MAINVIEW® for CICS PERFORMANCE REPORTER User Guide

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bmcsoftware

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- messages received (and the time and date that you received them)
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  - messages from related software

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About This Book

PERFORMANCE REPORTER is the MAINVIEW for CICS batch report facility. This book describes how to submit predefined PERFORMANCE REPORTER batch programs to produce reports about CICS performance and resource usage. This book also explains how to use the PERFORMANCE REPORTER Performance Reporting Language (PRL) to create your own custom reports.

This book contains examples of the reports you can produce with the PERFORMANCE REPORTER batch programs. A description of the data shown in the report accompanies each example.

Who Should Read This Book

This book is intended for anyone who needs to produce printed reports about the performance of their site's CICS systems. Readers are expected to understand CICS concepts; they should be able to write JCL jobs that produce printed reports.

How This Book Is Organized

This book is composed of five parts. Each part consists of chapters or appendixes of related information.

- Part 1, "Introduction and Report Data" on page 1 gives an overview of PERFORMANCE REPORTER and describes how to manage report data.
- Part 2, "MAINVIEW for CICS Reports" on page 43 describes how to write batch jobs to create miscellaneous MAINVIEW for CICS reports.
- Part 3, "COBOL and SAS Reports" on page 73 describes how to write batch jobs to create COBOL and SAS reports from data collected by MAINVIEW for CICS.
- Part 4, "Performance Reporting Language Reports" on page 107 describes how to create customized reports with the MAINVIEW for CICS Performance Reporting Language.
- Part 5, "Appendixes and Index" on page 167 consists of appendixes that list sample members in the BBSAMP data set and the data fields of MAINVIEW for CICS records. This part also contains a glossary of terms and an index of the information presented in this book.

Recommended Reading

Books and online information about MAINVIEW for CICS are divided into three categories:

- Installation, implementation, and customization
- Online services
- PERFORMANCE REPORTER

This book describes how to produce hardcopy reports with PERFORMANCE REPORTER programs and example JCL. The following two sections describe the documentation for the other categories.

Installation, Implementation, and Customizaton Information

Separate books describe the procedures to install MAINVIEW for CICS, implement the MAINVIEW subsystems, and customize the product. Read the following books for the information you need to complete these tasks:

- Installation

  The *OS/390 and z/OS Installer Guide* describes the procedures for installing MAINVIEW for CICS. The *MAINVIEW Installation Requirements Guide* identifies resource requirements such as software, storage, product libraries, and FMIDs.

- Subsystem Implementation

  After installation, the MAINVIEW subsystems must be prepared to support MAINVIEW for CICS. Procedures for this task are in the *MAINVIEW Common Customization Guide*.

- Product Customization

  The *MAINVIEW for CICS Customization Guide* describes the procedures to customize MAINVIEW for CICS for specific site conditions.

- Security

  Security can be implemented for MAINVIEW products with external security managers (ESMs) through the MVS Security Authorization Facility (SAF) interface. You can find the SAF resource definitions for MAINVIEW for CICS listed in *Implementing Security for MAINVIEW Products*. This book provides procedures to create SAF resource definitions for the MAINVIEW services and commands in MAINVIEW for CICS.

Online Services Documentation

Documentation for the MAINVIEW for CICS online services consists of thee books and an online help system.

Getting Started with MAINVIEW for CICS provides an introduction to the product and offers exercises to help you get started with the online services.

The *MAINVIEW for CICS Online Services Reference Manual* describes how to monitor and manage CICS regions with the online services. This book is intended for anyone responsible for maintaining adequate CICS performance at their site.

The *MAINVIEW for CICS Monitors Guide* describes how to use the data collection monitors.

The MAINVIEW for CICS help system consists of a tutorial, specific service help, and an online message library.

- An online tutorial provides an introduction to general services that are available to MAINVIEW for CICS with the MAINVIEW subsystem. The tutorial is listed as an option on the full-screen Primary Option Menu.
- All MAINVIEW for CICS views and full-screen displays include online help. The online help extends also to the fields within a view or display. By placing the cursor directly over a field and pressing the HELP key, you can get a functional description of the field.
- The General Services MESSAGES Option can be accessed from the MAINVIEW for CICS Primary Option Menu. The MESSAGES option displays a complete description of any error message or abend code produced by a MAINVIEW product. Message descriptions are stored in the MSGLIB data set, which also can be viewed online with the ISPF BROWSE facility.

Part 1. Introduction and Report Data

This part provides an overview of the MAINVIEW for CICS PERFORMANCE REPORTER batch report facility and explains how to manage the input data used to create reports.

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Chapter 1. Introduction to PERFORMANCE REPORTER

PERFORMANCE REPORTER is the MAINVIEW for CICS batch report facility. This chapter gives a short introduction to PERFORMANCE REPORTER and the various types of reports you can create.

