12:00:11 03/14/2005                      Page    3
-------System-------                                                    -------Start-------  --------Stop-------    Record
Name     Type   Imag  DDname  Data Set Name                               Date      Time       Date      Time       Count
SCLOG    Logger FTS2 SMFIN001 CICPRO.SMF.G1443V00                      2005-03-13 20.30.00  2005-03-14 12.00.00        64
                             CICPRO.SMF.G1437V00                      2005-03-13 16.30.00  2005-03-13 20.00.00        16
FTS2     Image       SMFIN001 CICPRO.SMF.G1443V00                      2005-03-13 20.30.00  2005-03-14 12.00.00        64
                             CICPRO.SMF.G1437V00                      2005-03-13 16.30.00  2005-03-13 20.00.00        16
CCVT22T  CICS   FTS1         CICPRO.SMF.G1442V00                      2005-03-14 11.10.38  2005-03-14 11.53.40      3030
                             CICPRO.SMF.G1441V00                      2005-03-14 10.02.51  2005-03-14 11.09.00      8470
                             CICPRO.SMF.G1440V00                      2005-03-14 08.21.37  2005-03-14 09.57.37     12685
                             CICPRO.SMF.G1439V00                      2005-03-14 06.25.38  2005-03-14 08.16.59      8544
                             CICPRO.SMF.G1438V00                      2005-03-13 20.09.11  2005-03-14 00.00.00       266
FTS1     Image               CICPRO.SMF.G1442V00                      2005-03-14 11.10.38  2005-03-14 12.00.11     29390
                             CICPRO.SMF.G1441V00                      2005-03-14 10.02.16  2005-03-14 11.10.13     34229
                             CICPRO.SMF.G1440V00                      2005-03-14 08.19.31  2005-03-14 10.02.14     50835
                             CICPRO.SMF.G1439V00                      2005-03-14 06.25.38  2005-03-14 08.18.08     39768
                             CICPRO.SMF.G1438V00                      2005-03-13 20.00.51  2005-03-14 00.00.00      8720
```

Figure 90. Shared System Take-up Recap report

Chapter 13. Understanding CMF data

When the CICS Monitoring Facility (CMF) is running, it collects the following types, or classes, of data:
- Performance class data
- Exception class data
- Transaction resource class data

Subsequently the data can be made available offline for analysis by CICS PA.

To understand the function of CICS PA and to interpret the reports and extracts properly, some knowledge of the CMF data records and their relationship to one another is necessary.

Special point

Care should be taken when using the information in this section to analyze monitoring data that is appropriate to your release of CICS.

Chapter 14, “CMF Field ID × CICS version,” on page 317 can be used to determine in which CICS release particular monitoring fields are available.

CMF performance class data fields

Performance class data is detailed transaction-level information, such as the processor and elapsed time for a transaction, or the time spent waiting for I/O. At least one performance record is written for each transaction that is being monitored. Performance class data provides detailed, resource-level data that can be used for accounting, performance analysis, and capacity planning. This data contains information relating to individual task resource usage, and is completed for each task when the task terminates.

The Monitoring Control Table (MCT) controls the CMF performance data that is collected. The performance class data records are not fixed format, instead the format is described in associated CMF dictionary records.

All the CMF performance class data fields are described in this section. Each data field is listed by **Field ID** within **Owner** as defined in the monitoring dictionary record.

For a complete description of the fields and to understand how the fields are collected, see the *CICS Performance Guide.*

DFHAPPL fields

DFHAPPL owns the following performance class data fields. They are only available when application programs invoke the application naming event monitoring points. For more information, see the APPLNAME parameter on the DFHMCT TYPE=INITIAL macro in the *CICS Customization Guide*..

001 (Type-C, APPLNAME, 12 bytes)
The data written when the DFHAPPL.1 and DFHAPPL.2 application naming event monitoring points are invoked. The 12 byte APPLNAME field comprises:
- DFHAPPL.1 in bytes 1 to 4. For example, a 4–byte transaction ID.

- DFHAPPL.2 in bytes 5 to 12. For example, an 8–byte program name.

DFHCBTS fields

DFHCBTS owns the following performance class data fields:

200 (Type-C, PRCSNAME, 36 bytes)
The name of the CICS business transaction service (BTS) process of which the user task formed part.

201 (Type-C, PRCSTYPE, 8 bytes)
The process-type of the CICS BTS process of which the user task formed part.

202 (Type-C, PRCSID, 52 bytes)
The CICS-assigned identifier of the CICS BTS root activity that the user task implemented.

203 (Type-C, ACTVTYID, 52 bytes)
The CICS-assigned identifier of the CICS BTS activity that the user task implemented.

204 (Type-C, ACTVTYNM, 16 bytes)
The name of the CICS BTS activity that the user task implemented.

205 (Type-A, BARSYNCT, 4 bytes)
The number of CICS BTS run process or run activity requests issued by the user task in order to execute a child process or activity synchronously.

206 (Type-A, BARASYCT, 4 bytes)
The number of CICS BTS run process and run activity requests issued by the user task in order to execute a child process or activity asynchronously.

207 (Type-A, BALKPACT, 4 bytes)
The number of CICS BTS link process or link activity requests issued by the user task.

208 (Type-A, BADPROCT, 4 bytes)
The number of CICS BTS define process requests issued by the user task.

209 (Type-A, BADACTCT, 4 bytes)
The number of CICS BTS define activity requests issued by the user task.

210 (Type-A, BARSPACT, 4 bytes)
The number of CICS BTS reset process and reset activity requests issued by the user task.

211 (Type-A, BASUPACT, 4 bytes)
The number of CICS BTS suspend process and suspend activity requests issued by the user task.

212 (Type-A, BARMPACT, 4 bytes)
The number of CICS BTS resume process and resume activity requests issued by the user task.

213 (Type-A, BADCPACT, 4 bytes)
The number of CICS BTS delete activity, cancel process and cancel activity requests issued by the user task.

214 (Type-A, BAACQPCT, 4 bytes)
The number of CICS BTS acquire process and acquire activity requests issued by the user task.

215 (Type-A, BATOTPCT, 4 bytes)
The total number of CICS BTS process and activity requests issued by the user task.

216 (Type-A, BAPRDCCT, 4 bytes)
The number of CICS BTS delete, get, or put container requests for process data containers issued by the user task.

217 (Type-A, BAACDCCT, 4 bytes)
The number of CICS BTS delete, get, or put container requests for activity data containers issued by the user task.

218 (Type-A, BATOTCCT, 4 bytes)
The total number of CICS BTS process container and activity container requests issued by the user task.

219 (Type-A, BARATECT, 4 bytes)
The number of CICS BTS retrieve-reattach requests issued by the user task.

220 (Type-A, BADFIECT, 4 bytes)
The number of CICS BTS define-input event requests issued by the user task.

221 (Type-A, BATIAECT, 4 bytes)
The number of CICS BTS timer associated requests issued by the user task.

222 (Type-A, BATOTECT, 4 bytes)
The total number of CICS BTS event-related requests issued by the user task.

Table 21. EXEC CICS business transaction services (BTS) commands related to the BTS monitoring fields

EXEC CICS BTS command	Monitoring fields
ACQUIRE ACTIVITYID	BAACQPCT and BATOTPCT
ACQUIRE PROCESS	BAACQPCT and BATOTPCT
ADD SUBEVENT	BATOTECT
CANCEL ACTIVITY	BADCPACT and BATOTPCT
CANCEL ACQPROCESS	BADCPACT and BATOTPCT
CANCEL ACQPROCESS	BADCPACT and BATOTPCT
CHECK ACQPROCESS	BATOTPCT
CHECK ACTIVITY	BATOTPCT
CHECK TIMER	BATIAECT and BATOTECT
DEFINE ACTIVITY	BADACTCT and BATOTPCT
DEFINE COMPOSITE EVENT	BATOTECT
DEFINE INPUT EVENT	BADFIECT and BATOTECT
DEFINE PROCESS	BADPROCT and BATOTPCT
DEFINE TIMER	BATIAECT and BATOTECT
DELETE ACTIVITY	BADCPACT and BATOTPCT
DELETE CONTAINER ACTIVITY	BAACDCCT and BATOTCCT
DELETE CONTAINER ACQACTIVITY	BAACDCCT and BATOTCCT
DELETE CONTAINER PROCESS	BAPRDCCT and BATOTCCT
DELETE CONTAINER ACQPROCESS	BAPRDCCT and BATOTCCT
DELETE EVENT	BATOTECT
DELETE TIMER	BATIAECT and BATOTECT

Table 21. EXEC CICS business transaction services (BTS) commands related to the BTS monitoring fields (continued)

EXEC CICS BTS command	Monitoring fields
FORCE TIMER	BATIAECT and BATOTECT
GET CONTAINER ACTIVITY	BAACDCCT and BATOTCCT
GET CONTAINER ACQACTIVITY	BAACDCCT and BATOTCCT
GET CONTAINER PROCESS	BAPRDCCT and BATOTCCT
GET CONTAINER ACQPROCESS	BAPRDCCT and BATOTCCT
LINK ACQPROCESS	BALKPACT and BATOTPCT
LINK ACTIVITY	BALKPACT and BATOTPCT
LINK ACQACTIVITY	BALKPACT and BATOTPCT
PUT CONTAINER ACTIVITY	BAACDCCT and BATOTCCT
PUT CONTAINER ACQACTIVITY	BAACDCCT and BATOTCCT
PUT CONTAINER PROCESS	BAPRDCCT and BATOTCCT
PUT CONTAINER ACQPROCESS	BAPRDCCT and BATOTCCT
REMOVE SUBEVENT	BATOTECT
RESET ACQPROCESS	BARSPACT and BATOTPCT
RESET ACTIVITY	BARSPACT and BATOTPCT
RESUME ACQACTIVITY	BARMPACT and BATOTPCT
RESUME ACQPROCESS	BARMPACT and BATOTPCT
RESUME ACTIVITY	BARMPACT and BATOTPCT
RETRIEVE REATTACH EVENT	BARATECT and BATOTECT
RETRIEVE SUBEVENT	BATOTECT
RUN ACTIVITY SYNCHRONOUS	BARSYNCT and BATOTPCT
RUN ACQACTIVITY SYNCHRONOUS	BARSYNCT and BATOTPCT
RUN ACQPROCESS SYNCHRONOUS	BARSYNCT and BATOTPCT
RUN ACTIVITY ASYNCHRONOUS	BARASYCT and BATOTPCT
RUN ACQACTIVITY ASYNCHRONOUS	BARASYCT and BATOTPCT
RUN ACQPROCESS ASYNCHRONOUS	BARASYCT and BATOTPCT
SUSPEND ACQACTIVITY	BASUPACT and BATOTPCT
SUSPEND ACQPROCESS	BASUPACT and BATOTPCT
SUSPEND ACTIVITY	BASUPACT and BATOTPCT
TEST EVENT	BATOTECT

For more information on CICS BTS, refer to *CICS Business Transaction Services.*

DFHCHNL fields

DFHCHNL owns the following performance class data fields:

321 (Type-A, PGTOTCCT, 4 bytes)
The total number of requests for channel containers issued by the user task.

322 (Type-A, PGBRWCCT, 4 bytes)
The number of browse requests for channel containers issued by the user task.

323 (Type-A, PGGETCCT, 4 bytes)
The number of GET CONTAINER requests for channel containers issued by the user task.

324 (Type-A, PGPUTCCT, 4 bytes)
The number of PUT CONTAINER requests for channel containers issued by the user task.

325 (Type-A, PGMOVCCT, 4 bytes)
The number of MOVE CONTAINER requests for channel containers issued by the user task.

326 (Type-A, PGGETCDL, 4 bytes)
The total length, in bytes, of the data in the containers of all the GET CONTAINER CHANNEL commands issued by the user task.

327 (Type-A, PGPUTCDL, 4 bytes)
The total length, in bytes, of the data in the containers of all the PUT CONTAINER CHANNEL commands issued by the user task.

328 (Type-A, PGCRECCT, 4 bytes)
The number of containers created by MOVE and PUT CONTAINER requests for channel containers issued by the user task.

329 (Type-A, PGCSTHWM, 4 bytes)
Maximum amount (high-water mark), in bytes, of container storage allocated to the user task.

DFHCICS fields

DFHCICS owns the following performance class data fields:

005 (Type-T, START, 8 bytes)
The start time (in GMT) of the measurement period. This is either:

- The time at which the task was attached, or
- The time at which data recording was most recently restarted in support of a user event monitoring point (EMP) DELIVER option or the monitoring options MNCONVerse, MNSYNCpoint, or MNFREQuency.

Notes:

1. CICS PA will always convert the start time into local time before formatting and printing.
2. The transaction response time (or measurement period) can be calculated by subtracting the START time from the STOP time.

006 (Type-T, STOP, 8 bytes)
The finish time (in GMT) of the measurement period. This is either:

- the time at which the task was detached, or
- the time at which data recording was most recently completed for the transaction in support of a user event monitoring point (EMP) DELIVER option or the monitoring options MNCONVerse, MNSYNCpoint, or MNFREQuency.

Notes:

1. CICS PA will always convert the stop time into local time before formatting and printing.
2. The transaction response time (or measurement period) can be calculated by subtracting the START time from the STOP time.

025 (Type-A, CFCAPICT, 4 bytes)
The total number of CICS OO foundation class requests and Java API for CICS (JCICS) class requests issued by the user task. CICS does not distinguish between the OO foundation class and JCICS class requests.

089 (Type-C, USERID, 8 bytes)
User identification at task attach. This can also be a remote user identifier for a task created as the result of receiving an ATTACH request across an MRO or APPC link with attach-time security enabled.

103 (Type-S, EXWTTIME, 8 bytes)
Accumulated data for exception conditions. The timer component of the clock contains the total elapsed time for which the user waited on exception conditions. The period count equals the number of exception conditions that have occurred for this task.. For more information, see “CMF exception class data fields” on page 303.

Note: This field will be updated when any of the exception conditions are encountered by the user task even when the exception class is inactive.

112 (Type-C, RTYPE, 4 bytes)
The performance record type (low-order byte-3). This field indicates the reason why a performance record has been output for the user task. It can be one of the following values:

C Record output for a terminal converse
D Record output for a user EMP DELIVER request
F Record output for a long-running transaction
S Record output for a syncpoint
T Record output for a task termination.

130 (Type-C, RSYSID, 4 bytes)
The Transaction Routing Sysid RSYSID field IDentifies the connection name (sysid) of the remote system to which the transaction was routed. If the transaction was not routed this field is null and the initial program name (field: PGMNAME, owner: DFHPROG, field ID: 071) will identify the initial application program name invoked for the transaction. See Table 24 on page 254 for more details.

This field also identifies the connection name (sysid) of the remote system to which the transaction was routed when using the CRTE routing transaction. However, this field will be null for those CRTE transactions which establish or cancel the transaction routing session.

131 (Type-C, PERRECNT, 4 bytes)
The total number of performance class records written by the CICS Monitoring Facility (CMF) for this user task.

167 (Type-C, SRVCLASS, 8 bytes)
The MVS Workload Manager (WLM) service class for this transaction. This field is null if there are no transaction classification rules defined for CICS subsystems in the active MVS Workload Manager (WLM) service policy or the transaction was WLM-classified in another CICS region.

The transaction flags field, TRANFLAG (owner: DFHTASK, field ID: 164) can be used to determine if this transaction was WLM-classified in another region.

See “Workload Activity report” on page 88.

168 (Type-C, RPTCLASS, 8 bytes)
The MVS Workload Manager (WLM) report class for this transaction. This field is null if there are no transaction classification rules defined for CICS

subsystems in the active MVS Workload Manager (WLM) service policy or the transaction was WLM-classified in another CICS region.

The transaction flags field, TRANFLAG (owner: DFHTASK, field ID: 164) can be used to determine if this transaction was WLM-classified in another region.

See "Workload Activity report" on page 88.

359 (Type-C, ONETWKID, 8 bytes
The network identifier from which this work request (transaction) originated.

360 (Type-C, OAPPLID, 8 bytes)
The applid of the CICS region in which this work request (transaction) originated; (for example, the region in which the CWXN task ran).

361 (Type-T, OSTART, 8 bytes)
The time at which the originating task (for example, the CWXN task) was started.

362 (Type-P, OTRANNUM, 4 bytes)
The number of the originating task (for example, the CWXN task).

363 (Type-C, OTRAN, 4 bytes)
The transaction ID (TRANSID) of the originating task (for example, the CWXN task).

364 (Type-C, OUSERID, 8 bytes)
The originating Userid-2 or Userid-1 (for example, from CWBA), depending on the originating task.

365 (Type-C, OUSERCOR, 64 bytes)
The originating user correlator.

366 (Type-C, OTCPSVCE, 8 bytes)
The name of the originating TCPIPSERVICE.

367 (Type-A, OPORTNUM, 4 bytes)
The port number used by the originating TCPIPSERVICE.

368 (Type-C, OCLIPADR, 16 bytes)
The IP address of the originating client (or Telnet client).

369 (Type-A, OCLIPORT, 4 bytes)
The TCP/IP port number of the originating client (or Telnet client).

370 (Type-A, OTRANFLG, 8 bytes)
Originating transaction flags, a string of 64 bits used for signaling transaction definition and status information:

Byte 0 The facility-type of the originating transaction:
- **Bit 0** None (X'80')
- **Bit 1** Terminal (X'40')
- **Bit 2** Surrogate (X'20')
- **Bit 3** Destination (X'10')
- **Bit 4** 3270 bridge (X'08')
- **Bit 5** Reserved
- **Bit 6** Reserved
- **Bit 7** Reserved

Byte 1 Transaction identification information:
- **Bit 0** System transaction (X'80')
- **Bit 1** Mirror transaction (X'40')
- **Bit 2** DPL mirror transaction (X'20')
- **Bit 3** ONC/RPC Alias transaction (X'10')

	Bit 4	WEB Alias transaction (X'08')
	Bit 5	3270 Bridge transaction (X'04')
	Bit 6	Reserved (X'02')
	Bit 7	CICS BTS Run transaction (X'01')
Byte 2	Reserved.	
Byte 3	Transaction definition information:	
	Bit 0	Taskdataloc = below (x'80')
	Bit 1	Taskdatakey = cics (x'40')
	Bit 2	Isolate = no (x'20')
	Bit 3	Dynamic = yes (x'10')
	Bit 4-7	Reserved
Byte 4	The type of the originating transaction:	
	X'01'	None
	X'02'	Terminal
	X'03'	Transient data
	X'04'	START
	X'05'	Terminal-related START
	X'06'	CICS business transaction services (BTS) scheduler
	X'07'	Transaction manager domain (XM)-run transaction
	X'08'	3270 bridge
	X'09'	Socket domain
	X'0A'	CICS Web support (CWS)
	X'0B'	Internet Inter-ORB Protocol (IIOP)
	X'0C'	Resource Recovery Services (RRS)
	X'0D'	LU 6.1 session
	X'0E'	LU 6.2 (APPC) session
	X'0F'	MRO session
	X'10'	External Call Interface (ECI) session
	X'11'	IIOP domain request receiver
	X'12'	Request stream (RZ) instore transport
	X'13'	IP interconnectivity session
Byte 5	Reserved.	
Byte 6	Reserved.	
Byte 7	Recovery manager information:	
	Bit 0	Indoubt wait = no
	Bit 1	Indoubt action = commit
	Bit 2	Recovery manager - UOW resolved with indoubt action
	Bit 3	Recovery manager - Shunt
	Bit 4	Recovery manager - Unshunt
	Bit 5	Recovery manager - Indoubt failure
	Bit 6	Recovery manager - Resource owner failure
	Bit 7	Reserved

371 (Type-C, OFCTYNME, 4 bytes)
The facility name of the originating transaction. If the originating transaction is not associated with a facility, this field is null. The transaction facility type, if any, can be identified using byte 0 of the transaction flags, OTRANFLG (370), field.

DFHDATA fields

DFHDATA owns the following performance class data fields:

179 (Type-A, IMSREQCT, 4 bytes)
The total number of IMS (DBCTL) requests issued by the user task.

180 (Type-A, DB2REQCT, 8 bytes)
The total number of DB2 EXEC SQL and Instrumentation Facility Interface (IFI) requests issued by the user task.

For more information on DB2 accounting and monitoring, see the *CICS DB2 Guide.*

186 (Type-S, IMSWAIT, 8 bytes)
The total elapsed time in which the user task waited for IMS (DBCTL) to service the IMS requests issued by the user task.

For more information, see “RMI elapsed and suspend time” on page 293 and “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014 and is also a component of the RMI suspend time field, RMISUSP (owner: DFHTASK, field ID: 171).

187 (Type-S, DB2RDYQW, 8 bytes)
The elapsed time in which the user task waited for a DB2 thread to become available.

For more general information on DB2 accounting and monitoring, see the *CICS DB2 Guide.*

For more information, see “RMI elapsed and suspend time” on page 293 and “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (group name: DFHTASK, field ID: 014 and is also a component of the RMI suspend time field, RMISUSP (owner: DFHTASK, field ID: 171).

188 (Type-S, DB2CONWT, 8 bytes)
In CICS Transaction Server for z/OS Version 2.1 or earlier, this field is the elapsed time in which the user task waited for a CICS subtask (TCB) to become available.

In CICS Transaction Server for z/OS Version 2.2 or later:

- When CICS is connected to DB2 Version 5 or earlier, and is therefore not exploiting the CICS open transaction environment, (OTE) this field is the elapsed time in which the user task waited for a CICS subtask (TCB) to become available.
- When CICS is connected to DB2 Version 6 or later, and so is using the CICS open transaction environment (OTE), this field is the elapsed time in which the user task waited for a DB2 connection to become available for use with the user tasks open TCB.

For more general information on DB2 accounting and monitoring, see the *CICS DB2 Guide.*

For more information, see “RMI elapsed and suspend time” on page 293 and “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (group name: DFHTASK, field ID: 014 and is also a component of the RMI suspend time field, RMISUSP (owner: DFHTASK, field ID: 171).

For more general information on the open transaction environment (OTE), see the *CICS Application Programming Guide.*

189 (Type-S, DB2WAIT, 8 bytes)
In CICS Transaction Server for z/OS Version 2.1 or earlier, this field is the elapsed time in which the user task waited for DB2 to service the DB2 EXEC SQL and Instrumentation Facility Interface (IFI) requests issued by the user task.

In CICS Transaction Server for z/OS Version 2.2 or later:

- When CICS is connected to DB2 Version 5 or earlier, and is therefore not exploiting the CICS open transaction environment (OTE), this field is the elapsed time in which the user task waited for DB2 to service the DB2 EXEC SQL and Instrumentation Facility Interface (IFI) requests issued by the user task.
- When CICS is connected to DB2 Version 6 or later, and so is using the CICS open transaction environment (OTE), this field does not apply and will be zero. This is because the CICS-DB2 attachment facility uses open TCBs as the thread TCBs rather than using specially created subtask TCBs and as a result any waits in DB2 that occur on a CICS L8 mode TCB will not be visible to the CICS dispatcher domain.

For more general information on DB2 accounting and monitoring, see the *CICS DB2 Guide.*

For more information, see “RMI elapsed and suspend time” on page 293 and “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (group name: DFHTASK, field ID: 014 and is also a component of the RMI suspend time field, RMISUSP (owner: DFHTASK, field ID: 171).

395 (Type-A, WMQREQCT, 4 bytes)
The total number of MQ requests issued by the user task.

396 (Type-S, WMQGETWT, 12 bytes)
The elapsed time the user task waited for WebSphere MQ to service the user task’s GETWAIT request.

DFHDEST fields

DFHDEST owns the following performance class data fields:

041 (Type-A, TDGETCT, 4 bytes)
The number of transient data GET requests issued by the user task.

042 (Type-A, TDPUTCT, 4 bytes)
The number of transient data PUT requests issued by the user task.

043 (Type-A, TDPURCT, 4 bytes)
The number of transient data PURGE requests issued by the user task.

091 (Type-A, TDTOTCT, 4 bytes)
The total number of transient data requests issued by the user task.

101 (Type-S, TDIOWTT, 4 bytes)
The elapsed time in which the user task waited for VSAM I/O to the intrapartition transient data set, DFHINTRA. For more information, see “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

DFHDOCH fields

DFHDOCH owns the following performance class data fields:

223 (Type-A, DHDELCT, 4 bytes)
The number of document handler DELETE requests issued by the user task.

226 (Type-C, DHCRECT, 4 bytes)
The number of document handler Create document requests issued by the user task.

227 (Type-C, DHINSCT, 4 bytes)
The number of document handler Insert data or Insert bookmark document requests issued by the user task.

228 (Type-C, DHSETCT, 4 bytes)
The number of document handler Set requests issued by the user task.

229 (Type-C, DHRETCT, 4 bytes)
The number of document handler Retrieve requests issued by the user task.

230 (Type-C, DHTOTCT, 4 bytes)
The total number of document handler requests issued by the user task.

How the EXEC CICS document API commands correspond to the document handler domain monitoring fields is shown in Table 22.

Table 22. EXEC CICS document commands related to the document handler control monitoring fields

EXEC CICS DOCUMENT command	Monitoring fields
CREATE	DHCRECT and DHTOTCT
INSERT	DHINSCT and DHTOTCT
RETRIEVE	DHRETCT and DHTOTCT
SET	DHSETCT and DHTOTCT

Note: The number of “other” document handler requests can be calculated by subtracting the document handler requests DHCRECT, DHINSCT, DHSETCT, and DHRETCT from the total document handler request count, DHTOTCT. The “other” CICS internal document handler requests include Inquire document, Delete bookmark, Delete document, and Delete Data requests.

240 (Type-C, DHTOTDCL, 4 bytes)
The total length of all the documents created by the user task using the document handler EXEC CICS API requests.

Note: See the related performance data for DFHSOCK on page 257 and DFHWEBB on page 284.

For more information, see “CICS Web support” on page 301 and the *CICS Internet Guide.*

DFHEJBS fields

DFHEJBS owns the following performance class data fields:

311 (Type-C, CBSRVRNM, 4 bytes)
The CorbaServer for which this request processor instance is handling requests. Request processor transactions can be identified using byte 4 of the transaction flags field, TRANFLAG (owner: DFHTASK, field ID: 164).

312 (Type-A, EJBSACCT, 4 bytes)
The number of bean activations that have occurred in this request processor.

313 (Type-A, EJBSPACT, 4 bytes)
The number of bean passivations that have occurred in this request processor.

314 (Type-A, EJBCRECT, 4 bytes)
The number of bean creation calls that have occurred in this request processor.

315 (Type-A, EJBREMCT, 4 bytes)
The number of bean removal calls that have occurred in this request processor.

316 (Type-A, EJBTOTCT, 4 bytes)
The total for this request processor of activation, passivation, creation, removal and method calls (fields 312–316).

317 (Type-A, EJBMTHCT, 4 bytes)
The number of bean method calls executed in this request processor.

DFHFEPI fields

DFHFEPI owns the following performance class data fields:

150 (Type-A, SZALLOCT, 4 bytes)
The number of FEPI conversations allocated by the user task. This number is incremented for each FEPI ALLOCATE POOL or FEPI CONVERSE POOL.

151 (Type-A, SZRCVCT, 4 bytes)
The number of FEPI RECEIVE requests issued by the user task. This number is also incremented for each FEPI CONVERSE request.

152 (Type-A, SZSENDCT, 4 bytes)
The number of FEPI SEND requests issued by the user task. This number is also incremented for each FEPI CONVERSE request.

153 (Type-A, SZSTRTCT, 4 bytes)
The number of FEPI START requests issued by the user task.

154 (Type-A, SZCHROUT, 4 bytes)
The number of characters sent through FEPI by the user task.

155 (Type-A, SZCHRIN, 4 bytes)
The number of characters received through FEPI by the user task.

156 (Type-S, SZWAIT, 8 bytes)
The elapsed time in which the user task waited for FEPI services. For more information, see “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

157 (Type-A, SZALLCTO, 4 bytes)
The number of times the user task timed out while waiting to allocate a conversation.

158 (Type-A, SZRCVTO, 4 bytes)
The number of times the user task timed out while waiting to receive data.

159 (Type-A, SZTOTCT, 4 bytes)
The total number of FEPI API and SPI requests issued by the user task.

For more information on FEPI, see the *CICS Front End Programming Interface User's Guide.*

DFHFILE fields

For a break down by individual file of some of the DFHFILE information, you can request transaction resource monitoring. See "CMF transaction resource class data fields" on page 310 for details.

DFHFILE owns the following performance class data fields:

036 (Type-A, FCGETCT, 4 bytes)
The number of file control GET requests issued by the user task.

037 (Type-A, FCPUTCT, 4 bytes)
The number of file control PUT requests issued by the user task.

038 (Type-A, FCBRWCT, 4 bytes)
The number of file control BROWSE requests issued by the user task.

039 (Type-A, FCADDCT, 4 bytes)
The number of file control ADD requests issued by the user task.

040 (Type-A, FCDELCT, 4 bytes)
The number of file control DELETE requests issued by the user task.

063 (Type-S, FCIOWTT, 8 bytes)
The elapsed time in which the user task waited for non-RLS file I/O.

For more information, see "Transaction timing fields" on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

070 (Type-A, FCAMCT, 4 bytes)
The number of times the user task invoked file access-method interfaces. This number excludes requests for file OPEN and CLOSE.

093 (Type-A, FCTOTCT, 4 bytes)
The total number of file control requests issued by the user task. This number *excludes* any request for OPEN, CLOSE, ENABLE or DISABLE of a file.

How the EXEC CICS file API commands correspond to the file control monitoring fields is shown in Table 23.

Table 23. EXEC CICS file commands related to the file control monitoring fields

EXEC CICS file command	Monitoring fields
READ	FCGETCT and FCTOTCT
READ UPDATE	FCGETCT and FCTOTCT
DELETE (after READ UPDATE)	FCDELCT and FCTOTCT
DELETE (with RIDFLD)	FCDELCT and FCTOTCT
REWRITE	FCPUTCT and FCTOTCT
WRITE	FCADDCT and FCTOTCT
STARTBR	FCTOTCT
READNEXT	FCBRWCT and FCTOTCT

Table 23. EXEC CICS file commands related to the file control monitoring fields (continued)

EXEC CICS file command	Monitoring fields
READNEXT UPDATE	FCBRWCT and FCTOTCT
READPREV	FCBRWCT and FCTOTCT
READPREV UPDATE	FCBRWCT and FCTOTCT
ENDBR	FCTOTCT
RESETBR	FCTOTCT
UNLOCK	FCTOTCT

Note: The number of STARTBR, ENDBR, RESETBR and UNLOCK file control requests can be calculated by subtracting the file request counts FCGETCT, FCPUTCT, FCBRWCT, FCADDCT and FCDELCT from the total file control request count, FCTOTCT.

174 (Type-S, RLSWAIT, 8 bytes)
The elapsed time in which the user task waited for RLS file I/O.

For more information, see "Transaction timing fields" on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

175 (Type-S, RLSCPUT, 8 bytes)
The RLS File Request CPU (SRB) time field (RLSCPUT) is the SRB CPU time this transaction spent processing RLS file requests. This field should be added to the transaction CPU time field (USRCPUT) when considering the measurement of the total CPU time consumed by a transaction.

However, this field cannot be considered a subset of any other single CMF field (including RLSWAIT). This is because the RLS file requests execute asynchronously under an MVS SRB which can be running in parallel with the requesting transaction. It is also possible for the SRB to complete its processing before the requesting transaction waits for the RLS file request to complete.

Note: This clock field could contain a CPU time of zero with a count of greater than zero. This is because the CMF timing granularity is measured in 16 microsecond units and the RLS file requests may complete in less than that time unit.

176 (Type-S, CFDTWAIT, 8 bytes)
The elapsed time in which the user task waited for a data table access request to the coupling facility data table server to complete.

For more information, see "Transaction timing fields" on page 287.

See the *CICS System Definition Guide* for more information on the CICS data servers.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

DFHJOUR fields

DFHJOUR owns the following performance class data fields:

010 (Type-S, JCIOWTT, 8 bytes)
The elapsed time in which the user task waited for journal (logstream) I/O.

For more information, see “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

058 (Type-A, JNLWRTCT, 4 bytes)
The number of journal write requests issued by the user task.

172 (Type-A, LOGWRTCT, 4 bytes)
The number of CICS logstream write requests issued by the user task.

DFHMAPP fields

DFHMAPP owns the following performance class data fields:

050 (Type-A, BMSMAPCT, 4 bytes)
The number of BMS RECEIVE MAP requests issued by the user task. This field corresponds to the number of RECEIVE MAP requests that did not incur a terminal I/O and the number of RECEIVE MAP FROM requests.

051 (Type-A, BMSINCT, 4 bytes)
The number of BMS RECEIVE MAP requests issued by the user task that did incur a terminal I/O.

052 (Type-A, BMSOUTCT, 4 bytes)
The number of BMS SEND MAP requests issued by the user task.

090 (Type-A, BMSTOTCT, 4 bytes)
The total number of BMS requests issued by the user task. This field is the sum of the BMS RECEIVE MAP, RECEIVE MAP FROM and SEND MAP requests as well as the number of BMS SEND TEXT and SEND CONTROL requests issued by the user task.

DFHPROG fields

DFHPROG owns the following performance class data fields:

055 (Type-A, PCLINKCT, 4 bytes)
The number of program LINK requests issued by the user task.

056 (Type-A, PCXCTLCT, 4 bytes)
The number of program XCTL requests issued by the user task.

057 (Type-A, PCLOADCT, 4 bytes)
The number of program LOAD requests issued by the user task.

071 (Type-C, PGMNAME, 8 bytes)
The name of the initial application program invoked at transaction attach.

For a remote transaction:

- If the CICS definition for the remote transaction does not specify a program name, this field contains blanks.
- If the CICS definition for the remote transaction specifies a program name, this field contains the name of the specified program.

  Note: This program name is not necessarily the name of the program that is executed on the remote system.

For a dynamically-routed transaction, if the dynamic transaction routing program routes the transaction locally and specifies an alternate program name, this field contains the name of the alternate program.

For a distributed program link (DPL) mirror transaction, this field contains the initial program name specified in the distributed program link request. A transaction can be identified as a DPL mirror transaction using information provided in byte 1 of the transaction flags field (owner: DFHTASK, field ID: 164).

For an ONC RPC or CICS Web support (CWS) alias transaction, this field contains the initial application program name invoked by the alias transaction. For example, the Web Terminal Transaction Application program, DFHWBTTA or the Web Interface sample program, DFH$WB1A. Transactions can be identified as an ONC RPC or WEB alias using the information provided in byte 1 of the transaction flags field (owner: DFHTASK, field ID: 164).

For a CICS BTS transaction, this field contains the application program name defined in the CICS BTS process or activity that the task is executing.

For a CICS Socket (SO) domain transaction, this field contains the program name from the transaction identifier defined in the installed TCP/IP service resource definition which was attached to process the incoming work request.

For an Internet Inter-ORB Protocol (IIOP) transaction, this field contains the application program name defined for the transaction that was attached to process the incoming work request as determined from the installed Requestmodel template resource definition.

For an ECI over TCP/IP transaction, this field contains the name of the application program specified in the External Call Interface (ECI) request from the client application.

Byte 4 of the transaction flags field, TRANFLAG (owner: DFHTASK, field ID: 164) can also be used to provide additional detail on the transaction's origin. See page 268 for more details on the transaction origin type.

Table 24 shows the transaction type values from byte 1 of the transaction flags field, TRANFLAG (owner: DFHTASK, field ID: 164) and its relationship with the transaction routing sysid field, RSYSID (owner: DFHCICS, field ID: 130) and the initial program name field, PGMNAME (owner: DFHPROG, field ID: 071).

Table 24. Transaction routing sysid and initial program name relationships

TRANFLAG (Byte 1)	RSYSID	Program Name
X'00' - User transaction	'xxxx'	N/A
X'00' - User transaction	null	Initial application program
X'80' - System transaction	N/A	Initial application program
X'40' - Mirror transaction	N/A	Mirror program
X'20' - DPL mirror transaction	N/A	Initial application program
X'10' - ONC RPC alias transaction	N/A	Initial application program
X'08' - WEB alias transaction	N/A	Initial application program
X'04' - 3270 bridge transaction	N/A	Initial application program
X'01' - CICS BTS run transaction	N/A	Initial application program

072 (Type-A, PCLURMCT, 4 bytes)
The number of program LINK URM (user-replaceable module) requests issued by the user task.

A user-replaceable module is a CICS-supplied program that is always invoked at a particular point in CICS processing as if it were part of the CICS code. You can modify the supplied program by including your own logic, or you can replace it with a version that you write yourself.

The CICS-supplied user-replaceable modules are:

- bridge exit program - DFH0CBRE, DFH0CBAE, DFHWBLT, or user specified
- CICS JVM interface program - DFHJVMAT
- distributed dynamic routing program - DFHDSRP (or user specified)
- document template exit program - user specified on the DOCTEMPLATE resource definition
- dynamic routing program - DFHDYP (or user specified)
- Internet Inter-ORB Protocol (IIOP) inbound request security exit program - DFHXOPUS
- Java hot-pooling pre-call program - DFHJHPAT
- node error program - DFHNEP
- program autoinstall program - DFHPGAxX (or user specified)
- program error program - DFHPEP
- terminal autoinstall programs - DFHZATDX/DFHZATDY
- terminal error program - DFHTEP
- transaction restart program - DFHRTY
- CICS-DBCTL interface status program - DFHDBUEX
- CICS-DB2 dynamic plan exit program - DSNCUEXT
- Enterprise JavaBeans™ (EJB) Distinguished Name program - DFHEJDNx
- Enterprise JavaBeans (EJB) event program - DFHEJEP

For detailed information on the CICS user-replaceable modules, see the *CICS Customization Guide.*

073 (Type-A, PCDPLCT, 4 bytes)
The number of distributed program link (DPL) requests issued by the user task.

113 (Type-C, ABCODEO, 4 bytes)
If the transaction abends, this field contains the 4 character abend code of the original abend.

114 (Type-C, ABCODEC, 4 bytes)
If the transaction abends, this field contains the 4 character abend code of the current abend.

115 (Type-S, PCLOADTM, 8 bytes)
The total elapsed time in which the user task waited for program fetches from the DFHRPL program library. Only fetches for programs with installed program definitions or autoinstalled as a result of application program requests are included in this figure. Installed programs residing in the LPA are not included because they do not incur a physical fetch from a program library.

For more information, see “Program load time” on page 292.

286 (Type-A, PCDLCSDL, 4 bytes)
The total length, in bytes, of the data in the containers of all the distributed program link (DPL) requests, with the CHANNEL option, issued by the user task. This total includes the length of any headers to the data.

287 (Type-A, PCDLCRDL, 4 bytes)
The total length, in bytes, of the data in the containers of all the distributed

program link (DPL) RETURN requests, with the CHANNEL option, issued by the user task. This total includes the length of any headers to the data.

306 (Type-A, PCLNKCCT, 4 bytes)
Number of local program LINK requests, with the CHANNEL option, issued by the user task. Note: This field is a subset of the program LINK requests field, PCLINKCT (055).

307 (Type-A, PCXCLCCT, 4 bytes)
Number of program XCTL requests, with the CHANNEL option, issued by the user task. Note: This field is a subset of the program XCTL requests field, PCXCTLCT (056).

308 (Type-A, PCDPLCCT, 4 bytes)
Number of program distributed program link (DPL) requests, with the CHANNEL option, issued by the user task. Note: This field is a subset of the distributed program link requests field, PCDPLCT (073).

309 (Type-A, PCRTNCCT, 4 bytes)
Number of remote pseudoconversational RETURN requests, with the CHANNEL option, issued by the user task.

310 (Type-A, PCRTNCDL, 4 bytes)
The total length, in bytes, of the data in the containers of all the remote pseudoconversational RETURN CHANNEL commands issued by the user task. This total includes the length of any headers to the data.

DFHRMI fields

DFHRMI fields are present in the performance class record only if RMI=YES is specified on the DFHMCT TYPE=INITIAL macro. For more information, see the RMI parameter on the DFHMCT TYPE=INITIAL macro in the *CICS Customization Guide.*

DFHRMI owns the following performance class data fields. For more information, see “RMI elapsed and suspend time” on page 293.

001 (Type-S, RMITOTAL, 8 bytes)
The total elapsed time spent in the CICS Resource Manager Interface (RMI). For more information, see “Transaction response time” on page 289 and “Clocks and time stamps” on page 287.

002 (Type-S, RMIOTHER, 8 bytes)
The total elapsed time spent in the CICS RMI for resource manager requests other than DB2, DBCTL, EXEC DLI, WebSphere MQ, CICSPlex® SM, and CICS TCP/IP socket requests.

003 (Type-S, RMIDB2, 8 bytes)
The total elapsed time spent in the CICS RMI for DB2 requests.

004 (Type-S, RMIDBCTL, 8 bytes)
The total elapsed time spent in the CICS RMI for DBCTL requests.

005 (Type-S, RMIEXDLI, 8 bytes)
The total elapsed time spent in the CICS RMI for EXEC DLI requests.

006 (Type-S, RMIMQM, 8 bytes)
The total elapsed time spent in the CICS RMI for WebSphere MQ requests.

007 (Type-S, RMICPSM, 8 bytes)
The total elapsed time spent in the CICS RMI for CICSPlex SM requests.

008 (Type-S, RMITCPIP, 8 bytes)
The total elapsed time spent in the CICS RMI for CICS TCP/IP socket requests.

DFHSOCK fields

DFHSOCK owns the following performance class data fields relating to the CICS (Socket Domain) support for TCP/IP:

241 (Type-S, SOIOWTT, 8 bytes)
The elapsed time in which the user task waited for inbound socket I/O. The outbound socket I/O wait time is measured in field ID: 299.

For more information, see “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

242 (Type-A, SOBYENCT, 4 bytes)
The number of bytes encrypted by the secure sockets layer (SSL) for the user task.

243 (Type-A, SOBYDECT, 4 bytes)
The number of bytes decrypted by the secure sockets layer (SSL) for the user task.

244 (Type-C, CLIPADDR, 16 bytes): IPIC only
The Client IP address in the form of *nnn.nnn.nnn.nnn* or Telnet client IP address.

245 (Type-C, TCPSRVCE, 8 bytes)
The name of the installed TCP/IP service resource definition from which the transaction was initiated.

246 (Type-A, PORTNUM, 4 bytes)
The port number of the installed TCP/IP service resource definition from which the transaction was initiated.

288 (Type-A, ISALLOCT, 4 bytes): IPIC only
The number of allocate session requests issued by the user task for sessions using IPIC.

289 (Type-A, SOEXTRCT, 4 bytes)
The number of EXTRACT TCPIP and EXTRACT CERTIFICATE requests issued by the user task.

290 (Type-A, SOCNPSCT, 4 bytes)
The number of non-persistent outbound socket create requests issued by the user task.

291 (Type-A, SOCPSCT, 4 bytes)
The number of persistent outbound socket create requests issued by the user task.

292 (Type-A, SONPSHWM, 4 bytes)
The peak number (high-water mark) of non-persistent outbound sockets owned by the user task.

293 (Type-A, SOPSHWM, 4 bytes)
The peak number (high-water mark) of persistent outbound sockets owned by the user task.

294 (Type-A, SORCVCT, 4 bytes)
The number of outbound socket RECEIVE requests issued by the user task.

295 (Type-A, SOCHRIN, 4 bytes)
The number of characters received by outbound socket RECEIVE requests issued by the user task.

296 (Type-A, SOSENDCT, 4 bytes)
The number of outbound socket SEND requests issued by the user task.

297 (Type-A, SOCHROUT, 4 bytes)
The number of characters sent by outbound socket SEND requests issued by the user task.

298 (Type-A, SOTOTCT, 4 bytes)
The total number of inbound and outbound socket requests issued by the user task.

299 (Type-S, SOOIOWTT (OSOWAIT), 8 bytes)
The elapsed time in which the user task waited for outbound socket I/O. The inbound socket I/O wait time is measured in field ID: 241.

For more information, see "Transaction timing fields" on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

300 (Type-S, ISIOWTT, 8 bytes): IPIC only
The elapsed time for which a user task waited for control at this end of an IPIC connection.

301 (Type-A, SOMSGIN1, 4 bytes)
The number of inbound socket RECEIVE requests issued by the user task.

302 (Type-A, SOCHRIN1, 4 bytes)
The number of characters received by inbound socket RECEIVE requests issued by the user task.

303 (Type-A, SOMSGOU1, 4 bytes)
The number of inbound socket SEND requests issued by the user task.

304 (Type-A, SOCHROU1, 4 bytes)
The number of characters sent by inbound socket SEND requests issued by the user task.

305 (Type-C, ISIPCNNM, 8 bytes): IPIC only
The name of the IPIC connection whose TCP/IP service attached the user task.

330 (Type-A, CLIPPORT, 4 bytes): IPIC only
The port number of the client or Telnet client.

See "CICS TCP/IP support" on page 302 for additional information and related performance data for DFHDOCH on page 249 and DFHWEBB on page 284.

For more information, see the *CICS Internet Guide* and the *CICS External Interfaces Guide.*

DFHSTOR user storage fields

DFHSTOR owns the following performance class data fields relating to user storage. For additional information on the user storage fields, see "User storage" on page 296.

033 (Type-A, SCUSRHWM, 4 bytes)
Maximum amount (high-water mark) of user-storage allocated to the user task below the 16MB line, in the user dynamic storage area (UDSA).

054 (Type-A, SCUGETCT, 4 bytes)
The number of user-storage GETMAIN requests issued by the user task for storage below the 16MB line, in the UDSA.

095 (Type-A, SCUSRSTG, 8 bytes)
The storage occupancy of the user task below the 16MB line, in the UDSA. This is a measure of the area under the curve of the storage in use against elapsed time. For more information, see “User storage occupancy” on page 296.

105 (Type-A, SCUGETCT, 4 bytes)
The number of user-storage GETMAIN requests issued by the user task for storage above the 16MB line, in the EUDSA.

106 (Type-A, SCUSRHWM, 4 bytes)
Maximum amount (high-water mark) of user-storage allocated to the user task above the 16MB line, in the user dynamic storage area (EUDSA).

107 (Type-A, SCUSRSTG, 8 bytes)
The storage occupancy of the user task above the 16MB line, in the EUDSA. This is a measure of the area under the curve of the storage in use against elapsed time. For more information, see “User storage occupancy” on page 296.

116 (Type-A, SC24CHWM, 4 bytes)
Maximum amount (high-water mark) of user-storage allocated to the user task below the 16MB line, in the CICS dynamic storage area (CDSA).

117 (Type-A, SCCGETCT, 4 bytes)
The number of user-storage GETMAIN requests issued by the user task for storage below the 16MB line, in the CDSA.

118 (Type-A, SC24COCC, 8 bytes)
The storage occupancy of the user task below the 16MB line, in the CDSA. This is a measure of the area under the curve of the storage in use against elapsed time. For more information, see “User storage occupancy” on page 296.

119 (Type-A, SC31CHWM, 4 bytes)
Maximum amount (high-water mark) of user-storage allocated to the user task above the 16MB line, in the CICS dynamic storage area (CDSA).

120 (Type-A, SCCGETCT, 4 bytes)
The number of user-storage GETMAIN requests issued by the user task for storage above the 16MB line, in the ECDSA.

121 (Type-A, SC31COCC, 8 bytes)
The storage occupancy of the user task above the 16MB line, in the ECDSA. This is a measure of the area under the curve of the storage in use against elapsed time. For more information, see “User storage occupancy” on page 296.

The following table shows the DFHSTOR user storage fields, what they measure, and in which storage area.

Table 25. User storage field ID cross-reference

	CDSA	UDSA	ECDSA	EUDSA
GETMAIN count	117	054	120	105
High-water mark	116	033	119	106
Occupancy	118	095	121	107

DFHSTOR shared storage fields

DFHSTOR owns the following performance class data fields relating to shared storage. For additional information on the shared storage fields, see “Shared storage” on page 297.

144 (Type-A, SC24SGCT, 4 bytes)
The number of storage GETMAIN requests issued by the user task for shared storage below the 16MB line, in the CDSA or SDSA.

145 (Type-A, SC24GSHR, 4 bytes)
The number of bytes of shared storage GETMAINed by the user task below the 16MB line, in the CDSA or SDSA.

146 (Type-A, SC24FSHR, 4 bytes)
The number of bytes of shared storage FREEMAINed by the user task below the 16MB line, in the CDSA or SDSA.

147 (Type-A, SC31SGCT, 4 bytes)
The number of storage GETMAIN requests issued by the user task for shared storage above the 16MB line, in the ECDSA or ESDSA.

148 (Type-A, SC31GSHR, 4 bytes)
The number of bytes of shared storage GETMAINed by the user task above the 16MB line, in the ECDSA or ESDSA.

149 (Type-A, SC31FSHR, 4 bytes)
The number of bytes of shared storage FREEMAINed by the user task above the 16MB line, in the CDSA or SDSA.

DFHSTOR program storage fields

DFHSTOR owns the following performance class data fields relating to program storage. For additional information on the program storage fields, see “Program storage” on page 298.

087 (Type-A, PCSTGHWM, 4 bytes)
The maximum amount (high-water mark) of program storage in use by the user task both *above* and *below* the 16MB line.

108 (Type-A, PC24BHWM, 4 bytes)
The maximum amount (high-water mark) of program storage in use by the user task below the 16MB line. This field is a subset of PCSTGHWM (field ID: 087) that resides below the 16MB line.

122 (Type-A, PC31RHWM, 4 bytes)
The maximum amount (high-water mark) of program storage in use by the user task above the 16MB line, in the extended read-only dynamic storage area (ERDSA). This field is a subset of PC31AHWM (field ID: 139) that resides above the 16MB line.

139 (Type-A, PC31AHWM, 4 bytes)
The maximum amount (high-water mark) of program storage in use by the user task above the 16MB line. This field is a subset of PCSTGHWM (field ID: 087) that resides above the 16MB line.

142 (Type-A, PC31CHWM, 4 bytes)
The maximum amount (high-water mark) of program storage in use by the user task above the 16MB line, in the extended CICS dynamic storage area (ECDSA). This field is a subset of PC31AHWM (field ID: 139) that resides in the ECDSA.

143 (Type-A, PC24CHWM, 4 bytes)
The maximum amount (high-water mark) of program storage in use by the user task below the 16MB line, in the CICS dynamic storage area (CDSA). This field is a subset of PC24BHWM (field ID: 108) that resides in the CDSA.

160 (Type-A, PC24SHWM, 4 bytes)
The maximum amount (high-water mark) of program storage in use by the user task below the 16MB line, in the shared dynamic storage area (SDSA). This field is a subset of PC24BHWM (field ID: 108) that resides in the SDSA.

161 (Type-A, PC31SHWM, 4 bytes)
The maximum amount (high-water mark) of program storage in use by the user task above the 16MB line, in the extended shared dynamic storage area (ESDSA). This field is a subset of PC31AHWM (field ID: 139) that resides in the ESDSA.

162 (Type-A, PC24RHWM, 4 bytes)
The maximum amount (high-water mark) of program storage in use by the user task below the 16MB line, in the read-only dynamic storage area (RDSA). This field is a subset of PC24BHWM (field ID: 108) that resides in the RDSA.

DFHSYNC fields

DFHSYNC owns the following performance class data fields relating to syncpoint activity:

060 (Type-A, SPSYNCCT, 4 bytes)
The total number of syncpoint requests issued by the user task. This also includes:

- The SYNCPOINT implicitly issued as part of the task-detach processing
- The SYNCPOINT issued at PSB termination for any DBCTL activity

173 (Type-S, SYNCTIME, 8 bytes)
The elapsed time in which the user task was dispatched or suspended processing syncpoint requests.

For more information, see “Syncpoint elapsed time” on page 293.

177 (Type-S, SRVSYWTT, 8 bytes)
The elapsed time in which the user task waited for completion of syncpoint or resynchronization processing using the coupling facility data table server to complete.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

196 (Type-S, SYNCDLY, 8 bytes)
The elapsed time in which the user task waited for a syncpoint request to be issued by it’s parent transaction. The user task was executing as a result of the parent transaction issuing a CICS Business Transaction Services (BTS) Run ACQPROCESS or Run Activity requests to execute a process or activity synchronously.

For more information on CICS BTS, see the *CICS Business Transaction Services.*

For more information, see “Syncpoint elapsed time” on page 293 and “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

199 (Type-S, OTSINDWT, 8 bytes)
The elapsed time in which the user task was dispatched or suspended indoubt whilst processing a syncpoint for an Object Transaction Service (OTS) Syncpoint request.

For more information, see “Syncpoint elapsed time” on page 293.

DFHTASK fields

DFHTASK owns the following performance class data fields:

001 (Type-C, TRAN, 4 bytes)
Transaction identification.

004 (Type-C, TTYPE, 4 bytes)
Type of transaction start (Start Code or Start Type):

TO The transaction was started (attached) by input of the transaction ID from the terminal user.

S Attached by automatic transaction initiation (ATI) without data. The transaction was started (attached) by an application program using the EXEC CICS START TRANSID('xxxx') ... API command. CICS internal transactions such as CATR, CEJR, CESN, CQRY, CRPM, CRSQ, CSFU, CSGM, CXRE, and CWBG are just some examples of CICS transactions that use this start type.

SD Attached by automatic transaction initiation (ATI) with data. The transaction was started (attached) by an application program using the EXEC CICS START TRANSID('xxxx') FROM(xxxx) ... API command. CICS internal transactions such as CLS1 is an example of a transaction that uses this start type.

QD The transaction was started (attached) because the trigger level of an intrapartition transient data queue was reached. If the transaction is not associated with a terminal facility, the Transaction Facility Name (field: FCTYNAME, owner: DFHTASK, field ID: 163) provides the name of the transient data queue ID.

U The transaction was started (attached) by a CICS internal function generally as a result of some user request. CICS internal transactions such as CATA, CATD, CEJR, CESC, CEX2, CFOR, CFQR, CFQS, CFTL, CGRP, CIEP, CIOF, CIOR, CIRP, CITS, CJTR, CLQ1, CLQ2, CLS2, COTR, COVR, CPLT, CPMI, CRSY, CSFR, CSHQ, CSNC, CSNE, CSOL, CSSY, CSTE, CSZI, CWBA, and CWXN are just some examples of the CICS transactions that use this start type. In addition to CICS internal functions, transaction’s that are being executed under the control of the CICS Execution Diagnostic Facility transaction, CEDF, are also started (attached) with this start type.

TP Attached from terminal (TCTTE) transaction ID. The preset transaction was started (attached) by input from the terminal user or by the previous transaction using the EXEC CICS RETURN TRANSID('xxxx') IMMEDIATE ... API command. The transaction ID can be preset either from the terminal definition, from using the CRTE routing transaction, or by the previous transaction’s application program using the EXEC CICS RETURN TRANSID('xxxx') ... API command with or without the IMMEDIATE option specified. Some examples of CICS transactions which use this start type are: CESN (except when used as the initial good morning transaction), CRTE (when invoked on the routed system),

and CSSF when invoked as part of a 'CRTE CANCEL' (the initial CRTE transaction which establishes the routing session uses the start type 'TO').

SZ Attached by the Front End Programming Interface (FEPI). The transaction was started (attached) as the *receive program* by the Front End Programming Interface as a result of inbound data. In addition to inbound data arriving, the *receive program* is also started (attached) if the time limit set by a FEPI START command expires, the session is lost, or anything that causes a FEPI RECEIVE command to complete. See the *CICS Front End Programming Interface User's Guide* for more information on FEPI *started tasks.*

007 (Type-S, USRDISPT, 8 bytes)
The total elapsed time during which the user task was dispatched by the CICS dispatcher domain on each CICS TCB under which the task executed. This can include the CICS dispatcher TCB modes QR, RO, CO, FO, SZ, RP, SL, SP, SO, H8, J8, J9, L8, L9, S8, X8, X9, JM and D2.

008 (Type-S, USRCPUT, 8 bytes)
The total processor (CPU) time during which the user task was dispatched by the CICS dispatcher domain on each CICS TCB under which the task executed. This can include the CICS dispatcher TCB modes QR, RO, CO, FO, SZ, RP, SL, SP, SO, H8, J8, J9, L8, L9, S8, X8, X9, JM and D2.

014 (Type-S, SUSPTIME, 8 bytes)
The total elapsed suspend (wait) time for which the user task was suspended by the CICS dispatcher domain. This includes:

- The task suspend (wait) time.
- The elapsed time that the transaction waited for its first dispatch. This also includes any delay incurred because of the limits set for this transaction's transaction class (if any) or by the system parameter MXT being reached by this transaction.
- The elapsed time waiting for redispatch after a suspended task has been resumed.

For more information, see "Transaction suspend (wait) time" on page 289.

031 (Type-P, TRANNUM, 4 bytes)
The transaction identification number.

Note: The transaction number field is normally a 4-byte packed decimal number. However, some CICS system tasks are identified by special characters in this field as follows:
III for system initialization tasks
TCP for the terminal control task

These special identifiers are placed in bytes 2 through 4. Byte 1 is blank (X'40') before the terminal control TCP identifier, and a null value (X'00') before the others.

059 (Type-A, ICPUINCT, 4 bytes)
The number of Interval Control START requests issued by the user task.

064 (Type-A, TASKFLAG, 4 bytes)
Task error flags, a string of 32 bits used for signaling unusual conditions occurring during the user task:

Bit 0 Reserved.

Bit 1 The CICS Monitoring Facility (CMF) detected an attempt to start a user clock that was already running, or to stop one that was not running.

Bits 2-31
Reserved.

065 (Type-A, ICSTACCT, 4 bytes)
The total number of local interval control START requests, with the CHANNEL option, issued by the user task.

066 (Type-A, ICTOTCT, 4 bytes)
The total number of Interval Control Start, Cancel, Delay, and Retrieve requests issued by the user task.

Note: The number of interval control Cancel, Delay, and Retrieve requests can be calculated by subtracting the interval control request count ICPUINCT from the total interval control request count, ICTOTCT.

082 (Type-C, TRNGRPID, 28 bytes)
The transaction group ID is assigned at transaction attach time, and can be used to correlate the transactions that CICS executes for the same incoming work request (for example, the CWXN and CWBA transactions for Web requests).

This transaction group ID relationship is particularly useful when applied to the requests that originate through the CICS Web support (CWS), IIOP, ECI over TCP/IP, or the 3270 bridge interface, as indicated by the transaction origin in byte 4 of the transaction flags field (owner: DFHTASK, field ID: 164). See page 268 for more details on the transaction origin type.

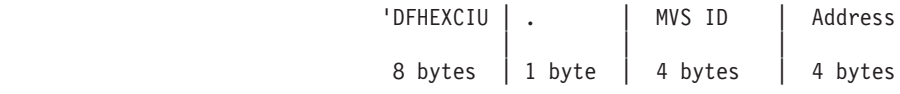
For more information, see “Correlating performance class data” on page 299 and the “Transaction Group report” on page 76.

097 (Type-C, NETUOWPX, 20 bytes)
The fully qualified name by which the originating system is known to the VTAM network. This name is assigned at attach time using either the netname derived from the terminal (when the task is attached to a local terminal), or the netname passed as part of an IRC (MRO) or ISC (APPC) attach header. At least three padding bytes (X'00') are present at the right end of the name.

If the originating terminal is VTAM across an ISC APPC or IRC link, the NETNAME is the *networkid.LUname*. If the terminal is non-VTAM, the NETNAME is *networkid.generic_APPLID*.

All originating information is passed as part of an ISC LUTYPE6.1 attach header has the same format as the non-VTAM terminal originators above.

When the originator is communicating over an external CICS interface (EXCI) session, the name is a concatenation of:



derived from the originating system. That is, the name is a 17-byte LU name consisting of:

- An 8-byte eye-catcher set to 'DFHEXCIU'.
- A 1-byte field containing a period '.'.
- A 4-byte field containing the MVS ID, in characters, under which the client program is running.

- A 4-byte field containing the address space ID (AS ID) in which the client program is running. This field contains the 4-character EBCDIC representation of the 2-byte hexadecimal address space ID.

For more information on the external CICS interface (EXCI), see the *CICS External Interfaces Guide.*

Note: That it is possible for transactions that are attached without a terminal or session facility to be given the same network unit-of-work netname in the format of *networkid.generic_APPLID.*

For more information, see "Correlating performance class data" on page 299 and the "Cross-System Work report" on page 69.

098 (Type-C, NETUOWSX, 8 bytes)
The name by which the network unit-of-work ID is known within the originating system. This name is assigned at transaction attach time using either a STCK-derived token created by the originating system, or the network unit-of-work ID passed as part of an IRC (MRO) or ISC (APPC) attach function management header (FMH).

The first six bytes of this field are a binary value derived from the system clock of the originating system and which can wrap round at intervals of several months.

The last two bytes of this field are a syncpoint sequence count. This count may change during the life of the task as a result of syncpoint activity.

For CICS Business Transaction Services (BTS) transactions, the network unit-of-work ID is also passed to a transaction that is invoked synchronously by an application program issuing either a CICS BTS run ACQPROCESS synchronous or run activity synchronous command.

Note: When using MRO or ISC, the NETUOWSX field can be combined with the NETUOWPX field (field ID: 097) to uniquely identify a task across each CICS system. It must be combined with the NETUOWPX because the NETUOWSX field on its own is unique only to the originating CICS system.

For more information, see "Correlating performance class data" on page 299 and "Cross-System Work report" on page 69.

102 (Type-S, DISPWTT, 8 bytes)
The elapsed time for which the user task waited for redispatch by the CICS dispatcher domain. This is the aggregate of the wait times between each wait event completion and the user task being redispatched by the CICS dispatcher domain.

Notes:

1. This field does not include the elapsed time spent waiting for the first dispatch.
2. This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

109 (Type-C, TRANPRI, 4 bytes)
The transaction priority of the task when monitoring of the task was initialized at transaction attach.

123 (Type-S, GNQDELAY, 8 bytes)
The elapsed time in which the user task waited for a CICS task control global enqueue.

For more information, see “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

124 (Type-C, BRDGTRAN, 4 bytes)
For those transactions that are attached by the CICS 3270 Bridge interface, this field contains the name of the bridge listener transaction that invoked the transaction. A bridge transaction can be identified using byte 1 of the transaction flags field, TRANFLAG (owner: DFHTASK, field ID: 164).

125 (Type-S, DSPDELAY, 8 bytes)
The elapsed time in which the user task waited for the first dispatch by the CICS dispatcher domain.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

126 (Type-S, TCLDELAY, 8 bytes)
The elapsed time in which the user task waited for first dispatch which was delayed because of the limits set for this transaction’s transaction class. The name of the transaction class for this transaction can be found in the TCLSNAME field, (owner: DFHTASK, field ID: 166).

For more information, see “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014) and the first dispatch delay time field, DSPDELAY (owner: DFHTASK, field ID: 125).

127 (Type-S, MXTDELAY, 8 bytes)
The elapsed time in which the user task waited for first dispatch which was delayed because of the limits set by the MXT system parameter being reached.

For more information, see “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014) and the first dispatch delay time field, DSPDELAY (owner: DFHTASK, field ID: 125).

128 (Type-S, LMDELAY, 8 bytes)
The elapsed time in which the user task waited to acquire a lock on a resource. A user task cannot explicitly acquire a lock on a resource, but many CICS modules lock resources on behalf of user tasks using the CICS lock manager (LM) domain.

For more information, see “Transaction timing fields” on page 287.

For more information about the CICS lock manager, see the *CICS Problem Determination Guide.*

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

129 (Type-S, ENQDELAY, 8 bytes)
The elapsed time in which the user task waited for a CICS task control local enqueue. For more information, see “Transaction timing fields” on page 287

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

132 (Type-T, RMUOWID, 8 bytes)
The identifier of the local unit of work (unit of recovery) for this task. The local unit-of-recovery values are used to synchronize recovery operations amongst CICS systems and other resource managers, such as IMS (DBCTL) and DB2.

163 (Type-C, FCTYNAME, 4 bytes)
Transaction facility name. This field is null if the transaction is not associated with a facility. The transaction facility type (if any) can be identified using byte 0 of the transaction flags field, TRANFLAG (owner: DFHTASK, field ID: 164).

164 (Type-A, TRANFLAG, 8 bytes)
Transaction flags, a string of 64 bits used for signaling transaction definition and status information:

Byte 0
Transaction facility identification. The field IDentifies the type of resource that is the transaction's principal facility and can have one of the following values:
Bit 0 Transaction facility name = none
Bit 1 Transaction facility name = terminal
Bit 2 Transaction facility name = surrogate
Bit 3 Transaction facility name = destination
Bit 4 Transaction facility name = 3270 bridge
Bit 5-7
Reserved

Byte 1
Transaction identification information:
Bit 0 System transaction
Bit 1 Mirror transaction
Bit 2 Distributed Program Link (DPL) mirror transaction
Bit 3 ONC RPC alias transaction
Bit 4 WEB alias transaction
Bit 5 3270 bridge transaction
Bit 6 Reserved
Bit 7 CICS BTS run transaction (ACQPROCESS or activity) synchronous

Byte 2
MVS workload manager request (transaction) completion information:
Bit 0 Report the total response time (begin-to-end phase) for the completed work request (transaction)
Bit 1 Notify that the entire execution phase of the work request (transaction) is complete
Bit 2 Notify that a subset of the execution phase of the work request (transaction) is complete
Bit 3-7
Reserved

Byte 3
Transaction definition information:
Bit 0 Taskdataloc = BELOW
Bit 1 Taskdatakey = CICS
Bit 2 Isolate = NO
Bit 3 Dynamic = YES

Bit 4-7
Reserved

Byte 4
Transaction origin type:
X'01' None
X'02' Terminal
X'03' Transient data
X'04' Start
X'05' Terminal start
X'06' CICS Business Transaction Services (BTS) scheduler
X'07' Transaction Manager domain (XM) run transaction
X'08' 3270 bridge
X'09' Socket domain
X'0A' CICS Web support (CWS)
X'0B' Internet Inter-ORB Protocol (IIOP)
X'0C' Resource Recovery Services (RRS)
X'0D' LU 6.1 session
X'0E' LU 6.2 (APPC) session
X'0F' MRO session
X'10' External Call Interface (ECI) session
X'11' II domain Request Receiver
X'12' Request stream (RZ) Instore Transport

Byte 5
Reserved

Byte 6
JVM status information:
Bit 0 JVM marked unresettable
Bit 1-7
Reserved

Byte 7
Recovery manager status information:
Bit 0 Indoubt wait = no
Bit 1 Indoubt action = commit
Bit 2 Recovery manager - UOW resolved with indoubt action
Bit 3 Recovery manager - Shunt
Bit 4 Recovery manager - Unshunt
Bit 5 Recovery manager - Indoubt failure
Bit 6 Recovery manager - Resource owner failure
Bit 7 Reserved

166 (Type-C, TCLSNAME, 8 bytes)
The transaction's transaction class name (TRANCLASS). If the transaction was delayed because of the limits set for the transaction class, the elapsed time that the transaction waited can be found in the TCLDELAY field, (owner: DFHTASK, field ID: 126).

The transaction class name field is null if the transaction is not defined in a transaction class.

170 (Type-S, RMITIME, 8 bytes)
The total elapsed time the user task spent in the CICS Resource Manager Interface (RMI) for all the resource managers invoked by the user task, including DB2, IMS (DBCTL), WebSphere MQ, CICS Sockets, and so on.

For information on the related fields for DB2 and IMS (DBCTL), see "DFHDATA fields" on page 246.

For more information, see “RMI elapsed and suspend time” on page 293.

Refer also to “DFHRMI fields” on page 256 for information that can provide additional insight into understanding and interpreting CICS Resource Manager Interface (RMI) performance problems.

171 (Type-S, RMISUSP, 8 bytes)
The elapsed time during which the user task was suspended by the CICS dispatcher domain whilst in the CICS Resource Manager Interface (RMI).

For more information, see “RMI elapsed and suspend time” on page 293 and “Transaction timing fields” on page 287.

For information on the related fields for DB2 and IMS (DBCTL), see “DFHDATA fields” on page 246.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

181 (Type-S, WTEXWAIT, 8 bytes)
The elapsed time the user task waited for one or more ECBs, passed to CICS by the user task using the EXEC CICS WAIT EXTERNAL ECBLIST() command, to be MVS POSTed. The user task can wait on one or more ECBs. If it waits on more than one, the user task becomes dispatchable as soon as one of the ECBs is posted.

For more information, see “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

182 (Type-S, WTCEWAIT, 8 bytes)
The elapsed time the user task waited for:

- One or more ECBs, passed to CICS by the user task using the EXEC CICS WAITCICS ECBLIST command, to be MVS POSTed. The user task can wait on one or more ECBs. If it waits on more than one, the user task becomes dispatchable as soon as one of the ECBs is posted.
- Completion of an event initiated by the same or by another task. The event would normally be the posting, at the expiration time, of a timer-event control area provided in response to an EXEC CICS POST command. The EXEC CICS WAIT EVENT command provides a method of directly giving up control to some other task until the event being waited on is completed.

For more information, see “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

183 (Type-S, ICDELAY, 8 bytes)
The elapsed time that the user task waited as a result of issuing either:

- An interval control EXEC CICS DELAY command for a specified time interval, or
- An interval control EXEC CICS DELAY command for a specified time of day to expire, or
- An interval control EXEC CICS RETRIEVE command with the WAIT option specified.

For more information, see “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

184 (Type-S, GVUPWAIT, 8 bytes)
The elapsed time in which the user task waited as a result of giving up control to another task. A user task can give up control in many ways. Some examples are application programs that use one or more of the following EXEC CICS API or SPI commands:

- Using the EXEC CICS SUSPEND command. This command causes the issuing task to relinquish control to another task of higher or equal dispatching priority. Control is returned to this task as soon as no other task of a higher or equal priority is ready to be dispatched.
- Using the EXEC CICS CHANGE TASK PRIORITY command. This command immediately changes the priority of the issuing task and causes the task to give up control in order for it to be dispatched at its new priority. The task is not redispatched until tasks of higher or equal priority, and that are also dispatchable, have been dispatched.
- Using the EXEC CICS DELAY command with INTERVAL(0). This command causes the issuing task to relinquish control to another task of higher or equal dispatching priority. Control is returned to this task as soon as no other task of a higher or equal priority is ready to be dispatched.
- Using the EXEC CICS POST command requesting notification that a specified time has expired. This command causes the issuing task to relinquish control to give CICS the opportunity to post the time-event control area.
- Using the CICS CICS PERFORM RESETTIME command to synchronize the CICS date and time with the MVS system date and time of day.
- Using the EXEC CICS START TRANSID command with the ATTACH option.

For more information, see “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

190 (Type-C, RRMSURID, 16 bytes)
The RRMS/MVS Unit-of-Recovery Id (URID).

For more general information on the Recoverable Resource Management Services (RRMS), see the *CICS External Interfaces Guide.*

191 (Type-S, RRMSWAIT, 8 bytes)
The elapsed time in which the user task waited indoubt using the MVS resource recovery services (RRS) for transactional EXCI.

For more information, see “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

192 (Type-S, RQRWAIT, 8 bytes)
The elapsed time during which the request receiver user task CIRR (or user specified transaction ID) waited for any outstanding replies to be satisfied.

For more information, see “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (group name: DFHTASK, field ID: 014).

193 (Type-S, RQPWAIT, 8 bytes)
The elapsed time during which the request processor user task CIRP waited for any outstanding replies to be satisfied.

For more information, see “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (group name: DFHTASK, field ID: 014).

194 (Type-C, OTSTID, 128 bytes)
The OTS TID is the Object Transaction Service Transaction ID. It can be used to correlate all the transactions that are part of the same Object Transaction.

195 (Type-S, RUNTRWTT, 8 bytes)
The elapsed time in which the user task waited for completion of a transaction that executed as a result of the user task issuing a CICS BTS run ACQPROCESS or run activity request to execute a process or activity synchronously.

For more information, see “Correlating performance class data” on page 299 and “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

247 (Type-S, DSCHMDLY, 8 bytes)
The elapsed time in which the user task waited for redispatch after a CICS Dispatcher change-TCB mode request was issued by or on behalf of the user task. For example, a change-TCB mode request from a CICS L8 or S8 mode TCB back to the CICS QR mode TCB might have to wait for the QR TCB because another task is currently dispatched on the QR TCB. Ideally the number of CICS dispatcher change-TCB modes should be kept to a minimum. See the section on the “Open transaction environment” on page 295 for more additional information.

For more information, see “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

248 (Type-A, CHMODECT, 4 bytes)
The number of CICS dispatcher domain change-TCB modes issued by or on behalf of the user task. Ideally the number of CICS dispatcher change-TCB modes should be kept to a minimum. This field is not available in CICS Transaction Server for z/OS Version 3.1 or later. See the section on the “Open transaction environment” on page 295 for additional information.

Before CICS Transaction Server Version 3, CHMODECT was the field in the CICS SMF 110 record that contained the count of TCB switches (change modes). In CICS Transaction Server Version 3, the CHMODECT field has been removed and replaced by the composite field DSCHMDLY. This composite field consists of a time and a count: The time portion represents the elapsed time the user task waited for redispatch after change mode requests. For example, a change mode request from an L8 TCB back to the QR TCB may have to wait for the QR TCB because another task is currently dispatched on the QR TCB. The count portion represents the number of change modes and is equivalent to CHMODECT in previous releases.

249 (Type-S, QRMODDLY, 8 bytes)
The elapsed time in which the user task waited for redispatch on the CICS QR

mode TCB. This is an aggregate of the wait times between each wait event completion and the user task being redispatched by the CICS dispatcher domain on the QR mode TCB. See the section on the "Open transaction environment" on page 295 for additional information.

This field is a subset of the wait for redispatch field, DISPWTT (owner: DFHTASK, field ID: 102).

For more information, see "Transaction timing fields" on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

250 (Type-S, MAXOTDLY, 8 bytes)
The elapsed time in which the user task waited to obtain a CICS open mode TCB because the CICS system had reached the limit set by the system parameter, MAXOPENTCBS.

In CICS Transaction Server for z/OS Version 2.1 or earlier this applies to *all* open mode TCBs controlled by the CICS dispatcher domain.

In CICS Transaction Server for z/OS Version 2.2 this applies to L8 mode open TCBs *only*. L8 mode open TCBs are used by task-related user exits that are enabled with the OPENAPI option. This includes the CICS DB2 adaptor when CICS connects to DB2 Version 6 or later. See the section on the "Open transaction environment" on page 295 for more general information.

For more information, see "Transaction timing fields" on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

251 (Type-A, TCBATTCT, 4 bytes)
The number of CICS dispatcher domain TCB attaches issued by or on behalf of the user task. See the section on the "Open transaction environment" on page 295 for additional information.

252 (Type-A, DSTCBHWM, 4 bytes)
The peak number of CICS open TCBs (in TCB modes H8, J8, J9, L8, L9, S8, X8, or X9) that have been allocated to the user task.

253 (Type-S, JVMTIME, 8 bytes)
The total elapsed time that the user task spent in the CICS Java Virtual Machine (JVM).

For more information, see "JVM elapsed and suspend time" on page 295.

254 (Type-S, JVMSUSP, 8 bytes)
The elapsed time during which the user task was suspended by the CICS dispatcher domain while running in the CICS Java Virtual Machine (JVM).

For more information, see "JVM elapsed and suspend time" on page 295 and "Transaction timing fields" on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

255 (Type-S, QRDISPT, 8 bytes)
The total elapsed time during which the user task was dispatched by the CICS dispatcher domain on the CICS QR mode TCB.

Note: This field is a component of the total task dispatch time field, USRDISPT (owner: DFHTASK, field ID: 007).

256 (Type-S, QRCPUT, 8 bytes)
The total processor (CPU) time during which the user task was dispatched by the CICS dispatcher domain on the CICS QR mode TCB.

Note: This field is a component of the total task CPU time field, USRCPUT (owner: DFHTASK, field ID: 008).

257 (Type-S, MSDISPT, 8 bytes)
The total elapsed time during which the user task was dispatched by the CICS dispatcher domain on each CICS TCB, mode RO, CO, FO, SZ, RP, SL, SO, SP, D2 and JM. Note that:

- Mode RO is used for opening and closing CICS data sets, loading programs, issuing RACF® calls, and so on.
- Mode CO is used for processes which can safely run in parallel with other CICS activity such as VSAM requests.
- Mode FO is used for opening and closing user data sets.
- Mode SZ is used only if FEPI is active.
- Mode RP is used only if ONC RPC support is active.
- Modes SL, SO and SP are used only if TCPIP=YES is specified as a system initialization parameter. Mode SL is used by the CICS support for TCP/IP (TCP/IP Service) Listener system transaction CSOL. Mode SO is used to process the CICS support for TCP/IP socket requests issued on by or on behalf of the user task. Mode SP is the CICS support for TCP/IP sockets IPT task (Initial Pthread TCB) and also owns all the SSL pthreads (S8 TCBs).
- Mode D2 is used to terminate DB2 protected threads. The CICS-DB2 attachment facility long running system task, CEX2, associates each protected thread in turn to the CICS D2 mode TCB so that after two protected thread purge cycles it can call DB2 to terminate the thread. The protected thread purge cycle is defined in the PURGECYCLE parameter on the DB2CONN resource definition. The CICS D2 mode TCB is also used should a user issue the DSNC DISCONNECT planname command to preempt the purge cycle and cause protected threads for a planname to be terminated immediately.

  Note: Mode D2 is *only* used in CICS Transaction Server for z/OS Version 2.2 or later, when CICS is connected to DB2 Version 6 or later.
- Mode JM is used for the master JVM when the shared class cache is in use.

Note: This field is a component of the total task dispatch time field, USRDISPT (owner: DFHTASK, field ID: 007).

258 (Type-S, MSCPUT, 8 bytes)
The total processor (CPU) time during which the user task was dispatched by the CICS dispatcher on each CICS TCB, mode RO, CO, FO, SZ, RP, SL, SO, SP, D2 and JM.

Note that:

- Mode RO is used for opening and closing CICS data sets, loading programs, issuing RACF calls, and so on.
- Mode CO is used for processes which can safely run in parallel with other CICS activity such as VSAM requests.
- Mode FO is used for opening and closing user data sets.

- Mode SZ is used only if FEPI is active.
- Mode RP is used only if ONC RPC support is active.
- Modes SL, SO and SP are used only if TCPIP=YES is specified as a system initialization parameter. Mode SL is used by the CICS support for TCP/IP (TCP/IP Service) Listener system transaction CSOL. Mode SO is used to process the CICS support for TCP/IP socket requests issued on by or on behalf of the user task. Mode SP is the CICS support for TCP/IP sockets IPT task (Initial Pthread TCB) and also owns all the SSL pthreads (S8 TCBs).
- Mode D2 is used to terminate DB2 protected threads. The CICS-DB2 attachment facility long running system task, CEX2, associates each protected thread in turn to the CICS D2 mode TCB so that after two protected thread purge cycles it can call DB2 to terminate the thread. The protected thread purge cycle is defined in the PURGECYCLE parameter on the DB2CONN resource definition. The CICS D2 mode TCB is also used should a user issue the DSNC DISCONNECT 'planname' command to preempt the purge cycle and cause protected threads for a planname to be terminated immediately.

  Note: Mode D2 is *only* used in CICS Transaction Server for z/OS Version 2.2 when CICS is connected to DB2 Version 6 or later.
- Mode JM is used for the master JVM when the shared class cache is in use.

Note: This field is a component of the total task CPU time field, USRCPUT (owner: DFHTASK, field ID: 008).

259 (Type-S, L8CPUT, 8 bytes)
The processor (CPU) time during which the user task was dispatched by the CICS dispatcher domain on a CICS L8 mode TCB.

In CICS Transaction Server for z/OS Version 2.2 or later, a transaction will be allocated and use a CICS L8 mode TCB when it invokes a task-related user exit program that has been enabled with the OPENAPI option. This includes the CICS DB2 adaptor when CICS connects to DB2 Version 6 or later. However, once a task has been allocated an L8 mode TCB, that same TCB will remain associated with the task until the transaction is detached.

For more information on the CICS open transaction environment (OTE), see the *CICS Application Programming Guide*

For more information on the DB2 accounting and monitoring, see the *CICS DB2 Guide.*

Note: This field is a component of the total task CPU time field, USRCPUT (owner: DFHTASK, field ID: 008) and the task key 8 CPU time field, KY8CPUT (owner: DFHTASK, field ID: 263). See the section on the “Open transaction environment” on page 295 for more information.

260 (Type-S, J8CPUT, 8 bytes)
The processor (CPU) time during which the user task was dispatched by the CICS dispatcher domain on a CICS J8 mode TCB. A transaction will be allocated and use a CICS J8 mode TCB each time the transaction invokes a CICS Java Virtual Machine (JVM) application program. However, once a task has been allocated a J8 mode TCB, that same TCB will remain associated with the task until the transaction is detached.

Note: This field is a component of the total task CPU time field, USRCPUT (owner: DFHTASK, field ID: 008) and the task key 8 CPU time field, KY8CPUT (owner: DFHTASK, field ID: 263).

261 (Type-S, S8CPUT, 8 bytes)
The processor (CPU) time during which the user task was dispatched by the CICS dispatcher domain on a CICS S8 mode TCB. A transaction will be allocated a CICS S8 mode TCB when it is using the secure sockets layer (SSL) during client certification negotiation. For CICS TS 2.3 or earlier, the S8 mode TCB will remain associated with the same task until the secure socket close which normally occurs during task detach processing. For CICS TS 3.1 or later, the S8 mode TCB remains associated with the same task for the life of the SSL request.

Note: This field is a component of the total task CPU time field, USRCPUT (owner: DFHTASK, field ID: 008) and the task key 8 CPU time field, KY8CPUT (owner: DFHTASK, field ID: 263).

262 (Type-S, KY8DISPT, 8 bytes)
The total elapsed time during which the user task was dispatched by the CICS dispatcher domain on a CICS Key 8 mode TCB. A transaction will be allocated and dispatched on a:

- CICS H8 mode TCB when it invokes an HPJ-compiled Java application program that has been defined to use Java hot-pooling.
- CICS J8 mode TCB each time the transaction invokes a Java application program that has been defined with JVM(YES). However, once a task has been allocated a J8 mode TCB, that same TCB will remain associated with the task until the transaction is detached. See the section on the “Open transaction environment” on page 295 for more information.
- CICS L8 mode TCB when it invokes a task-related user exit program that has with the OPENAPI option.

  In CICS Transaction Server for z/OS Version 2.2 or later, this includes the CICS DB2 adaptor when CICS connects to DB2 Version 6 or later. However, once a task has been allocated an L8 mode TCB, that same TCB will remain associated with the task until the transaction is detached.

  For more general information on the CICS open transaction environment (OTE), see the *CICS Application Programming Guide.*
- CICS S8 mode TCB when it is using the secure sockets layer (SSL) during client certification negotiation. The S8 mode TCB will remain associated with the same task until the secure socket close which normally occurs during task detach processing.
- CICS X8 mode TCB when a transaction invokes a C or C++ application program compiled with the XPLINK option on, and that is defined with EXECKEY=CICS. The TCB remains associated with the task until the program ends.

Note: This field is a component of the total task dispatch time field, USRDISPT (owner: DFHTASK, field ID: 007).

263 (Type-S, KY8CPUT, 8 bytes)
The total processor (CPU) time during which the user task was dispatched by the CICS dispatcher domain on a CICS Key 8 mode TCB. A transaction will be allocated and dispatched on a:

- CICS H8 mode TCB when it invokes an HPJ-compiled Java application program that has been defined to use Java hot-pooling.

- CICS J8 mode TCB each time the transaction invokes a Java application program that has been defined with JVM(YES). However, once a task has been allocated a J8 mode TCB, that same TCB will remain associated with the task until the transaction is detached. See the section on the “Open transaction environment” on page 295 for more information.
- CICS L8 mode TCB when it invokes a task-related user exit program that has with the OPENAPI option.

  In CICS Transaction Server for z/OS Version 2.2 or later, this includes the CICS DB2 adaptor when CICS connects to DB2 Version 6 or later. However, once a task has been allocated an L8 mode TCB, that same TCB will remain associated with the task until the transaction is detached.

  For more general information on the CICS open transaction environment (OTE), see the *CICS Application Programming Guide.*
- CICS S8 mode TCB when it is using the secure sockets layer (SSL) during client certification negotiation. The S8 mode TCB will remain associated with the same task until the secure socket close which normally occurs during task detach processing.
- CICS X8 mode TCB when a transaction invokes a C or C++ application program compiled with the XPLINK option on, and that is defined with EXECKEY=CICS. The TCB remains associated with the task until the program ends.

Note: This field is a component of the total task CPU time field, USRCPUT (owner: DFHTASK, field ID: 008).

264 (Type-S, KY9DISPT, 8 bytes)
The total elapsed time during which the user task was dispatched by the CICS dispatcher on a CICS Key 9 mode TCB. A transaction will be allocated and dispatched on a:

- CICS J9 mode TCB when a transaction invokes a Java program defined with EXECKEY=USER, that requires a JVM in user key. (If the storage protection facility is inactive, the transaction is allocated a J8 mode TCB instead of a J9 mode TCB.) The TCB remains associated with the task until the Java program completes.
- CICS L9 mode TCB when a transaction invokes an OPENAPI application program defined with EXECKEY=USER. The TCB remains associated with the task until the transaction is detached.
- CICS X9 mode TCB when a transaction invokes a C or C++ program that was compiled with the XPLINK option, and that is defined with EXECKEY=USER. The TCB remains associated with the task until the program ends.

Note: This field is a component of the task dispatch time field, USRDISPT (owner: DFHTASK, field ID: 007).

265 (Type-S, KY9CPUT, 8 bytes)
The total processor (CPU) time during which the user task was dispatched by the CICS dispatcher on a CICS Key 9 mode TCB. A transaction will be allocated and dispatched on a:

- CICS J9 mode TCB when a transaction invokes a Java program defined with EXECKEY=USER, that requires a JVM in user key. (If the storage protection facility is inactive, the transaction is allocated a J8 mode TCB instead of a J9 mode TCB.) The TCB remains associated with the task until the Java program completes.

- CICS L9 mode TCB when a transaction invokes an OPENAPI application program defined with EXECKEY=USER. The TCB remains associated with the task until the transaction is detached.
- CICS X9 mode TCB when a transaction invokes a C or C++ program that was compiled with the XPLINK option, and that is defined with EXECKEY=USER. The TCB remains associated with the task until the program ends.

Note: This field is a component of the total task CPU time field, USRCPUT (owner: DFHTASK, field ID: 008).

266 (Type-S, L9CPUT, 8 bytes)
The processor time during which the user task was dispatched by the CICS dispatcher domain on a CICS L9 mode TCB. When a transaction invokes an OPENAPI application program defined with EXECKEY=USER, it is allocated and uses a CICS L9 mode TCB. (If the storage protection facility is inactive, an L8 mode TCB is used instead of an L9 mode TCB.) Once a task has been allocated an L9 mode TCB, that same TCB remains associated with the task until the transaction is detached.

For more information on the CICS open transaction environment (OTE), see the *CICS Application Programming Guide.*

Note: This field is a component of the total task CPU time field, USRCPUT (owner: DFHTASK, field ID: 008).

267 (Type-S, J9CPUT, 8 bytes)
The processor time during which the user task was dispatched by the CICS dispatcher domain on a CICS J9 mode TCB. When a transaction invokes a Java program defined with EXECKEY=USER, that requires a JVM in user key, it is allocated and uses a CICS J9 mode TCB. (If the storage protection facility is inactive, a J8 mode TCB is used instead of a J9 mode TCB.) Once a task has been allocated a J9 mode TCB, that same TCB remains associated with the task until the Java program completes.

268 (Type-S, DSTCBMWT, 8 bytes)
The elapsed time which the user task spent in TCB mismatch waits, that is, waiting because there was no TCB available matching the request, but there was at least one non-matching free TCB. For transactions that invoke a Java program to run in a JVM, this shows the time spent waiting for a TCB of the correct mode (J8 or J9) and JVM profile. Refer to *Java Application Development for CICS: Base Services and CORBA Client Support* for more information about how CICS manages TCB mismatch waits for these transactions.

269 (Type-S, RODISPT, 8 bytes)
The total elapsed time during which the user task was dispatched by the CICS dispatcher on the CICS RO mode TCB. The CICS RO mode TCB is used for opening and closing CICS data sets, loading programs, issuing RACF calls, and so on.

Note: This field is a component of the total task dispatch time field, USRDISPT (owner: DFHTASK, field ID: 007) and the task miscellaneous TCB dispatch time field MSDISPT (owner: DFHTASK, field ID: 257).

270 (Type-S, ROCPUT, 8 bytes)
The total processor (CPU) time during which the user task was dispatched by

the CICS dispatcher on the CICS RO mode TCB. The CICS RO mode TCB is used for opening and closing CICS data sets, loading programs, issuing RACF calls, and so on.

Note: This field is a component of the total task CPU time field USRCPUT (owner: DFHTASK, field ID: 008) and the task miscellaneous TCB CPU time field MSCPUT (owner: DFHTASK, field ID: 258).

271 (Type-S, X8CPUT, 8 bytes)
The processor (CPU) time during which the user task was dispatched by the CICS dispatcher domain on a CICS X8 mode TCB. A transaction will be allocated and use a CICS X8 mode TCB each time the transaction invokes a C or C++ application program that has been compiled with the XPLINK flag turned on and that is defined with EXECKEY=CICS. (An X8 mode TCB can also be allocated if the program is defined with EXECKEY=USER, but the storage protection facility is inactive.) Once a task has been allocated an X8 mode TCB, that same TCB remains associated with the task until the program completes.

Note: This field is a component of the total task CPU time field USRCPUT (owner: DFHTASK, field ID: 008) and the task key 8 CPU time field KY8CPUT (owner: DFHTASK, field ID: 263).

272 (Type-S, X9CPUT, 8 bytes)
The processor (CPU) time during which the user task was dispatched by the CICS dispatcher domain on a CICS X9 mode TCB. A transaction will be allocated and use a CICS X9 mode TCB each time the transaction invokes a C or C++ application program that has been compiled with the XPLINK flag turned on, and that is defined with EXECKEY=USER, it is allocated and uses a CICS X9 mode TCB. (If the storage protection facility is inactive, an X8 mode TCB is used instead of an X9 mode TCB.) Once a task has been allocated an X9 mode TCB, that same TCB remains associated with the task until the program completes.

Note: This field is a component of the total task CPU time field USRCPUT (owner: DFHTASK, field ID: 008) and the task key 9 CPU time field KY9CPUT (owner: DFHTASK, field ID: 265).

273 (Type-S, JVMITIME, 8 bytes)
The elapsed time the user task spent initializing the CICS Java Virtual Machine (JVM) environment.

For more information, see “JVM elapsed and suspend time” on page 295.

Note: This field is a component of the task JVM elapsed time field JVMTIME (owner: DFHTASK, field ID: 253).

275 (Type-S, JVMRTIME, 8 bytes)
The elapsed time the user task spent resetting or destroying the CICS Java Virtual Machine (JVM) environment. If the reset fails, the JVM is marked un-resettable and the JVM is terminated.

For more information, see “JVM elapsed and suspend time” on page 295.

Note: This field is a component of the task JVM elapsed time field JVMTIME (owner: DFHTASK, field ID: 253).

277 (Type-S, MAXJTDLY, 8 bytes)
The elapsed time in which the user task waited to obtain a CICS JVM TCB (J8 or J9 mode), because the CICS system had reached the limit set by the system

parameter, MAXJVMTCBS. The J8 and J9 mode open TCBs are used exclusively by Java programs defined with JVM(YES).

For more information, see “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time (field: SUSPTIME, owner: DFHTASK, field ID: 014).

278 (Type-S, MAXHTDLY, 8 bytes)
The elapsed time in which the user task waited to obtain a CICS Hot-Pooling TCB (H8 mode), because the CICS system had reached the limit set by the system parameter, MAXHPTCBS. The H8 mode open TCBs are used exclusively by HPJ-compiled Java programs defined with HOTPOOL(YES). This field is not available in CICS Transaction Server for z/OS Version 3.1 or later.

For more information, see “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time (field: SUSPTIME, owner: DFHTASK, field ID: 014).

279 (Type-S, DSMMSCWT, 8 bytes)
The elapsed time which the user task spent waiting because no TCB was available, and none could be created because of MVS storage constraints.

Note: This field is a component of the task suspend time (field: SUSPTIME, owner: DFHTASK, field ID: 014).

281 (Type-S, MAXSTDLY, 8 bytes)
The elapsed time in which the user task waited to obtain a CICS SSL TCB (S8 mode), because the CICS system had reached the limit set by the system parameter, MAXSSLTCBS. The S8 mode open TCBs are used exclusively by secure sockets layer (SSL) pthread requests issued by or on behalf of a user task. For more information, see “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time (field: SUSPTIME, owner: DFHTASK, field ID: 014).

282 (Type-S, MAXXTDLY, 8 bytes)
The elapsed time in which the user task waited to obtain a CICS XPLink TCB (X8 or X9 mode), because the CICS system had reached the limit set by the system parameter, MAXXPTCBS. The X8 and X9 mode open TCBs are used exclusively by C or C++ programs compiled with the XPLINK flag turned on. For more information, see “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time (field: SUSPTIME, owner: DFHTASK, field ID: 014).

285 (Type-S, PTPWAIT, 8 bytes)
The elapsed time in which the user task waited for the 3270 bridge partner transaction to complete. For more information on the CICS 3270 Bridge, see the *CICS External Interfaces Guide*.

For more information, see “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time (field: SUSPTIME, owner: DFHTASK, field ID: 014).

345 (Type-A, ICSTACDL, 4 bytes)
The total length, in bytes, of the data in the containers of all the

locally-executed interval control START requests, with the CHANNEL option, issued by the user task. This total includes the length of any headers to the data.

346 (Type-A, ICSTRCCT, 4 bytes)
The number of interval control START requests, with the CHANNEL option, to be executed on remote systems issued by the user task.

347 (Type-A, ICSTRCDL, 4 bytes)
The total length, in bytes, of the data in the containers of all the remotely-executed interval control START requests, with the CHANNEL option, issued by the user task. This total includes the length of any headers to the data.

DFHTEMP fields

For a breakdown by individual temporary storage queue of some of the DFHTEMP information, you can request transaction resource monitoring. See “Temporary storage queue entry fields” on page 314 for details.

DFHTEMP owns the following performance class data fields:

011 (Type-S, TSIOWTT, 8 bytes)
The elapsed time in which the user task waited for VSAM I/O to the auxiliary temporary storage data set, DFHTEMP.

For more information, see “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time (field: SUSPTIME, owner: DFHTASK, field ID: 014).

044 (Type-A, TSGETCT, 4 bytes)
The number of temporary storage READQ requests issued by the user task.

046 (Type-A, TSPUTACT, 4 bytes)
The number of temporary storage WRITEQ AUX requests issued by the user task.

047 (Type-A, TSPUTMCT, 4 bytes)
The number of temporary storage WRITEQ MAIN requests issued by the user task.

092 (Type-A, TSTOTCT, 4 bytes)
The total number of temporary storage DELETEQ, READQ, WRITEQ AUX and WRITEQ MAIN requests issued by the user task.

Note: The number of temporary storage DELETEQ requests can be calculated by subtracting the temporary storage request counts TSGETCT, TSPUTACT, and TSPUTMCT from the total temporary storage request count, TSTOTCT.

178 (Type-S, TSSHWAIT, 8 bytes)
The elapsed time in which the user task waited for an asynchronous shared temporary storage request to a temporary storage data server to complete.

For more information, see “Transaction timing fields” on page 287.

See the *CICS System Definition Guide* for more information on the CICS data servers.

Note: This field is a component of the task suspend time (field: SUSPTIME, owner: DFHTASK, field ID: 014).

DFHTERM fields

DFHTERM owns the following performance class data fields:

002 (Type-C, TERM, 4 bytes)
Terminal or session identification. This field is null if the task is not associated with a terminal or session.

See the terminal information field, TERMINFO (owner: DFHTERM, field ID: 165) for details on the type of terminal or session.

009 (Type-S, TCIOWTT, 8 bytes)
The elapsed time in which the user task waited for input from the terminal user, after issuing an EXEC CICS RECEIVE request.

For more information, see “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

034 (Type-A, TCMSGIN1, 4 bytes)
The number of messages received from the task’s principal terminal facility, including LUTYPE6.1 and LUTYPE6.2 (APPC) but not MRO (Inter-Region Communication).

035 (Type-A, TCMSGOU1, 4 bytes)
The number of messages sent to the task’s principal terminal facility, including LUTYPE6.1 and LUTYPE6.2 (APPC) but not MRO (Inter-Region Communication).

067 (Type-A, TCMSGIN2, 4 bytes)
The number of messages received from the LUTYPE6.1 alternate terminal facilities allocated by the user task.

068 (Type-A, TCMSGOU2, 4 bytes)
The number of messages sent to the LUTYPE6.1 alternate terminal facilities allocated by the user task.

069 (Type-A, TCALLOCT, 4 bytes)
The number of session ALLOCATE requests issued by the user task for MRO (Inter-Region Communication), LUTYPE6.1, LUTYPE6.2 (APPC) sessions.

083 (Type-A, TCCHRIN1, 4 bytes)
The number of characters received from the task’s principal terminal facility, including LUTYPE6.1 and LUTYPE6.2 (APPC) but not MRO (Inter-Region Communication).

084 (Type-A, TCCHROU1, 4 bytes)
The number of characters sent to the task’s principal terminal facility, including LUTYPE6.1 and LUTYPE6.2 (APPC) but not MRO (Inter-Region Communication).

085 (Type-A, TCCHRIN2, 4 bytes)
The number of characters received from the LUTYPE6.1 alternate terminal facilities allocated by the user task.

086 (Type-A, TCCHROU2, 4 bytes)
The number of characters sent to the LUTYPE6.1 alternate terminal facilities allocated by the user task.

100 (Type-S, IRIOWTT, 8 bytes)
The elapsed time in which the user task waited for control to return at this end of an MRO (Inter-Region Communication) connection.

For more information, see “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

111 (Type-C, LUNAME, 8 bytes)
The LUNAME field is either the VTAM netname (LUname) of the terminal ID (if the Access Method for the terminal is VTAM) or the VTAM generic APPLID of the connection for the session ID (for an EXCI connection this field will be blank). The transaction's terminal or session type can be identified from the Nature (byte 0) field within the terminal information TERMINFO field (owner: DFHTERM, field ID: 165), see Table 26 on page 283 for details. This field is null if the transaction was not associated with a terminal or session facility.

133 (Type-S, LU61WTT, 8 bytes)
The elapsed time in which the user task waited for I/O on a LUTYPE6.1 connection or session. This time includes the waits for conversations across LUTYPE6.1 connections, but not the waits incurred due to LUTYPE6.1 syncpoint flows.

For more information, see “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

134 (Type-S, LU62WTT, 8 bytes)
The elapsed time in which the user task waited for I/O on a LUTYPE6.2 connection or session. This time includes the waits for conversations across LUTYPE6.2 (APPC) connections, but not the waits incurred due to LUTYPE6.2 (APPC) syncpoint flows.

For more information, see “Transaction timing fields” on page 287.

Note: This field is a component of the task suspend time field, SUSPTIME (owner: DFHTASK, field ID: 014).

135 (Type-A, TCM62IN2, 4 bytes)
The number of messages received from the alternate facility allocated by the user task for LUTYPE6.2 (APPC) sessions.

136 (Type-A, TCM62OU2, 4 bytes)
The number of messages sent to the alternate facility allocated by the user task for LUTYPE6.2 (APPC) sessions.

137 (Type-A, TCC62IN2, 4 bytes)
The number of characters received from the alternate facility allocated by the user task for LUTYPE6.2 (APPC) sessions.

138 (Type-A, TCC62OU2, 4 bytes)
The number of characters sent to the alternate facility allocated by the user task for LUTYPE6.2 (APPC) sessions.

165 (Type-A, TERMINFO, 4 bytes)
Terminal or session information for this task’s principal facility as identified in the TERM field (owner: DFHTERM, field ID: 002). This field is null if the task is not associated with a terminal or session facility.

Byte 0
Identifies whether this task is associated with a terminal or session. This field can be set to one of the following values:
X'00' None

X'01' Terminal
X'02' Session

Byte 1

If the principal facility for this task is a session (Byte 0 = X'02'), this field IDentifies the session type. This field can be set to one of the following values:
X'00' None
X'01' IRC
X'02' IRC XM
X'03' IRC XCF
X'04' LU61
X'05' LU62 Single
X'06' LU62 Parallel

Byte 2

Identifies the access method defined for the terminal ID or session ID in the TERM field. This field can be set to one of the following values:
X'00' None
X'01' VTAM
X'02' BTAM
X'03' BSAM
X'04' TCAM
X'05' TCAMSNA
X'06' BGAM
X'07' CONSOLE

Byte 3

Identifies the terminal or session type for the terminal ID or session ID in the TERM field. See the RDO Typeterm definition in the *CICS Resource Definition Guide* for more information on the values in this field.

Table 26 shows the contents and relationships of the terminal information field, TERMINFO (owner: DFHTERM, field ID: 165) with the transaction facility name field, FCTYNAME (owner: DFHTASK, field ID: 163), the terminal ID field, TERM (owner: DFHTERM, field ID: 002), the LUname field, LUNAME (owner: DFHTERM, field ID: 111), and the terminal session connection name field, TERMCNNM (owner: DFHTERM, field ID: 169).

Table 26. Terminal information cross-reference

TRANFLAG (byte 0)	TERMINFO (byte 0)	TERMINFO (byte 1)	TERMINFO (byte 2)	FCTYNAME	TERM	LUNAME	TERMCNNM
None X'80'	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Terminal X'40'	Terminal X'01'	N/A	Access Method	Terminal ID	Terminal ID	LUname of the terminal if VTAM	N/A
Terminal X'40'	Session X'02'	Session type	Access Method	Session ID	Session ID	MRO - APPLID of the connection LU61 - APPLID of the connection LU62 - APPLID of the connection EXCI - Blank	IRC/ISC system entry name
Surrogate X'20'	Session X'02'	Session type	Access Method	Session ID	Session ID	MRO - APPLID of the connection LU61 - APPLID of the connection LU62 - APPLID of the connection EXCI - Blank	IRC/ISC system entry name
Destination X'10'	None X'00'	N/A	N/A	Destination ID	N/A	N/A	N/A
Bridge X'48'	Terminal X'01'	N/A	Access Method (VTAM)	Bridge Terminal ID	Bridge Terminal ID	Bridge Terminal ID	N/A

Note: byte 0 of the transaction flags field, TRANFLAG (owner: DFHTASK, field ID: 164) can be used to initially identify whether the transaction has a facility and what type of facility it is (such as terminal or transient data destination).

169 (Type-C, TERMCNNM, 4 bytes)
Terminal session connection name. If the terminal facility associated with this transaction is a session, this field is the name of the owning connection (sysid).

A terminal facility can be identified as a session using byte 0 of the terminal information field, see Table 26 on page 283, (owner: DFHTERM, field ID: 165). If the value of the terminal information field is X'02' the terminal facility is a session.

197 (Type-C, NETID, 8 bytes)
The network ID field, NETID, is the network ID portion of the Network Qualified Name (NQNAME) received from VTAM during bind or logon for CICS terminal resources using any VTAM LUALIAS (defined or dynamic). If the resource has not logged on or an NQNAME was not received then this field will be set to null.

198 (Type-C, RLUNAME, 8 bytes)
The Real LUname field, RLUNAME, is the VTAM netname (LUname) of the terminal ID for CICS terminal resources using any VTAM LUALIAS (defined or dynamic). If the resource has not logged on or an NQNAME was not received, then this field will be set to null. Also, see the field, LUNAME (owner: DFHTERM, field ID: 111).

DFHWEBB fields

DFHWEBB owns the following performance class data fields. See the related performance data for “DFHDOCH fields” on page 249 and “DFHSOCK fields” on page 257.

For more information, see “CICS Web support” on page 301 and the *CICS Internet Guide.*

224 (Type-A, WBREADCT, 4 bytes)
The number of CICS Web support READ HTTPHEADER and FORMFIELD requests issued by the user task when CICS is an HTTP server.

225 (Type-A, WBWRITCT, 4 bytes)
The number of CICS (as an HTTP server) Web support WRITE HTTPHEADER and FORMFIELD requests issued by the user task when CICS is an HTTP server.

231 (Type-A, WBRCVCT, 4 bytes)
The number of CICS Web support RECEIVE requests issued by the user task when CICS is an HTTP server.

232 (Type-A, WBCHRIN, 4 bytes)
The number of characters received by the CICS Web support RECEIVE requests issued by the user task when CICS is an HTTP server.

233 (Type-A, WBSENDCT, 4 bytes)
The number of CICS Web support SEND requests issued by the user task when CICS is an HTTP server.

234 (Type-A, WBCHROUT, 4 bytes)
The number of characters sent by the CICS Web support SEND requests issued by the user task when CICS is an HTTP server.

235 (Type-A, WBTOTCT, 4 bytes)
The total number of CICS Web support requests issued by the user task.

How the EXEC CICS WEB API commands correspond to the CICS Web monitoring fields is shown in Table 27.