Figure 1 shows the process used to create reports with PERFORMANCE REPORTER. CICS transaction and statistical data are gathered by data collectors and stored on specialized VSAM data sets. Frequently, long-term reports are created from data that has been archived to tape.

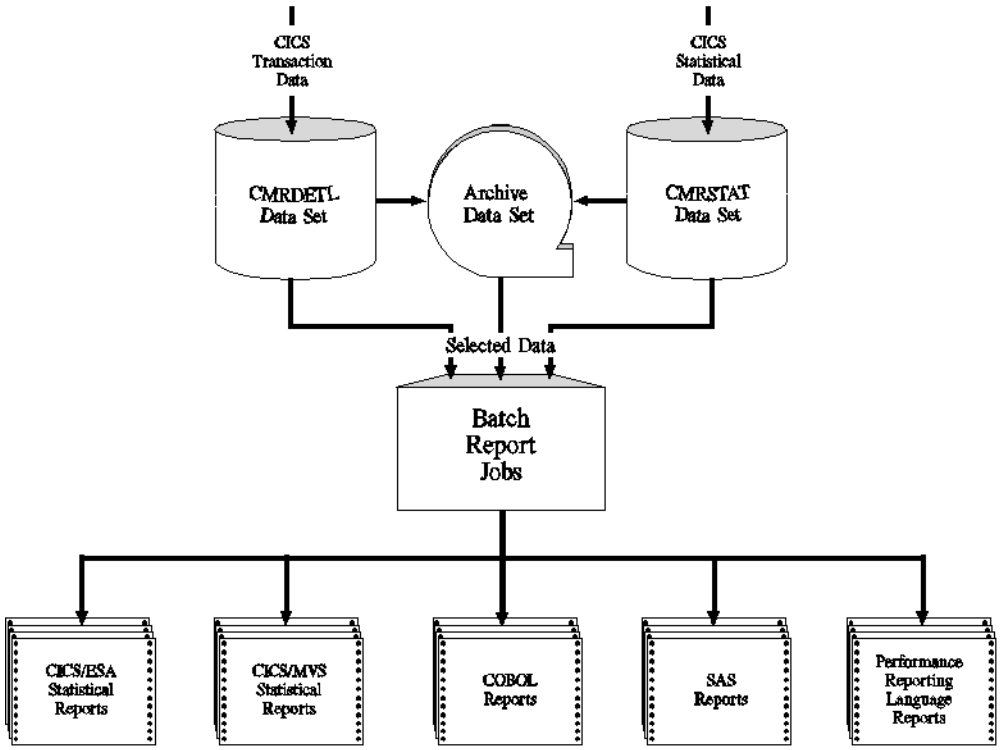

Figure 1. Overview of Process to Create Reports

Reports are created by running standard JCL batch programs. Samples of these batch programs are located in your site's BBSAMP data set. As a user, you edit copies of these samples and modify them to your site's conditions.

Normally, control statements are added to a report job. Some statements select the data from the VSAM data sets that you want to appear in a report. Other control statements specify how a report should be formatted.

Figure 1 shows the various types of reports you can create with the sample programs provided by PERFORMANCE REPORTER. The following parts of this book give examples from each report type and the control statements needed to produce specific reports.

Running Report Programs

PERFORMANCE REPORTER provides the capability to create predefined or custom reports. A predefined report has a fixed format that shows values that apply to a specific range of CICS performance parameters. Your BBSAMP data set contains sample jobs to create predefined CICS, COBOL, and SAS statistical reports.

In most cases, you merely specify the input data set and several control statements in your JCL to produce predefined reports. The control statements select the input data and specify whether the calculations produce a summary or detail report.

Other times, you may want to write programs to create custom reports. You use PERFORMANCE REPORTER's English-like Performance Reporting Language (PRL) to create custom reports. Figure 2 shows an example of a PRL program to create a custom report that summarizes transaction response times by CICS region.

```
//JOBNAME JOB USER PARAMETERS
/*JOBPARM USER PARAMETERS
//CMRL PROC
//PRL       EXEC PGM=CMRPRL
//STEPLIB   DD   DISP=SHR,DSN=CMR.CMRV3.BBLINK
//SYSPRINT  DD   SYSOUT=*
//SYSUDUMP  DD   SYSOUT=*
//SYSOUT    DD   SYSOUT=*
//ISYPROG   DD   SYSOUT=*,DCB=*LRECL=80,BLKSIZE=160,RECFM=FBA=
//ISYSOUT   DD   SYSOUT=*,DCB=*LRECL=80,BLKSIZE=160,RECFM=FBA=
//PNLLIB    DD   DISP=SHR,DSN=CMR.CMRV3.BBPLIB
//CMRDETL   DD   DISP=SHR,DSN=CMR.CMRV3.CMRDETL
//CMRSTAT   DD   DISP=SHR,DSN=CMR.CMRV3.CMRSTAT
//SORTWK01  DD   UNIT=SYSDA,SPACE=*CYL,5=
//SORTWK02  DD   UNIT=SYSDA,SPACE=*CYL,5=
//SORTWK03  DD   UNIT=SYSDA,SPACE=*CYL,5=
//      PEND
//RUNSTEP   EXEC CMRL
//SYSIN DD *
SET CLASS = 'R'
SET REPORTID = 'RES2RPT2'
SET TITLE = 'SUMMARY TRANSACTION ROSTER'
SELECT TYPE 6E RECORDS FROM CMRDETL
  USING CMRDATE T6ERESP T6ECPUR T6EDIST T6EFCWT T6ESUST T6ETSWT
  SUMMARY
REPORT
END
```