Table 27. EXEC CICS WEB commands related to the CWS monitoring fields

EXEC CICS WEB command	Monitoring fields
CLOSE	WBTOTCT
CONVERSE	WBSNDOU1, WBRCVIN1, and WBTOTCT
ENDBROWSE	WBBRWCT and WBTOTCT
EXTRACT	WBEXTRCT and WBTOTCT
OPEN	WBTOTCT
PARSE URL	WBPARSCT and WBTOTCT
READ	WBREADCT and WBTOTCT
READNEXT	WBBRWCT and WBTOTCT
RECEIVE	WBRCVCT and WBTOTCT
RETRIEVE	WBTOTCT
SEND	WBSENDCT and WBTOTCT
STARTBROWSE	WBBRWCT and WBTOTCT
WRITE	WBWRITCT and WBTOTCT

Notes:

1. For CICS Transaction Server for OS/390, Version 1 Release 3, the number of “other” CICS Web support requests can be calculated by subtracting the CICS Web support requests WBBRWCT, WBEXTRCT, WBRCVCT and WBSENDCT from the total CICS Web support request count, WBTOTCT. This calculated “other” request count will include the CICS Web support requests such as START, BROWSE, READNEXT, HTTPHEADER/ FORMFIELD, ENDBROWSE, EXTRACT, READ FORMFIELD, READ HTTPHEADER, RETRIEVE, WRITE HTTPHEADER, and so on.
2. When requests are made using the CICS WEB CONVERSE command, this will increment both the CICS as an HTTP client send and receive request counts (WBSNDOU1 and WBRCVIN1) and the characters sent and received (WBCHRIN1 and WBCHROU1).

Note:

236 (Type-A, WBREPRCT, 4 bytes)
The number of reads from the repository in temporary storage issued by the user task.

Note: These repository requests will also be included in the temporary storage request counts as defined in “DFHTEMP fields” on page 280.

237 (Type-A, WBREPWCT, 4 bytes)
The number of writes to the repository in temporary storage issued by the user task.

Note: These repository requests will also be included in the temporary storage request counts as defined in “DFHTEMP fields” on page 280.

238 (Type-A, WBEXTRCT, 4 bytes)
The number of CICS Web support EXTRACT requests issued by the user task. Also, see the field, SOEXTRCT (owner: DFHSOCK, field ID: 289).

239 (Type-A, WBBRWCT, 4 bytes)
The number of CICS Web support BROWSE HTTPHEADER and FORMFIELD requests (STARTBROWSE, READNEXT, and ENDBROWSE) issued by the user task.

331 (Type-A, WBREDOCT, 4 bytes)
The number of CICS Web support READ HTTPHEADER requests issued by the user task when CICS is an HTTP client.

332 (Type-A, WBWRTOCT, 4 bytes)
The number of CICS Web support WRITE HTTPHEADER requests issued by the user task when CICS is an HTTP client.

333 (Type-A, WBRCVIN1, 4 bytes)
The number of CICS Web support RECEIVE and CONVERSE requests issued by the user task when CICS is an HTTP client.

334 (Type-A, WBCHRIN1, 4 bytes)
The number of characters received by the CICS Web support RECEIVE and CONVERSE requests issued by the user task when CICS is an HTTP client.

335 (Type-A, WBSNDOU1, 4 bytes)
The number of CICS Web support SEND and CONVERSE requests issued by the user task when CICS is an HTTP client.

336 (Type-A, WBCHROU1, 4 bytes)
The number of characters sent by the CICS Web support SEND and CONVERSE requests issued by the user task when CICS is an HTTP client.

337 (Type-A, WBPARSCT, 4 bytes)
The number of CICS Web support PARSE URL requests issued by the user task when CICS is an HTTP client.

338 (Type-A, WBBRWOCT, 4 bytes)
The number of CICS Web support BROWSE HTTPHEADER requests (STARTBROWSE, READNEXT, and ENDBROWSE) issued by the user task when CICS is an HTTP client.

340 (Type-A, WBIWBSCT, 4 bytes)
The number of CICS INVOKE WEBSERVICE requests issued by the user task.

341 (Type-A, WBREPRDL, 4 bytes)
The total length, in bytes, of the data read from the repository in temporary storage by the user task.

342 (Type-A, WBREPWDL, 4 bytes)
The total length, in bytes, of the data written to the repository in temporary storage by the user task.

Interpreting performance class data

A user task can be represented by one or more performance class monitoring records depending on whether the monitoring system initialization parameters MNCONV, MNSYNC, or MNFREQ are selected and whether an application program invokes a user event monitoring point (EMP) with the DELIVER option specified. In the descriptions that follow, the term *user task* means *that part or whole of a transaction that is represented by a performance class record* unless the description states otherwise.

Clocks and time stamps

In CICS PA, the term *clock* is distinguished from the term *time stamp:*

Clock A 32-bit value, expressed in units of 16 microseconds, accumulated during one or more measurement periods. The 32-bit value is followed by 8 reserved bits, which are in turn followed by a 24-bit value indicating the number of measurements periods.

Neither the 32-bit timer component of the clock nor its 24-bit period count are protected against wraparound. The timer capacity is about 18 hours, and the period count runs to modulo-16 777 216.

The eight reserved bits have the following significance:

Bits 0, 1, 2, and 3
Used for online control of the clock when it is running, and should always be zero on output.

Bits 4 and 7
Not used.

Bits 5 and 6
Used to indicate, when set to 1, that the clock has suffered at least one out-of-phase start (bit 5) or stop (bit 6).

Time Stamp
An 8-byte copy of the output of a STCK instruction.

Transaction timing fields

The CMF performance class record provides detailed timing information for each transaction as it is processed by CICS. A transaction can be represented by one or more performance class records depending on the monitoring options selected. The key transaction timing fields are:

Transaction response time
Calculated by subtracting the transaction Start time from the transaction Stop time. The transaction Start time and Stop time represent the start and end of a transaction measurement interval. This is normally the period between transaction attach and transaction detach but the performance class record could represent a part of a transaction depending on the monitoring options selected. See “Transaction response time” on page 289 for more information.

Transaction dispatch time
The elapsed time that the transaction was dispatched by the CICS dispatcher domain. See “Transaction dispatch time” on page 289 for more information.

Transaction CPU time
The amount of processor (CPU) time used during the execution of the task while it is dispatched. See “Transaction CPU time” on page 289 for more information.

Transaction suspend (wait) time
The total elapsed time that the transaction was suspended by the CICS dispatcher domain. This includes all task suspend (wait) time including:

- The wait time for first dispatch (First Dispatch Delay). This is then further broken down into:
  - First Dispatch Delay due to TRANCLASS limits.
  - First Dispatch Delay due to MXT limits.
- The wait time for redispatch (Dispatch Wait). This is the time the transaction was still suspended but awaiting dispatch (wait for redispatch) by the CICS dispatcher domain.
- The total I/O wait and other wait times.

See “Transaction suspend (wait) time” on page 289 for more information.

For detailed information on all the fields relating to the CICS dispatcher domain including the CICS open transaction environment (OTE), see 262.

The CMF performance class data also provides several other important transaction timing measurements. They include:

Exception wait time
The accumulated time from all the exception conditions measured by the CMF exception class records for the transaction. See “CMF exception class data fields” on page 303 for more information on the CMF exception class records.

Program load time
The total program fetch time (dispatch time, CPU time and DFHRPL I/O wait time) for all programs invoked by the transaction that have to be loaded into CICS program storage from the DFHRPL program library. See “Program load time” on page 292 for more information.

Syncpoint elapsed time
The total elapsed time that the transaction spent processing a syncpoint. See “Syncpoint elapsed time” on page 293 for more information. The OTS indoubt wait time is the total elapsed time the transaction spent indoubt whilst processing an Object Transaction Service (OTS) syncpoint.

RMI elapsed time
The total elapsed time the transaction spent in all Resource Managers (such as DB2, IMS DBCTL, WebSphere MQ) invoked by the transaction using the CICS Resource Manager Interface (RMI). See “RMI elapsed and suspend time” on page 293 for more information.

JVM elapsed time
The total elapsed time the transaction spent in the Java Virtual Machine (JVM) for all the CICS Java application programs invoked by the transaction. See “JVM elapsed and suspend time” on page 295 for more information.

JVM initialization time
The elapsed time the transaction spent initializing the Java Virtual Machine (JVM) for all the CICS Java application programs invoked by the transaction. See “JVM elapsed and suspend time” on page 295 for more information.

JVM reset time
The elapsed time the transaction spent resetting the Java Virtual Machine (JVM) for all the CICS Java application programs invoked by the transaction. See “JVM elapsed and suspend time” on page 295 for more information.

Transaction response time

The transaction response time can be calculated by subtracting the transaction start time field (owner: DFHCICS, field ID: 005) from the transaction stop time field (owner: DFHCICS, field ID: 006).

Figure 91 shows an overall view of the relationship of the transaction response time with the transaction's dispatch time, CPU time, and suspend (wait) time.

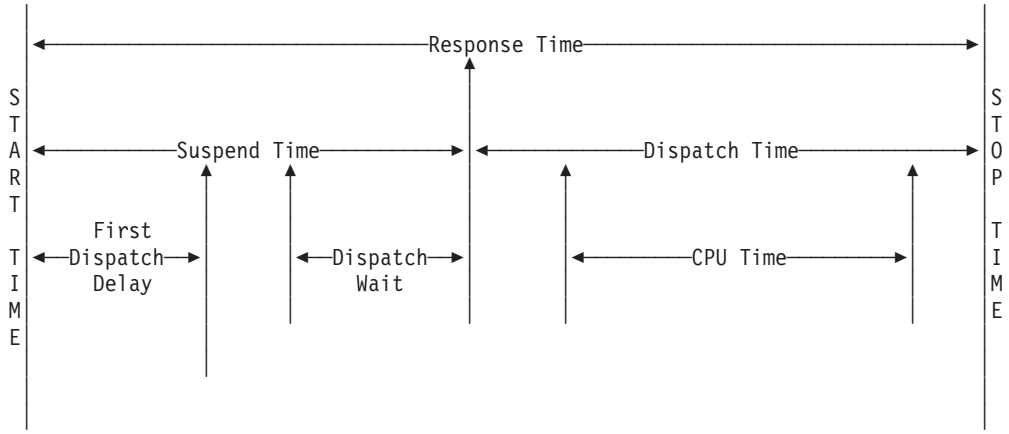


Figure 91. Transaction response time relationships

Transaction dispatch time

The Transaction Total Dispatch time field (owner: DFHTASK, field ID: 007) is the total elapsed time during which the user task was dispatched by the CICS dispatcher domain on each CICS TCB under which the task executed. This can include any of the CICS dispatcher domain TCB modes QR, RO, CO, FO, SZ, RP, SL, SO, SP, D2, H8, J8, L8, L9, S8, X8 and X9.

Transaction CPU time

The transaction total CPU time field (owner: DFHTASK, field ID: 008) is the total processor time during which the user task was dispatched by the CICS dispatcher domain on each CICS TCB under which the task executed. This can include any of the CICS dispatcher domain TCB modes QR, RO, CO, FO, SZ, RP, SL, SO, SP, D2, H8, J8, L8, L9, S8, X8 and X9.

Transaction suspend (wait) time

The transaction suspend (wait) time field (owner: DFHTASK, field ID: 014) is the total elapsed suspend (wait) time for which the user task was suspended by the CICS dispatcher domain. This includes:

- The task suspend (wait) time.
- The elapsed time the transaction waited for it's first dispatch by the CICS dispatcher domain. This also includes any delay incurred because of the limits set for this transaction's transaction class (if any) or by the system parameter MXT being reached by this transaction.
- The elapsed time waiting for redispatch after a suspended task has been resumed.

Table 28 on page 290 identifies all the individual or specific suspend (wait) fields that are collected in the performance class data. All the suspend (wait) time fields

listed are included in the total transaction suspend time field (owner: DFHTASK, field ID: 014). Each of the individual suspend (wait) time fields also contains a portion of the transaction's dispatch wait (wait for redispatch) time field (owner: DFHTASK, field ID: 102).

Table 28. Performance class suspend (wait) time fields

field ID	Owner	Field Description
009	DFHTERM	Terminal Control I/O wait time
010	DFHJOUR	Journal Control I/O wait time
011	DFHTEMP	Temporary Storage I/O wait time
063	DFHFILE	File Control I/O wait time
100	DFHTERM	Inter-Region (MRO) I/O wait time
101	DFHDEST	Transient Data I/O wait time
123	DFHTASK	Global ENQ delay time
128	DFHTASK	Lock Manager (LM) delay time
129	DFHTASK	Local ENQ delay time
133	DFHTERM	LU 6.1 I/O wait time
134	DFHTERM	LU 6.2 I/O wait time
156	DFHFEPI	FEPI I/O wait time
171	DFHTASK	RMI suspend time
174	DFHFILE	RLS File I/O wait time
176	DFHFILE	Coupling facility data table server I/O wait time
177	DFHSYNC	Coupling facility data table server syncpoint and resynchronization wait time
178	DFHTEMP	Shared Temporary Storage I/O wait time
181	DFHTASK	EXEC CICS WAIT EXTERNAL wait time
182	DFHTASK	EXEC CICS WAITCICS and EXEC CICS WAIT EVENT wait time
183	DFHTASK	Interval Control delay time
184	DFHTASK	Dispatchable Wait's wait time
186	DFHDATA	IMS (DBCTL) wait time
187	DFHDATA	DB2 ready queue wait time
188	DFHDATA	DB2 connection wait time
189	DFHDATA	DB2 wait time
191	DFHTASK	RRMS/MVS Indoubt wait time
192	DFHTASK	Request Receiver wait time
193	DFHTASK	Request Processor wait time
195	DFHTASK	CICS BTS Run transaction synchronous wait time
196	DFHSYNC	CICS BTS Syncpoint delay time
241	DFHSOCK	Inbound Socket I/O wait time
247	DFHTASK	CICS change-TCB mode delay time
250	DFHTASK	CICS MAXOPENTCBS delay time
254	DFHTASK	Java Virtual Machine (JVM) suspend time
268	DFHTASK	TCB mismatch wait time

Table 28. Performance class suspend (wait) time fields (continued)

field ID	Owner	Field Description
277	DFHTASK	CICS MAXJVMTCBS delay time
278	DFHTASK	CICS MAXHPTCBS delay time
279	DFHTASK	MVS storage constraint wait time
281	DFHTASK	CICS MAXSSLTCBS delay time
282	DFHTASK	CICS MAXXPTCBS delay time
285	DFHTASK	3270 bridge partner wait time
299	DFHSOCK	Outbound Socket I/O wait time

The performance class data fields listed in Table 28 on page 290 all record the elapsed time waiting for a particular type of I/O operation or transaction suspend (wait). For example, DFHTERM field ID 009 records the elapsed time waiting for terminal I/O. The elapsed time includes not only the time during which the I/O operation is actually taking place, but also the time during which the access method is completing the outstanding event control block, and the time subsequent to that until the waiting transaction is redispatched by the CICS dispatcher domain.

Figure 92 shows a representation of the relationship of a typical transaction's wait time field with the suspend (wait) time, the dispatch time, CPU time and dispatch wait time (wait for redispatch) fields.

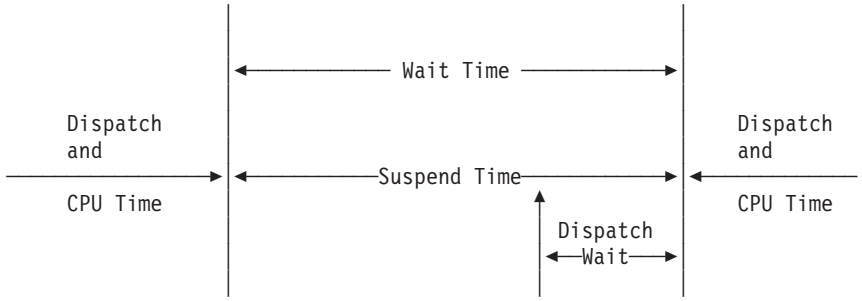


Figure 92. Suspend (wait) time relationships

Calculated fields: In the examples that follow, a number of calculations are shown that can be performed using the transaction's total suspend (wait) time field and the individual suspend (wait) time fields.

Total I/O wait time: Total I/O wait time =
(Terminal I/O wait time +
Temporary Storage I/O wait time +
Shared Temporary Storage I/O wait time +
Transient Data I/O wait time +
Journal (MVS Logger) I/O wait time +
File I/O wait time +
RLS File I/O wait time +
Coupling Facility Data Table I/O wait time +
Inbound Socket I/O wait time +
Outbound Socket I/O wait time +
Inter-Region (MRO) I/O wait time +
LU 6.1 I/O wait time +

LU 6.2 I/O wait time +
FEPI I/O wait time)

Total Other wait time: Total Other wait time =
(First Dispatch delay time +
CICS MAXHPTCBS delay time +
CICS MAXJVMTCBS delay time +
CICS MAXOPENTCBS delay time +
Local ENQ delay time +
Global ENQ delay time +
Interval Control delay time +
Lock Manager (LM) delay time +
EXEC CICS WAIT EXTERNAL wait time +
EXEC CICS WAITCICS wait time +
Request Receiver wait time +
Request Processor wait time +
CICS MAXSSLTCBS delay time +
CICS MAXXPTCBS delay time +
CICS change-TCB mode delay time +
RRMS/MVS indoubt wait time +
3270 bridge partner wait time +
Coupling Facility Data Table (CFDT) server syncpoint wait time +
CICS BTS Run Transaction synchronous wait time +
CICS BTS Syncpoint delay time +
RMI suspend time +
JVM suspend time +
TCB mismatch wait time +
MVS storage constraint wait time +
Dispatchable Wait's wait time)

Notes:

1. The First Dispatch Delay field includes the MXT Delay and TRANCLASS delay fields.
2. The RMI Suspend Time field includes:
   - DB2 READYQ wait time
   - DB2 connection wait time
   - DB2 wait time
   - IMS wait time.

   See “RMI elapsed and suspend time” on page 293 for further information.

Unaccounted (Uncaptured) wait time: The *unaccounted wait time* is the amount of transaction suspend (wait) time that is not specifically measured in an individual wait time field.

Unaccounted wait time =
(Suspend time - (Total I/O wait time + Total Other wait time))

Exception wait time

The exception wait time field, EXWTTIME (owner: DFHCICS, field ID: 103) is the accumulated time from all the exception conditions measured by the CMF exception class records for the transaction. For more information on the exception class records, see “CMF exception class data fields” on page 303.

Program load time

The program load time is the total elapsed time during which the user task waited for program fetches from the DFHRPL program library. Only fetches for programs

with installed program definitions or autoinstalled as a result of application program requests are included in this figure. Installed programs residing in the LPA are not included because they do not incur a physical fetch from a program library.

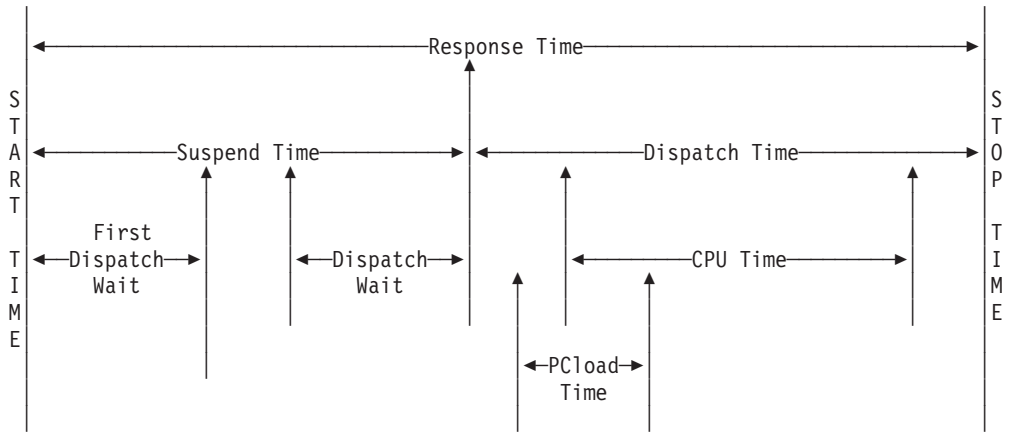


Figure 93. Program load time

Figure 93 shows an example of the relationship between the program load time field (owner: DFHPROG, field ID: 115) and the transaction dispatch time (owner: DFHTASK, field ID: 007) and the transaction suspend time (owner: DFHTASK, field ID: 014).

Syncpoint elapsed time

The performance class data includes a number of timing fields relating to the syncpoint processing performed by a transaction. These data fields include the following:

- Syncpoint elapsed time
- Coupling Facility Data Table (CFDT) server syncpoint time
- CICS Business Transaction Services (BTS) syncpoint delay time
- Object Transaction Services (OTS) indoubt wait time

These fields provide an in depth understanding of the amount of time a transaction spends processing syncpoints and the wait time for coupling facility data table server, CICS BTS syncpoint requests, and OTS indoubt time.

In particular, the CICS BTS syncpoint delay time field, SYNCDLY (owner: DFHSYNC, field ID: 196) can be used to determine the amount of time a transaction is suspended waiting for the syncpoint from the invoking (parent) transaction and should be analyzed in conjunction with the CICS BTS run transaction (ACQPROCESS or activity) wait time field (owner: DFHTASK, field ID: 195) from the invoking transaction to fully understand the syncpoint delay time in the correct context.

RMI elapsed and suspend time

Figure 94 on page 294 shows an example of the relationship between the CICS Resource Manager Interface (RMI) elapsed and suspend time fields (owner: DFHTASK, field IDs: 170 and 171), the transaction dispatch time (owner: DFHTASK, field ID: 007) and the transaction suspend time (owner: DFHTASK, field ID: 014).

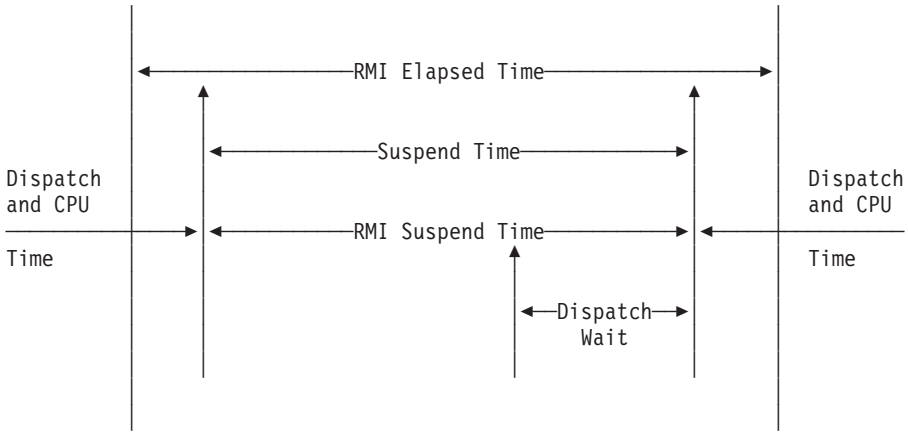


Figure 94. CICS Resource Manager Interface (RMI) elapsed and suspend time

When investigating performance problems relating to the CICS Resource Manager Interface (RMI) you will find it helpful in assisting your interpretation of the RMI timing fields if you have some knowledge of how CICS resource managers, such as DB2, IMS (DBCTL), WebSphere MQ, or user written, are being used by your CICS applications.

If an application invokes a CICS resource manager that in turn invokes another CICS resource manager from within the task-related user exit program (sometimes known as stacking RMIs) the CICS Resource Manager Interface (RMI) elapsed time field (RMITIME) will contain the total elapsed time from entry to exit of the first, or highest, level CICS resource manager.

Note: In CICS Transaction Server Version 1.3 or later, the DB2 wait, DB2 connection wait, and DB2 READYQ wait time fields as well as the IMS wait time field are included in the RMI suspend time.

For more detailed information on the timing fields for DB2 and IMS, see “DFHDATA fields” on page 246.

When investigating performance problems relating to the CICS Resource Manager Interface (RMI) in CICS Transaction Server for z/OS Version 2.2 or later, you may also find it useful to read the following sections:

- “Open transaction environment” on page 295
- “DFHRMI fields” on page 256

RMI other wait time:

The *RMI other wait time* contains the suspend (wait) time in the CICS dispatcher domain for other Resource Managers such as WebSphere MQ, CICS Sockets, or user written.

RMI Other wait time =
(RMI suspend -
(IMS wait time +
DB2 READYQ wait time +
DB2 Connection wait time +
DB2 wait time))

JVM elapsed and suspend time

The JVM elapsed and suspend time fields provide an insight into the amount of time that a transaction spends in a Java Virtual Machine (JVM).

Care must be taken when using the JVM elapsed time (owner: DFHTASK, field ID: 253) and JVM suspend time (owner: DFHTASK, field ID: 254) fields in any calculation with other CMF timing fields. This is because of the likelihood of double accounting other CMF timing fields in the performance class record within the JVM time fields. For example, if a Java application program invoked by a transaction issues a read file (non-RLS) request using the Java API for CICS (JCICS) classes, the file I/O wait time will be included in both the file I/O wait time field (owner: DFHFILE, field ID: 063), the transaction suspend time field (owner: DFHTASK, field ID: 014) as well as the JVM suspend time field.

A JVM application will invoke the CICS JVM for a number of reasons not just to invoke the main method of the application. These calls include:

- Creating and destroying the JVM
- Finding the wrapper class and the main method within the class
- Building the arguments to pass to the main method
- Invoking the main method of the application

The JVM elapsed and suspend time fields are best evaluated from the overall transaction performance view and their relationship with the transaction response time, transaction dispatch time, and transaction suspend time. The performance class data also includes the amount of processor (CPU) time that a transaction used whilst in a JVM on a CICS J8 mode TCB in the J8CPUT field (owner: DFHTASK, field ID: 260). When a transaction uses a JVM in user key, which runs on a CICS J9 mode TCB, the processor time is recorded in the J9CPUT field (owner: DFHTASK, field ID: 267).

Note: The number of Java API for CICS (JCICS) requests issued by the user task is included in the CICS OO foundation class request count field (owner: DFHCICS, field ID: 025).

In CICS Transaction Server for z/OS Version 2 Release 1, new monitoring fields were introduced to provide additional insight into the processing of CICS Java (JVM) applications. These new fields are, the JVM init time (owner: DFHTASK, field ID: 273), the JVM reset time (owner: DFHTASK, field ID: 275), and the JVM status information in byte 6 of the TRANFLAG field (owner: DFHTASK, field ID: 164).

Performance List and Summary reports: CICS PA provides Sample Report Forms that show the fields related to a transaction's use of a Java Virtual Machine (JVM):

Sample Form	Report
JVMLST	Performance List report (see "Performance List report" on page 19)
JVMSUM	Performance Summary report (see "Performance Summary report" on page 36)

Open transaction environment

The performance class data includes a number of timing fields relating to the exploitation of the CICS open transaction environment (OTE) by a transaction. These data fields provide an in depth understanding into the CICS dispatcher domain TCBs used by a transaction and include the following:

- QR mode TCB Dispatch and CPU time

- RO mode TCB Dispatch and CPU time (CICS TS 2.2 or later)
- Key 8 mode TCB Dispatch and CPU time
- Key 9 mode TCB Dispatch and CPU time (CICS TS 2.3 or later)
- J8, L8, S8 and X8 mode TCB CPU times
-
- QR mode TCB dispatch delay time
- CICS dispatcher TCB attach count
- CICS dispatcher TCB high-water-mark
- CICS dispatcher TCB change mode count
- CICS dispatcher change-TCB mode delay time (CICS TS 3.1 or later)
- Max open TCB delay time
- Max JVM TCB delay time (CICS TS 2.2 or later)
- Max Hot-Pooling TCB delay time (CICS TS 2.2 and CICS TS 2.3 only)
- Max SSL TCB delay time (CICS TS 3.1 or later)
- Max XPLink TCB delay time (CICS TS 3.1 or later)

For detailed information on all the fields relating to the CICS dispatcher domain including the CICS open transaction environment (OTE), see 262.

For more general information on the CICS open transaction environment (OTE), see the *CICS Application Programming Guide.*

For more information on the CICS DB2 attachment facility and its use of the open transaction environment (OTE) in CICS Transaction Server for z/OS Version 2.2 or later, see the *CICS DB2 Guide*.

User storage

The performance class data provides a number of data fields relating to the CICS storage used by a transaction. These fields are designed to provide detailed information on the amount and location of the CICS storage used by a transaction. For each CICS DSA (below or above the 16MB line) used by a transaction, the data fields provided include:

- Storage GETMAIN request count
- Storage high-water mark
- Storage occupancy measurement

The user storage fields are described in detail in “DFHSTOR user storage fields” on page 258.

User storage occupancy: A storage occupancy count measures the area under the curve of user-task storage in use against elapsed time. The unit of measure is the *byte-unit,* where the *unit* is equal to 1024 microseconds, or 1.024 milliseconds. For example, a user task occupying 256 bytes for 125 milliseconds is measured as follows (where *ms* is milliseconds):

```
125 / 1.024 ms = 122 units * 256
               = 31232 byte-units
```

Note: All references to *Start time* and *Stop time* in the calculations below refer to the middle 4 bytes of each 8 byte Start/Stop time field. The Start and Stop time fields are standard S/390® STCK time values where bit 51 of the Start time or Stop time represents a unit of 16 microseconds.

1. To calculate the response time and convert into microsecond units:

   ```
   Response = ((Stop time - Start time) * 16)
   ```

2. To calculate the number of 1024 microsecond units:

```
Units = (Response / 1024)
or
Units = ((Stop time - Start time) / 64
```

3. To calculate the average user-task storage used from the storage occupancy count:

   ```
   Average user-task storage used = (Storage Occupancy / Units)
   ```

4. To calculate units per second:

   ```
   Units Per Second = (1000000 / 1024) = 976.5625
   ```

5. To calculate the response time in seconds:

   ```
   Response = (((Stop time - Start time) * 16) / 1000000)
   ```

During the life of a user task, CICS measures, calculates, and accumulates the storage occupancy at the following points:

- Before a storage GETMAIN request increases the current user-storage values
- Before a storage FREEMAIN request decreases the current user-storage values
- Just before a performance record is created for the user task.

Figure 95 shows a pictorial representation of how the user storage occupancy measurement is calculated.

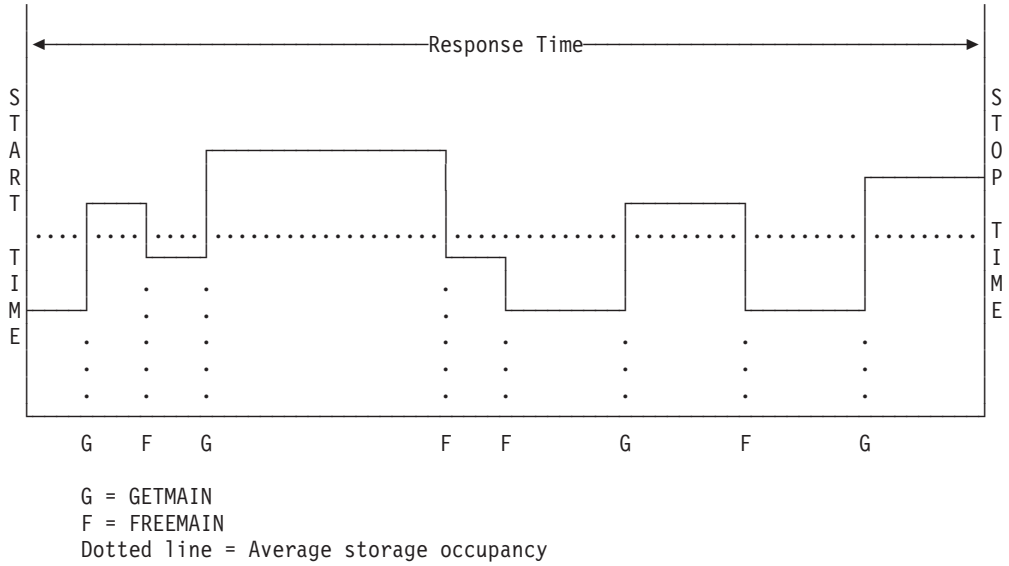


Figure 95. Transaction user storage occupancy

Shared storage

The performance class data also provides a number of fields relating to the CICS shared storage used by a transaction. These fields are designed to provide detailed information on the amount and location of the CICS shared storage used by a transaction. The data fields provided include:

- Shared storage GETMAIN request count
- Number of bytes of shared storage GETMAINed
- Number of bytes of shared storage FREEMAINed.

The shared storage fields are described in detail in “DFHSTOR shared storage fields” on page 260.

Program storage

The level of program storage in use is incremented at each program LOAD, LINK, and XCTL event by the size (in bytes) of the referenced program, and is decremented at each program RELEASE or RETURN event.

Note: On a program XCTL event, the program storage currently in use is also decremented by the size of the program issuing the program XCTL because the program is no longer required by the task.

Figure 96 shows the relationships between the *high-water mark* data fields that contain the maximum amounts of program storage in use by the user task. Field PCSTGHWM (owner: DFHSTOR, field ID: 087) contains the maximum amount of program storage in use by the task both above and below the 16MB line. Fields PC31AHWM (owner: DFHSTOR, field ID: 139) and PC24BHWM (owner: DFHSTOR, field ID: 108) are subsets of PCSTGHWM, containing the maximum amounts of program storage in use above and below the 16MB line, respectively. Other program storage fields, which are also a subset of PCSTGHWM, contain the maximum amounts of program storage in use by the task in each of the CICS dynamic storage areas (DSAs).

Note: The totaled values of all the subsets in a superset may not necessarily equate to the value of the superset. For example, the value of PC31AHWM plus the value of PC24BHWM may not equal the value of PCSTGHWM. This is because the peaks in the different types of program storage acquired by the user task do not necessarily occur simultaneously.

The program storage *high-water mark* fields are described in detail in “DFHSTOR program storage fields” on page 260.

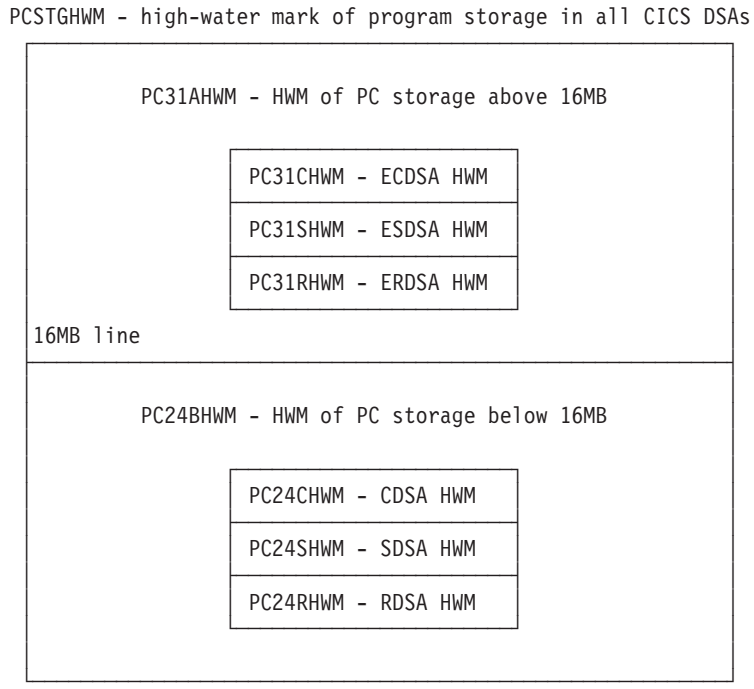


Figure 96. Relationships between the high-water mark program storage data fields

Correlating performance class data

The performance class data provides several fields that can be used to correlate all the related performance class data records from a single or multiple CICS systems in order to monitor the total amount of resources used by a transaction. The performance class records can be correlated by any of the following:

- Network unit-of-work ID
- Network unit-of-work ID and DB2 accounting correlation token
- Transaction group ID
- CICS BTS process ID (root activity ID)

The following sections describe the various ways in which the performance class records can be correlated.

Correlating by network unit-of-work ID

The network unit-of-work ID (owner: DFHTASK, field IDs: 097 and 098) can be used to correlate the performance class data records from a single or multiple CICS systems.

This name is assigned at transaction attach time using either a netname derived from the terminal (when the task is attached to a local VTAM terminal), or the netname passed as part of an IRC (MRO) or ISC (APPC) attach header combined with a STCK-derived token created by the originating system, or the network unit-of-work ID passed as part of an IRC (MRO) or ISC (APPC) attach function management header (FMH).

Cross-System Work report and extract

The CICS PA Cross-System Work report correlates performance class data from a single or multiple CICS systems, as long as the performance data is part of the same network unit-of-work.

The Cross-System Work report is particularly useful in understanding the type and flow of a CICS transaction across CICS systems, including:

- Transaction routing
- Function shipping
- Distributed Program Link (DPL)
- External Call Interface (ECI) over TCP/IP

For more information, see “Cross-System Work report” on page 69 and “Cross-System Work extract” on page 183.

Workload Activity report

The CICS PA Workload Activity report also correlates the performance records by network unit-of-work ID and can be used to understand the type and flow of a CICS transaction across CICS systems and its relationship with the MVS Workload Manager (WLM).

For more information on the Workload Activity report, see “Workload Activity report” on page 88.

Correlating by network unit-of-work ID and DB2 accounting token

The CICS performance class data records can also be correlated with the DB2 SMF 101 Class 2 accounting records. In order to provide the necessary accounting record granularity in the DB2 accounting records, you need to specify either ACCOUNTREC(TASK) or ACCOUNTREC(UOW) in the DB2 connection and DB2 entry resource definitions. Specifying ACCOUNTREC(TASK) ensures that there is a

minimum of one DB2 accounting record for each task but there could be more depending on thread reuse. ACCOUNTREC(TASK) is recommended rather than ACCOUNTREC(UOW) as this provides better matching between CMF performance records and DB2 accounting records.

DB2 report

The CICS PA DB2 report correlates the performance records by network unit-of-work ID and for those with DB2 activity, matches the DB2 accounting (SMF 101) records belonging to the same network unit-of-work. The DB2 report enables you to view CICS and DB2 resource usage statistics together in a single report.

For more information on the DB2 report, see “DB2 report” on page 119.

For more information on the CICS DB2 connection and DB2 entry definition, see the *CICS DB2 Guide* and the *CICS Resource Definition Guide.*

For more information on DB2 accounting and monitoring, see the *CICS DB2 Guide.*

Correlating by transaction group ID

The transaction group ID (owner: DFHTASK, field ID: 082) is assigned at transaction attach time and can be used to correlate the performance class records for the transactions that CICS executes for the same incoming work request (for example, the CWXN and CWBA transactions for CICS Web support requests).

This transaction group ID relationship is particularly useful when applied to the requests that originate through the CICS Web support (CWS), CICS IIOP, ECI over TCP/IP, or the 3270 bridge interface. The transaction origin can be determined from the transaction origin type in byte 4 of the transaction flags field (owner: DFHTASK, field ID: 164) as described in 268.

Transaction Group report

The CICS PA Transaction Group report correlates the performance class data records from a single system, as long as the transactions are part of the same incoming work request (they have the same transaction group ID).

The Transaction Group report is particularly useful in understanding the relationship and flow of transactions that originate through the CICS Web support (CWS), CICS Internet Inter-ORB protocol (IIOP), External Call Interface (ECI) over TCP/IP, or the 3270 bridge interface.

For more information on the Transaction Group report, see “Transaction Group report” on page 76.

Correlating by CICS BTS process ID (root activity ID)

The CICS Business Transaction Services (BTS) process ID (owner: DFHCBTS, field ID: 202), also known as the root activity ID, can be used to correlate the performance class records for the transactions that CICS executes that form part of the same process ID.

Note: Not all transactions that use CICS Business Transaction Services have a process ID assigned at transaction attach. However, the CICS PA BTS report includes ***all*** the performance class records for transactions that have used any CICS BTS services regardless of whether they have been assigned a process ID at transaction attach. In this case, whether or not the

performance class records form part of the same process ID is determined by comparing the transaction sequence number field (owner: DFHTASK, field ID: 031).

For detailed information on the monitoring data provided for the CICS Business Transaction Services (BTS) support, see “DFHCBTS fields” on page 240.

BTS report

The CICS PA BTS report correlates the performance class records by CICS BTS process ID. See the “BTS report” on page 84 for information on the report provided by CICS PA to analyze the transactions using CICS Business Transaction Services.

For more information on CICS Business Transaction Services (BTS), see *CICS Business Transaction Services.*

CICS Web support

The CICS Monitoring Facility provides extensive performance class monitoring data for those applications using the CICS Web support (CWS). This data includes:

- Client IP address
- EXEC CICS WEB API requests
- EXEC CICS DOCUMENT API requests
- CICS support for TCP/IP (socket domain) requests

In CICS Transaction Server for z/OS Version 2 Release 1, the performance class monitoring data was significantly enhanced with the addition of a number of new data fields which provided more detailed information for those applications using the CICS Web support. These fields included:

- The TCP/IP service name and port number of the installed TCP/IP resource definition from which the transaction was initiated
- EXEC CICS EXTRACT WEB API request count
- EXEC CICS WEB Browse API requests count
- EXEC CICS EXTRACT TCPIP and EXTRACT CERTIFICATE API requests count

In CICS Transaction Server for z/OS Version 3 Release 1, the performance class monitoring data has been further enhanced with the addition of a number of new monitoring data fields for the EXEC CICS WEB API requests used by application programs that using the CICS Web support for CICS as an HTTP client.

For detailed information on the monitoring data provided for the CICS Web support, see the DFHWEBB performance data on page 284, the DFHDOCH performance data on page 249, and the DFHSOCK performance data on page 257.

Transaction Group report

The CICS PA Transaction Group report is particularly useful in understanding the relationship and flow of transactions that originate through the CICS Web support. For more information on this report, see “Transaction Group report” on page 76.

Performance List and Summary reports

CICS PA has provided two Sample Report Forms that you can use for detailed analysis of those transactions that are using the CICS Web support:

Sample Form	Report
WEBLST	Performance List report (see “Performance List report” on page 19)

WEBSUM Performance Summary report (see “Performance Summary report” on page 36)

For more general information on the CICS Web support, see the *CICS Internet Guide.*

CICS TCP/IP support

In CICS Transaction Server for z/OS Version 2, the performance class monitoring data has been enhanced with the addition of a number of new data fields which provide additional detailed information for those applications using the CICS Web support (CWS), CICS IIOP, and the CICS ECI over TCP/IP support.

The performance class monitoring data provided includes the following:

- the TCP/IP service name and port number of the installed TCP/IP service resource definition from which the transaction was initiated
- the Client IP address in the interpreted format of *nnn.nnn.nnn.nnn*.
- Inbound and outbound socket I/O wait times
- Extract TCP/IP request counts
- Inbound and Outbound Socket request and character counts, - send, receive, and so on

For detailed information on the data provided for the CICS support for TCP/IP, see “DFHSOCK fields” on page 257.

For more information on the reports provided by CICS PA to analyze the performance class data by transaction group ID, see “Transaction Group report” on page 76.

CICS PA has provided two sample Report Forms that you can use to tailor the Performance List Report (TCPLST Form) and Performance Summary Report (TCPSUM Form) for analyzing the performance class data for the CICS support for TCP/IP.

For more general information, see the *CICS Internet Guide,* the *CICS External Interfaces Guide,* and *CICS Family: Communicating from CICS on System/390.*

CMF exception class data fields

All of the exception class data fields that can be produced by the CICS Monitoring Facility (CMF) are described in this section.

In contrast to performance class data records whose format is described in associated dictionary entries, exception class data records are not defined in the dictionary record. The exception class data records are fixed format.

The following field descriptions show the name of the exception class data field, the type, and the size. The data type may be one of the following:

A - a 32- or 64- bit count
C - a character string
P - a packed decimal
T - a time stamp

EXCMNTRN (Type-C, 4 bytes)
Transaction identification.

EXCMNTER (Type-C, 4 bytes)
Terminal or session identification. This field is null if the task is not associated with a terminal or session.

EXCMNUSR (Type-C, 8 bytes)
User identification at task attach. This can also be a remote user identifier for a task created as the result of receiving an ATTACH request across an MRO or APPC link with attach-time security enabled.

EXCMNTST (Type-C, 4 bytes)
Type of transaction start (Start Code or Start Type):

TO
The transaction was started (attached) by input of the transaction ID from the terminal user.

S Attached by automatic transaction initiation (ATI) without data. The transaction was started (attached) by an application program using the EXEC CICS START TRANSID('xxxx') ... API command. CICS internal transactions such as CATR, CEJR, CESN, CQRY, CRPM, CRSQ, CSFU, CSGM, CXRE, and CWBG are just some examples of CICS transactions that use this start type.

SD
Attached by automatic transaction initiation (ATI) with data. The transaction was started (attached) by an application program using the EXEC CICS START TRANSID('xxxx') FROM(xxxx) ... API command. CICS internal transactions such as CLS1 is an example of a transaction that uses this start type.

QD
The transaction was started (attached) because the trigger level of an intrapartition transient data queue was reached. If the transaction is not associated with a terminal facility, the Transaction Facility Name (field: FCTYNAME, owner: DFHTASK, field ID: 163) provides the name of the transient data queue ID.

U The transaction was started (attached) by a CICS internal function generally as a result of some user request. CICS internal transactions such as CATA, CATD, CEJR, CESC, CEX2, CFOR, CFQR, CFQS, CFTL, CGRP, CIEP, CIOF, CIOR, CIRP, CITS, CJTR, CLQ1, CLQ2, CLS2, COTR, COVR, CPLT,

CPMI, CRSY, CSFR, CSHQ, CSNC, CSNE, CSOL, CSSY, CSTE, CSZI, CWBA, and CWXN are just some examples of the CICS transactions that use this start type. In addition to CICS internal functions, transaction's that are being executed under the control of the CICS Execution Diagnostic Facility transaction, CEDF, are also started (attached) with this start type.

TP
Attached from terminal (TCTTE) transaction ID. The preset transaction was started (attached) by input from the terminal user or by the previous transaction using the EXEC CICS RETURN TRANSID('xxxx') IMMEDIATE ... API command. The transaction ID can be preset either from the terminal definition, from using the CRTE routing transaction, or by the previous transaction's application program using the EXEC CICS RETURN TRANSID('xxxx') ... API command with or without the IMMEDIATE option specified. Some examples of CICS transactions which use this start type are: CESN (except when used as the initial good morning transaction), CRTE (when invoked on the routed system), and CSSF when invoked as part of a CRTE CANCEL (the initial CRTE transaction which establishes the routing session uses the start type 'TO').

SZ
Attached by the Front End Programming Interface (FEPI). The transaction was started (attached) as the *receive program* by the Front End Programming Interface as a result of inbound data. In addition to inbound data arriving, the *receive program* is also started (attached) if the time limit set by a FEPI START command expires, the session is lost, or anything that causes a FEPI RECEIVE command to complete. See the *CICS Front End Programming Interface User's Guide* for more information on FEPI *started tasks.*

EXCMNSTA (Type-T, 8 bytes)
Start time of the exception.

EXCMNSTO (Type-T, 8 bytes)
Finish time of the exception.

Note: The performance class exception wait time field, EXWTTIME (owner: DFHCICS, field ID: 103), is a calculation based on subtracting the start time of the exception (EXCMNSTA) from the finish time of the exception (EXCNBSTO).

EXCMNTNO (Type-P, 4 bytes)
The transaction identification number.

Note: The transaction number field is normally a 4-byte packed decimal number. However, some CICS system tasks are identified by special characters in this field, as follows:
III for system initialization tasks
TCP for the terminal control task

These special identifiers are placed in bytes 2 through 4. Byte 1 is blank (X'40') before the terminal control TCP identifier, and a null value (X'00') before the others.

EXCMNTPR (Type-A, 4 bytes)
The transaction priority of the task when monitoring of the task was initialized at transaction attach.

EXCMNLUN (Type-C, 8 bytes)
The LUNAME field is either the VTAM netname (LUname) of the terminal ID (if

the Access Method for the terminal is VTAM) or the VTAM generic APPLID of the connection for the session ID (for an EXCI connection this field will be blank). The transaction's terminal or session type can be identified from the Nature (byte 0) field within the terminal information TERMINFO field (owner: DFHTERM, field ID: 165). This field is null if the transaction was not associated with a terminal or session facility.

EXCMNEXN (Type-A, 4 bytes)
The exception sequence number for this task.

EXCMNRTY (Type-C, 8 bytes)
The exception resource type. For more information, see Table 29 on page 308.

EXCMNRID (Type-C, 8 bytes)
The exception resource identification. For more information, see Table 29 on page 308.

EXCMNTYP (Type-A, 2 bytes)
The exception type. This field can be set to one of the following values:
X'0001'
Exception due to a wait (EXCMNWT)
X'0002'
Exception due to a buffer wait (EXCMNBWT)
X'0003'
Exception due to a string wait (EXCMNSWT)

For more information on the exception types, see Table 29 on page 308.

EXCMNTCN (Type-C, 8 bytes)
The transaction's transaction class name (TRANCLASS). This field is null if the transaction is not defined in a transaction class.

EXCMNSRV (Type-C, 8 bytes)
The MVS Workload Manager (WLM) service class for this transaction. This field is null if there are no transaction classification rules defined for CICS subsystems in the active MVS Workload Manager (WLM) service policy or the transaction was WLM-classified in another CICS region.

EXCMNRPT (Type-C, 8 bytes)
The MVS Workload Manager (WLM) report class for this transaction. This field is null if there are no transaction classification rules defined for CICS subsystems in the active MVS Workload Manager (WLM) service policy or the transaction was WLM-classified in another CICS region.

EXCMNNPX (Type-C, 20 bytes)
The fully qualified name by which the originating system is known to the VTAM network. This name is assigned at attach time using either the netname derived from the TCT (when the task is attached to a local terminal), or the netname passed as part of an ISC APPC or IRC MRO attach header. At least three padding bytes (X'00') are present at the right end of the name.

If the originating terminal is VTAM across an ISC APPC or IRC MRO link, the NETNAME is the *networkid.LUname*. If the terminal is non-VTAM, the NETNAME is *networkid.generic_APPLID*.

All originating information is passed as part of an ISC LUTYPE6.1 attach header has the same format as the non-VTAM terminal originators above.

When the originator is communicating over an external CICS interface (EXCI) session, the name is a concatenation of:

```
'DFHEXCIU | .       | MVS Id    | Address Space Id (ASID)'

 8 bytes  | 1 byte  | 4 bytes   | 4 bytes
```

derived from the originating system. That is, the name is a 17-byte LU name consisting of:

- An 8-byte eye-catcher set to DFHEXCIU.
- A 1-byte field containing a period.
- A 4-byte field containing the MVSID, in characters, under which the client program is running.
- A 4-byte field containing the address space ID (ASID) in which the client program is running. This field contains the 4-character EBCDIC representation of the 2-byte hexadecimal address space ID.

For more information on the external CICS interface (EXCI), see the *CICS External Interfaces Guide.*

EXCMNNSX (Type-C, 8 bytes)
The name by which the network unit-of-work ID is known within the originating system. This name is assigned at transaction attach time using either a STCK-derived token created by the originating system, or the network unit-of-work ID passed as part of an IRC (MRO) or ISC (APPC) attach function management header (FMH).

The first six bytes of this field are a binary value derived from the system clock of the originating system and which can wrap round at intervals of several months.

The last two bytes of this field are a syncpoint sequence count. This count may change during the life of the task as a result of syncpoint activity.

For CICS BTS transactions, the network unit-of-work ID is also passed to a transaction that is invoked synchronously by an application program issuing either a CICS BTS run ACQPROCESS synchronous or run activity synchronous command.

Note: When using MRO or ISC, the EXCMNNSX field can be combined with the EXCMNNPX field to uniquely identify a task across each CICS system. It must be combined with the EXCMNNPX because the EXCMNNSX field on its own is unique only to the originating CICS system.

EXCMNTRF (Type-A, 8 bytes)
Transaction flags, a string of 64 bits used for signaling transaction definition and status information:

Byte 0
Transaction facility identification:
Bit 0 Transaction facility name = none
Bit 1 Transaction facility name = terminal
Bit 2 Transaction facility name = surrogate
Bit 3 Transaction facility name = destination
Bit 4 Transaction facility name = 3270 bridge
Bit 5-7
Reserved

Byte 1
Transaction identification information:
Bit 0 System transaction

Bit 1 Mirror transaction
Bit 2 DPL Mirror transaction
Bit 4 ONC RPC alias transaction
Bit 4 WEB alias transaction
Bit 5 3270 Bridge transaction
Bit 6 Reserved
Bit 7 CICS BTS run transaction (ACQPROCESS or activity) synchronous

Byte 2

MVS workload manager request (transaction) completion information:
Bit 0 Report the total response time (begin-to-end phase) for the completed work request (transaction)
Bit 1 Notify that the entire execution phase of the work request (transaction) is complete
Bit 2 Notify that a subset of the execution phase of the work request (transaction) is complete
Bit 3-7
Reserved

Byte 3

Transaction definition information:
Bit 0 Taskdataloc = BELOW
Bit 1 Taskdatakey = CICS
Bit 2 Isolate = NO
Bit 3 Dynamic = YES
Bit 4-7
Reserved

Byte 4

Transaction origin type (See page 268 for details)

Byte 5

Reserved

Byte 6

JVM status information:
Bit 0 JVM marked unresettable
Bit 1-7
Reserved

Byte 7

Recovery manager information:
Bit 0 Indoubt wait = no
Bit 1 Indoubt action = commit
Bit 2 Recovery manager - UOW resolved with indoubt action
Bit 3 Recovery manager - Shunt
Bit 4 Recovery manager - Unshunt
Bit 5 Recovery manager - Indoubt failure
Bit 6 Recovery manager - Resource owner failure
Bit 7 Reserved

EXCMNFCN (Type-C, 4 bytes)

Transaction facility name. This field is null if the transaction is not associated with a facility. The transaction facility type (if any) can be identified using byte 0 of the transaction flags field, TRANFLAG (owner: DFHTASK, field ID: 164).

EXCMNCPN (Type-C, 8 bytes)

The name of the application program that was currently executing when the resource shortage condition occurred as identified by the exception record.

EXCMNBTR (Type-C, 4 bytes)
3270 Bridge listener transaction identification.

EXCMNURI (Type-C, 16 bytes)
RRMS/MVS unit-of-recovery ID (URID).

For more general information on the Recoverable Resource Management Services (RRMS), see the *CICS External Interfaces Guide.*

EXCMNRIL (Type-A, 4 bytes)
The length of the resource name in the exception resource identification field, EXCMNRIX.

EXCMNRIX (Type-C, 256 bytes)
The exception resource identification (extended).

EXCMNNID (Type-C, 8 bytes)
The network ID field, NETID, is the network ID portion of the Network Qualified Name (NQNAME) received from VTAM during bind or logon for CICS terminal resources using any VTAM LUALIAS (defined or dynamic). If the resource has not logged on or an NQNAME was not received, then this field will be set to null.

EXCMNRLU (Type-C, 8 bytes)
The Real LUname (EXCMNRLU) field is the VTAM netname (LUname) of the terminal ID for CICS terminal resources using any VTAM LUALIAS (defined or dynamic). If the resource has not logged on or an NQNAME was not received, then this field will be set to null. Also, see the field, EXCMNLUN.

Table 29 shows the values and relationships of the exception type (EXCMNTYP), resource type (EXCMNRTY), and resource identification (EXCMNRID) fields.

Table 29. Relationships between the exception type, resource type, and resource identification

EXCMNTYP Exception type	EXCMNRTY Resource type	EXCMNRID Resource ID	Exception description
EXCMNWT	CFDTLRSW	poolname	Wait for a CF data table locking request slot.
EXCMNWT	CFDTPOOL	poolname	Wait for a CF data table non-locking request slot.
EXCMNWT	STORAGE	CDSA	Wait for CDSA storage
EXCMNWT	STORAGE	ECDSA	Wait for ECDSA storage
EXCMNWT	STORAGE	UDSA	Wait for UDSA storage
EXCMNWT	STORAGE	EUDSA	Wait for EUDSA storage
EXCMNWT	STORAGE	SDSA	Wait for SDSA storage
EXCMNWT	STORAGE	ESDSA	Wait for ESDSA storage
EXCMNWT	STORAGE	RDSA	Wait for RDSA storage
EXCMNWT	STORAGE	ERDSA	Wait for ERDSA storage
EXCMNWT	TEMPSTOR	TS Qname	Wait for temporary storage
EXCMNBWT	LSRPOOL	filename	Wait for a buffer associated with an LSRPOOL
EXCMNBWT	TEMPSTOR	TS Qname	Wait for a buffer associated with DFHTEMP
EXCMNSWT	FILE	filename	Wait for a string associated with a file
EXCMNSWT	LSRPOOL	filename	Wait for a string associated with an LSRPOOL
EXCMNSWT	TEMPSTOR	TS Qname	Wait for a string associated with DFHTEMP

Note: The extended resource ID field, EXCMNRIX, should be used for analyzing the exception records for the TEMPSTOR exception resource types because the temporary storage queue names are now 16-bytes in length.

CMF transaction resource class data fields

The transaction resource class data fields produced by the CICS Monitoring Facility (CMF) are described in this section.

Transaction resource class data provides additional transaction-level information about individual resources accessed by a transaction. Currently, the transaction resource class covers file and temporary storage queue resources.

The maximum number of files and temporary storage queues monitored for each transaction is limited by the FILE and TSQUEUE parameters on the DFHMCT TYPE=INITIAL macro. The default is FILE=8 for files and TSQUEUE=4 for temporary storage queues. Therefore, you may need to assemble an MCT that specifies either or both FILE and TSQUEUE options if the default values are insufficient, or if you do not want to collect transaction resource data for either files or temporary storage queues. One transaction resource record is written for each transaction that is being monitored, provided the transaction accesses at least one of the resources for which monitoring data is requested, (for example, at least 1 file if you specify FILE=*number*).

Transaction resource records are variable length, depending on the number of resources for which data is being collected (for example, one transaction might access only 1 file, another 5 files and 2 temporary storage queues, and so on).

For only one file, the record length is 188 bytes plus 96 bytes for the file data (284 bytes). Each additional file adds another 96 bytes. The maximum number of files for which you can collect transaction resource data is 64.

For only one temporary storage queue, the record length is 188 bytes plus 96 bytes for the temporary storage queue data (284 bytes). Each additional temporary storage queue adds another 96 bytes. The maximum number of temporary storage queues for which you can collect transaction resource data is 32.

Performance class data also provides information about file and temporary storage queue resource accesses, but this information in the performance record is given in total only for all files (see “DFHFILE fields” on page 251) and all temporary storage queues (see “DFHTEMP fields” on page 280). Transaction resource data breaks this information down by individual file name and temporary storage queue name, up to the maximum number specified in the MCT. Transaction resource information is completed for each task when the task terminates.

You enable transaction resource class monitoring at startup by coding MNRES=ON (together with MN=ON) as a system initialization parameter. Alternatively, you can use one of the following commands to enable transaction resource class monitoring dynamically:

- CEMT SET MONITOR ON RESRCE
- EXEC CICS SET MONITOR STATUS(ON) RESRCECLASS(RESRCE)

In contrast to performance class data records whose format is described in associated dictionary entries, transaction resource class data records are not defined in the dictionary record. The transaction resource class data records are fixed format.

Task identification fields

This section describes the transaction header fields in a transaction monitoring resource record.

MNR_ID_TRANID (Type-C, 4 bytes)
Transaction identifier.

MNR_ID_TERMID (Type-C, 4 bytes)
Terminal identifier. This field is null if the task is not associated with a terminal or session.

MNR_ID_USERID (Type-C, 4 bytes)
User identification at task creation. This can also be the remote user identifier for a task created as the result of receiving an ATTACH request across an MRO or APPC link with attach-time security enabled.

MNR_ID_SYTPE (Type-C, 4 bytes)
Transaction start type. The high-order byte (0 and 1) can have one of the following values:

TO	Attached from terminal input
S	Attached by automatic transaction initiation (ATI) without data
SD	Attached by automatic transaction initiation (ATI) with data
QD	Attached by transient data trigger level
U	Attached by user request
TP	Attached from terminal TCTTE transaction ID
SZ	Attached by Front End Programming Interface (FEPI)

MNR_ID_START (Type-T, 8 bytes)
Start time of the transaction.

MNR_ID_STOP (Type-T, 8 bytes)
Stop time of the transaction.

MNR_ID_TASKNO (Type-A, 4 bytes)
The transaction identification number (the task number allocated to the transaction at task attach).

MNR_ID_LUNAME (Type-C, 8 bytes)
VTAM logical unit name (if available) of the terminal associated with this transaction. If the task is executing in an application-owning or file-owning region, the LUNAME is the generic applid of the originating connection for MRO, LUTYPE6.1, and LUTYPE6.2 (APPC). The LUNAME is blank if the originating connection is an external CICS interface (EXCI).

MNR_ID_PGMNAME (Type-C, 8 bytes)
The name of the first program invoked at attach-time. For more information, see the performance class data field PGMNAME (owner: DFHPROG, field ID: 071).

MNR_ID_UOW_PX (Type-C, 20 bytes)
This field contains the same information as the performance class data field NETUOWPX (owner: DFHTASK, field ID: 097).

MNR_ID_UOW_SX (Type-C, 8 bytes)
This field contains the same information as the performance class data field NETUOWSX (owner: DFHTASK, field ID: 098).

MNR_ID_TRN_FLAGS (Type-A, 8 bytes)
Transaction flags, a string of 64 bits used for signaling transaction definition and status information. For details, see the performance class data field TRANFLAG (owner: DFHTASK, field ID: 164).

MNR_ID_RSYSID (Type-C, 4 bytes)
The name (system ID) of the remote system to which this transaction was routed, either statically or dynamically. For more information, see the performance class data field RSYSID (owner: DFHCICS, field ID: 130).

MNR_ID_FCTYNAME (Type-C, 4 bytes)
Transaction facility name. This field is null if the transaction is not associated with a facility. You can identify the transaction facility type (if any) using byte 0 of the transaction flags (MNR_ID_TRN_FLAGS) field. For details, see the performance class data field FCTYNAME (owner: DFHTASK, field ID: 163).

MNR_ID_RTYPE (Type-C, 4 bytes)
Transaction resource monitoring record type (low-order byte-3). Currently this can have only one value, T, indicating a record output for task termination. For more information about record types, see the performance class data field RTYPE (owner: DFHCICS, field ID: 112).

TERMINFO (Type-A, 4 bytes)
Terminal or session information for the task principal facility. For more information about terminal information, see the performance class data field TERMINFO (owner: DFHTERM, field ID: 165).

MNR_ID_TERMCNNM (Type-C, 4 bytes)
Terminal session connection name. If the terminal facility associated with this transaction is a session, this field is the name of the owning connection (system ID). For more information, see the performance class data field TERMCNNM (owner: DFHTERM, field ID: 169).

MNR_ID_RES_FLAGS (Type-A, 4 bytes)
Resource flags, a string of 32 bits used for signaling resource status information.

Byte 0
Resource status information:
Bit 0 Maximum number of files to be monitored (defined in the MCT) has been exceeded by the transaction (X'80')
Bit 1 Maximum number of temporary storage queues to be monitored (defined in the MCT) has been exceeded by the transaction (X'40')
Bits 2-7
Reserved

Bytes 1-3
Reserved.

File entry fields

This section describes the fields in each file entry in a transaction resource monitoring record.

For information about transaction file accesses in performance class monitoring data, see “DFHFILE fields” on page 251.

MNR_FILE_NAME (Type-C, 8 bytes)
The CICS 8-character name of the file to which the following data fields refer.

MNR_FILE_GET (Type-S, 8 bytes)
The elapsed time that the user task waited for completion of GET requests issued by the user task for this file. The count part of this field (the low order 24

bits) contains the number of GET requests issued against the file. For more information, see “Transaction response time” on page 289 and “Clocks and time stamps” on page 287.

MNR_FILE_PUT (Type-S, 8 bytes)
The elapsed time that the user task waited for completion of PUT requests issued by the user task for this file. The count part of this field (the low order 24 bits) contains the number of PUT requests issued against the file. For more information, see “Transaction response time” on page 289 and “Clocks and time stamps” on page 287.

MNR_FILE_BRWSE (Type-S, 8 bytes)
The elapsed time that the user task waited for completion of BROWSE requests issued by the user task for this file. The count part of this field (the low order 24 bits) contains the number of BROWSE requests issued against the file. For more information, see “Transaction response time” on page 289 and “Clocks and time stamps” on page 287.

MNR_FILE_ADD (Type-S, 8 bytes)
The elapsed time that the user task waited for completion of ADD requests issued by the user task for this file. The count part of this field (the low order 24 bits) contains the number of ADD requests issued against the file. For more information, see “Transaction response time” on page 289 and “Clocks and time stamps” on page 287.

MNR_FILE_DEL (Type-S, 8 bytes)
The elapsed time that the user task waited for completion of DELETE requests issued by the user task for this file. The count part of this field (the low order 24 bits) contains the number of DELETE requests issued against the file. For more information, see “Transaction response time” on page 289 and “Clocks and time stamps” on page 287.

MNR_FILE_TOTAL (Type-S, 8 bytes)
The total elapsed time that the user task waited for completion of all requests issued by the user task for this file. The count part of this field (the low order 24 bits) contains the number of all requests issued against the file. For more information, see “Transaction response time” on page 289 and “Clocks and time stamps” on page 287.

MNR_FILE_AM_RQ (Type-A, 4 bytes)
Number of times the user task invoked file access-method interfaces. See also the performance class data field FCAMCT (owner: DFHFILE, field ID: 070).

MNR_FILE_IO_WT (Type-S, 8 bytes)
The total I/O wait time on this file. For more information, see “Transaction response time” on page 289 and “Clocks and time stamps” on page 287.

MNR_RLS_FILE_IO_WT (Type-S, 8 bytes)
Elapsed time in which the user task waited for RLS file I/O on this file. For more information, see “Transaction response time” on page 289 and “Clocks and time stamps” on page 287.

MNR_CFDT_IO_WT (Type-S, 8 bytes)
Elapsed time in which the user task waited for a data table access request to the coupling facility data table server to complete for this file. For more information, see “Transaction response time” on page 289 and “Clocks and time stamps” on page 287.

Temporary storage queue entry fields

This section describes the fields in each temporary storage queue entry in a transaction resource monitoring record.

For information about transaction temporary storage queue accesses in performance class monitoring data, see “DFHTEMP fields” on page 280.

MNR_TSQUEUE_NAME (Type-C, 16 bytes)
The CICS 16-character name of the temporary storage queue to which the following data fields refer.

MNR_TSQUEUE_GET (Type-S, 8 bytes)
The elapsed time that the user task waited for completion of GET requests issued by the user task for this temporary storage queue. The count part of this field (the low order 24 bits) contains the number of GET requests issued against the temporary storage queue. For more information, see “Transaction response time” on page 289 and “Clocks and time stamps” on page 287.

MNR_TSQUEUE_PUT_AUX (Type-S, 8 bytes)
The elapsed time that the user task waited for completion of PUT requests to auxiliary temporary storage, issued by the user task for this temporary storage queue. The count part of this field (the low order 24 bits) contains the number of PUT requests to auxiliary temporary storage issued against the temporary storage queue. For more information, see “Transaction response time” on page 289 and “Clocks and time stamps” on page 287.

MNR_TSQUEUE_PUT_MAIN (Type-S, 8 bytes)
The elapsed time that the user task waited for completion of PUT requests to main temporary storage, issued by the user task for this temporary storage queue. The count part of this field (the low order 24 bits) contains the number of PUT requests to main temporary storage issued against the temporary storage queue. For more information, see “Transaction response time” on page 289 and “Clocks and time stamps” on page 287.

MNR_TSQUEUE_TOTAL (Type-S, 8 bytes)
The total elapsed time that the user task waited for completion of all requests issued by the user task for this temporary storage queue. The count part of this field (the low order 24 bits) contains the number of all requests issued against the temporary storage queue. For more information, see “Transaction response time” on page 289 and “Clocks and time stamps” on page 287.

MNR_TSQUEUE_GET_ITEML (Type-S, 4 bytes)
The total length of all items obtained from this temporary storage queue.

MNR_TSQUEUE_PUT_AUX_ITEML (Type-S, 4 bytes)
The total length of all items written to the auxiliary temporary storage queue.

MNR_TSQUEUE_PUT_MAIN_ITEML (Type-S, 4 bytes)
The total length of all items written to the main temporary storage queue.

MNR_TSQUEUE_IO_WT (Type-S, 8 bytes)
The total I/O wait time on this temporary storage queue. For more information, see “Transaction response time” on page 289 and “Clocks and time stamps” on page 287.

MNR_SHR_TSQUEUE_IO_WT (Type-S, 8 bytes)
The total I/O wait time on the shared temporary storage queue. For more information, see “Transaction response time” on page 289 and “Clocks and time stamps” on page 287.

Part 6. Reference

The chapters in this part contain cross-reference information designed to help you more easily use CICS PA and understand the data it is reporting. It contains three cross-reference charts that apply to CMF performance class and transaction resource class data:

- Chapter 14, “CMF Field ID × CICS version” contains a cross-reference chart relating the CICS Monitoring Facility (CMF) fields with the corresponding CICS PA field names and CICS version.
- Chapter 15, “CICS PA field name × CICS version” contains a cross-reference chart relating the CICS PA field names with the corresponding CICS Monitoring Facility (CMF) fields and CICS version.
- Chapter 16, “Fields × forms, HDB templates” contains a cross-reference chart relating the CICS PA field names with the Report Forms, HDB Templates, and Selection Criteria where they can be specified.

Chapter 14. CMF Field ID × CICS version

The following cross-reference table relates the CICS monitoring facility (CMF) field IDs for performance class and transaction resource class data with the CICS versions to which they apply.

Some columns in the table require explanation:

CICS PA field name
The name used in report forms, HDB templates, and selection criteria (and the corresponding batch command operands FIELDS and SELECT):

- "Same" indicates that the CICS PA field name is the same as the CMF field name.
- "None" indicates that the field is not available, typically because it is a very long field, or it is an unprintable field such as a unit-of-work or a flag.

Column heading
The heading used to identify the field in CICS PA reports and extract data sets.

CICS version
The CICS versions to which a field applies:
- Yes, the field applies to this CICS version
– No, the field does not apply to this CICS version

The table is sorted by CMF group and CMF field ID.

Notes:

1. DBCTL fields can only be specified if the MCT contains the DBCTL EMP defined in SDFHSAMP member DFH$MCTD.
2. Some special fields, such as APPLID and RESPONSE, are not defined in the CMF Dictionary and are given a group name of "CICSPA". These fields are either derived from the fixed section of the CMF record (for example, APPLID), or calculated from two or more other CMF fields (for example, RESPONSE).
3. The FILENAME and TSQNAME fields are only available when CMF transaction resource class data is being collected.
4. The DFHAPPL fields are only available when application programs invoke the application naming event monitoring points.

Table 30. Cross-reference: CMF field ID × CICS version

CMF field						CICS version						
Group	Type	ID	Name	CICS PA field name	Column heading	530	610	620	630	640	650	Description
CICSPA	A	001	TOTRECS	Same	TotlRecs	•	•	•	•	•	•	Cross-System Total record count
CICSPA	A	002	APPLRECS	Same	APPLRecs	•	•	•	•	•	•	Cross-System Application records
CICSPA	A	003	TRANROUT	Same	TranRout	•	•	•	•	•	•	Cross-System Transaction Routing records
CICSPA	A	004	FUNCSHIP	Same	FuncShip	•	•	•	•	•	•	Cross-System Function Shipping records
CICSPA	A	005	DPLRECS	Same	DPL Recs	•	•	•	•	•	•	Cross-System DPL records
CICSPA	D	901	RESP	RESPONSE	Response	•	•	•	•	•	•	Transaction response time
CICSPA	X	902	TASKCNT	Same	#Tasks	•	•	•	•	•	•	Total Task count
CICSPA	C	903	APPLID	Same	APPLID	•	•	•	•	•	•	CICS Generic APPLID
CICSPA	C	904	MVSID	Same	MVS ID	•	•	•	•	•	•	MVS SMF ID
CICSPA	C	905	JOBNAME	Same	Jobname	•	•	•	•	•	•	Job Name
CICSPA	D	906	COMMWAIT	Same	CommWait	•	•	•	•	•	•	Communications wait time
CICSPA	D	907	IOWAIT	Same	I/O Wait	•	•	•	•	•	•	Total IO wait time

Table 30. Cross-reference: CMF field ID × CICS version (continued)

CMF field						CICS version						
Group	Type	ID	Name	CICS PA field name	Column heading	530	610	620	630	640	650	Description
CICSPA	D	908	IRESP	Same	Int Resp	•	•	•	•	•	•	Transaction internal response time
CICSPA	C	909	RELEASE	Same	Rlse	•	•	•	•	•	•	CICS release
CICSPA	D	910	JVMMTIME	Same	JVM Meth	–	•	•	•	•	•	JVM Method time
CICSPA	D	911	RMIOTIME	Same	RMIOTime	•	•	•	•	•	•	Resource Manager Interface (RMI) other time
CICSPA	C	912	UOWID	Same	UOW ID	•	•	•	•	•	•	Network UOW ID
CICSPA	C	913	UOWSEQ	Same	UOW Seq	•	•	•	•	•	•	Network UOW Sequence Number
CICSPA	X	914	TASKTCNT	Same	#TTasks	•	•	•	•	•	•	Total Task Termination count
CICSPA	C	916	FILENAME	Same	FileName	•	–	•	•	•	•	File name
CICSPA	C	917	TSQNAME	Same	TSQ Name	•	–	•	•	•	•	Temporary Storage Queue Name
CICSPA	D	918	TOTCPU	Same	Tot CPU	•	•	•	•	•	•	Total Task CPU Time
DBCTL	C	001	PSBNAME	Same	PSB Name	•	•	•	•	•	•	PSB Name
DBCTL	A	002	POOLWAIT	Same	PoolWait	•	•	•	•	•	•	Elapsed wait time for Pool Space
DBCTL	A	003	INTCWAIT	Same	IntCWait	•	•	•	•	•	•	Elapsed wait time for Intent Conflict
DBCTL	A	004	SCHTELAP	Same	SchTElap	•	•	•	•	•	•	Elapsed time for Schedule Process
DBCTL	A	005	DBIOELAP	Same	DBIOElap	•	•	•	•	•	•	Elapsed time for Database I/O
DBCTL	A	006	PILOCKEL	Same	PILockEl	•	•	•	•	•	•	Elapsed time for PI Locking
DBCTL	A	007	DBIOCALL	Same	DBIOCall	•	•	•	•	•	•	Number of Database I/Os
DBCTL	A	008	GUCALL	Same	GUcall	•	•	•	•	•	•	Number of Database GU calls issued
DBCTL	A	009	GNCALL	Same	GNcall	•	•	•	•	•	•	Number of Database GN calls issued
DBCTL	A	010	GNPCALL	Same	GNPcall	•	•	•	•	•	•	Number of Database GNP calls issued
DBCTL	A	011	GHUCALL	Same	GHUcall	•	•	•	•	•	•	Number of Database GHU calls issued
DBCTL	A	012	GHNCALL	Same	GHNcall	•	•	•	•	•	•	Number of Database GHN calls issued
DBCTL	A	013	GHNPCALL	Same	GHNPcall	•	•	•	•	•	•	Number of Database GHNP calls issued
DBCTL	A	014	ISRTCALL	Same	ISRTcall	•	•	•	•	•	•	Number of Database ISRT calls issued
DBCTL	A	015	DLETCALL	Same	DLETcall	•	•	•	•	•	•	Number of Database DLET calls issued
DBCTL	A	016	REPLCALL	Same	REPLcall	•	•	•	•	•	•	Number of Database REPL calls issued
DBCTL	A	017	DLICALLS	Same	DLIcalls	•	•	•	•	•	•	Total DL/I Database calls
DBCTL	A	018	TESTENQS	Same	TestENQs	•	•	•	•	•	•	Number of Test Enqueues
DBCTL	A	019	TESTENQW	Same	TestENQW	•	•	•	•	•	•	Number of waits on Test Enqueues
DBCTL	A	020	TESTDEQS	Same	TestDEQs	•	•	•	•	•	•	Number of Test Dequeues
DBCTL	A	021	UPDTENQS	Same	UpdtENQs	•	•	•	•	•	•	Number of Update Enqueues
DBCTL	A	022	UPDTENQW	Same	UpdtENQW	•	•	•	•	•	•	Number of waits on Update Enqueues
DBCTL	A	023	UPDTDEQS	Same	UpdtDEQs	•	•	•	•	•	•	Number of Update Dequeues
DBCTL	A	024	EXCLENQS	Same	ExclENQs	•	•	•	•	•	•	Number of Exclusive Enqueues
DBCTL	A	025	EXCLENQW	Same	ExclENQW	•	•	•	•	•	•	Number of waits on Exclusive Enqueues
DBCTL	A	026	EXCLDEQS	Same	ExclDEQs	•	•	•	•	•	•	Number of Exclusive Dequeues
DBCTL	A	027	DEDBCALL	Same	DEDBcall	•	•	•	•	•	•	Number of DEDB calls
DBCTL	A	028	DEDBRDOP	Same	DEDBRdOp	•	•	•	•	•	•	Number of DEDB read operations
DBCTL	A	029	OVFLBFRU	Same	OvflBfrU	•	•	•	•	•	•	Number of Overflow Buffers used
DBCTL	A	030	UOWCONTS	Same	UOWConts	•	•	•	•	•	•	Number of UOW Contentions
DBCTL	A	031	DEDBBFRW	Same	DEDBBfrW	•	•	•	•	•	•	Number of waits for DEDB buffers
DBCTL	A	032	THREDCPU	Same	ThredCPU	•	•	•	•	•	•	Thread TCB CPU time
DBCTL	T	033	SCHEDSTA	Same	SchedSta	•	•	•	•	•	•	IMS Schedule start time
DBCTL	T	034	SCHEDEND	Same	SchedEnd	•	•	•	•	•	•	IMS Schedule end time
DBCTL	A	035	DBGETS	Same	DBget	•	•	•	•	•	•	Number of Database Get calls issued
DBCTL	A	036	DBUPDATE	Same	DBupdate	•	•	•	•	•	•	Number of Database Update calls issued
DBCTL	A	037	DBWAITS	Same	DBwait	•	•	•	•	•	•	Number of Database waits
DFHAPPL	C	001	APPLNAME	APPLTRAN	Tran	•	–	•	•	•	•	Application naming Tran ID
DFHAPPL	C	001	APPLNAME	APPLPROG	Program	•	–	•	•	•	•	Application naming Program
DFHCBTS	C	200	PRCSNAME	Same	BTS Proc	•	•	•	•	•	•	BTS Process name
DFHCBTS	C	201	PRCSTYPE	Same	BTS PTyp	•	•	•	•	•	•	BTS Process type
DFHCBTS	C	202	PRCSID	None	BTS Root	•	•	•	•	•	•	BTS Root Activity identifier
DFHCBTS	C	203	ACTVTYID	None	BTSActID	•	•	•	•	•	•	BTS Activity identifier
DFHCBTS	C	204	ACTVTYNM	Same	BTSActNm	•	•	•	•	•	•	BTS Activity name
DFHCBTS	A	205	BARSYNCT	Same	BTS Sync	•	•	•	•	•	•	BTS synchronous Process/Activity count

Table 30. Cross-reference: CMF field ID × CICS version (continued)

CMF field						CICS version						
Group	Type	ID	Name	CICS PA field name	Column heading	530	610	620	630	640	650	Description
DFHCBTS	A	206	BARASYCT	Same	BTS Asyn	•	•	•	•	•	•	BTS asynchronous Process/Activity count
DFHCBTS	A	207	BALKPACT	Same	BTS Link	•	•	•	•	•	•	BTS Link Process/Activity count
DFHCBTS	A	208	BADPROCT	Same	BTS DefP	•	•	•	•	•	•	BTS Define Process requests
DFHCBTS	A	209	BADACTCT	Same	BTS DefA	•	•	•	•	•	•	BTS Define Activity requests
DFHCBTS	A	210	BARSPACT	Same	BTSReset	•	•	•	•	•	•	BTS Reset Process/Activity requests
DFHCBTS	A	211	BASUPACT	Same	BTS Susp	•	•	•	•	•	•	BTS Suspend Process/Activity requests
DFHCBTS	A	212	BARMPACT	Same	BTSResum	•	•	•	•	•	•	BTS Resume Process/Activity requests
DFHCBTS	A	213	BADCPACT	Same	BTSCancl	•	•	•	•	•	•	BTS Cancel Process/Activity requests
DFHCBTS	A	214	BAACQPCT	Same	BTSAcqui	•	•	•	•	•	•	BTS Acquire Process/Activity requests
DFHCBTS	A	215	BATOTPCT	Same	BTSTotal	•	•	•	•	•	•	BTS Total Process/Activity requests
DFHCBTS	A	216	BAPRDCCT	Same	BTSPDCRq	•	•	•	•	•	•	BTS Process Data Containers requests
DFHCBTS	A	217	BAACDCCT	Same	BTSADCRq	•	•	•	•	•	•	BTS Activity Data Containers requests
DFHCBTS	A	218	BATOTCCT	Same	BTSTDCRq	•	•	•	•	•	•	BTS Process/Activity Data Container requests
DFHCBTS	A	219	BARATECT	Same	BTSRtvEv	•	•	•	•	•	•	BTS Retrieve-Reattach Event requests
DFHCBTS	A	220	BADFIECT	Same	BTSDefEv	•	•	•	•	•	•	BTS Define-Input Event requests
DFHCBTS	A	221	BATIAECT	Same	BTSTimEv	•	•	•	•	•	•	BTS TIMER Event requests
DFHCBTS	A	222	BATOTECT	Same	BTSTotEv	•	•	•	•	•	•	BTS Event-related requests
DFHCHNL	A	321	PGTOTCCT	Same	PGTOTCCT	–	–	–	–	•	•	Total number of CHANNEL CONTAINER requests
DFHCHNL	A	322	PGBRWCCT	Same	PGBRWCCT	–	–	–	–	•	•	BROWSE CHANNEL CONTAINER requests
DFHCHNL	A	323	PGGETCCT	Same	PGGETCCT	–	–	–	–	•	•	GET CHANNEL CONTAINER requests
DFHCHNL	A	324	PGPUTCCT	Same	PGPUTCCT	–	–	–	–	•	•	PUT CHANNEL CONTAINER requests
DFHCHNL	A	325	PGMOVCCT	Same	PGMOVCCT	–	–	–	–	•	•	MOVE CHANNEL CONTAINER requests
DFHCHNL	A	326	PGGETCDL	Same	PGGETCDL	–	–	–	–	•	•	GET CHANNEL CONTAINER data length
DFHCHNL	A	327	PGPUTCDL	Same	PGPUTCDL	–	–	–	–	•	•	PUT CHANNEL CONTAINER data length
DFHCHNL	A	328	PGCRECCT	Same	PGCRECCT	–	–	–	–	•	•	Number of Containers created
DFHCHNL	A	329	PGCSTHWM	Same	PGCSTHWM	–	–	–	–	–	•	Maximum Container Storage allocated to task
DFHCICS	T	005	START	Same	Start	•	•	•	•	•	•	Task start time
DFHCICS	T	006	STOP	Same	Stop	•	•	•	•	•	•	Task stop time
DFHCICS	A	025	CFCAPICT	Same	CFClsAPI	•	•	•	•	•	•	OO Foundation Class requests
DFHCICS	C	089	USERID	Same	Userid	•	•	•	•	•	•	User ID
DFHCICS	S	103	EXWTTIME	EXWAIT	Exc Wait	•	•	•	•	•	•	Exception Conditions wait time
DFHCICS	C	112	RTYPE	Same	RTyp	•	•	•	•	•	•	Performance record type
DFHCICS	C	130	RSYSID	Same	RSID	•	•	•	•	•	•	Remote System ID
DFHCICS	A	131	PERRECNT	RECCOUNT	RecCount	•	•	•	•	•	•	Task Performance record count
DFHCICS	C	167	SRVCLASS	Same	SrvClass	•	•	•	•	•	•	WLM Service Class
DFHCICS	C	168	RPTCLASS	Same	RptClass	•	•	•	•	•	•	WLM Report Class
DFHCICS	C	359	ONETWKID	Same	ONETWKID	–	–	–	–	–	•	Originating Network ID
DFHCICS	C	360	OAPPLID	Same	OAPPLID	–	–	–	–	–	•	Originating CICS APPLID
DFHCICS	T	361	OSTART	Same	OStart	–	–	–	–	–	•	Originating Task start time
DFHCICS	P	362	OTRANNUM	OTASKNO	OTaskNo	–	–	–	–	–	•	Originating Transaction number
DFHCICS	C	363	OTRAN	Same	OTran	–	–	–	–	–	•	Originating Transaction identifier
DFHCICS	C	364	OUSERID	Same	OUserid	–	–	–	–	–	•	Originating User ID
DFHCICS	C	365	OUSERCOR	Same	OUserCor	–	–	–	–	–	•	Originating User Correlator
DFHCICS	C	366	OTCPSVCE	OTCPSRVC	OTCPIPSr	–	–	–	–	–	•	Originating TCP/IP Service Name
DFHCICS	A	367	OPORTNUM	OPORT	OPORT	–	–	–	–	–	•	Originating TCP/IP Port Number
DFHCICS	C	368	OCLIPADR	OCLINTIP	OClintIP	–	–	–	–	–	•	Originating Client or Telnet IP address
DFHCICS	A	369	OCLIPORT	Same	OCLIPORT	–	–	–	–	–	•	Originating Client IP Port Number
DFHCICS	A	370	OTRANFLG	Same	OTranFlg	–	–	–	–	–	•	Originating Transaction flags
DFHCICS	A	370	OTRANFLG	OFCTYTYP	OFctyTyp	–	–	–	–	–	•	Originating Transaction Facility Type
DFHCICS	C	370	OTRANFLG	OORIGIN	OOrigin	–	–	–	–	–	•	Originating Transaction Origin type
DFHCICS	C	370	OTRANFLG	OTRANTYP	OTranTyp	–	–	–	–	–	•	Originating Transaction type
DFHCICS	C	371	OFCTYNME	OFCTY	OFcty	–	–	–	–	–	•	Originating Transaction Facility name
DFHDATA	A	179	IMSREQCT	Same	IMS Reqs	•	•	•	•	•	•	IMS (DBCTL) requests
DFHDATA	A	180	DB2REQCT	Same	DB2 Reqs	•	•	•	•	•	•	DB2 requests

Table 30. Cross-reference: CMF field ID × CICS version (continued)

CMF field						CICS version						
Group	Type	ID	Name	CICS PA field name	Column heading	530	610	620	630	640	650	Description
DFHDATA	S	186	IMSWAIT	Same	IMS Wait	•	•	•	•	•	•	IMS (DBCTL) wait time
DFHDATA	S	187	DB2RDYQW	Same	DB2ThdWt	•	•	•	•	•	•	DB2 Thread wait time
DFHDATA	S	188	DB2CONWT	Same	DB2ConWt	•	•	•	•	•	•	DB2 Connection wait time
DFHDATA	S	189	DB2WAIT	Same	DB2SQLWt	•	•	•	•	•	•	DB2 SQL/IFI wait time
DFHDATA	A	395	WMQREQCT	Same	WMQ Reqs	–	–	–	–	–	•	Number of WebSphere MQ requests
DFHDATA	S	396	WMQGETWT	Same	WMQGetWt	–	–	–	–	–	•	WebSphere MQ GETWAIT wait time
DFHDEST	A	041	TDGETCT	TDGET	TDGET	•	•	•	•	•	•	Transient data GET requests
DFHDEST	A	042	TDPUTCT	TDPUT	TDPUT	•	•	•	•	•	•	Transient data PUT requests
DFHDEST	A	043	TDPURCT	TDPURGE	TDPURGE	•	•	•	•	•	•	Transient data PURGE requests
DFHDEST	A	091	TDTOTCT	TDTOTAL	TD Total	•	•	•	•	•	•	Transient data Total requests
DFHDEST	S	101	TDIOWTT	TDWAIT	TD Wait	•	•	•	•	•	•	VSAM transient data I/O wait time
DFHDOCH	A	223	DHDELCT	DHDELETE	DHDELETE	–	–	–	–	–	•	Document Handler DELETE requests
DFHDOCH	A	226	DHCRECT	DHCREATE	DHCREATE	•	•	•	•	•	•	Document Handler CREATE requests
DFHDOCH	A	227	DHINSCT	DHINSERT	DHINSERT	•	•	•	•	•	•	Document Handler INSERT requests
DFHDOCH	A	228	DHSETCT	DHSET	DHSET	•	•	•	•	•	•	Document Handler SET requests
DFHDOCH	A	229	DHRETCT	DHRETRVE	DHRETRVE	•	•	•	•	•	•	Document Handler RETRIEVE requests
DFHDOCH	A	230	DHTOTCT	DHTOTAL	DH Total	•	•	•	•	•	•	Document Handler Total requests
DFHDOCH	A	240	DHTOTDCL	Same	DHDocLen	•	•	•	•	•	•	Total length of all documents created
DFHEJBS	C	311	CBSRVRNM	Same	Corb	–	–	–	•	•	•	CorbaServer name
DFHEJBS	A	312	EJBSACCT	EJBACTIV	EJBActiv	–	–	–	•	•	•	Number of Bean State Activation requests
DFHEJBS	A	313	EJBSPACT	EJBPASIV	EJBPasiv	–	–	–	•	•	•	Number of Bean State Passivation requests
DFHEJBS	A	314	EJBCRECT	EJBCREAT	EJBCreat	–	–	–	•	•	•	Number of Bean Creation requests
DFHEJBS	A	315	EJBREMCT	EJBREMOV	EJBRemov	–	–	–	•	•	•	Number of Bean Removal requests
DFHEJBS	A	316	EJBMTHCT	EJBMETHD	EJBMethd	–	–	–	•	•	•	Number of EJB Method Calls
DFHEJBS	A	317	EJBTOTCT	EJBTOTAL	EJBTotal	–	–	–	•	•	•	Total Number of EJB requests
DFHFEPI	A	150	SZALLOCT	SZALLOC	SZALLOC	•	•	•	•	•	•	Conversations allocated count
DFHFEPI	A	151	SZRCVCT	SZRCV	SZRCV	•	•	•	•	•	•	FEPI RECEIVE requests
DFHFEPI	A	152	SZSENDCT	SZSEND	SZSEND	•	•	•	•	•	•	FEPI SEND requests
DFHFEPI	A	153	SZSTRTCT	SZSTART	SZSTART	•	•	•	•	•	•	FEPI START requests
DFHFEPI	A	154	SZCHROUT	Same	SZChrOut	•	•	•	•	•	•	FEPI characters sent count
DFHFEPI	A	155	SZCHRIN	Same	SZChrIn	•	•	•	•	•	•	FEPI characters received count
DFHFEPI	S	156	SZWAIT	Same	SZ Wait	•	•	•	•	•	•	FEPI services wait time
DFHFEPI	A	157	SZALLCTO	Same	SZAlocTO	•	•	•	•	•	•	Allocate conversation time-out count
DFHFEPI	A	158	SZRCVTO	Same	SZRecvTO	•	•	•	•	•	•	Receive Data time-out count
DFHFEPI	A	159	SZTOTCT	SZTOTAL	SZ Total	•	•	•	•	•	•	FEPI API and SPI requests
DFHFILE	A	036	FCGETCT	FCGET	FCGET	•	•	•	•	•	•	File GET requests
DFHFILE	A	037	FCPUTCT	FCPUT	FCPUT	•	•	•	•	•	•	File PUT requests
DFHFILE	A	038	FCBRWCT	FCBROWSE	FCBROWSE	•	•	•	•	•	•	File Browse requests
DFHFILE	A	039	FCADDCT	FCADD	FCADD	•	•	•	•	•	•	File ADD requests
DFHFILE	A	040	FCDELCT	FCDELETE	FCDELETE	•	•	•	•	•	•	File DELETE requests
DFHFILE	S	063	FCIOWTT	FCWAIT	FC Wait	•	•	•	•	•	•	File I/O wait time
DFHFILE	A	070	FCAMCT	Same	FCAMRq	•	•	•	•	•	•	File access-method requests
DFHFILE	A	093	FCTOTCT	FCTOTAL	FC Total	•	•	•	•	•	•	File Control requests
DFHFILE	S	174	RLSWAIT	Same	RLS Wait	•	•	•	•	•	•	RLS File I/O wait time
DFHFILE	S	175	RLSCPUT	RLSCPU	RLS CPU	•	•	•	•	•	•	RLS File Request CPU (SRB) time
DFHFILE	S	176	CFDTWAIT	Same	CFDTWait	•	•	•	•	•	•	CF Data Table access requests wait time
DFHJOUR	S	010	JCIOWTT	JCWAIT	JC Wait	•	•	•	•	•	•	Journal I/O wait time
DFHJOUR	A	058	JNLWRTCT	JNLPUT	JnlWrite	•	•	•	•	•	•	Journal write requests
DFHJOUR	A	172	LOGWRTCT	LOGWRITE	LogWrite	•	•	•	•	•	•	Log Stream write requests
DFHMAPP	A	050	BMSMAPCT	BMSMAP	BMSMAP	•	•	•	•	•	•	BMS MAP requests
DFHMAPP	A	051	BMSINCT	BMSIN	BMSIN	•	•	•	•	•	•	BMS IN requests
DFHMAPP	A	052	BMSOUTCT	BMSOUT	BMSOUT	•	•	•	•	•	•	BMS OUT requests

Table 30. Cross-reference: CMF field ID × CICS version (continued)

CMF field						CICS version						
Group	Type	ID	Name	CICS PA field name	Column heading	530	610	620	630	640	650	Description
DFHMAPP	A	090	BMSTOTCT	BMSTOTAL	BMSTotal	•	•	•	•	•	•	BMS Total requests
DFHPROG	A	055	PCLINKCT	PCLINK	PCLINK	•	•	•	•	•	•	Program LINK requests
DFHPROG	A	056	PCXCTLCT	PCXCTL	PCXCTL	•	•	•	•	•	•	Program XCTL requests
DFHPROG	A	057	PCLOADCT	PCLOAD	PCLOAD	•	•	•	•	•	•	Program LOAD requests
DFHPROG	C	071	PGMNAME	PROGRAM	Program	•	•	•	•	•	•	Program name
DFHPROG	A	072	PCLURMCT	PCLURM	PCLNKURM	•	•	•	•	•	•	Program LINK URM requests
DFHPROG	A	073	PCDPLCT	PCDPL	PCDPLINK	•	•	•	•	•	•	Distributed Program Link (DPL) requests
DFHPROG	C	113	ABCODEO	Same	ABor	•	•	•	•	•	•	Original ABEND Code
DFHPROG	C	114	ABCODEC	Same	ABcu	•	•	•	•	•	•	Current ABEND code
DFHPROG	S	115	PCLOADTM	Same	PCLOADWt	•	•	•	•	•	•	Program Library wait time
DFHPROG	A	286	PCDLCSDL	Same	PCDLCSDL	–	–	–	–	•	•	Container data length for DPL reqs with CHANNEL
DFHPROG	A	287	PCDLCRDL	Same	PCDLCRDL	–	–	–	–	•	•	Container data length for DPL RETURN w/ CHANNEL
DFHPROG	A	306	PCLNKCCT	Same	PCLNKCCT	–	–	–	–	•	•	LINK requests with CHANNEL option
DFHPROG	A	307	PCXCLCCT	Same	PCXCLCCT	–	–	–	–	•	•	XCTL requests with CHANNEL option
DFHPROG	A	308	PCDPLCCT	Same	PCDPLCCT	–	–	–	–	•	•	DPL requests with CHANNEL option
DFHPROG	A	309	PCRTNCCT	Same	PCRTNCCT	–	–	–	–	•	•	Program RETURN requests with CHANNEL option
DFHPROG	A	310	PCRTNCDL	Same	PCRTNCDL	–	–	–	–	•	•	Container data length for RETURN with CHANNEL
DFHRMI	S	001	RMITOTAL	Same	RMITotal	–	–	•	•	•	•	RMI total elapsed time
DFHRMI	S	002	RMIOTHER	Same	RMI Othr	–	–	•	•	•	•	RMI other elapsed time
DFHRMI	S	003	RMIDB2	Same	RMI DB2	–	–	•	•	•	•	RMI elapsed time for DB2 requests
DFHRMI	S	004	RMIDBCTL	Same	RMIDBCTL	–	–	•	•	•	•	RMI elapsed time for DBCTL requests
DFHRMI	S	005	RMIEXDLI	Same	RMIEXDLI	–	–	•	•	•	•	RMI elapsed time for EXEC DLI requests
DFHRMI	S	006	RMIMQM	Same	RMI MQ	–	–	•	•	•	•	RMI elapsed time for WebSphere MQ requests
DFHRMI	S	007	RMICPSM	Same	RMI CPSM	–	–	•	•	•	•	RMI elapsed time for CICSPlex SM requests
DFHRMI	S	008	RMITCPIP	Same	RMITCPIP	–	–	•	•	•	•	RMI elapsed time for TCP/IP socket requests
DFHSOCK	S	241	SOIOWTT	SOWAIT	SockWait	•	•	•	•	•	•	Inbound Socket I/O wait time
DFHSOCK	A	242	SOBYENCT	Same	SockEcry	•	•	•	•	•	•	Secure Socket bytes encrypted count
DFHSOCK	A	243	SOBYDECT	Same	SockDcry	•	•	•	•	•	•	Secure Socket bytes decrypted count
DFHSOCK	C	244	CLIPADDR	CLIENTIP	ClientIP	•	•	•	•	•	•	Client IP or Telnet client IP address
DFHSOCK	C	245	TCPSRVCE	Same	TCPIPSrv	–	•	•	•	•	•	TCP/IP Service Name
DFHSOCK	A	246	PORTNUM	PORT	PORT	–	•	•	•	•	•	TCP/IP Port Number
DFHSOCK	A	288	ISALLOCT	ISALLOC	ISALLOC	–	–	–	–	–	•	Allocate Session requests for sessions on IP
DFHSOCK	A	289	SOEXTRCT	Same	SOEXTRAC	–	•	•	•	•	•	EXTRACT TCP/IP and CERTIFICATE requests
DFHSOCK	A	290	SOCNPSCT	Same	SOCNPSRq	–	•	•	•	•	•	Create Non-Persistent Outbound Socket reqs
DFHSOCK	A	291	SOCPSCT	Same	SOCPSReq	–	•	•	•	•	•	Create Persistent Outbound Socket requests
DFHSOCK	A	292	SONPSHWM	Same	SONPSHWM	–	•	•	•	•	•	Non-Persistent Outbound Socket HWM
DFHSOCK	A	293	SOPSHWM	Same	SOPSHWM	–	•	•	•	•	•	Persistent Outbound Socket HWM
DFHSOCK	A	294	SORCVCT	SORCV	SO Recv	–	•	•	•	•	•	Outbound Sockets RECEIVE requests
DFHSOCK	A	295	SOCHRIN	Same	SOChrIn	–	•	•	•	•	•	Outbound Sockets characters received count
DFHSOCK	A	296	SOSENDCT	SOSEND	SO SEND	–	•	•	•	•	•	Outbound Sockets SEND requests
DFHSOCK	A	297	SOCHROUT	Same	SOChrOut	–	•	•	•	•	•	Outbound Sockets characters sent count
DFHSOCK	A	298	SOTOTCT	SOTOTAL	SOTotal	–	•	•	•	•	•	Socket Total requests
DFHSOCK	S	299	SOOIOWTT	OSOWAIT	OSO Wait	–	•	•	•	•	•	Outbound Socket I/O Wait Time
DFHSOCK	S	300	ISIOWTT	ISWAIT	IS Wait	–	–	–	–	–	•	IPCONN link wait time
DFHSOCK	A	301	SOMSGIN1	Same	SOMsgIn1	–	–	•	•	•	•	Inbound Sockets RECEIVE requests
DFHSOCK	A	302	SOCHRIN1	Same	SOChrIn1	–	–	•	•	•	•	Inbound Sockets characters received count
DFHSOCK	A	303	SOMSGOU1	Same	SOMsgOu1	–	–	•	•	•	•	Inbound Sockets SEND requests
DFHSOCK	A	304	SOCHROU1	Same	SOChrOu1	–	–	•	•	•	•	Inbound Sockets characters sent count
DFHSOCK	C	305	ISIPCNNM	ISIPICNM	ISIPICNM	–	–	–	–	–	•	Name of IPCONN definition that attached the task
DFHSOCK	A	330	CLIPPORT	Same	CLIPPORT	–	–	–	–	–	•	Client IP Port Number

Table 30. Cross-reference: CMF field ID × CICS version (continued)

CMF field						CICS version						
Group	Type	ID	Name	CICS PA field name	Column heading	530	610	620	630	640	650	Description
DFHSTOR	A	033	SCUSRHWM	SC24UHWM	SC24UHWM	•	•	•	•	•	•	UDSA HWM below 16MB
DFHSTOR	A	054	SCUGETCT	SC24UGET	SC24UGet	•	•	•	•	•	•	UDSA GETMAINs below 16MB
DFHSTOR	A	087	PCSTGHWM	Same	PCStgHWM	•	•	•	•	•	•	Program Storage HWM above and below 16MB
DFHSTOR	A	095	SCUSRSTG	SC24UOCC	SC24UOcc	•	•	•	•	•	•	UDSA Storage Occupancy below 16MB
DFHSTOR	A	105	SCUGETCT	SC31UGET	SC31UGet	•	•	•	•	•	•	EUDSA GETMAINs above 16MB
DFHSTOR	A	106	SCUSRHWM	SC31UHWM	SC31UHWM	•	•	•	•	•	•	EUDSA HWM above 16MB
DFHSTOR	A	107	SCUCRSTG	SC31UOCC	SC31UOcc	•	•	•	•	•	•	EUDSA Storage Occupancy above 16MB
DFHSTOR	A	108	PC24BHWM	Same	PC24bHWM	•	•	•	•	•	•	Program Storage HWM below 16MB
DFHSTOR	A	116	SC24CHWM	Same	SC24CHWM	•	•	•	•	•	•	CDSA HWM below 16MB
DFHSTOR	A	117	SCCGETCT	SC24CGET	SC24CGet	•	•	•	•	•	•	CDSA GETMAINs below 16MB
DFHSTOR	A	118	SC24COCC	Same	SC24COcc	•	•	•	•	•	•	CDSA Storage Occupancy below 16MB
DFHSTOR	A	119	SC31CHWM	Same	SC31CHWM	•	•	•	•	•	•	ECDSA HWM above 16MB
DFHSTOR	A	120	SCCGETCT	SC31CGET	SC31CGet	•	•	•	•	•	•	ECDSA GETMAINs above 16MB
DFHSTOR	A	121	SC31COCC	Same	SC31COcc	•	•	•	•	•	•	ECDSA Storage Occupancy above 16MB
DFHSTOR	A	122	PC31RHWM	Same	PC31RHWM	•	•	•	•	•	•	Program Storage (ERDSA) HWM above 16MB
DFHSTOR	A	139	PC31AHWM	Same	PC31aHWM	•	•	•	•	•	•	Program Storage HWM above 16MB