MainView for CICS Input Data Sets

PERFORMANCE REPORTER Control Statements

Figure 2. Typical Batch Job to Create a Custom Report

After modifying the CMRPRL batch job to your site's conditions, you include short PRL routines to select data and the format of your report.

An Overview of PERFORMANCE REPORTER Reports

This book describes the reports you can create with PERFORMANCE REPORTER, organized into two basic groups: predefined reports and custom reports.

Predefined Reports

As shown in Figure 1 on page 3, PERFORMANCE REPORTER includes sample predefined programs to create CICS, COBOL, and SAS statistical reports. Each of these groups includes sample programs to create functionally similar reports. Typically, predefined report programs include short-term and long-term reports.

Short-Term Reports

Short-term reports show resource usage for the current or immediately preceding CICS execution.

Destination Control Table Report
Either detailed or summarized usage of intra- and extrapartition transient data

File Control Table Report [1]
Either detailed file usage at specific times of the day or total file activity

Journal Control Table Report
Either detailed journal and journal buffer usage at specific times of the day or total journal activity

Processing Program Table Report[1]
Table entry statistics that can start with the program name, the highest fetch count, or the highest use count

Program Control Table Report[1]
Either detailed transaction usage at specific times of the day or total activity for each transaction

Temporary Storage Table Report
The usage of temporary storage and the auxiliary temporary storage data set

[1] Includes only active table entries

Terminal Control Table Report [1]
Either terminal activity at specific times of the day or total terminal activity

Transaction Class Usage Report
Class usage within the CICS region

Note: Short-term reports are generated by using PRL input with distributed sample report statements.

Long-Term Reports

Long-term report programs report about tabulated transaction or program resource usage, either individually or grouped as application systems or as histograms of CICS performance. These include

Resource Analysis Report
Tabulates resource usage and run-time statistics on transactions or programs individually or as a grouped application. The control statements submitted with the batch job control language determine time and date ranges, report input, chronological ordering of the data, and the report output type (a summarized or detailed report or a report of only the resources not meeting service levels).

Graphic Histogram Report
Produces histograms of selected CICS performance parameters or resource usage. The control statements submitted with the batch job define the CICS performance parameters that appear in a report.

Service Level Analysis Report
Shows the distribution of transactions into service level ranges.

Custom PRL Reports

With PRL control statements, you can create custom reports from data stored on the CMRDETL and CMRSTAT data sets. Chapter 10, “PRL Control Statement Verbs” on page 121 describes the usage of PRL programs to produce short-term batch reports for CICS users. Using control statements, you specify and format the following information:

- Type of data selected from the records stored on CMRDETL or CMRSTAT data sets
- Date and time range of selected records
- Interval counts for each data item or summarized totals you have specified
- Type of CMRDETL or CMRSTAT record processing resulting from a PRL computation or condition
- Report titles and column headings
- Organization of the report

[1] Includes only active table entries

Chapter 2. Collecting and Archiving Report Data

PERFORMANCE REPORTER batch reports are created from data gathered by the MAINVIEW for CICS data collectors. Depending upon the sampling parameters specified when MAINVIEW for CICS was customized, CICS data is collected over periodic intervals from monitored targets and then written as records to VSAM databases.

This chapter gives a description of the various data records that are used to create batch reports. An outline of the various steps you must complete to prepare this data is also part of the discussion. Chapter 3, “Managing Report Data” on page 17 gives a more complete description of some of the procedures introduced in this chapter.

This chapter concludes with a section that describes the procedure to archive and purge records from data sets.

Collecting Report Data

CICS data collected by MAINVIEW for CICS is written as records to CMRDETL and CMRSTATS data sets. PERFORMANCE REPORTER uses data dictionaries (CMRDETL and CMRSTATS) located in the BBPLIB data set to reformat the stored records for reports.

The *MAINVIEW for CICS Customization Guide* describes how to allocate and initialize both data sets. Appendix B, “CMRDETL: Transaction Detail Records” on page 173 describes each type of record that can be stored on a CMRDETL or CMRSTATS data set.

Transaction Detail Data (CMRDETL)

A detail record is written to the CMRDETL data set for every transaction that occurs in a CICS region monitored by MAINVIEW for CICS. This record contains a history of the transaction's lifespan.

Figure 3 gives an overview of the various steps to prepare detail transaction records for reports.

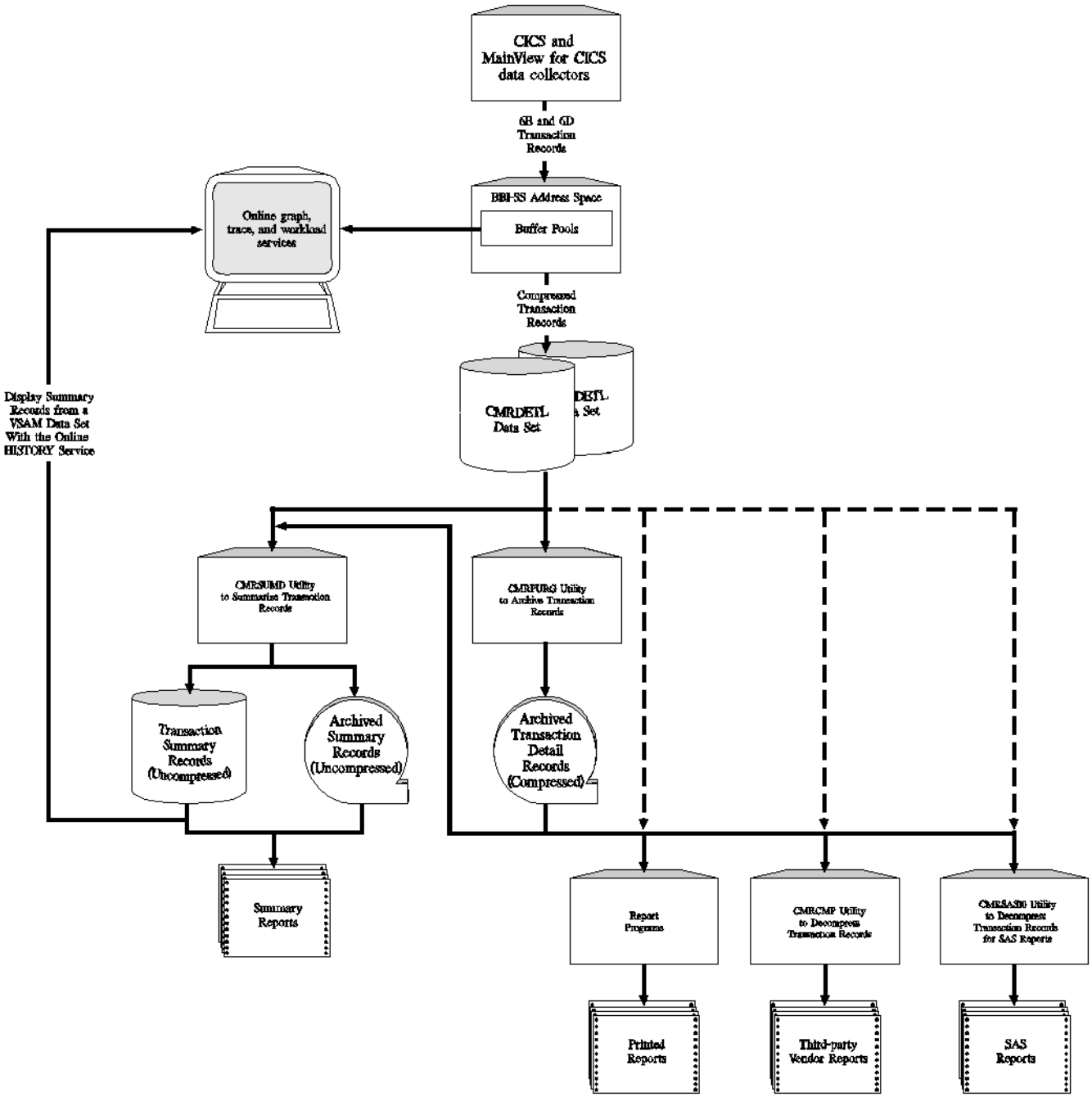

Figure 3. MAINVIEW for CICS Transaction Detail Records

There are two types of detail transaction records. A 6E record is written for every transaction that completes successfully. The CMRDETL data set also contains 6D abended transaction records. They are kept separate from 6E records because their data may be unreliable due to the abended transaction.