DFHSTOR	A	142	PC31CHWM	Same	PC31CHWM	•	•	•	•	•	•	Program Storage (ECDSA) HWM above 16MB
DFHSTOR	A	143	PC24CHWM	Same	PC24CHWM	•	•	•	•	•	•	Program Storage (CDSA) HWM below 16MB
DFHSTOR	A	144	SC24SGCT	SC24SGET	SC24SGet	•	•	•	•	•	•	CDSA/SDSA GETMAINs below 16MB
DFHSTOR	A	145	SC24GSHR	Same	SC24GShr	•	•	•	•	•	•	CDSA/SDSA storage GETMAINed below 16MB
DFHSTOR	A	146	SC24FSHR	Same	SC24FShr	•	•	•	•	•	•	CDSA/SDSA storage FREEMAINed below 16MB
DFHSTOR	A	147	SC31SGCT	SC31SGET	SC31SGet	•	•	•	•	•	•	ECDSA/ESDSA GETMAINs above 16MB
DFHSTOR	A	148	SC31GSHR	Same	SC31GShr	•	•	•	•	•	•	ECDSA/ESDSA storage GETMAINed above 16MB
DFHSTOR	A	149	SC31FSHR	Same	SC31FShr	•	•	•	•	•	•	ECDSA/ESDSA storage FREEMAINed above 16MB
DFHSTOR	A	160	PC24SHWM	Same	PC24SHWM	•	•	•	•	•	•	Program Storage (SDSA) HWM below 16MB
DFHSTOR	A	161	PC31SHWM	Same	PC31SHWM	•	•	•	•	•	•	Program Storage (ESDSA) HWM above 16MB
DFHSTOR	A	162	PC24RHWM	Same	PC24RHWM	•	•	•	•	•	•	Program Storage (RDSA) HWM below 16MB
DFHSYNC	A	060	SPSYNCCT	SYNCPT	SYNCPT	•	•	•	•	•	•	SYNCPOINT requests
DFHSYNC	S	173	SYNCTIME	Same	SYNCProc	•	•	•	•	•	•	SYNCPOINT processing time
DFHSYNC	S	177	SRVSYWTT	CFDTSYNC	CFDTSync	•	•	•	•	•	•	CF Data Table syncpoint wait time
DFHSYNC	S	196	SYNCDLY	Same	SYNC Dly	•	•	•	•	•	•	SYNCPOINT parent request wait time
DFHSYNC	S	199	OTSINDWT	Same	OTSIndWt	–	•	•	•	•	•	OTS Indoubt Wait time
DFHTASK	C	001	TRAN	Same	Tran	•	•	•	•	•	•	Transaction identifier
DFHTASK	C	004	TTYPE	STYPE	SC	•	•	•	•	•	•	Transaction start type
DFHTASK	S	007	USRDISPT	DISPATCH	Dispatch	•	•	•	•	•	•	Dispatch time
DFHTASK	S	008	USRCPUT	CPU	User CPU	•	•	•	•	•	•	CPU time
DFHTASK	S	014	SUSPTIME	SUSPEND	Suspend	•	•	•	•	•	•	Suspend time
DFHTASK	P	031	TRANNUM	TASKNO	TaskNo	•	•	•	•	•	•	Transaction identification number
DFHTASK	A	059	ICPUINCT	ICPUT	ICSTART	•	•	•	•	•	•	Interval Control START or INITIATE requests
DFHTASK	A	064	TASKFLAG	ERRFLAGS	Err Flag	•	•	•	•	•	•	Task error flags
DFHTASK	C	064	TASKFLAG	None	Err Flag	•	•	•	•	•	•	Task error flags
DFHTASK	A	065	ICSTACCT	Same	ICSTACCT	–	–	–	–	•	•	Local IC START requests with CHANNEL option
DFHTASK	A	066	ICTOTCT	ICTOTAL	IC Total	•	•	•	•	•	•	Interval Control requests
DFHTASK	C	082	TRNGRPID	None	Group ID	•	•	•	•	•	•	Transaction Group ID
DFHTASK	C	097	NETUOWPX	NETNAME	NETName	•	•	•	•	•	•	Originating System VTAM network name
DFHTASK	C	098	NETUOWSX	Same	NETUOWID	•	•	•	•	•	•	Network UOW ID
DFHTASK	S	102	DISPWTT	DISPWAIT	DispWait	•	•	•	•	•	•	Redispatch wait time
DFHTASK	A	109	TRANPRI	TRANPRTY	Prty	•	•	•	•	•	•	Transaction priority
DFHTASK	S	123	GNQDELAY	Same	GNQDelay	•	•	•	•	•	•	Global Enqueue wait time
DFHTASK	C	124	BRDGTRAN	Same	Brdg	•	•	•	•	•	•	Bridge Listener Transaction ID
DFHTASK	S	125	DSPDELAY	Same	Disp1Dly	•	•	•	•	•	•	First dispatch wait time

Table 30. Cross-reference: CMF field ID × CICS version (continued)

CMF field						CICS version						
Group	Type	ID	Name	CICS PA field name	Column heading	530	610	620	630	640	650	Description
DFHTASK	S	126	TCLDELAY	Same	TCLDelay	•	•	•	•	•	•	First dispatch TCLSNAME wait time
DFHTASK	S	127	MXTDELAY	Same	MXTDelay	•	•	•	•	•	•	First dispatch MXT wait time
DFHTASK	S	128	LMDELAY	LOCKDLAY	LM Delay	•	•	•	•	•	•	Lock Manager (LM) wait time
DFHTASK	S	129	ENQDELAY	Same	ENQDelay	•	•	•	•	•	•	Local Enqueue wait time
DFHTASK	C	132	RMUOWID	None	RM UOWID	•	•	•	•	•	•	Recovery UOW ID
DFHTASK	C	163	FCTYNAME	FCTY	Fcty	•	•	•	•	•	•	Transaction Facility name
DFHTASK	A	164	TRANFLAG	Same	TranFlag	•	•	•	•	•	•	Transaction flags
DFHTASK	A	164	TRANFLAG	FCTYTYPE	FctyType	•	•	•	•	•	•	Transaction facility type
DFHTASK	C	164	TRANFLAG	ORIGIN	Origin	•	•	•	•	•	•	Transaction origin type
DFHTASK	C	164	TRANFLAG	TRANTYPE	TranType	•	•	•	•	•	•	Transaction type
DFHTASK	C	166	TCLSNAME	TCLASSNM	TCLSName	•	•	•	•	•	•	Transaction Class name
DFHTASK	S	170	RMITIME	Same	RMI Elap	•	•	•	•	•	•	Resource Manager Interface (RMI) elapsed time
DFHTASK	S	171	RMISUSP	Same	RMI Susp	•	•	•	•	•	•	Resource Manager Interface (RMI) suspend time
DFHTASK	S	181	WTEXWAIT	WAITEXT	Ext Wait	•	•	•	•	•	•	External ECB wait time
DFHTASK	S	182	WTCEWAIT	WAITEVENT	CICSWait	•	•	•	•	•	•	CICS ECB wait time
DFHTASK	S	183	ICDELAY	Same	IC Delay	•	•	•	•	•	•	Interval Control (IC) wait time
DFHTASK	S	184	GVUPWAIT	GIVEUPWT	GiveUpWt	•	•	•	•	•	•	Give up control wait time
DFHTASK	C	190	RRMSURID	None	RRMSURID	•	•	•	•	•	•	RRMS/MVS unit-of-recovery ID (URID)
DFHTASK	S	191	RRMSWAIT	Same	RRMSWait	•	•	•	•	•	•	Resource Recovery Services indoubt wait time
DFHTASK	S	192	RQRWAIT	Same	RQR Wait	–	•	•	•	•	•	Request Receiver Wait Time
DFHTASK	S	193	RQPWAIT	Same	RQP Wait	–	•	•	•	•	•	Request Processor Wait Time
DFHTASK	C	194	OTSTID	OTSID	OTS ID	–	•	•	•	•	•	OTS Transaction ID
DFHTASK	S	195	RUNTRWTT	Same	BTSRunWt	•	•	•	•	•	•	BTS run Process/Activity wait time
DFHTASK	S	247	DSCHMDLY	Same	DSCHMDLY	–	–	–	–	•	•	Redispatch wait time caused by change-TCB mode
DFHTASK	A	248	CHMODECT	Same	ChngMode	•	•	•	•	–	–	Change-TCB modes requests
DFHTASK	S	249	QRMODDLY	Same	QRModDly	•	•	•	•	•	•	CICS QR TCB redispatch wait time
DFHTASK	S	250	MXTOTDLY	MAXOTDLY	MaxOTDly	•	•	•	•	•	•	Maximum Open TCB delay time
DFHTASK	A	251	TCBATTCT	Same	TCBAtach	•	•	•	•	•	•	TCBs attached count
DFHTASK	A	252	DSTCBHWM	Same	DSTCBHWM	–	–	–	•	•	•	CICS Dispatcher TCB HWM
DFHTASK	S	253	JVMTIME	Same	JVM Elap	•	•	•	•	•	•	JVM elapsed time
DFHTASK	S	254	JVMSUSP	Same	JVM Susp	•	•	•	•	•	•	JVM suspend time
DFHTASK	S	255	QRDISPT	Same	QR Disp	•	•	•	•	•	•	CICS QR TCB dispatch time
DFHTASK	S	256	QRCPUT	QRCPU	QR CPU	•	•	•	•	•	•	CICS QR TCB CPU time
DFHTASK	S	257	MSDISPT	Same	MS Disp	•	•	•	•	•	•	CICS TCBs dispatch time
DFHTASK	S	258	MSCPUT	MSCPU	MS CPU	•	•	•	•	•	•	CICS TCBs CPU time
DFHTASK	S	259	L8CPUT	L8CPU	L8 CPU	•	•	•	•	•	•	CICS L8 TCB CPU time
DFHTASK	S	260	J8CPUT	J8CPU	J8 CPU	•	•	•	•	•	•	CICS J8 TCB CPU time
DFHTASK	S	261	S8CPUT	S8CPU	S8 CPU	•	•	•	•	•	•	CICS S8 TCB CPU time
DFHTASK	S	262	KY8DISPT	Same	KY8 Disp	–	•	•	•	•	•	CICS Key 8 TCB dispatch time
DFHTASK	S	263	KY8CPUT	KY8CPU	KY8 CPU	–	•	•	•	•	•	CICS Key 8 TCB CPU time
DFHTASK	S	264	KY9DISPT	Same	KY9 Disp	–	–	–	•	•	•	User task Key 9 Mode Dispatch time
DFHTASK	S	265	KY9CPUT	KY9CPU	KY9 CPU	–	–	–	•	•	•	User task Key 9 Mode CPU time
DFHTASK	S	266	L9CPUT	L9CPU	L9 CPU	–	–	–	–	•	•	User task L9 CPU time
DFHTASK	S	267	J9CPUT	J9CPU	J9 CPU	–	–	–	•	•	•	User task J9 Mode CPU time
DFHTASK	S	268	DSTCBMWT	Same	DSTCBMWT	–	–	–	•	•	•	Dispatcher TCB Mismatch wait time
DFHTASK	S	269	RODISPT	Same	RO Disp	–	–	•	•	•	•	CICS RO TCB dispatch time
DFHTASK	S	270	ROCPUT	ROCPU	RO CPU	–	–	•	•	•	•	CICS RO TCB CPU time
DFHTASK	S	271	X8CPUT	X8CPU	X8 CPU	–	–	–	–	•	•	CICS X8 TCB CPU time
DFHTASK	S	272	X9CPUT	X9CPU	X9 CPU	–	–	–	–	•	•	User task X9 Mode CPU time
DFHTASK	S	273	JVMITIME	Same	JVMITime	–	•	•	•	•	•	JVM initialize elapsed time
DFHTASK	S	275	JVMRTIME	Same	JVMRTime	–	•	•	•	•	•	JVM reset elapsed time
DFHTASK	S	277	MAXJTDLY	Same	MaxJTDly	–	–	•	•	•	•	Maximum JVM TCB delay time
DFHTASK	S	278	MAXHTDLY	Same	MaxHTDly	–	–	•	•	–	–	Maximum Hot-Pooling TCB delay time
DFHTASK	S	279	DSMMSCWT	Same	DS Wait	–	–	–	•	•	•	DS storage constraint wait time

Table 30. Cross-reference: CMF field ID × CICS version (continued)

CMF field						CICS version						
Group	Type	ID	Name	CICS PA field name	Column heading	530	610	620	630	640	650	Description
DFHTASK	S	281	MAXSTDLY	Same	MAXSTDLY	–	–	–	–	•	•	Maximum SSL TCB delay time
DFHTASK	S	282	MAXXTDLY	Same	MAXXTDLY	–	–	–	–	•	•	Maximum XPLink TCB delay time
DFHTASK	S	285	PTPWAIT	Same	PTP Wait	–	–	•	•	•	•	3270 Bridge Partner wait time
DFHTASK	A	345	ICSTACDL	Same	ICSTACDL	–	–	–	–	•	•	Container data len for Local IC START w/ CHANNEL
DFHTASK	A	346	ICSTRCCT	Same	ICSTRCCT	–	–	–	–	•	•	Remote IC START requests with CHANNEL option
DFHTASK	A	347	ICSTRCDL	Same	ICSTRCDL	–	–	–	–	•	•	Container data len for Remot IC START w/ CHANNEL
DFHTEMP	S	011	TSIOWTT	TSWAIT	TS Wait	•	•	•	•	•	•	VSAM TS I/O wait time
DFHTEMP	A	044	TSGETCT	TSGET	TSGET	•	•	•	•	•	•	Temporary Storage GET requests
DFHTEMP	A	046	TSPUTACT	TSPUTAUX	TSPUTAux	•	•	•	•	•	•	Auxiliary TS PUT requests
DFHTEMP	A	047	TSPUTMCT	Same	TSPUTMai	•	•	•	•	•	•	Main TS PUT requests
DFHTEMP	A	092	TSTOTCT	TSTOTAL	TS Total	•	•	•	•	•	•	TS Total requests
DFHTEMP	S	178	TSSHWAIT	Same	TSShWait	•	•	•	•	•	•	Asynchronous Shared TS wait time
DFHTERM	C	002	TERM	Same	Term	•	•	•	•	•	•	Terminal ID
DFHTERM	S	009	TCIOWTT	TCWAIT	TC Wait	•	•	•	•	•	•	Terminal wait for input time
DFHTERM	A	034	TCMSGIN1	MSGIN1	MsgIn1	•	•	•	•	•	•	Messages received count
DFHTERM	A	035	TCMSGOU1	MSGOUT1	MsgOut1	•	•	•	•	•	•	Messages sent count
DFHTERM	A	067	TCMSGIN2	MSGIN2	MsgIn2	•	•	•	•	•	•	Messages received from LU6.1
DFHTERM	A	068	TCMSGOU2	MSGOUT2	MsgOut2	•	•	•	•	•	•	Messages sent to LU6.1
DFHTERM	A	069	TCALLOCT	TCALLOC	TCALLOC	•	•	•	•	•	•	TCTTE ALLOCATE requests
DFHTERM	A	083	TCCHRIN1	CHARIN1	CharIn1	•	•	•	•	•	•	Terminal characters received count
DFHTERM	A	084	TCCHROU1	CHAROUT1	CharOut1	•	•	•	•	•	•	Terminal characters sent count
DFHTERM	A	085	TCCHRIN2	CHARIN2	CharIn2	•	•	•	•	•	•	LU6.1 characters received count
DFHTERM	A	086	TCCHROU2	CHAROUT2	CharOut2	•	•	•	•	•	•	LU6.1 characters sent count
DFHTERM	S	100	IRIOWTT	IRWAIT	IR Wait	•	•	•	•	•	•	MRO link wait time
DFHTERM	C	111	LUNAME	Same	LUName	•	•	•	•	•	•	VTAM logical unit name
DFHTERM	S	133	LU61WTT	LU61WAIT	LU61Wait	•	•	•	•	•	•	LU6.1 wait time
DFHTERM	S	134	LU62WTT	LU62WAIT	LU62Wait	•	•	•	•	•	•	LU6.2 wait time
DFHTERM	A	135	TCM62IN2	Same	TCM62In2	•	•	•	•	•	•	LU6.2 messages received count
DFHTERM	A	136	TCM62OU2	Same	TCM62Ou2	•	•	•	•	•	•	LU6.2 messages sent count
DFHTERM	A	137	TCC62IN2	Same	TCC62In2	•	•	•	•	•	•	LU6.2 characters received count
DFHTERM	A	138	TCC62OU2	Same	TCC62Ou2	•	•	•	•	•	•	LU6.2 characters sent count
DFHTERM	A	165	TERMINFO	Same	TermInfo	•	•	•	•	•	•	Terminal information
DFHTERM	A	165	TERMINFO	ACCMETH	Acc Meth	•	•	•	•	•	•	Terminal Access Method
DFHTERM	A	165	TERMINFO	TERMCODE	DevT	•	•	•	•	•	•	Terminal Device Type
DFHTERM	A	165	TERMINFO	NATURE	Nature	•	•	•	•	•	•	Transaction
DFHTERM	A	165	TERMINFO	SESSTYPE	SessType	•	•	•	•	•	•	Terminal session type
DFHTERM	C	169	TERMCNNM	Same	ConnName	•	•	•	•	•	•	Terminal session Connection name
DFHTERM	C	197	NETID	Same	NET ID	–	•	•	•	•	•	VTAM LUALIAS Network ID
DFHTERM	C	198	RLUNAME	Same	RLUNAME	–	•	•	•	•	•	VTAM LUALIAS Logical Unit name
DFHWEBB	A	224	WBREADCT	WBREAD	WB READ	–	•	•	•	•	•	Web READ requests
DFHWEBB	A	225	WBWRITCT	WBWRITE	WB WRITE	–	•	•	•	•	•	Web WRITE requests
DFHWEBB	A	231	WBRCVCT	WBRCV	WBRCV	•	•	•	•	•	•	Web RECEIVE requests
DFHWEBB	A	232	WBCHRIN	Same	WBChrIn	•	•	•	•	•	•	Web characters received count
DFHWEBB	A	233	WBSENDCT	WBSEND	WBSEND	•	•	•	•	•	•	Web SEND requests
DFHWEBB	A	234	WBCHROUT	Same	WBChrOut	•	•	•	•	•	•	Web characters sent count
DFHWEBB	A	235	WBTOTWCT	WBTOTAL	WB Total	•	•	•	•	•	•	Web Total requests
DFHWEBB	A	236	WBREPRCT	Same	WBRepoRd	•	•	•	•	•	•	Web Temporary Storage Repository read requests
DFHWEBB	A	237	WBREPWCT	Same	WBRepoWr	•	•	•	•	•	•	Web Temporary Storage Repository write requests
DFHWEBB	A	238	WBEXTRCT	Same	WBEXTRAC	–	•	•	•	•	•	Web EXTRACT requests
DFHWEBB	A	239	WBBRWCT	WBBROWSE	WBBROWSE	–	•	•	•	•	•	Web Browse requests

Table 30. Cross-reference: CMF field ID × CICS version (continued)

CMF field						CICS version						
Group	Type	ID	Name	CICS PA field name	Column heading	530	610	620	630	640	650	Description
DFHWEBB	A	331	WBREDOCT	Same	WBREDOCT	–	–	–	–	•	•	CICS Web Support READ HTTPHEADER requests
DFHWEBB	A	332	WBWRTOCT	Same	WBWRTOCT	–	–	–	–	•	•	CICS Web Support WRITE HTTPHEADER requests
DFHWEBB	A	333	WBRCVIN1	Same	WBRCVIN1	–	–	–	–	•	•	CICS Web Support RECEIVE and CONVERSE requests
DFHWEBB	A	334	WBCHRIN1	Same	WBCHRIN1	–	–	–	–	•	•	CICS Web Support RECEIVE and CONVERSE chars
DFHWEBB	A	335	WBSNDOU1	Same	WBSNDOU1	–	–	–	–	•	•	CICS Web Support SEND and CONVERSE requests
DFHWEBB	A	336	WBCHROU1	Same	WBCHROU1	–	–	–	–	•	•	CICS Web Support SEND and CONVERSE chars
DFHWEBB	A	337	WBPARSCT	Same	WBPARSCT	–	–	–	–	•	•	CICS Web Support PARSE URL requests
DFHWEBB	A	338	WBBRWOCT	Same	WBBRWOCT	–	–	–	–	•	•	CICS Web Support BROWSE HTTPHEADER requests
DFHWEBB	A	340	WBIWBSCT	Same	WBIWBSCT	–	–	–	–	•	•	CICS INVOKE WEBSERVICE requests
DFHWEBB	A	341	WBREPRDL	Same	WBREPRDL	–	–	–	–	•	•	Repository Read data length
DFHWEBB	A	342	WBREPWDL	Same	WBREPWDL	–	–	–	–	•	•	Repository Write data length
OMCICS	C	001	DB2WARN	Same	DB2WARN	•	•	•	•	•	•	OMEGAMON DB2 Limit Warning
OMCICS	C	002	DLIWARN	Same	DLIWARN	•	•	•	•	•	•	OMEGAMON DLI Limit Warning
OMCICS	C	003	VSAMWARN	Same	VSAMWARN	•	•	•	•	•	•	OMEGAMON VSAM Limit warning
OMCICS	C	004	MQWARN	Same	MQWARN	•	•	•	•	•	•	OMEGAMON MQ Limit Warning
OMCICS	C	005	ADABWARN	Same	ADABWARN	•	•	•	•	•	•	OMEGAMON Adabas Limit Warning
OMCICS	C	006	IDMSWARN	Same	IDMSWARN	•	•	•	•	•	•	OMEGAMON CA-IDMS Limit Warning
OMCICS	C	007	SUPRWARN	Same	SUPRWARN	•	•	•	•	•	•	OMEGAMON Supra Limit Warning
OMCICS	C	008	DCOMWARN	Same	DCOMWARN	•	•	•	•	•	•	OMEGAMON CA-Datacom Limit Warning
OMCICS	C	009	CPUWARN	Same	CPUWARN	•	•	•	•	•	•	OMEGAMON CPU Limit Warning
OMCICS	C	010	ELAPWARN	Same	ELAPWARN	•	•	•	•	•	•	OMEGAMON Elapsed Time Limit Warning
OMCICS	C	011	DSAWARN	Same	DSAWARN	•	•	•	•	•	•	OMEGAMON DSA Limit Warning
OMCICS	C	012	EDSAWARN	Same	EDSAWARN	•	•	•	•	•	•	OMEGAMON EDSA Limit Warning
OMCICS	C	013	CALLWARN	Same	CALLWARN	•	•	•	•	•	•	OMEGAMON EXEC Calls Limit Warning
OMCICS	C	014	UE1WARN	Same	UE1WARN	•	•	•	•	•	•	OMEGAMON User Event Limit Warning
OMCICS	C	015	OMEGWORK	Same	OMEGWORK	•	•	•	•	•	•	OMEGAMON User work area
OMCICS	S	016	IDMSREQ	Same	IDMSREQ	•	•	•	•	•	•	OMEGAMON monitored CA-IDMS requests
OMCICS	S	017	ADABREQ	Same	ADABREQ	•	•	•	•	•	•	OMEGAMON monitored Adabas requests
OMCICS	S	018	SUPRREQ	Same	SUPRREQ	•	•	•	•	•	•	OMEGAMON monitored Supra requests
OMCICS	S	019	DCOMREQ	Same	DCOMREQ	•	•	•	•	•	•	OMEGAMON monitored CA-Datacom requests
OMCICS	S	020	USREVNT	Same	USREVNT	•	•	•	•	•	•	OMEGAMON User defined events

Chapter 15. CICS PA field name × CICS version

The following cross-reference table relates the CICS PA names for CICS monitoring facility (CMF) performance class and transaction resource class data fields to the corresponding CMF field IDs and the CICS versions to which they apply.

Some columns in the table require explanation:

CICS PA field name
The name used in report forms, HDB templates, and selection criteria (and their corresponding batch command operands FIELDS and SELECT).

A blank indicates that the field is not available, typically because it is a very long field, or it is an unprintable field such as a unit-of-work or a flag.

Column heading
The heading used to identify the field in CICS PA reports and extract data sets.

CICS version
The CICS versions to which a field applies:
- • Yes, the field applies to this CICS version
- – No, the field does not apply to this CICS version

The table is sorted by CICS PA field name.

Notes:

1. Some special fields, such as APPLID and RESPONSE, are not defined in the CMF Dictionary and are given a group name of “CICSPA”. These fields are either derived from the fixed section of the CMF record (for example, APPLID), or calculated from two or more other CMF fields (for example, RESPONSE).
2. The FILENAME and TSQNAME fields are only available when CMF transaction resource class data is being collected.
3. The APPLTRAN and APPLPROG fields are only available when application programs invoke the application naming event monitoring points.

Table 31. Cross-reference: CICS PA field name × CICS version

		CMF field				CICS version						
CICS PA field name	Column heading	Group	Type	ID	Name	530	610	620	630	640	650	Description
	BTS Root	DFHCBTS	C	202	PRCSID	•	•	•	•	•	•	BTS Root Activity identifier
	BTSActID	DFHCBTS	C	203	ACTVTYID	•	•	•	•	•	•	BTS Activity identifier
	Err Flag	DFHTASK	C	064	TASKFLAG	•	•	•	•	•	•	Task error flags
	Group ID	DFHTASK	C	082	TRNGRPID	•	•	•	•	•	•	Transaction Group ID
	RM UOWID	DFHTASK	C	132	RMUOWID	•	•	•	•	•	•	Recovery UOW ID
	RRMSURID	DFHTASK	C	190	RRMSURID	•	•	•	•	•	•	RRMS/MVS unit-of-recovery ID (URID)
ABCODEC	ABcu	DFHPROG	C	114	ABCODEC	•	•	•	•	•	•	Current ABEND code
ABCODEO	ABor	DFHPROG	C	113	ABCODEO	•	•	•	•	•	•	Original ABEND Code
ACCMETH	Acc Meth	DFHTERM	A	165	TERMINFO	•	•	•	•	•	•	Terminal Access Method
ACTVTYNM	BTSActNm	DFHCBTS	C	204	ACTVTYNM	•	•	•	•	•	•	BTS Activity name
ADABREQ	ADABREQ	OMCICS	S	017	ADABREQ	•	•	•	•	•	•	OMEGAMON monitored Adabas requests
ADABWARN	ADABWARN	OMCICS	C	005	ADABWARN	•	•	•	•	•	•	OMEGAMON Adabas Limit Warning
APPLID	APPLID	CICSPA	C	903	APPLID	•	•	•	•	•	•	CICS Generic APPLID
APPLPROG	Program	DFHAPPL	C	001	APPLNAME	•	–	•	•	•	•	Application naming Program
APPLRECS	APPLRecs	CICSPA	A	002	APPLRECS	•	•	•	•	•	•	Cross-System Application records
APPLTRAN	Tran	DFHAPPL	C	001	APPLNAME	•	–	•	•	•	•	Application naming Tran ID
BAACDCCT	BTSADCRq	DFHCBTS	A	217	BAACDCCT	•	•	•	•	•	•	BTS Activity Data Containers requests

Table 31. Cross-reference: CICS PA field name × CICS version (continued)

CICS PA field name	Column heading	CMF field				CICS version						Description
		Group	Type	ID	Name	530	610	620	630	640	650	
BAACQPCT	BTSAcqui	DFHCBTS	A	214	BAACQPCT	•	•	•	•	•	•	BTS Acquire Process/Activity requests
BADACTCT	BTS DefA	DFHCBTS	A	209	BADACTCT	•	•	•	•	•	•	BTS Define Activity requests
BADCPACT	BTSCancl	DFHCBTS	A	213	BADCPACT	•	•	•	•	•	•	BTS Cancel Process/Activity requests
BADFIECT	BTSDefEv	DFHCBTS	A	220	BADFIECT	•	•	•	•	•	•	BTS Define-Input Event requests
BADPROCT	BTS DefP	DFHCBTS	A	208	BADPROCT	•	•	•	•	•	•	BTS Define Process requests
BALKPACT	BTS Link	DFHCBTS	A	207	BALKPACT	•	•	•	•	•	•	BTS Link Process/Activity count
BAPRDCCT	BTSPDCRq	DFHCBTS	A	216	BAPRDCCT	•	•	•	•	•	•	BTS Process Data Containers requests
BARASYCT	BTS Asyn	DFHCBTS	A	206	BARASYCT	•	•	•	•	•	•	BTS asynchronous Process/Activity count
BARATECT	BTSRtvEv	DFHCBTS	A	219	BARATECT	•	•	•	•	•	•	BTS Retrieve-Reattach Event requests
BARMPACT	BTSResum	DFHCBTS	A	212	BARMPACT	•	•	•	•	•	•	BTS Resume Process/Activity requests
BARSPACT	BTSReset	DFHCBTS	A	210	BARSPACT	•	•	•	•	•	•	BTS Reset Process/Activity requests
BARSYNCT	BTS Sync	DFHCBTS	A	205	BARSYNCT	•	•	•	•	•	•	BTS synchronous Process/Activity count
BASUPACT	BTS Susp	DFHCBTS	A	211	BASUPACT	•	•	•	•	•	•	BTS Suspend Process/Activity requests
BATIAECT	BTSTimEv	DFHCBTS	A	221	BATIAECT	•	•	•	•	•	•	BTS TIMER Event requests
BATOTCCT	BTSTDCRq	DFHCBTS	A	218	BATOTCCT	•	•	•	•	•	•	BTS Process/Activity Data Container requests
BATOTECT	BTSTotEv	DFHCBTS	A	222	BATOTECT	•	•	•	•	•	•	BTS Event-related requests
BATOTPCT	BTSTotal	DFHCBTS	A	215	BATOTPCT	•	•	•	•	•	•	BTS Total Process/Activity requests
BMSIN	BMSIN	DFHMAPP	A	051	BMSINCT	•	•	•	•	•	•	BMS IN requests
BMSMAP	BMSMAP	DFHMAPP	A	050	BMSMAPCT	•	•	•	•	•	•	BMS MAP requests
BMSOUT	BMSOUT	DFHMAPP	A	052	BMSOUTCT	•	•	•	•	•	•	BMS OUT requests
BMSTOTAL	BMSTotal	DFHMAPP	A	090	BMSTOTCT	•	•	•	•	•	•	BMS Total requests
BRDGTRAN	Brdg	DFHTASK	C	124	BRDGTRAN	•	•	•	•	•	•	Bridge Listener Transaction ID
CALLWARN	CALLWARN	OMCICS	C	013	CALLWARN	•	•	•	•	•	•	OMEGAMON EXEC Calls Limit Warning
CBSRVRNM	Corb	DFHEJBS	C	311	CBSRVRNM	–	–	–	•	•	•	CorbaServer name
CFCAPICT	CFClsAPI	DFHCICS	A	025	CFCAPICT	•	•	•	•	•	•	OO Foundation Class requests
CFDTSYNC	CFDTSync	DFHSYNC	S	177	SRVSYWTT	•	•	•	•	•	•	CF Data Table syncpoint wait time
CFDTWAIT	CFDTWait	DFHFILE	S	176	CFDTWAIT	•	•	•	•	•	•	CF Data Table access requests wait time
CHARIN1	CharIn1	DFHTERM	A	083	TCCHRIN1	•	•	•	•	•	•	Terminal characters received count
CHARIN2	CharIn2	DFHTERM	A	085	TCCHRIN2	•	•	•	•	•	•	LU6.1 characters received count
CHAROUT1	CharOut1	DFHTERM	A	084	TCCHROU1	•	•	•	•	•	•	Terminal characters sent count
CHAROUT2	CharOut2	DFHTERM	A	086	TCCHROU2	•	•	•	•	•	•	LU6.1 characters sent count
CHMODECT	ChngMode	DFHTASK	A	248	CHMODECT	•	•	•	•	–	–	Change-TCB modes requests
CLIENTIP	ClientIP	DFHSOCK	C	244	CLIPADDR	•	•	•	•	•	•	Client IP or Telnet client IP address
CLIPPORT	CLIPPORT	DFHSOCK	A	330	CLIPPORT	–	–	–	–	–	•	Client IP Port Number
COMMWAIT	CommWait	CICSPA	D	906	COMMWAIT	•	•	•	•	•	•	Communications wait time
CPU	User CPU	DFHTASK	S	008	USRCPUT	•	•	•	•	•	•	CPU time
CPUWARN	CPUWARN	OMCICS	C	009	CPUWARN	•	•	•	•	•	•	OMEGAMON CPU Limit Warning
DB2CONWT	DB2ConWt	DFHDATA	S	188	DB2CONWT	•	•	•	•	•	•	DB2 Connection wait time
DB2RDYQW	DB2ThdWt	DFHDATA	S	187	DB2RDYQW	•	•	•	•	•	•	DB2 Thread wait time
DB2REQCT	DB2 Reqs	DFHDATA	A	180	DB2REQCT	•	•	•	•	•	•	DB2 requests
DB2WAIT	DB2SQLWt	DFHDATA	S	189	DB2WAIT	•	•	•	•	•	•	DB2 SQL/IFI wait time
DB2WARN	DB2WARN	OMCICS	C	001	DB2WARN	•	•	•	•	•	•	OMEGAMON DB2 Limit Warning
DBGETS	DBget	DBCTL	A	035	DBGETS	•	•	•	•	•	•	Number of Database Get calls issued
DBIOCALL	DBIOCall	DBCTL	A	007	DBIOCALL	•	•	•	•	•	•	Number of Database I/Os
DBIOELAP	DBIOElap	DBCTL	A	005	DBIOELAP	•	•	•	•	•	•	Elapsed time for Database I/O
DBUPDATE	DBupdate	DBCTL	A	036	DBUPDATE	•	•	•	•	•	•	Number of Database Update calls issued
DBWAITS	DBwait	DBCTL	A	037	DBWAITS	•	•	•	•	•	•	Number of Database waits
DCOMREQ	DCOMREQ	OMCICS	S	019	DCOMREQ	•	•	•	•	•	•	OMEGAMON monitored CA-Datacom requests
DCOMWARN	DCOMWARN	OMCICS	C	008	DCOMWARN	•	•	•	•	•	•	OMEGAMON CA-Datacom Limit Warning
DEDBBFRW	DEDBBfrW	DBCTL	A	031	DEDBBFRW	•	•	•	•	•	•	Number of waits for DEDB buffers
DEDBCALL	DEDBcall	DBCTL	A	027	DEDBCALL	•	•	•	•	•	•	Number of DEDB calls
DEDBRDOP	DEDBRdOp	DBCTL	A	028	DEDBRDOP	•	•	•	•	•	•	Number of DEDB read operations
DHCREATE	DHCREATE	DFHDOCH	A	226	DHCRECT	•	•	•	•	•	•	Document Handler CREATE requests
DHDELETE	DHDELETE	DFHDOCH	A	223	DHDELCT	–	–	–	–	–	•	Document Handler DELETE requests
DHINSERT	DHINSERT	DFHDOCH	A	227	DHINSCT	•	•	•	•	•	•	Document Handler INSERT requests
DHRETRVE	DHRETRVE	DFHDOCH	A	229	DHRETCT	•	•	•	•	•	•	Document Handler RETRIEVE requests
DHSET	DHSET	DFHDOCH	A	228	DHSETCT	•	•	•	•	•	•	Document Handler SET requests

Table 31. Cross-reference: CICS PA field name × CICS version (continued)

CICS PA field name	Column heading	CMF field				CICS version						Description
		Group	Type	ID	Name	530	610	620	630	640	650	
DHTOTAL	DH Total	DFHDOCH	A	230	DHTOTCT	•	•	•	•	•	•	Document Handler Total requests
DHTOTDCL	DHDocLen	DFHDOCH	A	240	DHTOTDCL	•	•	•	•	•	•	Total length of all documents created
DISPATCH	Dispatch	DFHTASK	S	007	USRDISPT	•	•	•	•	•	•	Dispatch time
DISPWAIT	DispWait	DFHTASK	S	102	DISPWTT	•	•	•	•	•	•	Redispatch wait time
DLETCALL	DLETcall	DBCTL	A	015	DLETCALL	•	•	•	•	•	•	Number of Database DLET calls issued
DLICALLS	DLIcalls	DBCTL	A	017	DLICALLS	•	•	•	•	•	•	Total DL/I Database calls
DLIWARN	DLIWARN	OMCICS	C	002	DLIWARN	•	•	•	•	•	•	OMEGAMON DLI Limit Warning
DPLRECS	DPL Recs	CICSPA	A	005	DPLRECS	•	•	•	•	•	•	Cross-System DPL records
DSAWARN	DSAWARN	OMCICS	C	011	DSAWARN	•	•	•	•	•	•	OMEGAMON DSA Limit Warning
DSCHMDLY	DSCHMDLY	DFHTASK	S	247	DSCHMDLY	–	–	–	–	•	•	Redispatch wait time caused by change-TCB mode
DSMMSCWT	DS Wait	DFHTASK	S	279	DSMMSCWT	–	–	–	•	•	•	DS storage constraint wait time
DSPDELAY	Disp1Dly	DFHTASK	S	125	DSPDELAY	•	•	•	•	•	•	First dispatch wait time
DSTCBHWM	DSTCBHWM	DFHTASK	A	252	DSTCBHWM	–	–	–	•	•	•	CICS Dispatcher TCB HWM
DSTCBMWT	DSTCBMWT	DFHTASK	S	268	DSTCBMWT	–	–	–	•	•	•	Dispatcher TCB Mismatch wait time
EDSAWARN	EDSAWARN	OMCICS	C	012	EDSAWARN	•	•	•	•	•	•	OMEGAMON EDSA Limit Warning
EJBACTIV	EJBActiv	DFHEJBS	A	312	EJBSACCT	–	–	–	•	•	•	Number of Bean State Activation requests
EJBCREAT	EJBCreat	DFHEJBS	A	314	EJBCRECT	–	–	–	•	•	•	Number of Bean Creation requests
EJBMETHD	EJBMethd	DFHEJBS	A	316	EJBMTHCT	–	–	–	•	•	•	Number of EJB Method Calls
EJBPASIV	EJBPasiv	DFHEJBS	A	313	EJBSPACT	–	–	–	•	•	•	Number of Bean State Passivation requests
EJBREMOV	EJBRemov	DFHEJBS	A	315	EJBREMCT	–	–	–	•	•	•	Number of Bean Removal requests
EJBTOTAL	EJBTotal	DFHEJBS	A	317	EJBTOTCT	–	–	–	•	•	•	Total Number of EJB requests
ELAPWARN	ELAPWARN	OMCICS	C	010	ELAPWARN	•	•	•	•	•	•	OMEGAMON Elapsed Time Limit Warning
ENQDELAY	ENQDelay	DFHTASK	S	129	ENQDELAY	•	•	•	•	•	•	Local Enqueue wait time
ERRFLAGS	Err Flag	DFHTASK	A	064	TASKFLAG	•	•	•	•	•	•	Task error flags
EXCLDEQS	ExclDEQs	DBCTL	A	026	EXCLDEQS	•	•	•	•	•	•	Number of Exclusive Dequeues
EXCLENQS	ExclENQs	DBCTL	A	024	EXCLENQS	•	•	•	•	•	•	Number of Exclusive Enqueues
EXCLENQW	ExclENQW	DBCTL	A	025	EXCLENQW	•	•	•	•	•	•	Number of waits on Exclusive Enqueues
EXWAIT	Exc Wait	DFHCICS	S	103	EXWTTIME	•	•	•	•	•	•	Exception Conditions wait time
FCADD	FCADD	DFHFILE	A	039	FCADDCT	•	•	•	•	•	•	File ADD requests
FCAMCT	FCAMRq	DFHFILE	A	070	FCAMCT	•	•	•	•	•	•	File access-method requests
FCBROWSE	FCBROWSE	DFHFILE	A	038	FCBRWCT	•	•	•	•	•	•	File Browse requests
FCDELETE	FCDELETE	DFHFILE	A	040	FCDELCT	•	•	•	•	•	•	File DELETE requests
FCGET	FCGET	DFHFILE	A	036	FCGETCT	•	•	•	•	•	•	File GET requests
FCPUT	FCPUT	DFHFILE	A	037	FCPUTCT	•	•	•	•	•	•	File PUT requests
FCTOTAL	FC Total	DFHFILE	A	093	FCTOTCT	•	•	•	•	•	•	File Control requests
FCTY	Fcty	DFHTASK	C	163	FCTYNAME	•	•	•	•	•	•	Transaction Facility name
FCTYTYPE	FctyType	DFHTASK	A	164	TRANFLAG	•	•	•	•	•	•	Transaction facility type
FCWAIT	FC Wait	DFHFILE	S	063	FCIOWTT	•	•	•	•	•	•	File I/O wait time
FILENAME	FileName	CICSPA	C	916	FILENAME	•	–	•	•	•	•	File name
FUNCSHIP	FuncShip	CICSPA	A	004	FUNCSHIP	•	•	•	•	•	•	Cross-System Function Shipping records
GHNCALL	GHNcall	DBCTL	A	012	GHNCALL	•	•	•	•	•	•	Number of Database GHN calls issued
GHNPCALL	GHNPcall	DBCTL	A	013	GHNPCALL	•	•	•	•	•	•	Number of Database GHNP calls issued
GHUCALL	GHUcall	DBCTL	A	011	GHUCALL	•	•	•	•	•	•	Number of Database GHU calls issued
GIVEUPWT	GiveUpWt	DFHTASK	S	184	GVUPWAIT	•	•	•	•	•	•	Give up control wait time
GNCALL	GNcall	DBCTL	A	009	GNCALL	•	•	•	•	•	•	Number of Database GN calls issued
GNPCALL	GNPcall	DBCTL	A	010	GNPCALL	•	•	•	•	•	•	Number of Database GNP calls issued
GNQDELAY	GNQDelay	DFHTASK	S	123	GNQDELAY	•	•	•	•	•	•	Global Enqueue wait time
GUCALL	GUcall	DBCTL	A	008	GUCALL	•	•	•	•	•	•	Number of Database GU calls issued
ICDELAY	IC Delay	DFHTASK	S	183	ICDELAY	•	•	•	•	•	•	Interval Control (IC) wait time
ICPUT	ICSTART	DFHTASK	A	059	ICPUINCT	•	•	•	•	•	•	Interval Control START or INITIATE requests
ICSTACCT	ICSTACCT	DFHTASK	A	065	ICSTACCT	–	–	–	–	•	•	Local IC START requests with CHANNEL option
ICSTACDL	ICSTACDL	DFHTASK	A	345	ICSTACDL	–	–	–	–	•	•	Container data len for Local IC START w/ CHANNEL
ICSTRCCT	ICSTRCCT	DFHTASK	A	346	ICSTRCCT	–	–	–	–	•	•	Remote IC START requests with CHANNEL option

Table 31. Cross-reference: CICS PA field name × CICS version (continued)

CICS PA field name	Column heading	CMF field Group	Type	ID	Name	CICS version 530	610	620	630	640	650	Description
ICSTRCDL	ICSTRCDL	DFHTASK	A	347	ICSTRCDL	–	–	–	–	•	•	Container data len for Remot IC START w/ CHANNEL
ICTOTAL	IC Total	DFHTASK	A	066	ICTOTCT	•	•	•	•	•	•	Interval Control requests
IDMSREQ	IDMSREQ	OMCICS	S	016	IDMSREQ	•	•	•	•	•	•	OMEGAMON monitored CA-IDMS requests
IDMSWARN	IDMSWARN	OMCICS	C	006	IDMSWARN	•	•	•	•	•	•	OMEGAMON CA-IDMS Limit Warning
IMSREQCT	IMS Reqs	DFHDATA	A	179	IMSREQCT	•	•	•	•	•	•	IMS (DBCTL) requests
IMSWAIT	IMS Wait	DFHDATA	S	186	IMSWAIT	•	•	•	•	•	•	IMS (DBCTL) wait time
INTCWAIT	IntCWait	DBCTL	A	003	INTCWAIT	•	•	•	•	•	•	Elapsed wait time for Intent Conflict
IOWAIT	I/O Wait	CICSPA	D	907	IOWAIT	•	•	•	•	•	•	Total IO wait time
IRESP	Int Resp	CICSPA	D	908	IRESP	•	•	•	•	•	•	Transaction internal response time
IRWAIT	IR Wait	DFHTERM	S	100	IRIOWTT	•	•	•	•	•	•	MRO link wait time
ISALLOC	ISALLOC	DFHSOCK	A	288	ISALLOCT	–	–	–	–	–	•	Allocate Session requests for sessions on IP
ISIPICNM	ISIPICNM	DFHSOCK	C	305	ISIPCNNM	–	–	–	–	–	•	Name of IPCONN definition that attached the task
ISRTCALL	ISRTcall	DBCTL	A	014	ISRTCALL	•	•	•	•	•	•	Number of Database ISRT calls issued
ISWAIT	IS Wait	DFHSOCK	S	300	ISIOWTT	–	–	–	–	–	•	IPCONN link wait time
J8CPU	J8 CPU	DFHTASK	S	260	J8CPUT	•	•	•	•	•	•	CICS J8 TCB CPU time
J9CPU	J9 CPU	DFHTASK	S	267	J9CPUT	–	–	–	•	•	•	User task J9 Mode CPU time
JCWAIT	JC Wait	DFHJOUR	S	010	JCIOWTT	•	•	•	•	•	•	Journal I/O wait time
JNLPUT	JnlWrite	DFHJOUR	A	058	JNLWRTCT	•	•	•	•	•	•	Journal write requests
JOBNAME	Jobname	CICSPA	C	905	JOBNAME	•	•	•	•	•	•	Job Name
JVMITIME	JVMITime	DFHTASK	S	273	JVMITIME	–	•	•	•	•	•	JVM initialize elapsed time
JVMMTIME	JVM Meth	CICSPA	D	910	JVMMTIME	–	•	•	•	•	•	JVM Method time
JVMRTIME	JVMRTime	DFHTASK	S	275	JVMRTIME	–	•	•	•	•	•	JVM reset elapsed time
JVMSUSP	JVM Susp	DFHTASK	S	254	JVMSUSP	•	•	•	•	•	•	JVM suspend time
JVMTIME	JVM Elap	DFHTASK	S	253	JVMTIME	•	•	•	•	•	•	JVM elapsed time
KY8CPU	KY8 CPU	DFHTASK	S	263	KY8CPUT	–	•	•	•	•	•	CICS Key 8 TCB CPU time
KY8DISPT	KY8 Disp	DFHTASK	S	262	KY8DISPT	–	•	•	•	•	•	CICS Key 8 TCB dispatch time
KY9CPU	KY9 CPU	DFHTASK	S	265	KY9CPUT	–	–	–	•	•	•	User task Key 9 Mode CPU time
KY9DISPT	KY9 Disp	DFHTASK	S	264	KY9DISPT	–	–	–	•	•	•	User task Key 9 Mode Dispatch time
L8CPU	L8 CPU	DFHTASK	S	259	L8CPUT	•	•	•	•	•	•	CICS L8 TCB CPU time
L9CPU	L9 CPU	DFHTASK	S	266	L9CPUT	–	–	–	–	•	•	User task L9 CPU time
LOCKDLAY	LM Delay	DFHTASK	S	128	LMDELAY	•	•	•	•	•	•	Lock Manager (LM) wait time
LOGWRITE	LogWrite	DFHJOUR	A	172	LOGWRTCT	•	•	•	•	•	•	Log Stream write requests
LU61WAIT	LU61Wait	DFHTERM	S	133	LU61WTT	•	•	•	•	•	•	LU6.1 wait time
LU62WAIT	LU62Wait	DFHTERM	S	134	LU62WTT	•	•	•	•	•	•	LU6.2 wait time
LUNAME	LUName	DFHTERM	C	111	LUNAME	•	•	•	•	•	•	VTAM logical unit name
MAXHTDLY	MaxHTDly	DFHTASK	S	278	MAXHTDLY	–	–	•	•	–	–	Maximum Hot-Pooling TCB delay time
MAXJTDLY	MaxJTDly	DFHTASK	S	277	MAXJTDLY	–	–	•	•	•	•	Maximum JVM TCB delay time
MAXOTDLY	MaxOTDly	DFHTASK	S	250	MXTOTDLY	•	•	•	•	•	•	Maximum Open TCB delay time
MAXSTDLY	MAXSTDLY	DFHTASK	S	281	MAXSTDLY	–	–	–	–	•	•	Maximum SSL TCB delay time
MAXXTDLY	MAXXTDLY	DFHTASK	S	282	MAXXTDLY	–	–	–	–	•	•	Maximum XPLink TCB delay time
MQWARN	MQWARN	OMCICS	C	004	MQWARN	•	•	•	•	•	•	OMEGAMON MQ Limit Warning
MSCPU	MS CPU	DFHTASK	S	258	MSCPUT	•	•	•	•	•	•	CICS TCBs CPU time
MSDISPT	MS Disp	DFHTASK	S	257	MSDISPT	•	•	•	•	•	•	CICS TCBs dispatch time
MSGIN1	MsgIn1	DFHTERM	A	034	TCMSGIN1	•	•	•	•	•	•	Messages received count
MSGIN2	MsgIn2	DFHTERM	A	067	TCMSGIN2	•	•	•	•	•	•	Messages received from LU6.1
MSGOUT1	MsgOut1	DFHTERM	A	035	TCMSGOU1	•	•	•	•	•	•	Messages sent count
MSGOUT2	MsgOut2	DFHTERM	A	068	TCMSGOU2	•	•	•	•	•	•	Messages sent to LU6.1
MVSID	MVS ID	CICSPA	C	904	MVSID	•	•	•	•	•	•	MVS SMF ID
MXTDELAY	MXTDelay	DFHTASK	S	127	MXTDELAY	•	•	•	•	•	•	First dispatch MXT wait time
NATURE	Nature	DFHTERM	A	165	TERMINFO	•	•	•	•	•	•	Transaction
NETID	NET ID	DFHTERM	C	197	NETID	–	•	•	•	•	•	VTAM LUALIAS Network ID
NETNAME	NETName	DFHTASK	C	097	NETUOWPX	•	•	•	•	•	•	Originating System VTAM network name
NETUOWSX	NETUOWID	DFHTASK	C	098	NETUOWSX	•	•	•	•	•	•	Network UOW ID
OAPPLID	OAPPLID	DFHCICS	C	360	OAPPLID	–	–	–	–	–	•	Originating CICS APPLID
OCLINTIP	OClintIP	DFHCICS	C	368	OCLIPADR	–	–	–	–	–	•	Originating Client or Telnet IP address

Table 31. Cross-reference: CICS PA field name × CICS version (continued)

CICS PA field name	Column heading	CMF field				CICS version						Description
		Group	Type	ID	Name	530	610	620	630	640	650	
OCLIPORT	OCLIPORT	DFHCICS	A	369	OCLIPORT	–	–	–	–	–	•	Originating Client IP Port Number
OFCTY	OFcty	DFHCICS	C	371	OFCTYNME	–	–	–	–	–	•	Originating Transaction Facility name
OFCTYTYP	OFctyTyp	DFHCICS	A	370	OTRANFLG	–	–	–	–	–	•	Originating Transaction Facility Type
OMEGWORK	OMEGWORK	OMCICS	C	015	OMEGWORK	•	•	•	•	•	•	OMEGAMON User work area
ONETWKID	ONETWKID	DFHCICS	C	359	ONETWKID	–	–	–	–	–	•	Originating Network ID
OORIGIN	OOrigin	DFHCICS	C	370	OTRANFLG	–	–	–	–	–	•	Originating Transaction Origin type
OPORT	OPORT	DFHCICS	A	367	OPORTNUM	–	–	–	–	–	•	Originating TCP/IP Port Number
ORIGIN	Origin	DFHTASK	C	164	TRANFLAG	•	•	•	•	•	•	Transaction origin type
OSOWAIT	OSO Wait	DFHSOCK	S	299	SOOIOWTT	–	•	•	•	•	•	Outbound Socket I/O Wait Time
OSTART	OStart	DFHCICS	T	361	OSTART	–	–	–	–	–	•	Originating Task start time
OTASKNO	OTaskNo	DFHCICS	P	362	OTRANNUM	–	–	–	–	–	•	Originating Transaction number
OTCPSRVC	OTCPIPSr	DFHCICS	C	366	OTCPSVCE	–	–	–	–	–	•	Originating TCP/IP Service Name
OTRAN	OTran	DFHCICS	C	363	OTRAN	–	–	–	–	–	•	Originating Transaction identifier
OTRANFLG	OTranFlg	DFHCICS	A	370	OTRANFLG	–	–	–	–	–	•	Originating Transaction flags
OTRANTYP	OTranTyp	DFHCICS	C	370	OTRANFLG	–	–	–	–	–	•	Originating Transaction type
OTSID	OTS ID	DFHTASK	C	194	OTSTID	–	•	•	•	•	•	OTS Transaction ID
OTSINDWT	OTSIndWt	DFHSYNC	S	199	OTSINDWT	–	•	•	•	•	•	OTS Indoubt Wait time
OUSERCOR	OUserCor	DFHCICS	C	365	OUSERCOR	–	–	–	–	–	•	Originating User Correlator
OUSERID	OUserid	DFHCICS	C	364	OUSERID	–	–	–	–	–	•	Originating User ID
OVFLBFRU	OvflBfrU	DBCTL	A	029	OVFLBFRU	•	•	•	•	•	•	Number of Overflow Buffers used
PC24BHWM	PC24bHWM	DFHSTOR	A	108	PC24BHWM	•	•	•	•	•	•	Program Storage HWM below 16MB
PC24CHWM	PC24CHWM	DFHSTOR	A	143	PC24CHWM	•	•	•	•	•	•	Program Storage (CDSA) HWM below 16MB
PC24RHWM	PC24RHWM	DFHSTOR	A	162	PC24RHWM	•	•	•	•	•	•	Program Storage (RDSA) HWM below 16MB
PC24SHWM	PC24SHWM	DFHSTOR	A	160	PC24SHWM	•	•	•	•	•	•	Program Storage (SDSA) HWM below 16MB
PC31AHWM	PC31aHWM	DFHSTOR	A	139	PC31AHWM	•	•	•	•	•	•	Program Storage HWM above 16MB
PC31CHWM	PC31CHWM	DFHSTOR	A	142	PC31CHWM	•	•	•	•	•	•	Program Storage (ECDSA) HWM above 16MB
PC31RHWM	PC31RHWM	DFHSTOR	A	122	PC31RHWM	•	•	•	•	•	•	Program Storage (ERDSA) HWM above 16MB
PC31SHWM	PC31SHWM	DFHSTOR	A	161	PC31SHWM	•	•	•	•	•	•	Program Storage (ESDSA) HWM above 16MB
PCDLCRDL	PCDLCRDL	DFHPROG	A	287	PCDLCRDL	–	–	–	–	•	•	Container data length for DPL RETURN w/ CHANNEL
PCDLCSDL	PCDLCSDL	DFHPROG	A	286	PCDLCSDL	–	–	–	–	•	•	Container data length for DPL reqs with CHANNEL
PCDPL	PCDPLINK	DFHPROG	A	073	PCDPLCT	•	•	•	•	•	•	Distributed Program Link (DPL) requests
PCDPLCCT	PCDPLCCT	DFHPROG	A	308	PCDPLCCT	–	–	–	–	•	•	DPL requests with CHANNEL option
PCLINK	PCLINK	DFHPROG	A	055	PCLINKCT	•	•	•	•	•	•	Program LINK requests
PCLNKCCT	PCLNKCCT	DFHPROG	A	306	PCLNKCCT	–	–	–	–	•	•	LINK requests with CHANNEL option
PCLOAD	PCLOAD	DFHPROG	A	057	PCLOADCT	•	•	•	•	•	•	Program LOAD requests
PCLOADTM	PCLOADWt	DFHPROG	S	115	PCLOADTM	•	•	•	•	•	•	Program Library wait time
PCLURM	PCLNKURM	DFHPROG	A	072	PCLURMCT	•	•	•	•	•	•	Program LINK URM requests
PCRTNCCT	PCRTNCCT	DFHPROG	A	309	PCRTNCCT	–	–	–	–	•	•	Program RETURN requests with CHANNEL option
PCRTNCDL	PCRTNCDL	DFHPROG	A	310	PCRTNCDL	–	–	–	–	•	•	Container data length for RETURN with CHANNEL
PCSTGHWM	PCStgHWM	DFHSTOR	A	087	PCSTGHWM	•	•	•	•	•	•	Program Storage HWM above and below 16MB
PCXCLCCT	PCXCLCCT	DFHPROG	A	307	PCXCLCCT	–	–	–	–	•	•	XCTL requests with CHANNEL option
PCXCTL	PCXCTL	DFHPROG	A	056	PCXCTLCT	•	•	•	•	•	•	Program XCTL requests
PGBRWCCT	PGBRWCCT	DFHCHNL	A	322	PGBRWCCT	–	–	–	–	•	•	BROWSE CHANNEL CONTAINER requests
PGCRECCT	PGCRECCT	DFHCHNL	A	328	PGCRECCT	–	–	–	–	•	•	Number of Containers created
PGCSTHWM	PGCSTHWM	DFHCHNL	A	329	PGCSTHWM	–	–	–	–	–	•	Maximum Container Storage allocated to task
PGGETCCT	PGGETCCT	DFHCHNL	A	323	PGGETCCT	–	–	–	–	•	•	GET CHANNEL CONTAINER requests
PGGETCDL	PGGETCDL	DFHCHNL	A	326	PGGETCDL	–	–	–	–	•	•	GET CHANNEL CONTAINER data length
PGMOVCCT	PGMOVCCT	DFHCHNL	A	325	PGMOVCCT	–	–	–	–	•	•	MOVE CHANNEL CONTAINER requests
PGPUTCCT	PGPUTCCT	DFHCHNL	A	324	PGPUTCCT	–	–	–	–	•	•	PUT CHANNEL CONTAINER requests
PGPUTCDL	PGPUTCDL	DFHCHNL	A	327	PGPUTCDL	–	–	–	–	•	•	PUT CHANNEL CONTAINER data length
PGTOTCCT	PGTOTCCT	DFHCHNL	A	321	PGTOTCCT	–	–	–	–	•	•	Total number of CHANNEL CONTAINER requests
PILOCKEL	PILockEl	DBCTL	A	006	PILOCKEL	•	•	•	•	•	•	Elapsed time for PI Locking

Table 31. Cross-reference: CICS PA field name × CICS version (continued)

CICS PA field name	Column heading	CMF field Group	Type	ID	Name	CICS version 530	610	620	630	640	650	Description
POOLWAIT	PoolWait	DBCTL	A	002	POOLWAIT	•	•	•	•	•	•	Elapsed wait time for Pool Space
PORT	PORT	DFHSOCK	A	246	PORTNUM	–	•	•	•	•	•	TCP/IP Port Number
PRCSNAME	BTS Proc	DFHCBTS	C	200	PRCSNAME	•	•	•	•	•	•	BTS Process name
PRCSTYPE	BTS PTyp	DFHCBTS	C	201	PRCSTYPE	•	•	•	•	•	•	BTS Process type
PROGRAM	Program	DFHPROG	C	071	PGMNAME	•	•	•	•	•	•	Program name
PSBNAME	PSB Name	DBCTL	C	001	PSBNAME	•	•	•	•	•	•	PSB Name
PTPWAIT	PTP Wait	DFHTASK	S	285	PTPWAIT	–	–	•	•	•	•	3270 Bridge Partner wait time
QRCPU	QR CPU	DFHTASK	S	256	QRCPUT	•	•	•	•	•	•	CICS QR TCB CPU time
QRDISPT	QR Disp	DFHTASK	S	255	QRDISPT	•	•	•	•	•	•	CICS QR TCB dispatch time
QRMODDLY	QRModDly	DFHTASK	S	249	QRMODDLY	•	•	•	•	•	•	CICS QR TCB redispatch wait time
RECCOUNT	RecCount	DFHCICS	A	131	PERRECNT	•	•	•	•	•	•	Task Performance record count
RELEASE	Rlse	CICSPA	C	909	RELEASE	•	•	•	•	•	•	CICS release
REPLCALL	REPLcall	DBCTL	A	016	REPLCALL	•	•	•	•	•	•	Number of Database REPL calls issued
RESPONSE	Response	CICSPA	D	901	RESP	•	•	•	•	•	•	Transaction response time
RLSCPU	RLS CPU	DFHFILE	S	175	RLSCPUT	•	•	•	•	•	•	RLS File Request CPU (SRB) time
RLSWAIT	RLS Wait	DFHFILE	S	174	RLSWAIT	•	•	•	•	•	•	RLS File I/O wait time
RLUNAME	RLUNAME	DFHTERM	C	198	RLUNAME	–	•	•	•	•	•	VTAM LUALIAS Logical Unit name
RMICPSM	RMI CPSM	DFHRMI	S	007	RMICPSM	–	–	•	•	•	•	RMI elapsed time for CICSPlex SM requests
RMIDB2	RMI DB2	DFHRMI	S	003	RMIDB2	–	–	•	•	•	•	RMI elapsed time for DB2 requests
RMIDBCTL	RMIDBCTL	DFHRMI	S	004	RMIDBCTL	–	–	•	•	•	•	RMI elapsed time for DBCTL requests
RMIEXDLI	RMIEXDLI	DFHRMI	S	005	RMIEXDLI	–	–	•	•	•	•	RMI elapsed time for EXEC DLI requests
RMIMQM	RMI MQ	DFHRMI	S	006	RMIMQM	–	–	•	•	•	•	RMI elapsed time for WebSphere MQ requests
RMIOTHER	RMI Othr	DFHRMI	S	002	RMIOTHER	–	–	•	•	•	•	RMI other elapsed time
RMIOTIME	RMIOTime	CICSPA	D	911	RMIOTIME	•	•	•	•	•	•	Resource Manager Interface (RMI) other time
RMISUSP	RMI Susp	DFHTASK	S	171	RMISUSP	•	•	•	•	•	•	Resource Manager Interface (RMI) suspend time
RMITCPIP	RMITCPIP	DFHRMI	S	008	RMITCPIP	–	–	•	•	•	•	RMI elapsed time for TCP/IP socket requests
RMITIME	RMI Elap	DFHTASK	S	170	RMITIME	•	•	•	•	•	•	Resource Manager Interface (RMI) elapsed time
RMITOTAL	RMITotal	DFHRMI	S	001	RMITOTAL	–	–	•	•	•	•	RMI total elapsed time
ROCPU	RO CPU	DFHTASK	S	270	ROCPUT	–	–	•	•	•	•	CICS RO TCB CPU time
RODISPT	RO Disp	DFHTASK	S	269	RODISPT	–	–	•	•	•	•	CICS RO TCB dispatch time
RPTCLASS	RptClass	DFHCICS	C	168	RPTCLASS	•	•	•	•	•	•	WLM Report Class
RQPWAIT	RQP Wait	DFHTASK	S	193	RQPWAIT	–	•	•	•	•	•	Request Processor Wait Time
RQRWAIT	RQR Wait	DFHTASK	S	192	RQRWAIT	–	•	•	•	•	•	Request Receiver Wait Time
RRMSWAIT	RRMSWait	DFHTASK	S	191	RRMSWAIT	•	•	•	•	•	•	Resource Recovery Services indoubt wait time
RSYSID	RSID	DFHCICS	C	130	RSYSID	•	•	•	•	•	•	Remote System ID
RTYPE	RTyp	DFHCICS	C	112	RTYPE	•	•	•	•	•	•	Performance record type
RUNTRWTT	BTSRunWt	DFHTASK	S	195	RUNTRWTT	•	•	•	•	•	•	BTS run Process/Activity wait time
S8CPU	S8 CPU	DFHTASK	S	261	S8CPUT	•	•	•	•	•	•	CICS S8 TCB CPU time
SC24CGET	SC24CGet	DFHSTOR	A	117	SCCGETCT	•	•	•	•	•	•	CDSA GETMAINs below 16MB
SC24CHWM	SC24CHWM	DFHSTOR	A	116	SC24CHWM	•	•	•	•	•	•	CDSA HWM below 16MB
SC24COCC	SC24COcc	DFHSTOR	A	118	SC24COCC	•	•	•	•	•	•	CDSA Storage Occupancy below 16MB
SC24FSHR	SC24FShr	DFHSTOR	A	146	SC24FSHR	•	•	•	•	•	•	CDSA/SDSA storage FREEMAINed below 16MB
SC24GSHR	SC24GShr	DFHSTOR	A	145	SC24GSHR	•	•	•	•	•	•	CDSA/SDSA storage GETMAINed below 16MB
SC24SGET	SC24SGet	DFHSTOR	A	144	SC24SGCT	•	•	•	•	•	•	CDSA/SDSA GETMAINs below 16MB
SC24UGET	SC24UGet	DFHSTOR	A	054	SCUGETCT	•	•	•	•	•	•	UDSA GETMAINs below 16MB
SC24UHWM	SC24UHWM	DFHSTOR	A	033	SCUSRHWM	•	•	•	•	•	•	UDSA HWM below 16MB
SC24UOCC	SC24UOcc	DFHSTOR	A	095	SCUSRSTG	•	•	•	•	•	•	UDSA Storage Occupancy below 16MB
SC31CGET	SC31CGet	DFHSTOR	A	120	SCCGETCT	•	•	•	•	•	•	ECDSA GETMAINs above 16MB
SC31CHWM	SC31CHWM	DFHSTOR	A	119	SC31CHWM	•	•	•	•	•	•	ECDSA HWM above 16MB
SC31COCC	SC31COcc	DFHSTOR	A	121	SC31COCC	•	•	•	•	•	•	ECDSA Storage Occupancy above 16MB
SC31FSHR	SC31FShr	DFHSTOR	A	149	SC31FSHR	•	•	•	•	•	•	ECDSA/ESDSA storage FREEMAINed above 16MB
SC31GSHR	SC31GShr	DFHSTOR	A	148	SC31GSHR	•	•	•	•	•	•	ECDSA/ESDSA storage GETMAINed above 16MB

Table 31. Cross-reference: CICS PA field name × CICS version (continued)

CICS PA field name	Column heading	CMF field				CICS version						Description
		Group	Type	ID	Name	530	610	620	630	640	650	
SC31SGET	SC31SGet	DFHSTOR	A	147	SC31SGCT	•	•	•	•	•	•	ECDSA/ESDSA GETMAINs above 16MB
SC31UGET	SC31UGet	DFHSTOR	A	105	SCUGETCT	•	•	•	•	•	•	EUDSA GETMAINs above 16MB
SC31UHWM	SC31UHWM	DFHSTOR	A	106	SCUSRHWM	•	•	•	•	•	•	EUDSA HWM above 16MB
SC31UOCC	SC31UOcc	DFHSTOR	A	107	SCUCRSTG	•	•	•	•	•	•	EUDSA Storage Occupancy above 16MB
SCHEDEND	SchedEnd	DBCTL	T	034	SCHEDEND	•	•	•	•	•	•	IMS Schedule end time
SCHEDSTA	SchedSta	DBCTL	T	033	SCHEDSTA	•	•	•	•	•	•	IMS Schedule start time
SCHTELAP	SchTElap	DBCTL	A	004	SCHTELAP	•	•	•	•	•	•	Elapsed time for Schedule Process
SESSTYPE	SessType	DFHTERM	A	165	TERMINFO	•	•	•	•	•	•	Terminal session type
SOBYDECT	SockDcry	DFHSOCK	A	243	SOBYDECT	•	•	•	•	•	•	Secure Socket bytes decrypted count
SOBYENCT	SockEcry	DFHSOCK	A	242	SOBYENCT	•	•	•	•	•	•	Secure Socket bytes encrypted count
SOCHRIN	SOChrIn	DFHSOCK	A	295	SOCHRIN	–	•	•	•	•	•	Outbound Sockets characters received count
SOCHRIN1	SOChrIn1	DFHSOCK	A	302	SOCHRIN1	–	–	•	•	•	•	Inbound Sockets characters received count
SOCHROU1	SOChrOu1	DFHSOCK	A	304	SOCHROU1	–	–	•	•	•	•	Inbound Sockets characters sent count
SOCHROUT	SOChrOut	DFHSOCK	A	297	SOCHROUT	–	•	•	•	•	•	Outbound Sockets characters sent count
SOCNPSCT	SOCNPSRq	DFHSOCK	A	290	SOCNPSCT	–	•	•	•	•	•	Create Non-Persistent Outbound Socket reqs
SOCPSCT	SOCPSReq	DFHSOCK	A	291	SOCPSCT	–	•	•	•	•	•	Create Persistent Outbound Socket requests
SOEXTRCT	SOEXTRAC	DFHSOCK	A	289	SOEXTRCT	–	•	•	•	•	•	EXTRACT TCP/IP and CERTIFICATE requests
SOMSGIN1	SOMsgIn1	DFHSOCK	A	301	SOMSGIN1	–	–	•	•	•	•	Inbound Sockets RECEIVE requests
SOMSGOU1	SOMsgOu1	DFHSOCK	A	303	SOMSGOU1	–	–	•	•	•	•	Inbound Sockets SEND requests
SONPSHWM	SONPSHWM	DFHSOCK	A	292	SONPSHWM	–	•	•	•	•	•	Non-Persistent Outbound Socket HWM
SOPSHWM	SOPSHWM	DFHSOCK	A	293	SOPSHWM	–	•	•	•	•	•	Persistent Outbound Socket HWM
SORCV	SO Recv	DFHSOCK	A	294	SORCVCT	–	•	•	•	•	•	Outbound Sockets RECEIVE requests
SOSEND	SO SEND	DFHSOCK	A	296	SOSENDCT	–	•	•	•	•	•	Outbound Sockets SEND requests
SOTOTAL	SOTotal	DFHSOCK	A	298	SOTOTCT	–	•	•	•	•	•	Socket Total requests
SOWAIT	SockWait	DFHSOCK	S	241	SOIOWTT	•	•	•	•	•	•	Inbound Socket I/O wait time
SRVCLASS	SrvClass	DFHCICS	C	167	SRVCLASS	•	•	•	•	•	•	WLM Service Class
START	Start	DFHCICS	T	005	START	•	•	•	•	•	•	Task start time
STOP	Stop	DFHCICS	T	006	STOP	•	•	•	•	•	•	Task stop time
STYPE	SC	DFHTASK	C	004	TTYPE	•	•	•	•	•	•	Transaction start type
SUPRREQ	SUPRREQ	OMCICS	S	018	SUPRREQ	•	•	•	•	•	•	OMEGAMON monitored Supra requests
SUPRWARN	SUPRWARN	OMCICS	C	007	SUPRWARN	•	•	•	•	•	•	OMEGAMON Supra Limit Warning
SUSPEND	Suspend	DFHTASK	S	014	SUSPTIME	•	•	•	•	•	•	Suspend time
SYNCDLY	SYNC Dly	DFHSYNC	S	196	SYNCDLY	•	•	•	•	•	•	SYNCPOINT parent request wait time
SYNCPT	SYNCPT	DFHSYNC	A	060	SPSYNCCT	•	•	•	•	•	•	SYNCPOINT requests
SYNCTIME	SYNCProc	DFHSYNC	S	173	SYNCTIME	•	•	•	•	•	•	SYNCPOINT processing time
SZALLCTO	SZAlocTO	DFHFEPI	A	157	SZALLCTO	•	•	•	•	•	•	Allocate conversation time-out count
SZALLOC	SZALLOC	DFHFEPI	A	150	SZALLOCT	•	•	•	•	•	•	Conversations allocated count
SZCHRIN	SZChrIn	DFHFEPI	A	155	SZCHRIN	•	•	•	•	•	•	FEPI characters received count
SZCHROUT	SZChrOut	DFHFEPI	A	154	SZCHROUT	•	•	•	•	•	•	FEPI characters sent count
SZRCV	SZRCV	DFHFEPI	A	151	SZRCVCT	•	•	•	•	•	•	FEPI RECEIVE requests
SZRCVTO	SZRecvTO	DFHFEPI	A	158	SZRCVTO	•	•	•	•	•	•	Receive Data time-out count
SZSEND	SZSEND	DFHFEPI	A	152	SZSENDCT	•	•	•	•	•	•	FEPI SEND requests
SZSTART	SZSTART	DFHFEPI	A	153	SZSTRTCT	•	•	•	•	•	•	FEPI START requests
SZTOTAL	SZ Total	DFHFEPI	A	159	SZTOTCT	•	•	•	•	•	•	FEPI API and SPI requests
SZWAIT	SZ Wait	DFHFEPI	S	156	SZWAIT	•	•	•	•	•	•	FEPI services wait time
TASKCNT	#Tasks	CICSPA	X	902	TASKCNT	•	•	•	•	•	•	Total Task count
TASKNO	TaskNo	DFHTASK	P	031	TRANNUM	•	•	•	•	•	•	Transaction identification number
TASKTCNT	#TTasks	CICSPA	X	914	TASKTCNT	•	•	•	•	•	•	Total Task Termination count
TCALLOC	TCALLOC	DFHTERM	A	069	TCALLOCT	•	•	•	•	•	•	TCTTE ALLOCATE requests
TCBATTCT	TCBAtach	DFHTASK	A	251	TCBATTCT	•	•	•	•	•	•	TCBs attached count
TCC62IN2	TCC62In2	DFHTERM	A	137	TCC62IN2	•	•	•	•	•	•	LU6.2 characters received count
TCC62OU2	TCC62Ou2	DFHTERM	A	138	TCC62OU2	•	•	•	•	•	•	LU6.2 characters sent count
TCLASSNM	TCLSName	DFHTASK	C	166	TCLSNAME	•	•	•	•	•	•	Transaction Class name
TCLDELAY	TCLDelay	DFHTASK	S	126	TCLDELAY	•	•	•	•	•	•	First dispatch TCLSNAME wait time
TCM62IN2	TCM62In2	DFHTERM	A	135	TCM62IN2	•	•	•	•	•	•	LU6.2 messages received count
TCM62OU2	TCM62Ou2	DFHTERM	A	136	TCM62OU2	•	•	•	•	•	•	LU6.2 messages sent count
TCPSRVCE	TCPIPSrv	DFHSOCK	C	245	TCPSRVCE	–	•	•	•	•	•	TCP/IP Service Name

Table 31. Cross-reference: CICS PA field name × CICS version (continued)

CICS PA field name	Column heading	CMF field Group	Type	ID	Name	CICS version 530	610	620	630	640	650	Description
TCWAIT	TC Wait	DFHTERM	S	009	TCIOWTT	•	•	•	•	•	•	Terminal wait for input time
TDGET	TDGET	DFHDEST	A	041	TDGETCT	•	•	•	•	•	•	Transient data GET requests
TDPURGE	TDPURGE	DFHDEST	A	043	TDPURCT	•	•	•	•	•	•	Transient data PURGE requests
TDPUT	TDPUT	DFHDEST	A	042	TDPUTCT	•	•	•	•	•	•	Transient data PUT requests
TDTOTAL	TD Total	DFHDEST	A	091	TDTOTCT	•	•	•	•	•	•	Transient data Total requests
TDWAIT	TD Wait	DFHDEST	S	101	TDIOWTT	•	•	•	•	•	•	VSAM transient data I/O wait time
TERM	Term	DFHTERM	C	002	TERM	•	•	•	•	•	•	Terminal ID
TERMCNNM	ConnName	DFHTERM	C	169	TERMCNNM	•	•	•	•	•	•	Terminal session Connection name
TERMCODE	DevT	DFHTERM	A	165	TERMINFO	•	•	•	•	•	•	Terminal Device Type
TERMINFO	TermInfo	DFHTERM	A	165	TERMINFO	•	•	•	•	•	•	Terminal information
TESTDEQS	TestDEQs	DBCTL	A	020	TESTDEQS	•	•	•	•	•	•	Number of Test Dequeues
TESTENQS	TestENQs	DBCTL	A	018	TESTENQS	•	•	•	•	•	•	Number of Test Enqueues
TESTENQW	TestENQW	DBCTL	A	019	TESTENQW	•	•	•	•	•	•	Number of waits on Test Enqueues
THREDCPU	ThredCPU	DBCTL	A	032	THREDCPU	•	•	•	•	•	•	Thread TCB CPU time
TOTCPU	Tot CPU	CICSPA	D	918	TOTCPU	•	•	•	•	•	•	Total Task CPU Time
TOTRECS	TotlRecs	CICSPA	A	001	TOTRECS	•	•	•	•	•	•	Cross-System Total record count
TRAN	Tran	DFHTASK	C	001	TRAN	•	•	•	•	•	•	Transaction identifier
TRANFLAG	TranFlag	DFHTASK	A	164	TRANFLAG	•	•	•	•	•	•	Transaction flags
TRANPRTY	Prty	DFHTASK	A	109	TRANPRI	•	•	•	•	•	•	Transaction priority
TRANROUT	TranRout	CICSPA	A	003	TRANROUT	•	•	•	•	•	•	Cross-System Transaction Routing records
TRANTYPE	TranType	DFHTASK	C	164	TRANFLAG	•	•	•	•	•	•	Transaction type
TSGET	TSGET	DFHTEMP	A	044	TSGETCT	•	•	•	•	•	•	Temporary Storage GET requests
TSPUTAUX	TSPUTAux	DFHTEMP	A	046	TSPUTACT	•	•	•	•	•	•	Auxiliary TS PUT requests
TSPUTMCT	TSPUTMai	DFHTEMP	A	047	TSPUTMCT	•	•	•	•	•	•	Main TS PUT requests
TSQNAME	TSQ Name	CICSPA	C	917	TSQNAME	•	–	•	•	•	•	Temporary Storage Queue Name
TSSHWAIT	TSShWait	DFHTEMP	S	178	TSSHWAIT	•	•	•	•	•	•	Asynchronous Shared TS wait time
TSTOTAL	TS Total	DFHTEMP	A	092	TSTOTCT	•	•	•	•	•	•	TS Total requests
TSWAIT	TS Wait	DFHTEMP	S	011	TSIOWTT	•	•	•	•	•	•	VSAM TS I/O wait time
UE1WARN	UE1WARN	OMCICS	C	014	UE1WARN	•	•	•	•	•	•	OMEGAMON User Event Limit Warning
UOWCONTS	UOWConts	DBCTL	A	030	UOWCONTS	•	•	•	•	•	•	Number of UOW Contentions
UOWID	UOW ID	CICSPA	C	912	UOWID	•	•	•	•	•	•	Network UOW ID
UOWSEQ	UOW Seq	CICSPA	C	913	UOWSEQ	•	•	•	•	•	•	Network UOW Sequence Number
UPDTDEQS	UpdtDEQs	DBCTL	A	023	UPDTDEQS	•	•	•	•	•	•	Number of Update Dequeues
UPDTENQS	UpdtENQs	DBCTL	A	021	UPDTENQS	•	•	•	•	•	•	Number of Update Enqueues
UPDTENQW	UpdtENQW	DBCTL	A	022	UPDTENQW	•	•	•	•	•	•	Number of waits on Update Enqueues
USERID	Userid	DFHCICS	C	089	USERID	•	•	•	•	•	•	User ID
USREVNT	USREVNT	OMCICS	S	020	USREVNT	•	•	•	•	•	•	OMEGAMON User defined events
VSAMWARN	VSAMWARN	OMCICS	C	003	VSAMWARN	•	•	•	•	•	•	OMEGAMON VSAM Limit warning
WAITEVENT	CICSWait	DFHTASK	S	182	WTCEWAIT	•	•	•	•	•	•	CICS ECB wait time
WAITEXT	Ext Wait	DFHTASK	S	181	WTEXWAIT	•	•	•	•	•	•	External ECB wait time
WBBROWSE	WBBROWSE	DFHWEBB	A	239	WBBRWCT	–	•	•	•	•	•	Web Browse requests
WBBRWOCT	WBBRWOCT	DFHWEBB	A	338	WBBRWOCT	–	–	–	–	•	•	CICS Web Support BROWSE HTTPHEADER requests
WBCHRIN	WBChrIn	DFHWEBB	A	232	WBCHRIN	•	•	•	•	•	•	Web characters received count
WBCHRIN1	WBCHRIN1	DFHWEBB	A	334	WBCHRIN1	–	–	–	–	•	•	CICS Web Support RECEIVE and CONVERSE chars
WBCHROU1	WBCHROU1	DFHWEBB	A	336	WBCHROU1	–	–	–	–	•	•	CICS Web Support SEND and CONVERSE chars
WBCHROUT	WBChrOut	DFHWEBB	A	234	WBCHROUT	•	•	•	•	•	•	Web characters sent count
WBEXTRCT	WBEXTRAC	DFHWEBB	A	238	WBEXTRCT	–	•	•	•	•	•	Web EXTRACT requests
WBIWBSCT	WBIWBSCT	DFHWEBB	A	340	WBIWBSCT	–	–	–	–	•	•	CICS INVOKE WEBSERVICE requests
WBPARSCT	WBPARSCT	DFHWEBB	A	337	WBPARSCT	–	–	–	–	•	•	CICS Web Support PARSE URL requests
WBRCV	WBRCV	DFHWEBB	A	231	WBRCVCT	•	•	•	•	•	•	Web RECEIVE requests
WBRCVIN1	WBRCVIN1	DFHWEBB	A	333	WBRCVIN1	–	–	–	–	•	•	CICS Web Support RECEIVE and CONVERSE requests
WBREAD	WB READ	DFHWEBB	A	224	WBREADCT	–	•	•	•	•	•	Web READ requests
WBREDOCT	WBREDOCT	DFHWEBB	A	331	WBREDOCT	–	–	–	–	•	•	CICS Web Support READ HTTPHEADER requests

Table 31. Cross-reference: CICS PA field name × CICS version (continued)

CICS PA field name	Column heading	CMF field				CICS version						Description
		Group	Type	ID	Name	530	610	620	630	640	650	
WBREPRCT	WBRepoRd	DFHWEBB	A	236	WBREPRCT	•	•	•	•	•	•	Web Temporary Storage Repository read requests
WBREPRDL	WBREPRDL	DFHWEBB	A	341	WBREPRDL	–	–	–	–	•	•	Repository Read data length
WBREPWCT	WBRepoWr	DFHWEBB	A	237	WBREPWCT	•	•	•	•	•	•	Web Temporary Storage Repository write requests
WBREPWDL	WBREPWDL	DFHWEBB	A	342	WBREPWDL	–	–	–	–	•	•	Repository Write data length
WBSEND	WBSEND	DFHWEBB	A	233	WBSENDCT	•	•	•	•	•	•	Web SEND requests
WBSNDOU1	WBSNDOU1	DFHWEBB	A	335	WBSNDOU1	–	–	–	–	•	•	CICS Web Support SEND and CONVERSE requests
WBTOTAL	WB Total	DFHWEBB	A	235	WBTOTWCT	•	•	•	•	•	•	Web Total requests
WBWRITE	WB WRITE	DFHWEBB	A	225	WBWRITCT	–	•	•	•	•	•	Web WRITE requests
WBWRTOCT	WBWRTOCT	DFHWEBB	A	332	WBWRTOCT	–	–	–	–	•	•	CICS Web Support WRITE HTTPHEADER requests
WMQGETWT	WMQGetWt	DFHDATA	S	396	WMQGETWT	–	–	–	–	–	•	WebSphere MQ GETWAIT wait time
WMQREQCT	WMQ Reqs	DFHDATA	A	395	WMQREQCT	–	–	–	–	–	•	Number of WebSphere MQ requests
X8CPU	X8 CPU	DFHTASK	S	271	X8CPUT	–	–	–	–	•	•	CICS X8 TCB CPU time
X9CPU	X9 CPU	DFHTASK	S	272	X9CPUT	–	–	–	–	•	•	User task X9 Mode CPU time

Chapter 16. Fields × forms, HDB templates

The following cross-reference table lists the CICS PA field names for CICS monitoring facility (CMF) performance class and transaction resource class data and shows the report forms and HDB templates to which they apply.

Some columns in the table require explanation:

CICS PA field name
The name used in report forms, HDB templates, and selection criteria (and their corresponding batch command operands FIELDS and SELECT).

A blank indicates that the field is not available, typically because it is a very long field, or it is an unprintable field such as a unit-of-work or a flag.

Report form and HDB template
The report forms and HDB templates to which a field applies:
- • Yes, the field applies
- **S** Yes, the field applies and is an eligible sort field (in a report form) or key field (in an HDB template)
- **–** No, the field does not apply

Type Indicates the data type of the field:
- **A** 32-bit or 64-bit count
- **C** Character string
- **D** Time derived by CICS PA
- **P** Packed decimal integer
- **S** Clock
- **T** STCK time stamp
- **X** Count calculated by CICS PA

Length
The default length in the output report or data set.

Clock (S) fields have two components, each of length 8:

COUNT	Number of occurrences
TIME	Elapsed time in seconds with specified precision 0.0001 - 0.000001, default format *sss.thmi*

Time Stamp (T) fields vary in length (5 - 19) depending on the specified format:

TIMET	Time in the format *hh:mm:ss.thm*
TIMEM	Time in the format *hh:mm*
TIMES	Time in the format *hh:mm:ss*
DATE	Date in the format *mm/dd/yyyy*
DATEISO	Date in the format *yyyy-mm-dd*
DATEM	Date in the format *mm/dd*
DATEYR	Date in the format *mm/dd/yy*
DATETIM	Date and time in the format *yyyy-mm-dd hh:mm:ss*

Notes:

1. Some special fields, such as APPLID and RESPONSE, are not defined in the CMF Dictionary and are given a group name of “CICSPA”. These fields are either derived from the fixed section of the CMF record (for example, APPLID), or calculated from two or more other CMF fields (for example, RESPONSE).
2. The FILENAME and TSQNAME fields are only available when CMF transaction resource class data is being collected.

3. The APPLTRAN and APPLPROG fields are only available when application programs invoke the application naming event monitoring points.

Table 32. Cross-reference: fields × forms, HDB templates

CMF field					Report form			HDB template		
CICS PA field name	Group	Type	ID	Length	LIST	LISTX	SUMMARY	LIST	SUMMARY	Description
	DFHCBTS	C	202	52	–	–	–	–	–	BTS Root Activity identifier
	DFHCBTS	C	203	52	–	–	–	–	–	BTS Activity identifier
	DFHTASK	C	064	4	–	–	–	–	–	Task error flags
	DFHTASK	C	082	28	–	–	–	–	–	Transaction Group ID
	DFHTASK	C	132	8	–	–	–	–	–	Recovery UOW ID
	DFHTASK	C	190	16	–	–	–	–	–	RRMS/MVS unit-of-recovery ID (URID)
ABCODEC	DFHPROG	C	114	4	•	S	S	•	–	Current ABEND code
ABCODEO	DFHPROG	C	113	4	•	S	S	•	–	Original ABEND Code
ACCMETH	DFHTERM	A	165	4	•	S	–	•	–	Terminal Access Method
ACTVTYNM	DFHCBTS	C	204	16	•	S	–	•	–	BTS Activity name
ADABREQ	OMCICS	S	017	8	•	–	•	–	–	OMEGAMON monitored Adabas requests
ADABWARN	OMCICS	C	005	4	•	–	S	–	–	OMEGAMON Adabas Limit Warning
APPLID	CICSPA	C	903	8	•	S	S	S	S	CICS Generic APPLID
APPLPROG	DFHAPPL	C	001	8	•	S	S	•	S	Application naming Program
APPLRECS	CICSPA	A	002	8	•	•	•	•	•	Cross-System Application records
APPLTRAN	DFHAPPL	C	001	4	•	S	S	•	S	Application naming Tran ID
BAACDCCT	DFHCBTS	A	217	4	•	S	•	•	•	BTS Activity Data Containers requests
BAACQPCT	DFHCBTS	A	214	4	•	S	•	•	•	BTS Acquire Process/Activity requests
BADACTCT	DFHCBTS	A	209	4	•	S	•	•	•	BTS Define Activity requests
BADCPACT	DFHCBTS	A	213	4	•	S	•	•	•	BTS Cancel Process/Activity requests
BADFIECT	DFHCBTS	A	220	4	•	S	•	•	•	BTS Define-Input Event requests
BADPROCT	DFHCBTS	A	208	4	•	S	•	•	•	BTS Define Process requests
BALKPACT	DFHCBTS	A	207	4	•	S	•	•	•	BTS Link Process/Activity count
BAPRDCCT	DFHCBTS	A	216	4	•	S	•	•	•	BTS Process Data Containers requests
BARASYCT	DFHCBTS	A	206	4	•	S	•	•	•	BTS asynchronous Process/Activity count
BARATECT	DFHCBTS	A	219	4	•	S	•	•	•	BTS Retrieve-Reattach Event requests
BARMPACT	DFHCBTS	A	212	4	•	S	•	•	•	BTS Resume Process/Activity requests
BARSPACT	DFHCBTS	A	210	4	•	S	•	•	•	BTS Reset Process/Activity requests
BARSYNCT	DFHCBTS	A	205	4	•	S	•	•	•	BTS synchronous Process/Activity count
BASUPACT	DFHCBTS	A	211	4	•	S	•	•	•	BTS Suspend Process/Activity requests
BATIAECT	DFHCBTS	A	221	4	•	S	•	•	•	BTS TIMER Event requests
BATOTCCT	DFHCBTS	A	218	4	•	S	•	•	•	BTS Process/Activity Data Container requests
BATOTECT	DFHCBTS	A	222	4	•	S	•	•	•	BTS Event-related requests
BATOTPCT	DFHCBTS	A	215	4	•	S	•	•	•	BTS Total Process/Activity requests
BMSIN	DFHMAPP	A	051	4	•	S	•	•	•	BMS IN requests
BMSMAP	DFHMAPP	A	050	4	•	S	•	•	•	BMS MAP requests
BMSOUT	DFHMAPP	A	052	4	•	S	•	•	•	BMS OUT requests
BMSTOTAL	DFHMAPP	A	090	4	•	S	•	•	•	BMS Total requests
BRDGTRAN	DFHTASK	C	124	4	•	S	–	•	–	Bridge Listener Transaction ID
CALLWARN	OMCICS	C	013	4	•	–	S	–	–	OMEGAMON EXEC Calls Limit Warning
CBSRVRNM	DFHEJBS	C	311	4	•	S	S	S	S	CorbaServer name
CFCAPICT	DFHCICS	A	025	4	•	S	•	•	•	OO Foundation Class requests
CFDTSYNC	DFHSYNC	S	177	8	•	S	•	•	•	CF Data Table syncpoint wait time
CFDTWAIT	DFHFILE	S	176	8	•	S	•	•	•	CF Data Table access requests wait time
CHARIN1	DFHTERM	A	083	4	•	S	•	•	•	Terminal characters received count
CHARIN2	DFHTERM	A	085	4	•	S	•	•	•	LU6.1 characters received count
CHAROUT1	DFHTERM	A	084	4	•	S	•	•	•	Terminal characters sent count
CHAROUT2	DFHTERM	A	086	4	•	S	•	•	•	LU6.1 characters sent count
CHMODECT	DFHTASK	A	248	4	•	S	•	•	•	Change-TCB modes requests
CLIENTIP	DFHSOCK	C	244	16	•	S	–	•	–	Client IP or Telnet client IP address
CLIPPORT	DFHSOCK	A	330	4	•	S	–	•	–	Client IP Port Number

Table 32. Cross-reference: fields × forms, HDB templates (continued)

	CMF field				Report form			HDB template		
CICS PA field name	Group	Type	ID	Length	LIST	LISTX	SUMMARY	LIST	SUMMARY	Description
COMMWAIT	CICSPA	D	906	8	•	S	–	•	–	Communications wait time
CPU	DFHTASK	S	008	8	•	S	•	•	•	CPU time
CPUWARN	OMCICS	C	009	4	•	–	S	–	–	OMEGAMON CPU Limit Warning
DB2CONWT	DFHDATA	S	188	8	•	S	•	•	•	DB2 Connection wait time
DB2RDYQW	DFHDATA	S	187	8	•	S	•	•	•	DB2 Thread wait time
DB2REQCT	DFHDATA	A	180	8	•	S	•	•	•	DB2 requests
DB2WAIT	DFHDATA	S	189	8	•	S	•	•	•	DB2 SQL/IFI wait time
DB2WARN	OMCICS	C	001	4	•	–	S	–	–	OMEGAMON DB2 Limit Warning
DBGETS	DBCTL	A	035	8	•	–	•	–	–	Number of Database Get calls issued
DBIOCALL	DBCTL	A	007	8	•	–	•	–	–	Number of Database I/Os
DBIOELAP	DBCTL	A	005	8	•	–	•	–	–	Elapsed time for Database I/O
DBUPDATE	DBCTL	A	036	8	•	–	•	–	–	Number of Database Update calls issued
DBWAITS	DBCTL	A	037	8	•	–	•	–	–	Number of Database waits
DCOMREQ	OMCICS	S	019	8	•	–	•	–	–	OMEGAMON monitored CA-Datacom requests
DCOMWARN	OMCICS	C	008	4	•	–	S	–	–	OMEGAMON CA-Datacom Limit Warning
DEDBBFRW	DBCTL	A	031	8	•	–	•	–	–	Number of waits for DEDB buffers
DEDBCALL	DBCTL	A	027	8	•	–	•	–	–	Number of DEDB calls
DEDBRDOP	DBCTL	A	028	8	•	–	•	–	–	Number of DEDB read operations
DHCREATE	DFHDOCH	A	226	4	•	S	•	•	•	Document Handler CREATE requests
DHDELETE	DFHDOCH	A	223	4	•	S	•	•	•	Document Handler DELETE requests
DHINSERT	DFHDOCH	A	227	4	•	S	•	•	•	Document Handler INSERT requests
DHRETRVE	DFHDOCH	A	229	4	•	S	•	•	•	Document Handler RETRIEVE requests
DHSET	DFHDOCH	A	228	4	•	S	•	•	•	Document Handler SET requests
DHTOTAL	DFHDOCH	A	230	4	•	S	•	•	•	Document Handler Total requests
DHTOTDCL	DFHDOCH	A	240	4	•	S	•	•	•	Total length of all documents created
DISPATCH	DFHTASK	S	007	8	•	S	•	•	•	Dispatch time
DISPWAIT	DFHTASK	S	102	8	•	S	•	•	•	Redispatch wait time
DLETCALL	DBCTL	A	015	8	•	–	•	–	–	Number of Database DLET calls issued
DLICALLS	DBCTL	A	017	8	•	–	•	–	–	Total DL/I Database calls
DLIWARN	OMCICS	C	002	4	•	–	S	–	–	OMEGAMON DLI Limit Warning
DPLRECS	CICSPA	A	005	8	•	•	•	•	•	Cross-System DPL records
DSAWARN	OMCICS	C	011	4	•	–	S	–	–	OMEGAMON DSA Limit Warning
DSCHMDLY	DFHTASK	S	247	8	•	S	•	•	•	Redispatch wait time caused by change-TCB mode
DSMMSCWT	DFHTASK	S	279	8	•	S	•	•	•	DS storage constraint wait time
DSPDELAY	DFHTASK	S	125	8	•	S	•	•	•	First dispatch wait time
DSTCBHWM	DFHTASK	A	252	4	•	S	•	•	•	CICS Dispatcher TCB HWM
DSTCBMWT	DFHTASK	S	268	8	•	S	•	•	•	Dispatcher TCB Mismatch wait time
EDSAWARN	OMCICS	C	012	4	•	–	S	–	–	OMEGAMON EDSA Limit Warning
EJBACTIV	DFHEJBS	A	312	4	•	S	•	•	•	Number of Bean State Activation requests
EJBCREAT	DFHEJBS	A	314	4	•	S	•	•	•	Number of Bean Creation requests
EJBMETHD	DFHEJBS	A	316	4	•	S	•	•	•	Number of EJB Method Calls
EJBPASIV	DFHEJBS	A	313	4	•	S	•	•	•	Number of Bean State Passivation requests
EJBREMOV	DFHEJBS	A	315	4	•	S	•	•	•	Number of Bean Removal requests
EJBTOTAL	DFHEJBS	A	317	4	•	S	•	•	•	Total Number of EJB requests
ELAPWARN	OMCICS	C	010	4	•	–	S	–	–	OMEGAMON Elapsed Time Limit Warning
ENQDELAY	DFHTASK	S	129	8	•	S	•	•	•	Local Enqueue wait time
ERRFLAGS	DFHTASK	A	064	4	•	•	–	•	–	Task error flags
EXCLDEQS	DBCTL	A	026	8	•	–	•	–	–	Number of Exclusive Dequeues
EXCLENQS	DBCTL	A	024	8	•	–	•	–	–	Number of Exclusive Enqueues
EXCLENQW	DBCTL	A	025	8	•	–	•	–	–	Number of waits on Exclusive Enqueues
EXWAIT	DFHCICS	S	103	8	•	S	•	•	•	Exception Conditions wait time
FCADD	DFHFILE	A	039	4	•	S	•	•	•	File ADD requests
FCAMCT	DFHFILE	A	070	4	•	S	•	•	•	File access-method requests
FCBROWSE	DFHFILE	A	038	4	•	S	•	•	•	File Browse requests

Table 32. Cross-reference: fields × forms, HDB templates (continued)

CMF field					Report form			HDB template		
CICS PA field name	Group	Type	ID	Length	LIST	LISTX	SUMMARY	LIST	SUMMARY	Description
FCDELETE	DFHFILE	A	040	4	•	S	•	•	•	File DELETE requests
FCGET	DFHFILE	A	036	4	•	S	•	•	•	File GET requests
FCPUT	DFHFILE	A	037	4	•	S	•	•	•	File PUT requests
FCTOTAL	DFHFILE	A	093	4	•	S	•	•	•	File Control requests
FCTY	DFHTASK	C	163	4	•	S	–	•	–	Transaction Facility name
FCTYTYPE	DFHTASK	A	164	4	•	S	–	•	–	Transaction facility type
FCWAIT	DFHFILE	S	063	8	•	S	•	•	•	File I/O wait time
FILENAME	CICSPA	C	916	8	–	–	–	–	–	File name
FUNCSHIP	CICSPA	A	004	8	•	•	•	•	•	Cross-System Function Shipping records
GHNCALL	DBCTL	A	012	8	•	–	•	–	–	Number of Database GHN calls issued
GHNPCALL	DBCTL	A	013	8	•	–	•	–	–	Number of Database GHNP calls issued
GHUCALL	DBCTL	A	011	8	•	–	•	–	–	Number of Database GHU calls issued
GIVEUPWT	DFHTASK	S	184	8	•	S	•	•	•	Give up control wait time
GNCALL	DBCTL	A	009	8	•	–	•	–	–	Number of Database GN calls issued
GNPCALL	DBCTL	A	010	8	•	–	•	–	–	Number of Database GNP calls issued
GNQDELAY	DFHTASK	S	123	8	•	S	•	•	•	Global Enqueue wait time
GUCALL	DBCTL	A	008	8	•	–	•	–	–	Number of Database GU calls issued
ICDELAY	DFHTASK	S	183	8	•	S	•	•	•	Interval Control (IC) wait time
ICPUT	DFHTASK	A	059	4	•	S	•	•	•	Interval Control START or INITIATE requests
ICSTACCT	DFHTASK	A	065	8	•	S	•	•	•	Local IC START requests with CHANNEL option
ICSTACDL	DFHTASK	A	345	8	•	S	•	•	•	Container data len for Local IC START w/ CHANNEL
ICSTRCCT	DFHTASK	A	346	8	•	S	•	•	•	Remote IC START requests with CHANNEL option
ICSTRCDL	DFHTASK	A	347	8	•	S	•	•	•	Container data len for Remot IC START w/ CHANNEL
ICTOTAL	DFHTASK	A	066	4	•	S	•	•	•	Interval Control requests
IDMSREQ	OMCICS	S	016	8	•	–	•	–	–	OMEGAMON monitored CA-IDMS requests
IDMSWARN	OMCICS	C	006	4	•	–	S	–	–	OMEGAMON CA-IDMS Limit Warning
IMSREQCT	DFHDATA	A	179	4	•	S	•	•	•	IMS (DBCTL) requests
IMSWAIT	DFHDATA	S	186	8	•	S	•	•	•	IMS (DBCTL) wait time
INTCWAIT	DBCTL	A	003	8	•	–	•	–	–	Elapsed wait time for Intent Conflict
IOWAIT	CICSPA	D	907	8	•	S	–	•	–	Total IO wait time
IRESP	CICSPA	D	908	8	•	S	•	–	•	Transaction internal response time
IRWAIT	DFHTERM	S	100	8	•	S	•	•	•	MRO link wait time
ISALLOC	DFHSOCK	A	288	4	•	S	•	•	•	Allocate Session requests for sessions on IP
ISIPICNM	DFHSOCK	C	305	8	•	S	S	•	S	Name of IPCONN definition that attached the task
ISRTCALL	DBCTL	A	014	8	•	–	•	–	–	Number of Database ISRT calls issued
ISWAIT	DFHSOCK	S	300	8	•	S	•	•	•	IPCONN link wait time
J8CPU	DFHTASK	S	260	8	•	S	•	•	•	CICS J8 TCB CPU time
J9CPU	DFHTASK	S	267	8	•	S	•	•	•	User task J9 Mode CPU time
JCWAIT	DFHJOUR	S	010	8	•	S	•	•	•	Journal I/O wait time
JNLPUT	DFHJOUR	A	058	4	•	S	•	•	•	Journal write requests
JOBNAME	CICSPA	C	905	8	•	S	S	•	S	Job Name
JVMITIME	DFHTASK	S	273	8	•	S	•	•	•	JVM initialize elapsed time
JVMMTIME	CICSPA	D	910	8	•	S	•	•	•	JVM Method time
JVMRTIME	DFHTASK	S	275	8	•	S	•	•	•	JVM reset elapsed time
JVMSUSP	DFHTASK	S	254	8	•	S	•	•	•	JVM suspend time
JVMTIME	DFHTASK	S	253	8	•	S	•	•	•	JVM elapsed time
KY8CPU	DFHTASK	S	263	8	•	S	•	•	•	CICS Key 8 TCB CPU time
KY8DISPT	DFHTASK	S	262	8	•	S	•	•	•	CICS Key 8 TCB dispatch time
KY9CPU	DFHTASK	S	265	8	•	S	•	•	•	User task Key 9 Mode CPU time
KY9DISPT	DFHTASK	S	264	8	•	S	•	•	•	User task Key 9 Mode Dispatch time
L8CPU	DFHTASK	S	259	8	•	S	•	•	•	CICS L8 TCB CPU time
L9CPU	DFHTASK	S	266	8	•	S	•	•	•	User task L9 CPU time
LOCKDLAY	DFHTASK	S	128	8	•	S	•	•	•	Lock Manager (LM) wait time
LOGWRITE	DFHJOUR	A	172	4	•	S	•	•	•	Log Stream write requests

Table 32. Cross-reference: fields × forms, HDB templates (continued)

CMF field					Report form			HDB template		
CICS PA field name	Group	Type	ID	Length	LIST	LISTX	SUMMARY	LIST	SUMMARY	Description
LU61WAIT	DFHTERM	S	133	8	•	S	•	•	•	LU6.1 wait time
LU62WAIT	DFHTERM	S	134	8	•	S	•	•	•	LU6.2 wait time
LUNAME	DFHTERM	C	111	8	•	S	–	•	–	VTAM logical unit name
MAXHTDLY	DFHTASK	S	278	8	•	S	•	•	•	Maximum Hot-Pooling TCB delay time
MAXJTDLY	DFHTASK	S	277	8	•	S	•	•	•	Maximum JVM TCB delay time
MAXOTDLY	DFHTASK	S	250	8	•	S	•	•	•	Maximum Open TCB delay time
MAXSTDLY	DFHTASK	S	281	8	•	S	•	•	•	Maximum SSL TCB delay time
MAXXTDLY	DFHTASK	S	282	8	•	S	•	•	•	Maximum XPLink TCB delay time
MQWARN	OMCICS	C	004	4	•	–	S	–	–	OMEGAMON MQ Limit Warning
MSCPU	DFHTASK	S	258	8	•	S	•	•	•	CICS TCBs CPU time
MSDISPT	DFHTASK	S	257	8	•	S	•	•	•	CICS TCBs dispatch time
MSGIN1	DFHTERM	A	034	4	•	S	•	•	•	Messages received count
MSGIN2	DFHTERM	A	067	4	•	S	•	•	•	Messages received from LU6.1
MSGOUT1	DFHTERM	A	035	4	•	S	•	•	•	Messages sent count
MSGOUT2	DFHTERM	A	068	4	•	S	•	•	•	Messages sent to LU6.1
MVSID	CICSPA	C	904	4	•	S	S	S	S	MVS SMF ID
MXTDELAY	DFHTASK	S	127	8	•	S	•	•	•	First dispatch MXT wait time
NATURE	DFHTERM	A	165	4	•	S	–	•	–	Transaction
NETID	DFHTERM	C	197	8	•	S	–	•	–	VTAM LUALIAS Network ID
NETNAME	DFHTASK	C	097	20	•	S	–	•	–	Originating System VTAM network name
NETUOWSX	DFHTASK	C	098	8	–	–	–	–	–	Network UOW ID
OAPPLID	DFHCICS	C	360	8	•	S	S	•	S	Originating CICS APPLID
OCLINTIP	DFHCICS	C	368	16	•	S	–	•	–	Originating Client or Telnet IP address
OCLIPORT	DFHCICS	A	369	4	•	S	–	•	–	Originating Client IP Port Number
OFCTY	DFHCICS	C	371	8	•	S	S	•	S	Originating Transaction Facility name
OFCTYTYP	DFHCICS	A	370	4	•	S	–	•	–	Originating Transaction Facility Type
OMEGWORK	OMCICS	C	015	32	•	–	S	–	–	OMEGAMON User work area
ONETWKID	DFHCICS	C	359	8	•	S	S	•	S	Originating Network ID
OORIGIN	DFHCICS	C	370	8	•	S	S	•	–	Originating Transaction Origin type
OPORT	DFHCICS	A	367	4	•	S	–	•	–	Originating TCP/IP Port Number
ORIGIN	DFHTASK	C	164	8	•	S	S	•	–	Transaction origin type
OSOWAIT	DFHSOCK	S	299	8	•	S	•	•	•	Outbound Socket I/O Wait Time
OSTART	DFHCICS	T	361	8	•	S	S	•	S	Originating Task start time
OTASKNO	DFHCICS	P	362	4	•	S	–	•	–	Originating Transaction number
OTCPSRVC	DFHCICS	C	366	8	•	S	S	•	S	Originating TCP/IP Service Name
OTRAN	DFHCICS	C	363	4	•	S	S	•	S	Originating Transaction identifier
OTRANFLG	DFHCICS	A	370	16	•	S	–	•	–	Originating Transaction flags
OTRANTYP	DFHCICS	C	370	8	•	•	–	•	–	Originating Transaction type
OTSID	DFHTASK	C	194	128	•	•	–	•	–	OTS Transaction ID
OTSINDWT	DFHSYNC	S	199	8	•	S	•	•	•	OTS Indoubt Wait time
OUSERCOR	DFHCICS	C	365	64	•	S	S	•	S	Originating User Correlator
OUSERID	DFHCICS	C	364	8	•	S	S	•	S	Originating User ID
OVFLBFRU	DBCTL	A	029	8	•	–	•	–	–	Number of Overflow Buffers used
PC24BHWM	DFHSTOR	A	108	4	•	S	•	•	•	Program Storage HWM below 16MB
PC24CHWM	DFHSTOR	A	143	4	•	S	•	•	•	Program Storage (CDSA) HWM below 16MB
PC24RHWM	DFHSTOR	A	162	4	•	S	•	•	•	Program Storage (RDSA) HWM below 16MB
PC24SHWM	DFHSTOR	A	160	4	•	S	•	•	•	Program Storage (SDSA) HWM below 16MB
PC31AHWM	DFHSTOR	A	139	4	•	S	•	•	•	Program Storage HWM above 16MB
PC31CHWM	DFHSTOR	A	142	4	•	S	•	•	•	Program Storage (ECDSA) HWM above 16MB
PC31RHWM	DFHSTOR	A	122	4	•	S	•	•	•	Program Storage (ERDSA) HWM above 16MB
PC31SHWM	DFHSTOR	A	161	4	•	S	•	•	•	Program Storage (ESDSA) HWM above 16MB
PCDLCRDL	DFHPROG	A	287	8	•	S	•	•	•	Container data length for DPL RETURN w/ CHANNEL
PCDLCSDL	DFHPROG	A	286	8	•	S	•	•	•	Container data length for DPL reqs with CHANNEL
PCDPL	DFHPROG	A	073	4	•	S	•	•	•	Distributed Program Link (DPL) requests

Table 32. Cross-reference: fields × forms, HDB templates (continued)

	CMF field				Report form			HDB template		
CICS PA field name	Group	Type	ID	Length	LIST	LISTX	SUMMARY	LIST	SUMMARY	Description
PCDPLCCT	DFHPROG	A	308	8	•	S	•	•	•	DPL requests with CHANNEL option
PCLINK	DFHPROG	A	055	4	•	S	•	•	•	Program LINK requests
PCLNKCCT	DFHPROG	A	306	8	•	S	•	•	•	LINK requests with CHANNEL option
PCLOAD	DFHPROG	A	057	4	•	S	•	•	•	Program LOAD requests
PCLOADTM	DFHPROG	S	115	8	•	S	•	•	•	Program Library wait time
PCLURM	DFHPROG	A	072	4	•	S	•	•	•	Program LINK URM requests
PCRTNCCT	DFHPROG	A	309	8	•	S	•	•	•	Program RETURN requests with CHANNEL option
PCRTNCDL	DFHPROG	A	310	8	•	S	•	•	•	Container data length for RETURN with CHANNEL
PCSTGHWM	DFHSTOR	A	087	4	•	S	•	•	•	Program Storage HWM above and below 16MB
PCXCLCCT	DFHPROG	A	307	8	•	S	•	•	•	XCTL requests with CHANNEL option
PCXCTL	DFHPROG	A	056	4	•	S	•	•	•	Program XCTL requests
PGBRWCCT	DFHCHNL	A	322	8	•	S	•	•	•	BROWSE CHANNEL CONTAINER requests
PGCRECCT	DFHCHNL	A	328	8	•	S	•	•	•	Number of Containers created
PGCSTHWM	DFHCHNL	A	329	4	•	S	–	•	–	Maximum Container Storage allocated to task
PGGETCCT	DFHCHNL	A	323	8	•	S	•	•	•	GET CHANNEL CONTAINER requests
PGGETCDL	DFHCHNL	A	326	8	•	S	•	•	•	GET CHANNEL CONTAINER data length
PGMOVCCT	DFHCHNL	A	325	8	•	S	•	•	•	MOVE CHANNEL CONTAINER requests
PGPUTCCT	DFHCHNL	A	324	8	•	S	•	•	•	PUT CHANNEL CONTAINER requests
PGPUTCDL	DFHCHNL	A	327	8	•	S	•	•	•	PUT CHANNEL CONTAINER data length
PGTOTCCT	DFHCHNL	A	321	8	•	S	•	•	•	Total number of CHANNEL CONTAINER requests
PILOCKEL	DBCTL	A	006	8	•	–	•	–	–	Elapsed time for PI Locking
POOLWAIT	DBCTL	A	002	8	•	–	•	–	–	Elapsed wait time for Pool Space
PORT	DFHSOCK	A	246	8	•	S	–	•	–	TCP/IP Port Number
PRCSNAME	DFHCBTS	C	200	36	•	•	–	•	–	BTS Process name
PRCSTYPE	DFHCBTS	C	201	8	•	•	S	•	S	BTS Process type
PROGRAM	DFHPROG	C	071	8	•	S	S	S	S	Program name
PSBNAME	DBCTL	C	001	8	•	–	S	–	–	PSB Name
PTPWAIT	DFHTASK	S	285	8	•	S	•	•	•	3270 Bridge Partner wait time
QRCPU	DFHTASK	S	256	8	•	S	•	•	•	CICS QR TCB CPU time
QRDISPT	DFHTASK	S	255	8	•	S	•	•	•	CICS QR TCB dispatch time
QRMODDLY	DFHTASK	S	249	8	•	S	•	•	•	CICS QR TCB redispatch wait time
RECCOUNT	DFHCICS	A	131	4	•	•	•	•	•	Task Performance record count
RELEASE	CICSPA	C	909	4	•	S	S	•	S	CICS release
REPLCALL	DBCTL	A	016	8	•	–	•	–	–	Number of Database REPL calls issued
RESPONSE	CICSPA	D	901	8	•	S	•	•	•	Transaction response time
RLSCPU	DFHFILE	S	175	8	•	S	•	•	•	RLS File Request CPU (SRB) time
RLSWAIT	DFHFILE	S	174	8	•	S	•	•	•	RLS File I/O wait time
RLUNAME	DFHTERM	C	198	8	•	S	–	•	–	VTAM LUALIAS Logical Unit name
RMICPSM	DFHRMI	S	007	8	•	S	•	•	•	RMI elapsed time for CICSPlex SM requests
RMIDB2	DFHRMI	S	003	8	•	S	•	•	•	RMI elapsed time for DB2 requests
RMIDBCTL	DFHRMI	S	004	8	•	S	•	•	•	RMI elapsed time for DBCTL requests
RMIEXDLI	DFHRMI	S	005	8	•	S	•	•	•	RMI elapsed time for EXEC DLI requests
RMIMQM	DFHRMI	S	006	8	•	S	•	•	•	RMI elapsed time for WebSphere MQ requests
RMIOTHER	DFHRMI	S	002	8	•	S	•	•	•	RMI other elapsed time
RMIOTIME	CICSPA	D	911	8	•	S	•	•	•	Resource Manager Interface (RMI) other time
RMISUSP	DFHTASK	S	171	8	•	S	•	•	•	Resource Manager Interface (RMI) suspend time
RMITCPIP	DFHRMI	S	008	8	•	S	•	•	•	RMI elapsed time for TCP/IP socket requests
RMITIME	DFHTASK	S	170	8	•	S	•	•	•	Resource Manager Interface (RMI) elapsed time
RMITOTAL	DFHRMI	S	001	8	•	S	•	•	•	RMI total elapsed time
ROCPU	DFHTASK	S	270	8	•	S	•	•	•	CICS RO TCB CPU time
RODISPT	DFHTASK	S	269	8	•	S	•	•	•	CICS RO TCB dispatch time
RPTCLASS	DFHCICS	C	168	8	•	S	S	•	S	WLM Report Class
RQPWAIT	DFHTASK	S	193	8	•	S	•	•	•	Request Processor Wait Time
RQRWAIT	DFHTASK	S	192	8	•	S	•	•	•	Request Receiver Wait Time

Table 32. Cross-reference: fields × forms, HDB templates (continued)

	CMF field				Report form			HDB template		
CICS PA field name	Group	Type	ID	Length	LIST	LISTX	SUMMARY	LIST	SUMMARY	Description
RRMSWAIT	DFHTASK	S	191	8	•	S	•	•	•	Resource Recovery Services indoubt wait time
RSYSID	DFHCICS	C	130	4	•	S	S	•	S	Remote System ID
RTYPE	DFHCICS	C	112	4	•	•	–	•	–	Performance record type
RUNTRWTT	DFHTASK	S	195	8	•	S	•	•	•	BTS run Process/Activity wait time
S8CPU	DFHTASK	S	261	8	•	S	•	•	•	CICS S8 TCB CPU time
SC24CGET	DFHSTOR	A	117	4	•	S	•	•	•	CDSA GETMAINs below 16MB
SC24CHWM	DFHSTOR	A	116	4	•	S	•	•	•	CDSA HWM below 16MB
SC24COCC	DFHSTOR	A	118	8	•	S	•	•	•	CDSA Storage Occupancy below 16MB
SC24FSHR	DFHSTOR	A	146	4	•	S	•	•	•	CDSA/SDSA storage FREEMAINed below 16MB
SC24GSHR	DFHSTOR	A	145	4	•	S	•	•	•	CDSA/SDSA storage GETMAINed below 16MB
SC24SGET	DFHSTOR	A	144	4	•	S	•	•	•	CDSA/SDSA GETMAINs below 16MB
SC24UGET	DFHSTOR	A	054	4	•	S	•	•	•	UDSA GETMAINs below 16MB
SC24UHWM	DFHSTOR	A	033	4	•	S	•	•	•	UDSA HWM below 16MB
SC24UOCC	DFHSTOR	A	095	8	•	S	•	•	•	UDSA Storage Occupancy below 16MB
SC31CGET	DFHSTOR	A	120	4	•	S	•	•	•	ECDSA GETMAINs above 16MB
SC31CHWM	DFHSTOR	A	119	4	•	S	•	•	•	ECDSA HWM above 16MB
SC31COCC	DFHSTOR	A	121	8	•	S	•	•	•	ECDSA Storage Occupancy above 16MB
SC31FSHR	DFHSTOR	A	149	4	•	S	•	•	•	ECDSA/ESDSA storage FREEMAINed above 16MB
SC31GSHR	DFHSTOR	A	148	4	•	S	•	•	•	ECDSA/ESDSA storage GETMAINed above 16MB
SC31SGET	DFHSTOR	A	147	4	•	S	•	•	•	ECDSA/ESDSA GETMAINs above 16MB
SC31UGET	DFHSTOR	A	105	4	•	S	•	•	•	EUDSA GETMAINs above 16MB
SC31UHWM	DFHSTOR	A	106	4	•	S	•	•	•	EUDSA HWM above 16MB
SC31UOCC	DFHSTOR	A	107	8	•	S	•	•	•	EUDSA Storage Occupancy above 16MB
SCHEDEND	DBCTL	T	034	8	•	–	–	–	–	IMS Schedule end time
SCHEDSTA	DBCTL	T	033	8	•	–	–	–	–	IMS Schedule start time
SCHTELAP	DBCTL	A	004	8	•	–	•	–	–	Elapsed time for Schedule Process
SESSTYPE	DFHTERM	A	165	4	•	•	–	•	–	Terminal session type
SOBYDECT	DFHSOCK	A	243	4	•	S	•	•	•	Secure Socket bytes decrypted count
SOBYENCT	DFHSOCK	A	242	4	•	S	•	•	•	Secure Socket bytes encrypted count
SOCHRIN	DFHSOCK	A	295	8	•	S	•	•	•	Outbound Sockets characters received count
SOCHRIN1	DFHSOCK	A	302	8	•	S	•	•	•	Inbound Sockets characters received count
SOCHROU1	DFHSOCK	A	304	8	•	S	•	•	•	Inbound Sockets characters sent count
SOCHROUT	DFHSOCK	A	297	8	•	S	•	•	•	Outbound Sockets characters sent count
SOCNPSCT	DFHSOCK	A	290	8	•	S	•	•	•	Create Non-Persistent Outbound Socket reqs
SOCPSCT	DFHSOCK	A	291	8	•	S	•	•	•	Create Persistent Outbound Socket requests
SOEXTRCT	DFHSOCK	A	289	8	•	S	•	•	•	EXTRACT TCP/IP and CERTIFICATE requests
SOMSGIN1	DFHSOCK	A	301	8	•	S	•	•	•	Inbound Sockets RECEIVE requests
SOMSGOU1	DFHSOCK	A	303	8	•	S	•	•	•	Inbound Sockets SEND requests
SONPSHWM	DFHSOCK	A	292	8	•	S	•	•	•	Non-Persistent Outbound Socket HWM
SOPSHWM	DFHSOCK	A	293	8	•	S	•	•	•	Persistent Outbound Socket HWM
SORCV	DFHSOCK	A	294	8	•	S	•	•	•	Outbound Sockets RECEIVE requests
SOSEND	DFHSOCK	A	296	8	•	S	•	•	•	Outbound Sockets SEND requests
SOTOTAL	DFHSOCK	A	298	8	•	S	•	•	•	Socket Total requests
SOWAIT	DFHSOCK	S	241	8	•	S	•	•	•	Inbound Socket I/O wait time
SRVCLASS	DFHCICS	C	167	8	•	S	S	•	S	WLM Service Class
START	DFHCICS	T	005	8	•	S	S	S	S	Task start time
STOP	DFHCICS	T	006	8	•	S	S	S	S	Task stop time
STYPE	DFHTASK	C	004	2	•	S	–	•	–	Transaction start type
SUPRREQ	OMCICS	S	018	8	•	–	•	–	–	OMEGAMON monitored Supra requests
SUPRWARN	OMCICS	C	007	4	•	–	S	–	–	OMEGAMON Supra Limit Warning
SUSPEND	DFHTASK	S	014	8	•	S	•	•	•	Suspend time
SYNCDLY	DFHSYNC	S	196	8	•	S	•	•	•	SYNCPOINT parent request wait time
SYNCPT	DFHSYNC	A	060	4	•	S	•	•	•	SYNCPOINT requests
SYNCTIME	DFHSYNC	S	173	8	•	S	•	•	•	SYNCPOINT processing time

Table 32. Cross-reference: fields × forms, HDB templates (continued)

CMF field					Report form			HDB template		
CICS PA field name	Group	Type	ID	Length	LIST	LISTX	SUMMARY	LIST	SUMMARY	Description
SZALLCTO	DFHFEPI	A	157	4	•	S	•	•	•	Allocate conversation time-out count
SZALLOC	DFHFEPI	A	150	4	•	S	•	•	•	Conversations allocated count
SZCHRIN	DFHFEPI	A	155	4	•	S	•	•	•	FEPI characters received count
SZCHROUT	DFHFEPI	A	154	4	•	S	•	•	•	FEPI characters sent count
SZRCV	DFHFEPI	A	151	4	•	S	•	•	•	FEPI RECEIVE requests
SZRCVTO	DFHFEPI	A	158	4	•	S	•	•	•	Receive Data time-out count
SZSEND	DFHFEPI	A	152	4	•	S	•	•	•	FEPI SEND requests
SZSTART	DFHFEPI	A	153	4	•	S	•	•	•	FEPI START requests
SZTOTAL	DFHFEPI	A	159	4	•	S	•	•	•	FEPI API and SPI requests
SZWAIT	DFHFEPI	S	156	8	•	S	•	•	•	FEPI services wait time
TASKCNT	CICSPA	X	902	4	–	–	•	–	•	Total Task count
TASKNO	DFHTASK	P	031	4	•	S	–	•	–	Transaction identification number
TASKTCNT	CICSPA	X	914	4	–	–	•	–	•	Total Task Termination count
TCALLOC	DFHTERM	A	069	4	•	S	•	•	•	TCTTE ALLOCATE requests
TCBATTCT	DFHTASK	A	251	8	•	S	•	•	•	TCBs attached count
TCC62IN2	DFHTERM	A	137	4	•	S	•	•	•	LU6.2 characters received count
TCC62OU2	DFHTERM	A	138	4	•	S	•	•	•	LU6.2 characters sent count
TCLASSNM	DFHTASK	C	166	8	•	S	S	•	S	Transaction Class name
TCLDELAY	DFHTASK	S	126	8	•	S	•	•	•	First dispatch TCLSNAME wait time
TCM62IN2	DFHTERM	A	135	4	•	S	•	•	•	LU6.2 messages received count
TCM62OU2	DFHTERM	A	136	4	•	S	•	•	•	LU6.2 messages sent count
TCPSRVCE	DFHSOCK	C	245	8	•	S	S	•	S	TCP/IP Service Name
TCWAIT	DFHTERM	S	009	8	•	S	•	•	•	Terminal wait for input time
TDGET	DFHDEST	A	041	4	•	S	•	•	•	Transient data GET requests
TDPURGE	DFHDEST	A	043	4	•	S	•	•	•	Transient data PURGE requests
TDPUT	DFHDEST	A	042	4	•	S	•	•	•	Transient data PUT requests
TDTOTAL	DFHDEST	A	091	4	•	S	•	•	•	Transient data Total requests
TDWAIT	DFHDEST	S	101	8	•	S	•	•	•	VSAM transient data I/O wait time
TERM	DFHTERM	C	002	4	•	S	S	•	S	Terminal ID
TERMCNNM	DFHTERM	C	169	4	•	S	–	•	–	Terminal session Connection name
TERMCODE	DFHTERM	A	165	4	•	•	–	•	–	Terminal Device Type
TERMINFO	DFHTERM	A	165	4	•	•	–	•	–	Terminal information
TESTDEQS	DBCTL	A	020	8	•	–	•	–	–	Number of Test Dequeues
TESTENQS	DBCTL	A	018	8	•	–	•	–	–	Number of Test Enqueues
TESTENQW	DBCTL	A	019	8	•	–	•	–	–	Number of waits on Test Enqueues
THREDCPU	DBCTL	A	032	8	•	–	•	–	–	Thread TCB CPU time
TOTCPU	CICSPA	D	918	8	•	S	•	•	•	Total Task CPU Time
TOTRECS	CICSPA	A	001	8	•	•	•	•	•	Cross-System Total record count
TRAN	DFHTASK	C	001	4	•	S	S	S	S	Transaction identifier
TRANFLAG	DFHTASK	A	164	16	•	•	–	•	–	Transaction flags
TRANPRTY	DFHTASK	A	109	4	•	S	–	•	–	Transaction priority
TRANROUT	CICSPA	A	003	8	•	•	•	•	•	Cross-System Transaction Routing records
TRANTYPE	DFHTASK	C	164	8	•	•	–	•	–	Transaction type
TSGET	DFHTEMP	A	044	4	•	S	•	•	•	Temporary Storage GET requests
TSPUTAUX	DFHTEMP	A	046	4	•	S	•	•	•	Auxiliary TS PUT requests
TSPUTMCT	DFHTEMP	A	047	4	•	S	•	•	•	Main TS PUT requests
TSQNAME	CICSPA	C	917	8	–	–	–	–	–	Temporary Storage Queue Name
TSSHWAIT	DFHTEMP	S	178	8	•	S	•	•	•	Asynchronous Shared TS wait time
TSTOTAL	DFHTEMP	A	092	4	•	S	•	•	•	TS Total requests
TSWAIT	DFHTEMP	S	011	8	•	S	•	•	•	VSAM TS I/O wait time
UE1WARN	OMCICS	C	014	4	•	–	S	–	–	OMEGAMON User Event Limit Warning
UOWCONTS	DBCTL	A	030	8	•	–	•	–	–	Number of UOW Contentions
UOWID	CICSPA	C	912	12	•	•	–	•	–	Network UOW ID
UOWSEQ	CICSPA	C	913	5	•	•	–	•	–	Network UOW Sequence Number

Table 32. Cross-reference: fields × forms, HDB templates (continued)

	CMF field				Report form			HDB template		
CICS PA field name	Group	Type	ID	Length	LIST	LISTX	SUMMARY	LIST	SUMMARY	Description
UPDTDEQS	DBCTL	A	023	8	•	–	•	–	–	Number of Update Dequeues
UPDTENQS	DBCTL	A	021	8	•	–	•	–	–	Number of Update Enqueues
UPDTENQW	DBCTL	A	022	8	•	–	•	–	–	Number of waits on Update Enqueues
USERID	DFHCICS	C	089	8	•	S	S	S	S	User ID
USREVNT	OMCICS	S	020	8	•	–	•	–	–	OMEGAMON User defined events
VSAMWARN	OMCICS	C	003	4	•	–	S	–	–	OMEGAMON VSAM Limit warning
WAITEVENT	DFHTASK	S	182	8	•	•	•	•	•	CICS ECB wait time
WAITEXT	DFHTASK	S	181	8	•	S	•	•	•	External ECB wait time