Batch jobs that produce the reports select data from the CMRDETL data set by the record ID (the hexadecimal code 6E or 6D) located in the TYPE field of the record. The following example shows a PRL control statement to select a 6E record as input data for a report:

```
SELECT TYPE 6E
```

Appendix B, “CMRDETL: Transaction Detail Records” on page 173 gives a complete description of every field of 6E and 6D transaction records. This section includes two tables that list the fields of the record by offset order and by function.

Before 6E or 6D records are written to the CMRDETL data set, they are held in transient buffer pools. You can view this data with the MAINVIEW for CICS online trace, graph, and workload services. After that, the detail trace records are compressed and written to a CMRDETL data set.

You can use single or dual CMRDETL data sets. Dual data sets allow you to monitor almost continuously without having to stop and archive the data set when it becomes full. CMRDETL data set switching allows archives to occur without interrupting the data collection process. The *MAINVIEW for CICS Customization Guide* describes how to use the control statements located in member CMRDTL00 of your BBPARM data set to specify the switching conditions for dual CMRDETL data sets.

PERFORMANCE REPORTER batch reports can be prepared from compressed detail transaction records held in the CMRDETL data set or a tape archive. If you are going to use this data to prepare SAS reports or other third-party vendor reports, the records must be decompressed before running the batch report programs. Sample members CMRCMP and CMRSAS10 located in your BBSAMP data set can be edited to run batch jobs that decompress 6E or 6D transaction records.

CMRSUMD is a utility that summarizes selected detail transaction records. You can summarize transaction activity over periods from minutes to days to create uncompressed summary records stored to tape or a VSAM database. In turn, these summary records can be used to create specialized summary reports.

If you store summary records to a VSAM data set, you can display them online with the MAINVIEW for CICS HISTORY service. “Creating Reports from Summarized Data” on page 24 describes how to create summary records from detail transaction records.

CICS Operational Statistics (CMRSTATS)

MAINVIEW for CICS collects CICS statistics according to parameters specified in the CMRSOPT startup table. These statistical records are stored in the CMRSTATS data set.

CICS statistical records are first written to the system management facility (SMF) data set with CICS SMF 110 records. Statistical records are then reformatted and moved by the CMRSTATS batch routine to the CMRSTATS data set.

Note: The CMRSTATC program is still supported for compatibility with earlier releases of MAINVIEW for CICS. However, due to changes in CICS statistics from one release to the next, the records that CMRSTATC produces may contain incomplete or invalid data. To obtain complete, up-to-date CICS statistics, you should use the enhanced CMRSTATS program.

Figure 4 shows how CICS statistical records are processed for batch reports.

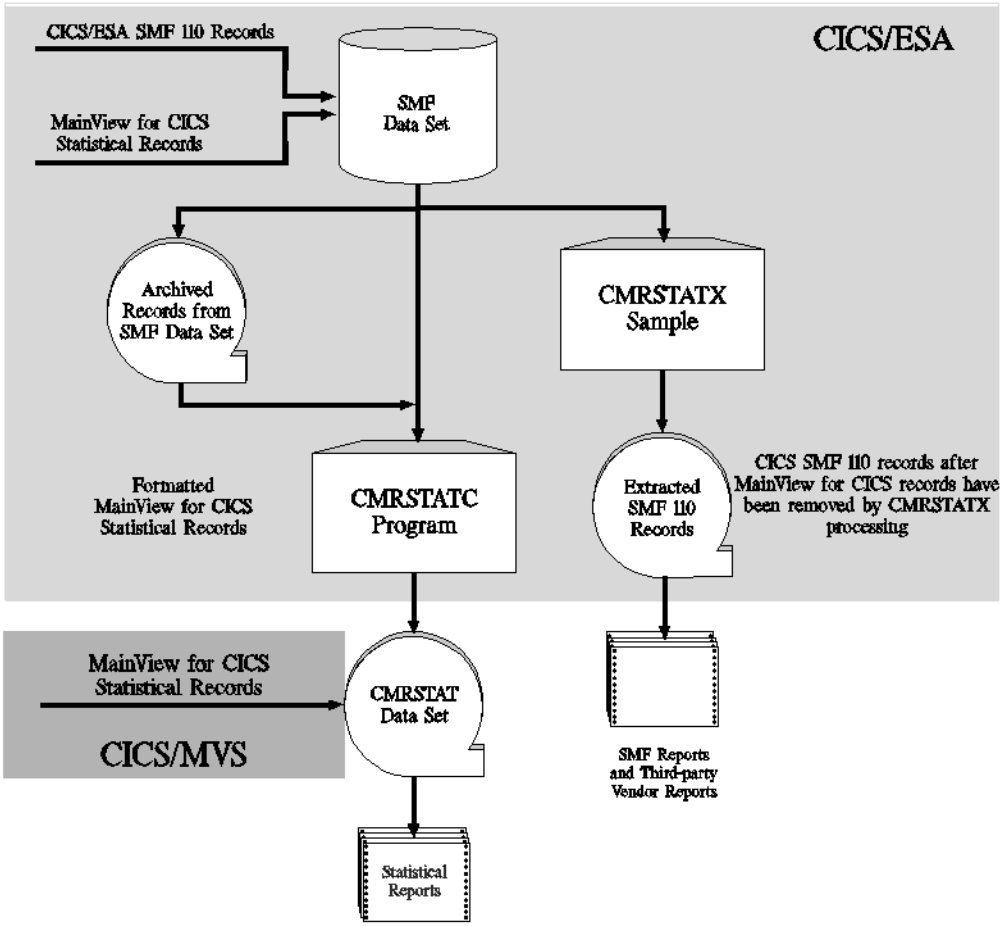

Figure 4. CICS Statistical Records

Predefined statistical reports select data from the CMRSTATS data set. If you want to create CICS SMF or other third-party vendor reports from data held in the SMF data set, you must first filter out MAINVIEW for CICS statistical records. A sample member named CMRSTATX located in your BBSAMP data set removes MAINVIEW for CICS records, leaving SMF 110 records for other reports.

All statistical records contain a field in the header area that identifies the record type. Records are selected from the CMRSTATS data set by the two-digit hexadecimal code entered into the TYPE field of the record. Global Performance records (Type CC) are written to the data set at five-minute intervals. Other types of records are written according to the startup parameters specified in the CMRSOPT table.

Archiving Data (CMRPURG)

CMRPURG is a program that purges and archives data held in CMRDETL data sets. If specified, CMRPURG can also archive and purge selected data to a tape data set and merge it with other archive tapes.

Archiving a Single CMRDETL Data Set

This section describes the procedure to archive and purge records from a single CMRDETL data set. “Archiving Dual CMRDETL Data Sets” on page 14 describes the procedure to archive dual CMRDETL data sets.

Before submitting the CMRPURG job for batch execution (when the CICS region is active), you must stop data collection. Issue either the CICS SMN2 transaction from a CICS terminal or the FST2 QOFF transaction from the MVS operator’s console.

The execution JCL for CMRPURG is shown in Figure 5 on page 11. Descriptions corresponding to the numbered statements follow the JCL.

Note: Sample JCL for the CMRPURG program is in the CMRPURGE member of your BBSAMP data set.

```
//jobname  JOB  user parameters
/*JOBPARM  user parameters
//JOBLIB   DD   DISP=SHR,DSN=CMR.CMRV5.BBLINK
//ARCHIVE  EXEC PGM=CMRPURG
//TAPEIN   DD   DISP=OLD,DSN=PREV.HISTORY.FILE                (1)
//TAPEOUT  DD   DISP=(NEW,CATLG),DSN=CMR.MERGED.ARCHIVE,UNIT=TAPE  (2)
//CMRWRK1  DD   DSN=CMR.CMRWRK1,SPACE=(CYL,(10,10)),UNIT=SYSDA     (3)
//            DISP=(NEW,DELETE,CATLG)
//CMRDETL  DD   DISP=SHR,DSN=CMR.CMRV5.CMRDETL                (4)
//REPORT   DD   SYSOUT=*
//SYSPRINT DD   SYSOUT=*
//SYSIN    DD   *
DATE=mmddyyyy                                   (5)
HISTORY=YES                                     (6)
```

Figure 5. Sample JCL to Run CMRPURG for a Single CMRDETL Data Set

The numbered items in the following list explain the JCL statements of the example CMRPURG job shown in Figure 5.

Note: The default block size is 12000. You can override the default block size with a value of 11994 or greater.

(1) Identifies a data set that is to be merged and archived with the purged CMRDETL records.

(2) Identifies the output tape data set for the purged CMRDETL records.

(3) Specifies a data set, CMRWRK1, to hold all records that are not archived during the reorganization phase. The recorder data sets also must be defined with REUSE so that reorganization can occur.

The records can be written to either tape or disk.

(4) Identifies the CMRDETL recorder data sets to be processed. Archiving each data set to a separate tape as separate jobs increases access to statistical data because there is less volume. More days can then be kept online without requiring a purge.

(5) Specifies the date for purging. This statement must start in column 1. All data stamped with this or a previous date is purged and, if requested, archived to the output tape data set. DATE=12319999 purges all the data from the recorder data set.

Note: If 12319999 is specified, the CMRWRK1 data set is not required.

The date for purging can also be specified as a number of days preceding today. The format is

DATE=*-*nn*

where *nn* is a two-digit number of days before today. Note that the date calculated can represent a day in the previous year. The actual date calculated by the program is displayed in an informational message on the report output.