WBBROWSE	DFHWEBB	A	239	8	•	S	•	•	•	Web Browse requests
WBBRWOCT	DFHWEBB	A	338	8	•	S	•	•	•	CICS Web Support BROWSE HTTPHEADER requests
WBCHRIN	DFHWEBB	A	232	4	•	S	•	•	•	Web characters received count
WBCHRIN1	DFHWEBB	A	334	8	•	S	•	•	•	CICS Web Support RECEIVE and CONVERSE chars
WBCHROU1	DFHWEBB	A	336	8	•	S	•	•	•	CICS Web Support SEND and CONVERSE chars
WBCHROUT	DFHWEBB	A	234	4	•	S	•	•	•	Web characters sent count
WBEXTRCT	DFHWEBB	A	238	8	•	S	•	•	•	Web EXTRACT requests
WBIWBSCT	DFHWEBB	A	340	8	•	S	•	•	•	CICS INVOKE WEBSERVICE requests
WBPARSCT	DFHWEBB	A	337	8	•	S	•	•	•	CICS Web Support PARSE URL requests
WBRCV	DFHWEBB	A	231	4	•	S	•	•	•	Web RECEIVE requests
WBRCVIN1	DFHWEBB	A	333	8	•	S	•	•	•	CICS Web Support RECEIVE and CONVERSE requests
WBREAD	DFHWEBB	A	224	8	•	S	•	•	•	Web READ requests
WBREDOCT	DFHWEBB	A	331	8	•	S	•	•	•	CICS Web Support READ HTTPHEADER requests
WBREPRCT	DFHWEBB	A	236	4	•	S	•	•	•	Web Temporary Storage Repository read requests
WBREPRDL	DFHWEBB	A	341	8	•	S	•	•	•	Repository Read data length
WBREPWCT	DFHWEBB	A	237	4	•	S	•	•	•	Web Temporary Storage Repository write requests
WBREPWDL	DFHWEBB	A	342	8	•	S	•	•	•	Repository Write data length
WBSEND	DFHWEBB	A	233	4	•	S	•	•	•	Web SEND requests
WBSNDOU1	DFHWEBB	A	335	8	•	S	•	•	•	CICS Web Support SEND and CONVERSE requests
WBTOTAL	DFHWEBB	A	235	4	•	S	•	•	•	Web Total requests
WBWRITE	DFHWEBB	A	225	8	•	S	•	•	•	Web WRITE requests
WBWRTOCT	DFHWEBB	A	332	8	•	S	•	•	•	CICS Web Support WRITE HTTPHEADER requests
WMQGETWT	DFHDATA	S	396	8	•	S	•	•	•	WebSphere MQ GETWAIT wait time
WMQREQCT	DFHDATA	A	395	4	•	S	•	•	•	Number of WebSphere MQ requests
X8CPU	DFHTASK	S	271	8	•	S	•	•	•	CICS X8 TCB CPU time
X9CPU	DFHTASK	S	272	8	•	S	•	•	•	User task X9 Mode CPU time

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Bibliography

Additional information can be found in the following publications.

Other CICS Performance Analyzer books

CICS Performance Analyzer for z/OS User's Guide, SC34-6799
CICS Performance Analyzer for z/OS Program Directory, GI13-0517

Books from related libraries

You may find the following publications useful when using CICS Performance Analyzer to analyze and tune the performance of your CICS systems.

CICS Transaction Server for z/OS Version 3

CICS System Definition Guide, SC34-6813
CICS Customization Guide, SC34-6814
CICS Resource Definition Guide, SC34-6815
CICS Operations and Utilities Guide, SC34-6816
CICS Supplied Transactions, SC34-6817
CICS Application Programming Guide, SC34-6818
CICS Application Programming Reference, SC34-6819
CICS System Programming Reference, SC34-6820
CICS Business Transaction Services, SC34-6824
CICS External Interfaces Guide, SC34-6830
CICS Internet Guide, SC34-6831
CICS Performance Guide, SC34-6833
CICS DB2 Guide, SC34-6837

CICS Transaction Server for z/OS Version 2

CICS System Definition Guide, SC34-6226
CICS Customization Guide, SC34-6227
CICS Resource Definition Guide, SC34-6228
CICS Operations and Utilities Guide, SC34-6229
CICS Supplied Transactions, SC34-6230
CICS System Programming Reference, SC34-6233
CICS Performance Guide, SC34-6247
CICS DB2 Guide, SC34-6252

CICS Transaction Server for OS/390

CICS System Definition Guide, SC33-1682
CICS Resource Definition Guide, SC33-1684
CICS Operations and Utilities Guide, SC33-1685
CICS Supplied Transactions, SC33-1686
CICS System Programming Reference, SC33-1689
CICS Performance Guide, SC33-1699
CICS DB2 Guide, SC33-1939

IMS Performance Analyzer for z/OS

IMS Performance Analyzer User's Guide, SC18-9778
IMS Performance Analyzer Report Analysis, SC18-9779

z/OS

z/OS MVS System Management Facilities (SMF), SA22-7630
z/OS DFSORT Application Programming Guide, SC26-7523

RMF

z/OS RMF User's Guide, SC33-7990
z/OS RMF Report Analysis, SC33-7991
z/OS RMF Performance Management Guide, SC33-7992

WebSphere MQ for z/OS

WebSphere MQ for z/OS System Setup Guide, SC34-6052

Tivoli Decision Support for z/OS

Accounting Workstation for z/OS User Guide, SH19-4516
Administration Guide, SH19-6816
CICS Performance Feature Guide and Reference, SH19-6820

DB2

DB2 UDB for z/OS Administration Guide, SC18-7413

DB2 PM

DB2 Performance Monitor for z/OS Report Reference, SC18-7978
DB2 Performance Monitor for z/OS Reporting User's Guide, SC18-7979

Others

Threadsafe Considerations for CICS, SG24-6351
Systems Programmers Guide to: z/OS System Logger, SG24-6898
Performance Considerations and Measurements for CICS and System Logger, REDP-3768

Glossary of CICSPA Command Operands and Fields

This glossary lists all the operands, suboperands, and fields used with the **CICSPA** command.

The format of the command is:

```
CICSPA operand[(suboperand)]
     [,operand[(suboperand)],]...
```

A

ABCODEC. CMF ID: ABCODEC DFHPROG C114. Performance field used with the FIELDS and SELECT operands; contains the current abend code.

ABCODEO. CMF ID: ABCODEO DFHPROG C113. Performance field used with the FIELDS and SELECT operands; contains the original abend code.

ACCMETH. CMF ID: TERMINFO DFHTERM A165. Performance field used with the FIELDS operand; contains the access method defined for the terminal ID or session ID in the TERM field (owner: DFHTERM, field ID: 002).

ACTIVE. Suboperand used with SELECT(PERFORMANCE and SELECT(EXCEPTION to select long-running (active) transactions. Requires a report interval to be specified using FROM and TO.

ACTVTYNM. CMF ID: ACTVTYNM DFHCBTS C204. Performance field used with the FIELDS operand; contains the name of the CICS BTS activity.

ALTER. Suboperand used with LOGGER(LIST when requesting the System Logger List report; specifies that Structure Alter events are to be reported. Since these events apply to structures not individual logstreams, Structure Alter events are reported with a logstream name of *ALTER*.

APPLID. Control operand (global or report-level); specifies the application identifiers of the CICS systems whose data you want to process.

APPLPROG. CMF ID: APPLNAME DFHAPPL C001. Performance field used with the FIELDS and SELECT operands; contains the Application naming Program name (bytes 5 to 12 of the DFHAPPL field APPLNAME).

APPLRECS. CICS PA ID: APPLRECS CICSPA A002. Performance field used with the FIELDS operand; contains the number of Application records in this Network Unit-of-Work Extract record. All Cross-System Work Extract records include this User Field counter.

APPLTRAN. CMF ID: APPLNAME DFHAPPL C001. Performance field used with the FIELDS and SELECT operands; contains the Application naming Transaction ID (bytes 1 to 4 of the DFHAPPL field APPLNAME).

ASCEND. Suboperand used with SUMMARY(FIELDS and HDB(FIELDS for Summary HDB; requests field sort in ascending order.

AVE. Suboperand used with SUMMARY(FIELDS and HDB(FIELDS for Summary HDB; requests the average value of a count or clock field.

B

BAACDCCT. CMF ID: BAACDCCT DFHCBTS A217. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS delete, get, and put activity data container requests.

BAACQPCT. CMF ID: BAACQPCT DFHCBTS A214. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS acquire process and acquire activity requests.

BADACTCT. CMF ID: BADACTCT DFHCBTS A209. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS define activity requests.

BADCPACT. CMF ID: BADCPACT DFHCBTS A213. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS delete activity, cancel process, and cancel activity requests.

BADFIECT. CMF ID: BADFIECT DFHCBTS A220. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS define input event requests.

BADPROCT. CMF ID: BADPROCT DFHCBTS A208. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS defined process requests.

BALKPACT. CMF ID: BALKPACT DFHCBTS A207. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS link process and link activity requests.

BAPRDCCT. CMF ID: BAPRDCCT DFHCBTS A216. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS delete, get, and put process data container requests.

BARASYCT. CMF ID: BARASYCT DFHCBTS A206. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS run ACQPROCESS and run activity asynchronous requests.

BARATECT. CMF ID: BARATECT DFHCBTS A219. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS retrieve reattach requests.

BARMPACT. CMF ID: BARMPACT DFHCBTS A212. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS resume process and resume activity requests.

BARSPACT. CMF ID: BARSPACT DFHCBTS A210. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS reset process and reset activity requests.

BARSYNCT. CMF ID: BARSYNCT DFHCBTS A205. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS run ACQPROCESS and run activity synchronous requests.

BASUPACT. CMF ID: BASUPACT DFHCBTS A211. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS suspend process and suspend activity requests.

BATIAECT. CMF ID: BATIAECT DFHCBTS A221. Performance field used with the FIELDS and SELECT operands; contains the number of CICS BTS timer associated requests.

BATOTCCT. CMF ID: BATOTCCT DFHCBTS A218. Performance field used with the FIELDS and SELECT operands; contains the total number of CICS BTS process container and activity container requests.

BATOTECT. CMF ID: BATOTECT DFHCBTS A222. Performance field used with the FIELDS and SELECT operands; contains the total number of CICS BTS event related requests.

BATOTPCT. CMF ID: BATOTPCT DFHCBTS A215. Performance field used with the FIELDS and SELECT operands; contains the total number of CICS BTS process and activity requests

BMSIN. CMF ID: BMSINCT DFHMAPP A051. Performance field used with the FIELDS and SELECT operands; contains the number of BMS IN requests.

BMSMAP. CMF ID: BMSMAPCT DFHMAPP A050. Performance field used with the FIELDS and SELECT operands; contains the number of BMS MAP requests.

BMSOUT. CMF ID: BMSOUTCT DFHMAPP A052. Performance field used with the FIELDS and SELECT operands; contains the number of BMS OUT requests.

BMSTOTAL. CMF ID: BMSTOTCT DFHMAPP A090. Performance field used with the FIELDS and SELECT operands; contains the total number of BMS requests issued.

BRDGTRAN. CMF ID: BRDGTRAN DFHTASK C124. Performance field used with the FIELDS and SELECT operands; contains the name of the bridge listener transaction.

BTS. Report operand used to request the BTS (CICS Business Transaction Services) Report.

BY. Suboperand used with the LISTX operand; specifies the performance record sort sequence on the Performance List Extended Report. Suboperand used with the SUMMARY operand; specifies the summarization order on the Performance Summary Report. Suboperand used with the WAITANALYSIS operand, specifies the sort sequence (up to 3 fields) and control breaks for the Wait Analysis report.

BYTRAN. Suboperand used with the RESUSAGE(FILESUMM and RESUSAGE(TEMPSTORSUMM report operands to request individual transaction statistics.

C

CBSRVRNM. CMF ID: CBSRVRNM DFHEJBS C311. Performance field used with the FIELDS and SELECT operands; contains the name of the CorbaServer for which this request processor instance is handling requests.

CFCAPICT. CMF ID: CFCAPICT DFHCICS A025. Performance field used with the FIELDS and SELECT operands; contains the number of CICS OO Foundation class requests, including the Java API for CICS (JCICS) classes.

CFDTSLOT. Exception field used with the SELECT operand; contains the name of the coupling facility data table that incurred a wait for a locking or non-locking request slot.

CFDTSYNC. CMF ID: SRVSYWTT DFHSYNC S177. Performance field used with the FIELDS and SELECT operands; contains CF (coupling facility) data table syncpoint wait time. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

CFDTWAIT. CMF ID: CFDTWAIT DFHFILE S176. Performance field used with the FIELDS and SELECT operands; contains CF (coupling facility) access requests wait time. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

CHARACTER. Suboperand used with the FIELDS and SELECT operands; identifies a user character field. OWNER must be specified to determine which character field the data is taken from. If only part of the field is to be considered, this is specified using

SUBSTR(offset,length). In SELECT statements, VALUE must also be specified. Suboperand used with the CROSS operand for the Cross-System Work Extract; identifies a user character field to include in the extract data set. Requires OWNER, LENGTH, and HEADER to be specified.

CHARIN1. CMF ID: TCCHRIN1 DFHTERM A083. Performance field used with the FIELDS and SELECT operands; contains the number of characters received from a principal terminal facility.

CHARIN2. CMF ID: TCCHRIN2 DFHTERM A085. Performance field used with the FIELDS and SELECT operands; contains the number of characters received from a secondary terminal facility.

CHAROUT1. CMF ID: TCCHROU1 DFHTERM A084. Performance field used with the FIELDS and SELECT operands; contains the number of characters transmitted from a principal terminal facility.

CHAROUT2. CMF ID: TCCHROU2 DFHTERM A086. Performance field used with the FIELDS and SELECT operands; contains the number of characters transmitted from a secondary terminal facility.

CHMODECT. CMF ID: CHMODECT DFHTASK A248. Performance field used with the FIELDS and SELECT operands; contains the number of CICS TCB change modes. This field is not available in CICS Transaction Server for z/OS Version 3.1 or later.

CLASS1. Suboperand used with the MQ report operand to request the WebSphere MQ Class 1 reports.

CLASS3. Suboperand used with the MQ report operand to request the WebSphere MQ Class 3 reports.

CLIENTIP. CMF ID: CLIPADDR DFHSOCK C244. Performance field used with the FIELDS operand; contains the interpreted Client IP address (nnn.nnn.nnn.nnn).

CLOCK. Suboperand used with the CROSS operand for the Cross-System Work Extract; identifies a user clock field to include in the extract data set. Requires OWNER, NUMBER, and HEADER to be specified. This field has two parts: elapsed time and a count of the number of times that the clock was stopped (number of occurrences). CLOCK applies to both parts of the field.

CLOCKCOUNT. Suboperand used with the FIELDS and SELECT operands; identifies the count component of a user clock field. OWNER and NUMBER suboperands must be specified to determine which user clock the data is taken from. For SELECT statements, VALUE must also be specified.

CLOCKTIME. Suboperand used with the FIELDS and SELECT operands; identifies the time component of a user clock field. OWNER and NUMBER suboperands must be specified to determine which user clock the data is taken from. For SELECT statements, VALUE must also be specified.

COMMWAIT. CICS PA ID: COMMWAIT CICSPA D906. Performance field used with the LIST(FIELDS, LISTX(FIELDS and SELECT operands; contains the total time value of the communications related fields IRWAIT, ISWAIT, SZWAIT, TCWAIT, LU61WAIT, and LU62WAIT. The time value is displayed in seconds to four decimal places. If it is a very large value, the field shows as + + + + + +.

COUNT. Field qualifier used with the FIELDS and SELECT operands to identify the count component of a CMF clock field (time is the other component). For example, SUSPEND(COUNT),FCWAIT(TIME,COUNT). The count is the number of times that the clock was stopped (number of occurrences). With the SELECT operand, TIME or COUNT must be specified (there is no default). TIME is the default for the FIELDS operand. Suboperand used with the FIELDS and SELECT operand to identify a user count field. OWNER and NUMBER suboperands must be specified to determine which user count the data is taken from. For SELECT statements, VALUE must also be specified. For example, COUNT(OWNER(owner),NUMBER(nnn),VALUE(value list)) Suboperand used with the CROSS operand for the Cross-System Work Extract; identifies a count type user field to include in the extract data set. Requires OWNER, NUMBER, and HEADER to be specified.

CPU. CMF ID: USRCPUT DFHTASK S008. Performance field used with the FIELDS and SELECT operands; contains CPU time. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

CROSSsystem. Report operand used to request the Cross-System Work Report, Cross-System Work Extract, or both.

D

DATE. Qualifier for time stamp fields such as START or STOP; specifies that the date is to be reported in the format *mm/dd/yyyy.*

DATEISO. Qualifier for time stamp fields such as START or STOP; specifies that the date is to be reported in the format *yyyy-mm-dd.*

DATEM. Qualifier for time stamp fields such as START or STOP; specifies that the date is to be reported in the format *mm/dd.*

DATEYR. Qualifier for time stamp fields such as START or STOP; specifies that the date is to be reported in the format *mm/dd/yy.*

DB2. Report operand used to request the DB2 Report.

DB2CONWT. CMF ID: DB2CONWT DFHDATA S188. Performance field used with the FIELDS and SELECT operands; contains the DB2 Connection wait time. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

DB2RDYQW. CMF ID: DB2RDYQW DFHDATA S187. Performance field used with the FIELDS and SELECT operands; contains the DB2 Thread wait time. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

DB2REQCT. CMF ID: DB2REQCT DFHDATA A180. Performance field used with the FIELDS and SELECT operands; contains the number of DB2 (EXEC SQL and IFI) requests.

DB2WAIT. CMF ID: DB2WAIT DFHDATA S189. Performance field used with the FIELDS and SELECT operands; contains the DB2 (EXEC SQL and IFI) wait time. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

DDNAME. Suboperand used in requesting a Cross-System Work Extract or an Exported Performance Extract; specified with a valid 8-character DDname, it overrides the default DDname used for the requested extract data set.

DELIMIT. Suboperand used with the EXPORT operand; specifies the field delimiter for the records written to the Exported Performance Extract data set. The default is a semicolon (;).

DESCEND. Suboperand used with SUMMARY(FIELDS and HDB(FIELDS for Summary HDB; requests field sort in descending order.

DEV. Suboperand used with SUMMARY(FIELDS and HDB(FIELDS for Summary HDB; requests the standard deviation of the values of a count or clock field.

DHCREATE. CMF ID: DHCRECT DFHDOCH A226. Performance field used with the FIELDS and SELECT operands; contains the number of document handler CREATE requests issued.

DHINSERT. CMF ID: DHINSCT DFHDOCH A227. Performance field used with the FIELDS and SELECT operands; contains the number of document handler INSERT requests issued.

DHRETRVE. CMF ID: DHRETCT DFHDOCH A229. Performance field used with the FIELDS and SELECT operands; contains the number of document handler RETRIEVE requests issued.

DHSET. CMF ID: DHSETCT DFHDOCH A228. Performance field used with the FIELDS and SELECT operands; contains the number of document handler SET requests issued.

DHTOTAL. CMF ID: DHTOTCT DFHDOCH A230. Performance field used with the FIELDS and SELECT operands; contains the total number of document handler requests issued.

DHTOTDCL. CMF ID: DHTOTDCL DFHDOCH A240. Performance field used with the FIELDS and SELECT operands; contains the total length of documents created by the task.

DISPATCH. CMF ID: USRDISPT DFHTASK S007. Performance field used with the FIELDS and SELECT operands; contains the total elapsed time during which the user task was dispatched by the CICS dispatcher on each CICS TCB under which the task executed. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. The time is shown in seconds to four decimal places if possible. If not, the decimal point is moved. Specify the COUNT parameter to request the number of times that the clock was stopped (number of occurrences). TIME or COUNT must be specified with SELECT. TIME is the default for FIELDS.

DISPWAIT. CMF ID: DISPWTT DFHTASK S102. Performance field used with the FIELDS and SELECT operands; contains the elapsed time during which the user task waited for redispatch by the CICS dispatcher. (This does not include the elapsed time spent waiting for the first dispatch. See SUSPEND.) This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. The time is shown in seconds to four decimal places if possible. If not, the decimal point is moved. Specify the COUNT parameter to request the number of times that the clock was stopped (number of occurrences). TIME or COUNT must be specified with SELECT. TIME is the default for FIELDS.

DPLRECS. CICS PA ID: DPLRECS CICSPA A005. Performance field used with the FIELDS operand; contains the number of Distributed Program Link (DPL) records in this Network Unit-of-Work Extract record. This is a subset of FUNCSHIP, the Function Shipping record count. All Cross-System Work Extract records include this User Field counter.

DSCHMDLY. CMF ID: DFHTASK S247 DSCHMDLY. Performance field used with the FIELDS and SELECT operands; contains the redispatch wait time caused by change-TCB mode. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

DSPDELAY. CMF ID: DSPDELAY DFHTASK S125. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for the first dispatch. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

DSMMSCWT. CMF ID: DSMMSCWT DFHTASK S279. Performance field used with the FIELDS and SELECT operands; contains the elapsed time which the user task spent waiting because no TCB was available, and none could be created because of MVS storage constraints. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

DSTCBHWM. CMF ID: DSTCBHWM DFHTASK A252. Performance field used with the FIELDS and SELECT operands; contains the peak number of CICS open TCBs (in TCB modes H8, J8, J9, L8, L9, S8, X8, or X9) that have been allocated to the user task.

DSTCBMWT. CMF ID: DSTCBMWT DFHTASK S268. Performance field used with the FIELDS and SELECT operands; contains the elapsed time which the user task spent in TCB mismatch waits, that is, waiting because there was no TCB available matching the request, but there was at least one non-matching free TCB. For transactions that invoke a Java program to run in a JVM, this shows the time spent waiting for a TCB of the correct mode (J8 or J9) and JVM profile. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

E

EJBACTIV. CMF ID: EJBSACCT DFHEJBS A312. Performance field used with the FIELDS and SELECT operands; contains the number of bean activations that have occurred in this request processor.

EJBCREAT. CMF ID: EJBCRECT DFHEJBS A314. Performance field used with the FIELDS and SELECT operands; contains the number of bean creation calls that have occurred in this request processor

EJBMETHD. CMF ID: EJBMTHCT DFHEJBS A316. Performance field used with the FIELDS and SELECT operands; contains the number of bean method calls executed in this request processor.

EJBPASIV. CMF ID: EJBSPACT DFHEJBS A313. Performance field used with the FIELDS and SELECT operands; contains the number of bean passivations that have occurred in this request processor

EJBREMOV. CMF ID: EJBREMCT DFHEJBS A315. Performance field used with the FIELDS and SELECT operands; contains the number of bean removal calls that have occurred in this request processor.

EJBTOTAL. CMF ID: EJBTOTCT DFHEJBS A317. Performance field used with the FIELDS and SELECT operands; contains the total number of bean calls executed in this request processor, including Activation, Passivation, Creation, Removal and Method calls (DFHEJBS fields 312–316).

ENQDELAY. CMF ID: ENQDELAY DFHTASK S129. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for a CICS task control local enqueue. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

ERRFLAGS. CMF ID: TASKFLAG DFHTASK A064. Performance field used with the FIELDS operand. This 4-byte field contains a string of 32 bits which signal transaction errors.

EXCEPTION. Suboperand used with the SELECT operand; specifies that the selection criteria applies to exception class data records. Selection criteria for performance class data must be specified in a separate SELECT statement.

EXCLUDE. Suboperand used with the SELECT operand; causes records that match the specified criteria to be excluded from the report or extract. Suboperand used with the SELECT2 operand (Report Form Selection Criteria); records that match both SELECT and SELECT2 will be excluded from the report.

EXPORT. Report operand used to request the Exported Performance Data Extract.

EXTERNAL. Suboperand used with the LISTX, SUMMARY, CROSS, TRANGROUP, and BTS operands. If specified for the SUMMARY report, it invokes the external sort facility; otherwise the report uses an internal sort. EXTERNAL(ddname) specifies the DDname of the External Work Data Set which stores records for the external sort facility. The LISTX, CROSS, TRANGROUP, and BTS reports always use an external sort, and if EXTERNAL is not specified, CICS PA assigns a data set from the External Work Data Set pool.

EXWAIT. CMF ID: EXWTTIME DFHCICS S103. Performance field used with the FIELDS and SELECT operands; contains the accumulated elapsed time for all exception conditions. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

F

FCADD. CMF ID: FCADDCT DFHFILE A039. Performance field used with the FIELDS and SELECT operands; contains the number of file control ADD requests.

FCAMCT. CMF ID: FCAMCT DFHFILE A070. Performance field used with the FIELDS and SELECT operands; contains the number of access method calls from file control.

FCBROWSE. CMF ID: FCBRWCT DFHFILE A038. Performance field used with the FIELDS and SELECT operands; contains the number of file control BROWSE requests.

FCDELETE. CMF ID: FCDELCT DFHFILE A040. Performance field used with the FIELDS and SELECT operands; contains the number of file control DELETE requests.

FCGET. CMF ID: FCGETCT DFHFILE A036. Performance field used with the FIELDS and SELECT operands; contains the number of file control GET requests.

FCPUT. CMF ID: FCPUTCT DFHFILE A037. Performance field used with the FIELDS and SELECT operands; contains the number of file control PUT requests.

FCTOTAL. CMF ID: FCTOTCT DFHFILE A093. Performance field used with the FIELDS and SELECT operands; contains the total number of file control requests issued.

FCTY. CMF ID: FCTYNAME DFHTASK C163. Performance field used with the FIELDS and SELECT operands; contains the name of the transaction's principal facility, if any.

FCTYTYPE. CMF ID: TRANFLAG DFHTASK A164. Performance field used with the FIELDS and SELECT operands; contains an interpretation of the type of transaction facility from byte 0 of the transaction flags field.

FCWAIT. CMF ID: FCIOWTT DFHFILE S063. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for non-RLS file I/O. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

FIELDS. Suboperand used with the LIST, LISTX, and SUMMARY operands; specifies which fields are to print on the Performance List, Performance List Extended, and the Performance Summary Report, and the order of the columns.

FILE. Suboperand of the RESUSAGE(TRANSUMM report operand to request the Transaction File Usage Summary report. Suboperand of the RESUSAGE(TRANLIST report operand to request File activity in the Transaction Resource Usage List report.

FILENAME. CICS PA ID: FILENAME CICSPA C916. Transaction resource class data field used with the SELECT operand; contains the File name. Applicable to the Transaction Resource Usage reports and ignored by all others.

FILESUMMARY. RESUSAGE report operand to request the File Usage Summary report.

FLOAT. LIST or SUMMARY Export operand to write numeric fields in the extract in S390 FLOAT format. This enables the export data to be imported reliably and consistently into DB2 tables.

FORMAT. Control operand (global) used to specify time and date delimiters for reports and extracts. The operand syntax is FORMAT(time-delimiter,date-delimiter). The default time-delimiter is a colon (:) and the default date-delimiter is a slash (/).

FROM. Suboperand used with the SELECT operand and ACTIVE, START, or STOP; specifies the start of a report interval to restrict the data reported based on transaction Start or Stop times. The format is FROM(date,time),TO(date,time). The date is a calendar date or a relative date, and the time is a time-of-day.

FSTRINGW. Exception field used with the SELECT operand; contains the name of the file that waited for a string.

FUNCSHIP. CICS PA ID: FUNCSHIP CICSPA A004. Performance field used with the FIELDS operand; contains the number of Function Shipping records in this Network Unit-of-Work Extract record. All Cross-System Work Extract records include this User Field counter.

G

GIVEUPWT. CMF ID: GVUPWAIT DFHTASK S184. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited as a result of giving up control to another task. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

GNQDELAY. CMF ID: GNQDELAY DFHTASK S123. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for a CICS task control global enqueue. This field has two parts, a time value and a count.

Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

GRAPH. Operand used to create a graph report from the CMF performance class data. GRAPH is followed by a suboperand requesting a specific graph.

H

HEADER. Suboperand used with character user fields on the CROSS operand for the Cross-System Work Extract; specifies the 8-character name for the field to be written to the extract data set. The default is “USER”.

I

ICDELAY. CMF ID: ICDELAY DFHTASK S183. Performance field used with the FIELDS and SELECT operands; contains the elapsed time that the user task waited as a result of issuing Interval Control requests (DELAY, RETRIEVE, specific time of day). This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

ICPUT. CMF ID: ICPUINCT DFHTASK A059. Also known as **ICSTART.** Performance field used with the FIELDS and SELECT operands; contains the number of interval control PUT/START or INITIATE requests.

ICSTACCT. CMF ID: DFHTASK A065 ICSTACCT. Performance field used with the FIELDS and SELECT operands; contains the number of local IC START requests with CHANNEL option.

ICSTACDL. CMF ID: DFHTASK A345 ICSTACDL . Performance field used with the FIELDS and SELECT operands; contains the container data length for local IC START requests with CHANNEL option.

ICSTRCCT. CMF ID: DFHTASK A346 ICSTRCCT . Performance field used with the FIELDS and SELECT operands; contains the number of remote IC START requests with CHANNEL option.

ICSTRCDL. CMF ID: DFHTASK A347 ICSTRCDL . Performance field used with the FIELDS and SELECT operands; contains the container data length for remote IC START requests with CHANNEL option.

ICTOTAL. CMF ID: ICTOTCT DFHTASK A066. Performance field used with the FIELDS and SELECT operands; contains the total number of interval control requests.

IMSREQT. CMF ID: IMSREQCT DFHDATA A179. Performance field used with the FIELDS and SELECT operands; contains the number of IMS (DBCTL) requests issued by the user task.

IMSWAIT. CMF ID: IMSWAIT DFHDATA S186. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for DBCTL to service the IMS requests issued by the user task. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

INCLUDE. (1) Suboperand used with the SELECT operand; causes records that match the specified criteria to be included in the report or extract. Suboperand used with the SELECT2 operand (Report Form Selection Criteria); records that match both SELECT and SELECT2 will be reported. (2)

INput. Control operand (global) used to specify the DDNAME of the SMF input data set.

INTERVAL. Suboperand used with the SUMMARY operand when START or STOP are specified to request a report summarizing transaction activity over time; specifies the time interval (hh:mm:ss) of each line in the report. The interval can be between 1 second and 24 hours. The default is 1 minute. Suboperand used with the GRAPH operand; specifies the time interval (in minutes) of each line of the Transaction Rate or Transaction Response Time graph reports. Suboperand used with HDB(REPORT when requesting HDB Summary reports. The default is the interval in the HDB Template.

IOWAIT. CMF ID: IOWAIT CICSPA D907. Performance field used with the LIST(FIELDS, LISTX(FIELDS, and SELECT operands; contains the total time value of the I/O wait time fields FCWAIT, JCWAIT, TDWAIT, TSWAIT. The time value is displayed in seconds to four decimal places. If it is a very large value, the field shows as + + + + + +.

IRESP. CICS PA ID: IRESP CICSPA D908. Performance field used with the FIELDS and SELECT operands; contains the CICS internal response time for the transaction. It is calculated by the difference in the Start and Stop times minus the time spent waiting on the terminal (operator think time).

IRWAIT. CMF ID: IRIOWTT DFHTERM S100. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for control to return at this end of an MRO (Inter-Region Communication) connection. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

J

JCWAIT. CMF ID: JCIOWTT DFHJOUR S010. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user

task waited for journal (logstream) I/O. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

JNLPUT. CMF ID: JNLWRTCT DFHJOUR A058. Also known as **JNLWRITE.** Performance field used with the FIELDS and SELECT operands; contains the number of journal control write requests.

JOBNAME. CICS PA ID: JOBNAME CICSPA C905. Performance field used with the FIELDS operand; contains the jobname of the CICS system from which the performance class data was output.

JVMITIME . CMF ID: JVMITIME DFHTASK S273. Performance field used with the FIELDS and SELECT operands; contains the elapsed time the user task spent initializing the CICS Java Virtual Machine (JVM) environment, and is a component of the task JVM elapsed time field, JVMTIME. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

JVMMTIME. CICS PA ID: JVMMTIME CICSPA D910. Performance field used with the FIELDS and SELECT operands; contains the JVM method time, the elapsed time spent in the CICS JVM by the user task, excluding the JVM initialize and reset elapsed times. It is calculated by subtracting the sum of the JVM init time (JVMITIME) and JVM reset time (JVMRTIME) from the JVM elapsed time (JVMTIME).

JVMRTIME. CMF ID: JVMRTIME DFHTASK S275. Performance field used with the FIELDS and SELECT operands; contains the elapsed time the user task spent resetting or destroying the CICS Java Virtual Machine (JVM) environment. It is a component of the task JVM elapsed time field, JVMTIME. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

JVMSUSP . CMF ID: JVMSUSP DFHTASK S254. Performance field used with the FIELDS and SELECT operands; contains the elapsed time during which the user task was suspended by the CICS dispatcher while running in the CICS Java Virtual Machine (JVM). This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

JVMTIME. CMF ID: JVMTIME DFHTASK S253. Performance field used with the FIELDS and SELECT operands; contains the elapsed time that the user task spent in the CICS Java Virtual Machine (JVM). This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

J8CPU. CMF ID: J8CPUT DFHTASK S260. Performance field used with the FIELDS and SELECT operands; contains the CPU time during which the user task was dispatched by the CICS dispatcher on a CICS J8 mode TCB. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

J9CPU. CMF ID: J9CPUT DFHTASK S267. Performance field used with the FIELDS and SELECT operands; contains the processor time during which the user task was dispatched by the CICS dispatcher domain on a CICS J9 mode TCB. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

K

KY8CPU. CMF ID: KY8CPUT DFHTASK S263. Performance field used with the FIELDS and SELECT operands; contains the total processor (CPU) time during which the user task was dispatched by the CICS dispatcher domain on a CICS Key 8 mode TCB. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

KY8DISPT. CMF ID: KY8DISPT DFHTASK S262. Performance field used with the FIELDS and SELECT operands; contains the total elapsed time during which the user task was dispatched by the CICS dispatcher domain on a CICS Key 8 mode TCB. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

KY9CPU. CMF ID: KY9CPUT DFHTASK S265. Performance field used with the FIELDS and SELECT operands; contains the processor time during which the user task was dispatched by the CICS dispatcher on a CICS Key 9 mode TCB. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

KY9DISPT. CMF ID: KY9DISPT DFHTASK S264. Performance field used with the FIELDS and SELECT operands; contains the total elapsed time during which the user task was dispatched by the CICS dispatcher on a CICS Key 9 mode TCB. This field has two parts, a time value and a count. Specify the TIME parameter to

request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

L

LABELS. Suboperand used with the EXPORT operand; requests that the first record written to the Exported Performance Extract data set is to be the field headings.

LENGTH. Suboperand used with character user fields on the CROSS operand for the Cross-System Work Extract; specifies the length of the user character field to be written to the extract data set. The length is between 1 and 256.

LIMIT. Suboperand used with the LISTX operand. The format is LIMIT(fieldname(proclim)) where proclim is a number between 1 and 99999999. Applies to one of the sort fields specified in the BY operand to limit the number of records processed at that level in the sort sequence.

LINECount. Control operand (global or report-level); specifies the number of lines per page to print on the reports.

LIST. Report operand used to request the Performance List Report. Report operand used to request an Export Extract formatted by using a LIST or LISTX (sort ignored) Report Form (the DDNAME suboperand identifies that this is an extract, not a report). Suboperand of the DB2 report operand to request the DB2 List report.Suboperand of the MQ report operand to request the WebSphere MQ List report.

LISTEXCeption. Report operand used to request the Exception List Report.

LISTX. Report operand used to request the Performance List Extended Report. Report operand used to request the Cross-System Work Extended Report. This is where the Cross-System Work Report is tailored using a LISTX Report Form. BY(UOWID) identifies that this is the Cross-System Work Extended Report, not the Performance List Extended Report.

LOCKDLAY. CMF ID: LMDELAY DFHTASK S128. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited to acquire a lock on a resource. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

LOGGER. Report operand used to request the System Logger Report.

LOGWRITE. CMF ID: LOGWRTCT DFHJOUR A172. Performance field used with the FIELDS and SELECT operands; contains the number of Logger write requests issued.