(6) Specifies the type of history tape manipulation to be performed. This statement must start in column 1. Valid values are

NO No input or output history tapes are to be used. All data that has a date earlier than the DATE value will be purged.

OUT No input tape is to be used. Only an output tape is to be created containing the data to be purged.

YES Both input and output tapes are to be used. The data on the input tape is to be merged with the data to be purged from the MAINVIEW for CICS recorder data sets and written to the output tape.

Archive-Purge Process

The CMRPURG job performs the following operations:

1. Reads data from the recorder data sets, merges it with another archive data set (HISTORY=YES), and then writes it to the history output tape (HISTORY=YES or HISTORY=OUT). If HISTORY=NO is specified, the data is deleted and not archived.
2. Purges data from the recorder data sets.

   Note: Purging is performed here so that abends (such as tape errors) do not leave the recorder data sets in a state of reduced integrity.

   The data that is purged is determined by the DATE= control statement. The entire data set can be purged by specifying DATE=12319999, or a portion of the recorder data set can be purged as follows:

   a. If only part of a data set is to be purged, define the VSAM REUSE parameter when the MAINVIEW for CICS recorder data set is defined, as described in the *MAINVIEW for CICS Customization Guide*, and allocate a temporary data set, as shown by CMRWRK1 in the previous sample JCL. CMRPURG uses CMRWRK1 to

contain temporarily the records that are to remain on the recorder data set. REUSE reorganizes and resets the CMRDETL recorder data sets so that records written to CMRWRK1 from these data sets can be reloaded.

b. CMRPURG processes the CMRDETL recorder data set. The records stamped with the DATE value or a date previous to the specified date are written as specified by the HISTORY= control statement.

c. The selected records are deleted from CMRDETL if NOREUSE is specified, which can be a time-consuming update to the CMRDETL data set.

If an abend occurs while archiving data, check the messages on the report output to determine at what point it occurred. CMRPURG does not write the same record twice if it exists on both the history and the recorder data sets.

Each phase of the archive-purge process is recorded in the Recorder File Purge Report. Figure 6 shows a typical listing for CMRDETL recorder data sets.

Report Listing for CMRDETL Recorder File

```
 C I C S   M A N A G E R   R E C O R D E R   F I L E   P U R G E

FT290I-DETAIL TRANSACTION RECORDER FILE BEING PROCESSED
FT293I-BEGINNING ARCHIVE OF REQUESTED RECORDS
FT294I-ARCHIVE OF REQUESTED RECORDS COMPLETED
FT295I-BEGINNING PURGE OF REQUESTED RECORDS
FT296I-PURGE OF REQUESTED RECORDS COMPLETED
FT297I-CMRWRK1 DATASET FOUND - BEGINNING REORGANIZATION
FT298I-ENTERING SECOND PHASE OF REORGANIZATION
FT301I-REORGANIZATION OF RECORDER FILE COMPLETED

 ------ RECORDER FILE ------     -- HISTORY FILE ACTIVITY --
    INPUT       PURGED             INPUT     OUTPUT

   000001667    000001666          000000000 000001666
```

Figure 6. Sample Recorder File Purge Report Listings

Archive-Purge Completion

When the archive-purge process is complete, activate data collection from CICS with an SMN2 transaction or from an MVS console using FST2. This reopens the CMRDETL data set.

Archiving Dual CMRDETL Data Sets

The use of CMRPURG to process dual CMRDETL data sets is restricted to archival only. Any archival utility, such as IDCAMS REPRO, can be used to archive the data. The BBI-SS PAS purges all data and reorganizes the file automatically when a switch occurs. With dual CMRDETL data sets, archiving begins after a CMRDETL data set becomes full, when an I/O error occurs, or when a switch is manually requested with the FST2 SWITCH command.

BBSAMP member CMRDJCL contains sample JCL to execute CMRPURG when a CMRDETL switch occurs. The following options must be used if you use CMRPURG to archive dual CMRDETL data sets:

HISTORY — HISTORY=YES or HISTORY=OUT must be used.

DATE — DATE=12/31/9999 must be used.

LEAVE — Specifies whether to leave data in CMRDETL or purge it after archiving is completed. This statement must start in column 1. Valid values are

- **NO** — Data is removed from CMRDETL. LEAVE=NO is the default and must be used for a single CMRDETL data set.
- **YES** — Data remains in CMRDETL after archiving. This should be specified when using dual CMRDETL data sets. It provides HISTORY access to the data after a CMRDETL switch occurs.

For additional information about how to set up and use dual detail files, see the *MAINVIEW for CICS Customization Guide.*

Purging Summary Records from the CMRSUMD Data Set

The CMRSUMD utility summarizes performance data over selected intervals and places uncompressed summary records in an output VSAM data set. You can create batch reports from the summary records or view the records online with the HISTORY service.