LONGSUM. Suboperand of DB2 report operand to request the DB2 Long Summary report

LUNAME. CMF ID: LUNAME DFHTERM C111. Field used with the FIELDS, SELECT(PERFORMANCE and SELECT(EXCEPTION operands; contains the VTAM logical unit name of the terminal ID associated with the transaction.

LU61WAIT. CMF ID: LU61WTT DFHTERM S133. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for I/O on a LUTYPE6.1 connection or session. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

LU62WAIT. CMF ID: LU62WTT DFHTERM S134. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for I/O on a LUTYPE6.2 connection or session. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

L8CPU. CMF ID: L8CPUT DFHTASK S259. Performance field used with the FIELDS and SELECT operands; contains the CPU time during which the user task was dispatched by the CICS dispatcher on a CICS L8 mode TCB. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

L9CPU. CMF ID: DFHTASK S266 L9CPUT. Performance field used with the FIELDS and SELECT operands; contains the CPU time during which the user task was dispatched by the CICS dispatcher on a CICS L9 mode TCB. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

M

MAX. Suboperand used with SUMMARY(FIELDS; requests the maximum value of a count or clock field.

MAXHTDLY. CMF ID: MAXHTDLY DFHTASK S278. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited to obtain a CICS Hot-Pooling TCB (H8 mode), because the CICS system had reached the limit set by the system parameter, MAXHPTCBS. The H8 mode open TCBs are used exclusively by HPJ-compiled

Java programs defined with HOTPOOL(YES). This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences. This field is not available in CICS Transaction Server for z/OS Version 3.1 or later.

MAXJTDLY. CMF ID: MAXJTDLY DFHTASK S277. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited to obtain a CICS JVM TCB (J8 mode), because the CICS system had reached the limit set by the system parameter, MAXJVMTCBS. The J8 mode open TCBs are used exclusively by Java programs defined with JVM(YES). This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

MAXOTDLY. CMF ID: MXTOTDLY DFHTASK S250. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited to obtain a CICS open TCB (J8 or L8 mode) because the CICS system had reached the limit set by the system parameter MAXOPENTCBS. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

MAXSTDLY. CMF ID: DFHTASK S281 MAXSTDLY. Performance field used with the FIELDS and SELECT operands; contains the maximum SSL TCB delay time. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

MAXXTDLY. CMF ID: DFHTASK S282 MAXXTDLY. Performance field used with the FIELDS and SELECT operands; contains the maximum XPLink TCB delay time. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

MIN. Suboperand used with SUMMARY(FIELDS; requests the minimum value of a count or clock field.

MQ. Report operand used to request the WebSphere MQ Report.

MSCPU. CMF ID: MSCPUT DFHTASK S258. Performance field used with the FIELDS and SELECT operands; contains the total CPU time during which the user task was dispatched by the CICS dispatcher on each CICS TCB. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

MSDISPT. CMF ID: MSDISPT DFHTASK S257. Performance field used with the FIELDS and SELECT operands; contains the total elapsed time during which the user task was dispatched by the CICS dispatcher on each CICS TCB. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

MSGIN1. CMF ID: TCMSGIN1 DFHTERM A034. Performance field used with the FIELDS and SELECT operands; contains the number of input messages from a principal terminal facility.

MSGIN2. CMF ID: TCMSGIN2 DFHTERM A067. Performance field used with the FIELDS and SELECT operands; contains the number of output messages from a principal terminal facility.

MSGOUT1. CMF ID: TCMSGOU1 DFHTERM A035. Performance field used with the FIELDS and SELECT operands; contains the number of input messages from a secondary terminal facility.

MSGOUT2. CMF ID: TCMSGOU2 DFHTERM A068. Performance field used with the FIELDS and SELECT operands; contains the number of output messages from a secondary terminal facility.

MVSID. CICS PA ID: MVSID CICSPA C904. Performance field used with the FIELDS operand; contains the SMF system ID.

MXTDELAY. CMF ID: MXTDELAY DFHTASK S127. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for first dispatch which was delayed because of the limits set by the MXT system parameter being reached. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

N

NATURE. CMF ID: TERMINFO DFHTERM A165. Performance field used with the FIELDS operand; contains an interpretation of the transaction's principal facility (if applicable) as a terminal ID or session ID.

NETID. CMF ID: NETID DFHTERM C197. Performance field used with the FIELDS and SELECT operands; contains the network qualified name (NQNAME) for CICS terminal resources using any VTAM LUALIAS (defined or dynamic).

NETNAME. CMF ID: NETUOWPX DFHTASK C097. Performance field used with the FIELDS and SELECT operands; contains the fully qualified name by which the originating system is known to the VTAM network.

NOAPPLID. Control operand (report-level); specifies that you want to report on all APPLIDs in the SMF input file.

NOFLOAT. Suboperand used with the HDB(EXTRACT operand; specifies that numeric fields will be written to the extract file in a mixture of integer, real and exponential using character digits. This is the default and is suitable when importing the extract data into a PC spreadsheet tool. NOFLOAT is in contrast to the FLOAT operand.

NOLABELS. Suboperand used with the EXPORT operand; indicates that a field headings record is not to be written to the Exported Performance Extract data set.

NOPRINT. Suboperand used on the CROSS operand. It specifies that the Cross-System Work Report is not to be produced. It is used to request only the Extract.

NOPRINTMultiple. Suboperand used on the CROSS operand. It specifies that the performance class records contained in a unit-of-work that includes multiple tasks are not printed.

NOTOTALS. Suboperand used with the SUMMARY operand when requesting the Performance Summary report, or with the HDB(REPORT operand when requesting HDB Summary reports; specifies to exclude total lines from the report. The default is to include totals.

NOWRITE. Suboperand used on the CROSS operand. It specifies that the Cross-System Work Extract data set is not to be created. It is used to request only the Report.

NOWRITEMultiple. Suboperand used on the CROSS operand. It specifies that the performance class records contained in a unit-of-work that includes multiple tasks are not written to the output data set.

NUMBER. Suboperand for user fields used with FIELDS or SELECT(PERFORMANCE operands; specifies the number of the user field within the owner as specified in the Monitoring Control Table (MCT).

O

ORIGIN. CMF ID: TRANFLAG DFHTASK C164. Performance field used with the FIELDS operand; contains an interpretation of the transaction origin type from byte 4 of the transaction flags field.

OSOWAIT. CMF ID: SOOIOWTT DFHSOCK S299. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for outbound socket I/O. (The inbound socket I/O wait time is contained in SOWAIT.) This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

OTSINDWT. CMF ID: OTSINDWT DFHSYNC S199. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task was dispatched or suspended indoubt whilst processing a syncpoint for an Object Transaction Service (OTS) Syncpoint request. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

OTSTID. CMF ID: OTSTID DFHTASK C194. Performance field used with the FIELDS and SELECT operands; contains the OTS Tid, the Object Transaction Service Transaction ID which can be used to correlate all the transactions that are part of the same Object Transaction.

Note: OTSTID is supported by CICS PA but is not available from the CICS PA dialog.

OUTput. Suboperand used to specify the DDname for the report output.

OWNER. Suboperand for user fields used with the FIELDS, SELECT(PERFORMANCE, or CROSSsystem operands; specifies the owner ID for the user field as specified in the Monitoring Control Table (MCT).

P

PCDLCRDL. CMF ID: PCDLCRDL DFHPROG A287. Performance field used with the FIELDS and SELECT operands; contains the total length, in bytes, of the data in the containers of all distributed program link (DPL) RETURN CHANNEL commands issued by the user task. This total includes the length of any headers to the data.

PCDLCSDL. CMF ID: PCDLCSDL DFHPROG A286. Performance field used with the FIELDS and SELECT operands; contains the total length, in bytes, of the data in the containers of all the distributed program link (DPL) requests issued with the CHANNEL option by the user task. This total includes the length of any headers to the data.

PCDPL. CMF ID: PCDPLCT DFHPROG A073. Performance field used with the FIELDS and SELECT operands; contains the number of distributed program link (DPL) requests.

PCDPLCCT. CMF ID: PCDPLCCT DFHPROG A308. Performance field used with the FIELDS and SELECT operands; contains the number of program distributed program link (DPL) requests, with the CHANNEL option, issued by the user task. Note: This field is a subset of the distributed program link requests field, PCDPL (073).

PCLINK. CMF ID: PCLINKCT DFHPROG A055. Performance field used with the FIELDS and SELECT operands; contains the number of program control LINK requests.

PCLNKCCT. CMF ID: PCLNKCCT DFHPROG A306. Performance field used with the FIELDS and SELECT operands; contains the number of local program LINK requests, with the CHANNEL option, issued by the user task. Note: This field is a subset of the program LINK requests field, PCLINK (055).

PCLOAD. CMF ID: PCLOADCT DFHPROG A057. Performance field used with the FIELDS and SELECT operands; contains the number of program control LOAD requests.

PCLOADTM. CMF ID: PCLOADTM DFHPROG S115. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for program fetches from the DFHRPL program library. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

PCLURM. CMF ID: PCLURMCT DFHPROG A072. Performance field used with the FIELDS and SELECT operands; contains the number of program link LINK URM requests.

PCRTNCCT. CMF ID: PCRTNCCT DFHPROG A309. Performance field used with the FIELDS and SELECT operands; contains the number of program RETURN requests, with the CHANNEL option, issued by the user task.

PCRTNCDL. CMF ID: PCRTNCDL DFHPROG A310. Performance field used with the FIELDS and SELECT operands; contains the total length, in bytes, of the data in the containers of all the program RETURN requests, with the CHANNEL option, issued by the user task.

PCSTGHWM. CMF ID: PCSTGHWM DFHSTOR A087. Performance field used with the FIELDS and SELECT operands; contains the high-water mark of program storage in user by the user task.

PCXCLCCT. CMF ID: PCXCLCCT DFHPROG A307. Performance field used with the FIELDS and SELECT operands; contains the number of program XCTL requests, with the CHANNEL option, issued by the user task. Note: This field is a subset of the program XCTL requests field, PCXCTL (056).

PCXCTL. CMF ID: PCXCTLCT DFHPROG A056. Performance field used with the FIELDS and SELECT operands; contains the number of program control XCTL requests.

PC24BHWM. CMF ID: PC24BHWM DFHSTOR A108. Performance field used with the FIELDS and SELECT operands; contains the high-water mark of program storage in user by the user task below the 16MB line.

PC24CHWM. CMF ID: PC24CHWM DFHSTOR A143. Performance field used with the FIELDS and SELECT operands; contains the high-water mark of program storage in user by the user task below the 16MB line, in the CDSA.

PC24RHWM. CMF ID: PC24RHWM DFHSTOR A162. Performance field used with the FIELDS and SELECT operands; contains the high-water mark of program storage in user by the user task below the 16MB line, in the RDSA.

PC24SHWM. CMF ID: PC24SHWM DFHSTOR A160. Performance field used with the FIELDS and SELECT operands; contains the high-water mark of program storage in user by the user task below the 16MB line, in the SDSA.

PC31AHWM. CMF ID: PC31AHWM DFHSTOR A139. Performance field used with the FIELDS and SELECT operands; contains the high-water mark of program storage in user by the user task above the 16MB line.

PC31CHWM. CMF ID: PC31CHWM DFHSTOR A142. Performance field used with the FIELDS and SELECT operands; contains the high-water mark of program storage in user by the user task above the 16MB line, in the ECDSA.

PC31RHWM. CMF ID: PC31RHWM DFHSTOR A122. Performance field used with the FIELDS and SELECT operands; contains the high-water mark of program storage in user by the user task above the 16MB line, in the ERDSA.

PC31SHWM. CMF ID: PC31SHWM DFHSTOR A161. Performance field used with the FIELDS and SELECT operands; contains the high-water mark of program storage in user by the user task above the 16MB line, in the ESDSA.

PERFORMANCE. Suboperand used with the SELECT operand; specifies that the selection criteria applies to performance class data records. Selection criteria for exception class data must be specified in a separate SELECT statement.

PGBRWCCT. CMF ID: DFHCHNL A322 PGBRWCCT. Performance field used with the FIELDS and SELECT operands; contains the number of BROWSE CHANNEL CONTAINER requests.

PGCRECCT. CMF ID: DFHCHNL A328 PGCRECCT. Performance field used with the FIELDS and SELECT operands; contains the number of containers created.

PGGETCCT. CMF ID: DFHCHNL A323 PGGETCCT. Performance field used with the FIELDS and SELECT operands; contains the number of GET CHANNEL CONTAINER requests.

PGGETCDL. CMF ID: DFHCHNL A326 PGGETCDL. Performance field used with the FIELDS and SELECT operands; contains the GET CHANNEL CONTAINER data length.

PGMOVCCT. CMF ID: DFHCHNL A325 PGMOVCCT. Performance field used with the FIELDS and SELECT operands; contains the number of MOVE CHANNEL CONTAINER requests.

PGPUTCCT. CMF ID: DFHCHNL A324 PGPUTCCT. Performance field used with the FIELDS and SELECT operands; contains the number of PUT CHANNEL CONTAINER requests.

PGPUTCDL. CMF ID: DFHCHNL A327 PGPUTCDL. Performance field used with the FIELDS and SELECT operands; contains the PUT CHANNEL CONTAINER data length.

PGTOTCCT. CMF ID: DFHCHNL A321 PGTOTCCT. Performance field used with the FIELDS and SELECT operands; contains the total number of CHANNEL CONTAINER requests.

PORT. CMF ID: PORTNUM DFHSOCK A246. Performance field used with the FIELDS and SELECT operands; contains the port number of the installed TCP/IP service resource definition from which the transaction was initiated.

PRCSNAME. CMF ID: PRCSNAME DFHCBTS C200. Performance field used with the FIELDS operand; contains the name of the CICS BTS process.

PRCSTYPE. CMF ID: PRCSTYPE DFHCBTS C201. Performance field used with the FIELDS operand; contains the CICS BTS process type.

PRECISION. Control operand (global); specifies the precision of numeric fields for reporting. Numeric fields can be formatted to either 4, 5, or 6 decimal places. The default is 4.

PRINTMultiple. Suboperand used on the CROSS and TRANGROUP operands. It specifies that the performance records that are contained in a network unit-of-work that includes multiple records are to be printed.

PRINTSingle. Suboperand used on the CROSS and TRANGROUP operands. It specifies that the performance records that are contained in a network unit-of-work that includes a single record only are to be printed.

PROGRAM. CMF ID: PGMNAME DFHPROG C071. Performance field used with the FIELDS and SELECT operands; contains the initial program name for the task.

PRTY. Exception field used with the SELECT operand; contains the transaction priority when monitoring of the task was initialized.

PTPWAIT. CMF ID: PTPWAIT DFHTASK S285. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for the 3270 bridge partner transaction to complete. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

Q

QNAME. Suboperand of MQ report operand to filter on WebSphere MQ queue name.

QRCPU. CMF ID: QRCPUT DFHTASK S256. Performance field used with the FIELDS and SELECT operands; contains the CPU time during which the user task was dispatched by the CICS dispatcher on the CICS QR mode TCB. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

QRDISPT. CMF ID: QRDISPT DFHTASK S255. Performance field used with the FIELDS and SELECT operands; contains the elapsed time during which the user task was dispatched by the CICS dispatcher on the CICS QR mode TCB. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

QRMODDLY. CMF ID: QRMODDLY DFHTASK S249. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for redispatch on the CICS QR mode TCB. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

R

RANGE1(number). Suboperand used with the GRAPH(TRANRATE and GRAPH(RESPONSE operands; specifies the high-end (in seconds) of the Average Response Time graph for the Transaction Rate and Transaction Response Time graph reports.

RANGE2(number). Suboperand used with the GRAPH(TRANRATE operand for the Transaction Rate graph report; RANGE2(number) specifies the high-end of the graph of Number of Transactions Completed. Suboperand used with the GRAPH(RESPONSE operand for the Transaction Response Time graph report; RANGE2(number) specifies the high-end (in seconds) of the Maximum Response Time graph.

RECCOUNT. CMF ID: PERRECNT DFHCICS A131. Performance field used with the FIELDS and SELECT operands; contains the number of performance class records written for a user task.

RECORDSELECTION. Alias for RECSEL report operand.

RECSEL. Report operand used to request the Record Selection Extract.

RELEASE. CICS PA ID: RELEASE CICSPA C909. Performance field used with the FIELDS operand; contains the CICS release of the performance class data.

RESOURCE. Exception field used with the SELECT operand; contains the type of resource that caused the wait exception. Exception resource types are: CFDTLRSW, CFDTPOOL, STORAGE, TEMPSTOR, LSRPOOL, FILE.

RESPONSE. CICS PA ID: RESP CICSPA D901. Field used with the FIELDS, SELECT(PERFORMANCE, and SELECT(EXCEPTION operands; contains the CICS response time for the transaction. It is calculated as the difference between the Start and Stop times. Also, suboperand of the GRAPH report operand; requests the Transaction Response Time graph report.

RESUSAGE. Report operand used to request the Transaction Resource Usage List report.

RLSCPU. CMF ID: RLSCPUT DFHFILE S175. Performance field used with the FIELDS and SELECT operands. The RLS File Request CPU (SRB) time field; contains the SRB CPU time the transaction spent processing RLS file requests. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RLSWAIT. CMF ID: RLSWAIT DFHFILE S174. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for RLS file I/O. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RLUNAME. CMF ID: RLUNAME DFHTERM C198. Performance field used with the FIELDS and SELECT operands; contains the real VTAM logical unit name of the terminal ID associated with the transaction.

RMICPSM. CMF ID: RMICPSM DFHRMI S007. Performance field used with the FIELDS and SELECT operands; contains the total elapsed time spent in the CICS RMI for CICSPlex SM requests. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RMIDB2. CMF ID: RMIDB2 DFHRMI S003. Performance field used with the FIELDS and SELECT operands; contains the total elapsed time spent in the CICS RMI for DB2 requests. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RMIDBCTL. CMF ID: RMIDBCTL DFHRMI S004. Performance field used with the FIELDS and SELECT operands; contains the total elapsed time spent in the CICS RMI for DBCTL requests. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RMIEXDLI. CMF ID: RMIEXDLI DFHRMI S005. Performance field used with the FIELDS and SELECT operands; contains the total elapsed time spent in the CICS RMI for EXEC DLI requests. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RMIMQM. CMF ID: RMIMQM DFHRMI S006. Performance field used with the FIELDS and SELECT operands; contains the total elapsed time spent in the CICS RMI for MQSeries requests. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RMIOTHER. CMF ID: RMIOTHER DFHRMI S002. Performance field used with the FIELDS and SELECT operands; contains the total elapsed time spent in the CICS RMI for resource manager requests other than DB2, DBCTL, EXEC DLI, WebSphere MQ, CICSPlex SM, and CICS socket requests. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RMIOTIME. CICS PA ID: RMIOTIME CICSPA D911. Performance field used with the FIELDS and SELECT operands; contains the amount of elapsed time the task was suspended by the dispatcher while in the Resource Manager Interface (RMI), excluding time waiting for DB2 and IMS. The value is calculated by subtracting the sum of the IMS wait time (IMSWAIT), the DB2 readyq wait time (DB2RDYQW), the DB2 connection wait time (DB2CONWT), and the DB2 wait time (DB2WAIT) from the RMI suspend time (RMISUSP). In releases prior to CICS PA V 1R3, the name of this field was RMIOTHER.

RMISUSP. CMF ID: RMISUSP DFHTASK S171. Performance field used with the FIELDS and SELECT operands; contains the elapsed time during which the user task was suspended by the CICS dispatcher whilst in the Resource Manager Interface (RMI). This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RMITCPIP. CMF ID: RMITCPIP DFHRMI S008. Performance field used with the FIELDS and SELECT operands; contains the total elapsed time spent in the CICS RMI for CICS TCP/IP socket requests. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RMITIME. CMF ID: RMITIME DFHTASK S170. Performance field used with the FIELDS and SELECT operands; contains the elapsed time the user task spent in the Resource Manager Interface (RMI). This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RMITOTAL. CMF ID: RMITOTAL DFHRMI S001. Performance field used with the FIELDS and SELECT operands; contains the total elapsed time spent in the CICS Resource Manager Interface (RMI).

ROCPU. CMF ID: ROCPUT DFHTASK S270. Performance field used with the FIELDS and SELECT operands; contains the total processor (CPU) time during which the user task was dispatched by the CICS dispatcher on the CICS RO mode TCB. The CICS RO mode TCB is used for opening and closing CICS data sets, loading programs, issuing RACF calls, and so on. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RODISPT. CMF ID: RODISPT DFHTASK S269. Performance field used with the FIELDS and SELECT operands; contains the total elapsed time during which the user task was dispatched by the CICS dispatcher on the CICS RO mode TCB. The CICS RO mode TCB is used for opening and closing CICS data sets, loading programs, issuing RACF calls, and so on. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RPTCLASS. CMF ID: RPTCLASS DFHCICS C168. Performance field used with the FIELDS and SELECT operands; contains the MVS Workload Manager (WLM) service class for this transaction.

RQPWAIT. CMF ID: RQPWAIT DFHTASK S193. Performance field used with the FIELDS and SELECT operands; contains the elapsed time during which the request processor user task CIRP waited for any outstanding replies to be satisfied. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RQRWAIT. CMF ID: RQRWAIT DFHTASK S192. Performance field used with the FIELDS and SELECT operands; contains the elapsed time during which the request receiver user task CIRR (or user specified transaction ID) waited for any outstanding replies to be satisfied. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RRMSWAIT. CMF ID: RRMSWAIT DFHTASK S191. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited indoubt using the MVS resource recovery services (RRS) for transactional EXCI. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

RSYSID. CMF ID: RSYSID DFHCICS C130. Performance field used with the FIELDS and SELECT operands; contains the connection name (sysid) of the remote system to which the transaction was routed.

RTYPE. CMF ID: RTYPE DFHCICS C112. Performance field used with the FIELDS and SELECT operands; indicates the reason for a performance class record to be written for a user task.

RUNTRWTT. CMF ID: RUNTRWTT DFHTASK S195. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for completion of a transaction that executed as a result of the user task issuing a CICS BTS run ACQPROCESS or run activity request to execute a process or activity synchronously. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

S

SC24CGET. CMF ID: SCCGETCT DFHSTOR A117. Performance field used with the FIELDS and SELECT operands; contains the number of GETMAINs for storage in the CDSA.

SC24CHWM. CMF ID: SC24CHWM DFHSTOR A116. Performance field used with the FIELDS and SELECT operands; contains the high-water mark of storage allocated to the task from the CDSA.

SC24COCC. CMF ID: SC24COCC DFHSTOR A118. Performance field used with the FIELDS and SELECT operands; contains the CDSA storage “occupancy” of the transaction. This measures the area under the curve of storage-in-use against elapsed time. The unit of measure is “1K byte-units”, where the “unit” is equal to one second. For example, a user occupying 12,288 bytes of storage for 1.5 seconds incurs 18 (12 * 1.5) 1K

byte-units of this statistic. This statistic reflects the use of GETMAINs and FREEMAINs.

SC24FSHR. CMF ID: SC24FSHR DFHSTOR A146. Performance field used with the FIELDS and SELECT operands; contains the number of bytes of shared storage FREEMAINed in the CDSA and SDSA.

SC24GSHR. CMF ID: SC24GSHR DFHSTOR A145. Performance field used with the FIELDS and SELECT operands; contains the number of bytes of shared storage GETMAINed in the CDSA and SDSA.

SC24SGET. CMF ID: SC24SGCT DFHSTOR A144. Performance field used with the FIELDS and SELECT operands; contains the number of GETMAINs for shared storage in the CDSA and SDSA.

SC24UGET. CMF ID: SCUGETCT DFHSTOR A054. Performance field used with the FIELDS and SELECT operands; contains the number of GETMAINs for storage in the UDSA.

SC24UHWM. CMF ID: SCUSRHWM DFHSTOR A033. Performance field used with the FIELDS and SELECT operands; contains the high-water mark of storage allocated to the task from the UDSA.

SC24UOCC. CMF ID: SCUSRSTG DFHSTOR A095. Performance field used with the FIELDS and SELECT operands; contains the UDSA storage “occupancy” of the transaction. This measures the area under the curve of storage-in-use against elapsed time. The unit of measure is “1K byte-units”, where the “unit” is equal to one second. For example, a user occupying 12,288 bytes of storage for 1.5 seconds incurs 18 (12 * 1.5) 1K byte-units of this statistic. This statistic reflects the use of GETMAINs and FREEMAINs.

SC31CGET. CMF ID: SCCGETCT DFHSTOR A120. Performance field used with the FIELDS and SELECT operands; contains the number of GETMAINs for storage in the ECDSA.

SC31CHWM. CMF ID: SC31CHWM DFHSTOR A119. Performance field used with the FIELDS and SELECT operands; contains the high-water mark of storage allocated to the task from the ECDSA.

SC31COCC. CMF ID: SC31COCC DFHSTOR A121. Performance field used with the FIELDS and SELECT operands; contains the ECDSA storage “occupancy” of the transaction. This measures the area under the curve of storage-in-use against elapsed time. The unit of measure is “1K byte-units”, where the “unit” is equal to one second. For example, a user occupying 12,288 bytes of storage for 1.5 seconds incurs 18 (12 * 1.5) 1K byte-units of this statistic. This statistic reflects the use of GETMAINs and FREEMAINs.

SC31FSHR. CMF ID: SC31FSHR DFHSTOR A149. Performance field used with the FIELDS and SELECT operands; contains the number of bytes of shared storage FREEMAINed in the ECDSA and ESDSA.

SC31GSHR. CMF ID: SC31GSHR DFHSTOR A148. Performance field used with the FIELDS and SELECT operands; contains the number of bytes of shared storage GETMAINed in the ECDSA and ESDSA.

SC31SGET. CMF ID: SC31SGCT DFHSTOR A147. Performance field used with the FIELDS and SELECT operands; contains the number of GETMAINs for shared storage in the ECDSA and ESDSA.

SC31UGET. CMF ID: SCUGETCT DFHSTOR A105. Performance field used with the FIELDS and SELECT operands; contains the number of GETMAINs for storage in the EUDSA.

SC31UHWM. CMF ID: SCUSRHWM DFHSTOR A106. Performance field used with the FIELDS and SELECT operands; contains the high-water mark of storage allocated to the task from the EUDSA.

SC31UOCC. CMF ID: SCUCRSTG DFHSTOR A107. Performance field used with the FIELDS and SELECT operands; contains the EUDSA storage “occupancy” of the transaction. This measures the area under the curve of storage-in-use against elapsed time. The unit of measure is “1K byte-units”, where the “unit” is equal to one second. For example, a user occupying 12,288 bytes of storage for 1.5 seconds incurs 18 (12 * 1.5) 1K byte-units of this statistic. This statistic reflects the use of GETMAINs and FREEMAINs.

SELECT. Control operand (global or report-level) used to select records for reporting based on field values.

SELUOW. Report operand used to select records for the Cross-System report or extract based on units-of-work. If a task in the UOW matches the selection criteria, the entire UOW is reported. It can be used in conjunction with SELECT to first filter out those tasks that you know are of no interest and thereby optimize the record sort process.

SELECT2. Report operand used to select records for reporting based on field values. Generated when Selection Criteria are specified in Report Forms. When used in conjunction with SELECT, the record is selected if it matches the Selection Criteria in *both* SELECT and SELECT2.

SESSTYPE. CMF ID: TERMINFO DFHTERM A165. Performance field used with the FIELDS operand; contains an interpretation of the type of session for the session ID in the TERM field (owner: DFHTERM, field ID: 002).

SHORTSUM. Suboperand of DB2 report operand to request the DB2 Short Summary report.

SMFSTART. Control operand (global); specifies the start of a time period to restrict the SMF input data

processed based on the SMF record time stamp. The format is SMFSTART(date,time),SMFSTOP(date,time). The date is a calendar date or a relative date, and the time is a time-of-day.

SMFSTOP. Control operand (global); specifies the end of a time period to restrict the SMF input data processed based on the SMF record time stamp. The format is SMFSTART(date,time),SMFSTOP(date,time). The date is a calendar date or a relative date, and the time is a time-of-day.

SOBYDECT. CMF ID: SOBYDECT DFHSOCK A243. Performance field used with the FIELDS and SELECT operands; contains the number of bytes decrypted by the secure sockets layer (SSL).

SOBYENCT. CMF ID: SOBYENCT DFHSOCK A242. Performance field used with the FIELDS and SELECT operands; contains the number of bytes encrypted by the secure sockets layer (SSL).

SOCHRIN. CMF ID: SOCHRIN DFHSOCK A295. Performance field used with the FIELDS and SELECT operands; contains the number of characters received from outbound sockets.

SOCHRIN1. CMF ID: SOCHRIN1 DFHSOCK A302. Performance field used with the FIELDS and SELECT operands; contains the number of characters received from inbound sockets.

SOCHROUT. CMF ID: SOCHROUT DFHSOCK A297. Performance field used with the FIELDS and SELECT operands; contains the number of characters sent to outbound sockets.

SOCHROU1. CMF ID: SOCHROU1 DFHSOCK A304. Performance field used with the FIELDS and SELECT operands; contains the number of characters sent to inbound sockets.

SOCNPSCT. CMF ID: SOCNPSCT DFHSOCK A290. Performance field used with the FIELDS and SELECT operands; contains the number of create non-persistent socket requests issued by the user task.

SOCPSCT. CMF ID: SOCPSCT DFHSOCK A291. Performance field used with the FIELDS and SELECT operands; contains the number of create persistent socket requests issued by the user task.

SOEXTRCT. CMF ID: SOEXTRCT DFHSOCK A289. Performance field used with the FIELDS and SELECT operands; contains the number of EXTRACT TCP/IP and EXTRACT CERTIFICATE requests issued by the user task.

SOMSGIN1. CMF ID: SOMSGIN1 DFHSOCK A301. Performance field used with the FIELDS and SELECT operands; contains the number of RECEIVE requests from inbound sockets.

SOMSGOU1. CMF ID: SOMSGOU1 DFHSOCK A303. Performance field used with the FIELDS and SELECT operands; contains the number of inbound socket SEND requests issued.

SONPSHWM. CMF ID: SONPSHWM DFHSOCK A292. Performance field used with the FIELDS and SELECT operands; contains the peak number (high-water mark) of non-persistent outbound sockets established by the user task.

SOPSHWM. CMF ID: SOPSHWM DFHSOCK A293. Performance field used with the FIELDS and SELECT operands; contains the peak number (high-water mark) of persistent outbound sockets established by the user task.

SORCV. CMF ID: SORCVCT DFHSOCK A294. Performance field used with the FIELDS and SELECT operands; contains the number of socket RECEIVE requests issued.

SORT. Suboperand of MQ report operand to specify sort sequence of WebSphere MQ Summary report.

SOSEND. CMF ID: SOSENDCT DFHSOCK A296. Performance field used with the FIELDS and SELECT operands; contains the total number of outbound socket SEND requests issued.

SOTOTAL. CMF ID: SOTOTCT DFHSOCK A298. Performance field used with the FIELDS and SELECT operands; contains the total number of socket requests issued.

SOWAIT. CMF ID: SOIOWTT DFHSOCK S241. Performance field used with the FIELDS and SELECT operands; contains the inbound socket I/O wait time, the elapsed time in which the user task waited for socket I/O. (The outbound socket I/O wait time is contained in OSOWAIT.) This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

SRVCLASS. CMF ID: SRVCLASS DFHCICS C167. Performance field used with the FIELDS and SELECT operands; contains the MVS Workload Manager (WLM) service class for this transaction.

SSID. Suboperand of DB2, MQ and RECSEL report operands to specify DB2 and MQ Subsystem ID.

START. CMF ID: START DFHCICS T005. Time stamp field used with the FIELDS, SELECT(PERFORMANCE, and SELECT(EXCEPTION operands; contains the task start time. With FIELDS, a date or time format is required: either DATE, DATEISO, DATEM, DATEYR, TIMET (default), TIMEM, or TIMES. For SELECT, a report interval must be specified using FROM and TO.

STOP. CMF ID: STOP DFHCICS T006. Time stamp field used with the FIELDS, SELECT(PERFORMANCE,

and SELECT(EXCEPTION operands; contains the task stop time. With FIELDS, a date or time format is required: either DATE, DATEISO, DATEM, DATEYR, TIMET (default), TIMEM, or TIMES. For SELECT, a report interval must be specified using FROM and TO.

STORAGEW. Exception field used with the SELECT operand. This is a character field containing the name of a CICS dynamic storage area (DSA) that incurred a wait for storage. Candidates are: CDSA, RDSA, SDSA, UDSA, ECDSA, ERDSA, ESDSA, or EUDSA.

STYPE. CMF ID: TTYPE DFHTASK C004. Performance field used with the FIELDS and SELECT operands; a 2-character field that indicates the transaction start type.

SUBSTR . Suboperand for user character fields used with FIELDS or SELECT(PERFORMANCE operands; specifies that only part of the field is to be considered. The format is SUBSTR(offset,length). For example, SUBSTR(1,8) identifies the first eight bytes of the character field.

SUMEXCeption. Report operand used to specify the Exception Summary Report.

SUMMARY. Report operand used to specify the Performance Summary Report. Report operand used to request an Export Extract formatted by using a SUMMARY Report Form. Suboperand of MQ report operand to request WebSphere MQ Summary report.

SUSPEND. CMF ID: SUSPTIME DFHTASK S014. Performance field used with the FIELDS and SELECT operands; contains the total elapsed wait time for which the user task was suspended by the CICS dispatcher. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

SYNCDLY. CMF ID: SYNCDLY DFHSYNC S196. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for a syncpoint request to be issued by its parent transaction. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

SYNCPT. CMF ID: SPSYNCCT DFHSYNC A060. Performance field used with the FIELDS and SELECT operands; contains the number of syncpoint requests issued by the user task.

SYNCTIME. CMF ID: SYNCTIME DFHSYNC S173. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task was dispatched or suspended processing Syncpoint requests. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

SYSID. Suboperand used with the CROSS operand for the Cross-System Work Extract. SYSID(applid,mvsid) specifies the APPLID and MVS (SMF) ID to be written in each record of the extract data set. The defaults are respectively MULTIPLE and CICS.

SZALLCTO. CMF ID: SZALLCTO DFHFEPI A157. Performance field used with the FIELDS and SELECT operands; contains the number of FEPI ALLOCATE requests that timed out.

SZALLOC. CMF ID: SZALLOCT DFHFEPI A150. Performance field used with the FIELDS and SELECT operands; contains the FEPI ALLOCATE requests issued by the user task.

SZCHRIN. CMF ID: SZCHRIN DFHFEPI A155. Performance field used with the FIELDS and SELECT operands; contains the number of characters received through FEPI.

SZCHROUT. CMF ID: SZCHROUT DFHFEPI A154. Performance field used with the FIELDS and SELECT operands; contains the number of characters sent through FEPI.

SZRCV. CMF ID: SZRCVCT DFHFEPI A151. Performance field used with the FIELDS and SELECT operands; contains the number of FEPI RECEIVE requests.

SZRCVTO. CMF ID: SZRCVTO DFHFEPI A158. Performance field used with the FIELDS and SELECT operands; contains the number of FEPI RECEIVE data requests that timed out.

SZSEND. CMF ID: SZSENDCT DFHFEPI A152. Performance field used with the FIELDS and SELECT operands; contains the number of FEPI SEND requests issued by the user task.

SZSTART. CMF ID: SZSTRTCT DFHFEPI A153. Performance field used with the FIELDS and SELECT operands; contains the number of FEPI START requests issued by the user task.

SZTOTAL. CMF ID: SZTOTCT DFHFEPI A159. Performance field used with the FIELDS and SELECT operands; contains the total number of FEPI requests issued.

SZWAIT. CMF ID: SZWAIT DFHFEPI S156. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for FEPI services. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

S8CPU. CMF ID: S8CPUT DFHTASK S261. Performance field used with the FIELDS and SELECT operands; contains the CPU time during which the user task was dispatched by the CICS dispatcher on a CICS S8 mode TCB. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

T

TASKCNT. CICS PA ID: TASKCNT CICSPA X902. Special field used with the SUMMARY(FIELDS operand; This special field is generated by CICS PA during processing of the Performance Summary Report or Summary HDB. It gives the total number of CMF records processed. Specify whether to use TASKCNT or TASKTCNT for the summary statistical calculations.

TASKNO. CMF ID: TRANNUM DFHTASK P031. Field used with the FIELDS, SELECT(PERFORMANCE, and SELECT(EXCEPTION operands; contains the transaction number assigned by CICS and has a value between 1 and 99999.

TASKTCNT. CICS PA ID: TASKTCNT CICSPA X914. Special field used with the SUMMARY(FIELDS operand; This special field is generated by CICS PA during processing of the Performance Summary Report or Summary HDB. It gives the total number of CMF task termination records processed. Specify whether to use TASKCNT or TASKTCNT for the summary statistical calculations.

TCALLOC. CMF ID: TCALLOCT DFHTERM A069. Performance field used with the FIELDS and SELECT operands; contains the terminal facility ALLOCATE count.

TCB Modes. TCB Mode codes and their descriptions:

QR The quasi-reentrant mode TCB
RO The resource-owning mode TCB
CO The concurrent mode TCB
SZ The FEPI mode TCB
RP The ONC/RPC mode TCB
FO The file-owning mode TCB
SL The sockets listener mode TCB
SO The sockets mode TCB
S8 The secure sockets layer mode TCB
D2 The CICS-DB2 housekeeping mode TCB
L8 An open mode TCB
H8 A Java hotpooling mode TCB
J8 The J8 open TCB, used for JVMs that are in CICS key
J9 The J9 open TCB, used for JVMs that are in user key
JM The JM open TCB, used for the master JVM that initializes the shared class cache

TCBATTCT. CMF ID: TCBATTCT DFHTASK A251. Performance field used with the FIELDS and SELECT operands; contains the number of CICS TCB attaches.

TCC62IN2. CMF ID: TCC62IN2 DFHTERM A137. Performance field used with the FIELDS and SELECT operands; contains the number of characters received from the alternate facility LUTYPE6.2 (APPC) sessions.

TCC62OU2. CMF ID: TCC62OU2 DFHTERM A138. Performance field used with the FIELDS and SELECT operands; contains the number of characters sent to the alternate facility LUTYPE6.2 (APPC) sessions.

TCLASSNM. CMF ID: TCLSNAME DFHTASK C166. Performance field used with the FIELDS and SELECT operands; contains the name of the transaction class.

TCLASS. Exception field used with the SELECT operand; contains the name of the transaction class.

TCLDELAY. CMF ID: TCLDELAY DFHTASK S126. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for first dispatch which was delayed because of the limits set for this transaction's transaction class. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

TCM62IN2. CMF ID: TCM62IN2 DFHTERM A135. Performance field used with the FIELDS and SELECT operands; contains the number of messages received from the alternate facility LUTYPE6.2 (APPC) sessions.

TCM62OU2. CMF ID: TCC62OU2 DFHTERM A138. Performance field used with the FIELDS and SELECT operands; contains the number of messages sent to the alternate facility LUTYPE6.2 (APPC) sessions.

TCPSRVCE. CMF ID: TCPSRVCE DFHSOCK C245. Performance field used with the FIELDS and SELECT operands; contains the TCP/IP service name which attached the user task.

TCWAIT. CMF ID: TCIOWTT DFHTERM S009. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for input from the terminal user, after issuing an EXEC CICS RECEIVE request. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

TDGET. CMF ID: TDGETCT DFHDEST A041. Performance field used with the FIELDS and SELECT operands; contains the number of Transient data GET requests.

TDPURGE. CMF ID: TDPURCT DFHDEST A043. Performance field used with the FIELDS and SELECT operands; contains the number of Transient data PURGE requests.

TDPUT. CMF ID: TDPUTCT DFHDEST A042. Performance field used with the FIELDS and SELECT operands; contains the number of Transient data PUT requests.

TDTOTAL. CMF ID: TDTOTCT DFHDEST A091. Performance field used with the FIELDS and SELECT operands; contains the total number of transient data requests issued by the user task.

TDWAIT. CMF ID: TDIOWTT DFHDEST S101. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for VSAM transient data I/O. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

TEMPSTOR. Suboperand of the RESUSAGE(TRANSUMM report operand to request the Transaction Temporary Storage Usage Summary report. Suboperand of the RESUSAGE(TRANLIST report operand to request Temporary Storage activity in the Transaction Resource Usage List report.

TEMPSTORSUMMARY. Report operand to request the Temporary Storage Usage Summary report.

TERM. CMF ID: TERM DFHTERM C002. Field used with the FIELDS, SELECT(PERFORMANCE, and SELECT(EXCEPTION operands; contains the 4-character terminal ID.

TERMCNNM. CMF ID: TERMCNNM DFHTERM C169. Performance field used with the FIELDS and SELECT operands; contains the name of the owning connection (sysid) for those transactions associated with a session terminal facility.

TERMCODE. CMF ID: TERMINFO DFHTERM A165. Performance field used with the FIELDS operand; contains an interpretation of the terminal device type for the terminal ID, or session type for the session ID, in the TERM field (owner: DFHTERM, field ID: 002).

TERMINFO. CMF ID: TERMINFO DFHTERM A165. Performance field used with the FIELDS operand; contains a hexadecimal interpretation of the terminal information field, TERMINFO (owner: DFHTERM, field ID: 165).

TIME. Field qualifier used with the FIELDS and SELECT operands to identify the elapsed time component of a CMF clock field (count is the other component). For example, CPU(TIME),FCWAIT(TIME,COUNT). With the SELECT operand, TIME or COUNT must be specified (there is no default). TIME is the default for the FIELDS operand. The time is shown in seconds to four decimal places. If it is a very large value, the field shows as + + + + + +.

TIMEM. Qualifier for time stamp fields such as START or STOP; specifies that the time is to be reported in the format *hh:mm.*

TIMES. Qualifier for time stamp fields such as START or STOP; specifies that the time is to be reported in the format *hh:mm:ss.*

TIMESEQ. Suboperand used with LOGGER(LIST when requesting the System Logger List report; specifies that the report is to be sorted on time (interval expiry period) then logstream or structure name sequence within time. If not specified, the report is sorted on logstream or structure name.

TIMET. Qualifier for time stamp fields such as START or STOP; specifies that the time is to be reported in the format *hh:mm:ss.thm.*

TITLE1. Control operand (report-level); specifies up to 64 characters as the first half of a report title which prints at the top of each page below the report heading.

TITLE2. Control operand (report-level); specifies up to 64 characters as the second half of a report title which prints at the top of each page below the report heading.

TO. Suboperand used with the SELECT operand and ACTIVE, START, or STOP; specifies the end of a report interval to restrict the data reported based on transaction Start or Stop times. The format is FROM(date,time),TO(date,time). The date is a calendar date or a relative date, and the time is a time-of-day.

TOT. Suboperand used with SUMMARY(FIELDS and HDB(FIELDS for Summary HDB; requests the total value of the values of a count or clock field.

TOTAL. Report operand used to request the Performance Totals Report. Suboperand of the RESUSAGE(FILESUMM and RESUSAGE(TEMPSTORSUMM report operands to include total transaction statistics.

TOTRECS. CICS PA ID: TOTRECS CICSPA A001. Performance field used with the FIELDS operand; contains the total number of CMF performance records in this Network Unit-of-Work Extract record. All Cross-System Work Extract records include this User Field counter.

TRAN. CMF ID: TRAN DFHTASK C001. Field used with the FIELDS, SELECT(PERFORMANCE, and SELECT(EXCEPTION operands; contains the 4-character transaction ID.

TRANFLAG. CMF ID: TRANFLAG DFHTASK A164. This 8-byte field is used on the FIELDS suboperand. It contains the transaction flags in hexadecimal notation.

TRANGROUP. Report operand used to request the Transaction Group Report.

TRANLIST. RESUSAGE report operand used to request the Transaction Resource Usage List report.

TRANPRTY. CMF ID: TRANPRI DFHTASK A109. Performance field used with the FIELDS and SELECT operands; contains the priority of the transaction.

TRANRATE. Suboperand of the GRAPH report operand; requests the Transaction Rate graph report.

TRANROUT. CICS PA ID: TRANROUT CICSPA A003. Performance field used with the FIELDS operand; contains the number of Transaction Routing records in this Network Unit-of-Work Extract record. All Cross-System Work Extract records include this User Field counter.

TRANSUMMARY. RESUSAGE report operand to request the Transaction File Usage Summary report and the Transaction Temporary Storage Usage Summary report.

TRANTYPE. CMF ID: TRANFLAG DFHTASK A164. Performance field used with the FIELDS operand; contains an interpretation of the type of transaction from byte 1 of the transaction flags field.

TSBUFFER. Exception field used with the SELECT operand; contains the name of the temporary storage queue that waited for a buffer.

TSGET. CMF ID: TSGETCT DFHTEMP A044. Performance field used with the FIELDS and SELECT operands; contains the number of temporary storage PUT to auxiliary storage requests.

TSPUTAUX. CMF ID: TSPUTACT DFHTEMP A046. Performance field used with the FIELDS and SELECT operands; contains the number of temporary storage PUT to main storage requests.

TSPUTMCT. CMF ID: TSPUTMCT DFHTEMP A047. Performance field used with the FIELDS and SELECT operands; contains the number of temporary storage GET requests.

TSQNAME. CICS PA ID: TSQNAME CICSPA C917. Transaction resource class data field used with the SELECT operand; contains the Temporary Storage Queue name. Applicable to the Transaction Resource Usage reports and ignored by all others.

TSSHWAIT. CMF ID: TSSHWAIT DFHTEMP S178. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for an asynchronous shared temporary storage request to a temporary storage data server to complete. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

TSSTRING. Exception field used with the SELECT operand; contains the name of the temporary storage queue that waited for a string.

TSTOTAL. CMF ID: TSTOTCT DFHTEMP A092. Performance field used with the FIELDS and SELECT operands; contains the total number of temporary storage requests issued by the user task.

TSWAIT. CMF ID: TSIOWTT DFHTEMP S011. Performance field used with the FIELDS and SELECT operands; contains the elapsed time in which the user task waited for VSAM temporary storage I/O. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

U

UOWID. CICS PA ID: UOWID CICSPA C912. Performance field used with the FIELDS operand for the LIST and LISTX reports; contains the network unit-of-work ID.

UOWSEQ. CICS PA ID: UOWSEQ CICSPA C913. Performance field used with the FIELDS operand for the LIST and LISTX reports; contains the network unit-of-work ID sequence number.

USERID. CMF ID: USERID DFHCICS C089. Field used with the FIELDS, SELECT(PERFORMANCE, and SELECT(EXCEPTION operands; an 8-byte character field that contains the User ID.

V

VALUE. Suboperand used when specifying user fields in the SELECT operand.

VBUFFERW. Exception field used with the SELECT operand; contains the 8-byte name of a file that incurred a wait for a VSAM buffer.

VSTRINGW. Exception field used with the SELECT operand; contains the 8-byte name of a file that incurred a wait for a VSAM string.

W

WAITANALYSIS. Report operand to request the Wait Analysis report.

WAITCICS. CMF ID: WTCEWAIT DFHTASK S182. This field is a component of the task suspend time, SUSPTIME S014. Performance field used with the FIELDS and SELECT operands; contains the elapsed

time the user task waited for one or more ECBs, passed to CICS by the user task using the EXEC CICS WAITCICS ECBLIST command, to be MVS POSTed. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

WAITEXT. CMF ID: WTEXWAIT DFHTASK S181. This field is a component of the task suspend time, SUSPTIME S014. Performance field used with the FIELDS and SELECT operands; contains the elapsed time that the user task waited for one or more ECBs, passed to CICS by the user task using the EXEC CICS WAIT EXTERNAL ECBLIST command, to be MVS POSTed. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

WBBROWSE. CMF ID: WBBRWCT DFHWEBB A239. Performance field used with the FIELDS and SELECT operands; contains the number of CICS Web Interface (CWI) browse requests issued by the user task.

WBBRWOCT. CMF ID: DFHWEBB A338 WBBRWOCT. Performance field used with the FIELDS and SELECT operands; contains the number of CICS Web Support BROWSE HTTPHEADER requests.

WBCHRIN. CMF ID: WBCHRIN DFHWEBB A232. Performance field used with the FIELDS and SELECT operands; contains the number of characters received from the CICS Web Interface (CWI).

WBCHRIN1. CMF ID: DFHWEBB A334 WBCHRIN1. Performance field used with the FIELDS and SELECT operands; contains the number of CICS Web Support RECEIVE and CONVERSE characters.

WBCHROUT. CMF ID: WBCHROUT DFHWEBB A234. Performance field used with the FIELDS and SELECT operands; contains the number of characters sent to the CICS Web Interface (CWI).

WBCHROU1. CMF ID: DFHWEBB A336 WBCHROU1. Performance field used with the FIELDS and SELECT operands; contains the number of CICS Web Support SEND and CONVERSE characters.

WBEXTRCT. CMF ID: WBEXTRCT DFHWEBB A238. Performance field used with the FIELDS and SELECT operands; contains the number of CICS Web Interface (CWI) extract Web requests issued by the user task.

WBIWBSCT. CMF ID: DFHWEBB A340 WBIWBSCT. Performance field used with the FIELDS and SELECT operands; contains the number of CICS INVOKE WEBSERVICE requests.

WBPARSCT. CMF ID: DFHWEBB A337 WBPARSCT. Performance field used with the FIELDS and SELECT operands; contains the number of CICS Web Support PARSE URL requests.

WBRCV. CMF ID: WBRCVCT DFHWEBB A231. Performance field used with the FIELDS and SELECT operands; contains the number of CICS Web Interface (CWI) RECEIVE requests issued by the user task.

WBRCVIN1. CMF ID: DFHWEBB A333 WBRCVIN1. Performance field used with the FIELDS and SELECT operands; contains the number of CICS Web Support RECEIVE and CONVERSE requests.

WBREAD. CMF ID: WBREADCT DFHWEBB A224. Performance field used with the FIELDS and SELECT operands; contains the number of CICS Web support READ HTTPHEADER and FORMFIELD requests issued by the user task.

WBREDOCT. CMF ID: DFHWEBB A331 WBREDOCT. Performance field used with the FIELDS and SELECT operands; contains the number of CICS Web Support READ HTTPHEADER requests.

WBREPRCT. CMF ID: WBREPRCT DFHWEBB A236. Performance field used with the FIELDS and SELECT operands; contains the number of reads from the repository in shared temporary storage.

WBREPRDL. CMF ID: DFHWEBB A341 WBREPRDL. Performance field used with the FIELDS and SELECT operands; contains the repository read data length.

WBREPWCT. CMF ID: WBREPWCT DFHWEBB A237. Performance field used with the FIELDS and SELECT operands; contains the number of writes to the repository in shared temporary storage.

WBREPWDL. CMF ID: DFHWEBB A342 WBREPWDL. Performance field used with the FIELDS and SELECT operands; contains the repository write data length.

WBSEND. CMF ID: WBSENDCT DFHWEBB A233. Performance field used with the FIELDS and SELECT operands; contains the total number of Web SEND requests issued by the user task.

WBSNDOU1. CMF ID: DFHWEBB A335 WBSNDOU1. Performance field used with the FIELDS and SELECT operands; contains the number of CICS Web Support SEND and CONVERSE requests.

WBTOTAL. CMF ID: WBTOTWCT DFHWEBB A235. Performance field used with the FIELDS and SELECT operands; contains the total number of Web requests issued.

WBWRITE. CMF ID: WBWRITCT DFHWEBB A225. Performance field used with the FIELDS and SELECT

operands; contains the number of CICS Web support WRITE HTTPHEADER requests issued by the user task.

WBWRTOCT. CMF ID: DFHWEBB A332 WBWRTOCT. Performance field used with the FIELDS and SELECT operands; contains the number of CICS Web Support WRITE HTTPHEADER requests.

WLM. Alias for WORKLOAD report operand.

WORKLOAD. Report operand used to request the Workload Manager Activity Report.

WRITEMultiple. Suboperand used on the CROSS operand. It specifies that the performance class records contained in a network unit-of-work that includes multiple records are to be written to an output data set.

WRITESingle. Suboperand used on the CROSS operand. It specifies that the performance class records that are contained in a network unit-of-work that includes a single record only are to be written to an output data set.

X

X8CPU. CMF ID: DFHTASK S271 X8CPUT. Performance field used with the FIELDS and SELECT operands; contains the CICS X8 TCB CPU time. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

X9CPU. CMF ID: DFHTASK S272 X9CPUT. Performance field used with the FIELDS and SELECT operands; contains the user task X9 Mode CPU time. This field has two parts, a time value and a count. Specify the TIME parameter to request the elapsed time. Specify the COUNT parameter to request the number of occurrences.

Z

ZONE. Control operand (global); specifies the time zone to use for reporting. The format is ZONE(time zone). The time zone is an integer from -12 to +12 representing the number of hours that local time is west or east of GMT. If specified, it overrides your local CPU time zone setting. It is only useful if the SMF data comes from a system with a different time zone setting. Indeed, if this is the case, ZONE ***must*** be specified for the DB2, MQ, and System Logger reports to show correct times.

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