CMRPURG can purge selected summary records from the CMRSUMD data set. This allows you to keep some summary records required for long-term reports and remove others that are no longer needed.

The JCL shown in Figure 5 on page 11 can be used to run the CMRPURG program. An additional WORKLOAD control statement must be added to the job stream beneath the SYSIN DD statement. The WORKLOAD control statement selects which summary records are purged.

The WORKLOAD control statement has the following positional parameters:

WORKLOAD = *wkld, group, time*

wkld — Is the name of the workload used to summarize records. All records are purged by default.

group Is the name of the group of CICS regions combined to create a summary workload. All groups are purged by default.

The group name is specified with the SGROUP control statement of the CMRSUMD utility.

time Is the summarization interval of summary records. All summary intervals are purged by default.

The following examples show how to use the WORKLOAD control statement with the CMRPURG program to purge summary records from the CMRSUMD data set.

- WORKLOAD=IBMTRANS,*,1440

  Daily summary records of all groups of the IBMTRANS workload are purged from a VSAM data set.

- WORKLOAD=,,60

  All hourly records from all workloads and groups are purged from a VSAM data set.

Chapter 3. Managing Report Data

This chapter describes several procedures to prepare data that appears in batch reports. Separate procedures describe how to

- Create statistical records
- Reformat compressed detail transaction records
- Summarize detail transaction records

Creating Statistical Records

To create statistical records from data collected by a CICS region, you must run the CMRSTATS program.

Note: The CMRSTATC program is still supported for compatibility with earlier releases of MAINVIEW for CICS. However, due to changes in CICS statistics from one release to the next, the records that CMRSTATC produces may contain incomplete or invalid data. To obtain complete, up-to-date CICS statistics, you should use the enhanced CMRSTATS program.

The CMRSTATS program reads data directly from an SMF data set or a sequential extract from an SMF data set. The program determines the type of SMF data set that is allocated to the job. Only one VSAM data set is read at a time, and the required SMF data set (SYS1.MAN1, SYS1.MAN2) must be specified.

Sample JCL to run this program is provided in BBSAMP as member CMRSTJCL. You can use the sample JCL along with distributed sample report statements to generate CICS statistical reports.

Figure 7 on page 18 shows the JCL for running the CMRSTATS program.

```
//CMRSTJCL JOB user parameters
/*JOBPARM user parameters
//*
//* THIS SAMPLE JCL CAN BE USED TO EXTRACT CMRSTATS STATISTICAL
//* DATA FROM THE SMF DATA PRODUCED BY MAINVIEW FOR CICS.
//*
//* YOU MUST MAKE SOME CHANGES TO THIS JCL. THE LINES THAT MAY
//* REQUIRE CHANGES ARE INDICATED BY A <=== MARKER.
//*
//JOBLIB   DD DSN=MAINVIEW.CMR55.BBLINK,DISP=SHR            <=== CHANGE
//*
//* THE FOLLOWING STEP (STATS) EXTRACTS THE CMRSTATS DATA FROM
//* THE SMF FILE AND PLACES IT INTO A FILE THAT CAN BE USED
//* BY THE PERFORMANCE REPORTER LANGUAGE (PRL), OR OTHER USER
//* WRITTEN PROGRAMS TO PRODUCE REPORTS ON THE PERFORMANCE OF
//* YOUR CICS REGIONS.
//*
//STATS    EXEC PGM=CMRSTATS
//SYSPRINT DD SYSOUT=*
//SMFIN    DD DSN=smf.data.set,DISP=SHR                    <=== CHANGE
//CMRSTATS DD DSN=stat.data.set,DISP=(,CATLG,DELETE),       <=== CHANGE
//           VOL=SER=VOLSER,UNIT=SYSDA,                     <=== CHANGE
//           SPACE=(CYL,(15,15),RLSE),DCB=BLKSIZE=19000     <=== CHANGE
//SYSIN    DD *
 CMRSTATS CONTROL STATEMENTS SHOULD BE INSERTED HERE.       <=== CHANGE
 (SEE THE PERFORMANCE REPORTER USER GUIDE FOR DETAILS.)
//*
//*  THE FOLLOWING STEP (PRL) USES THE STATISTICAL DATA EXTRACTED
//*  BY THE FIRST STEP (STATS) TO PROVIDE A PERFORMANCE REPORTER
//*  LANGUAGE REPORT (SERVICE LEVEL ANALYSIS REPORT).
//*
//PRL      EXEC PGM=CMRPRL
//SYSPRINT DD   SYSOUT=*
//SYSUDUMP DD   SYSOUT=*
//SYSOUT   DD   SYSOUT=*
//SORTWK01 DD   UNIT=SYSDA,SPACE=(CYL,5)
//SORTWK02 DD   UNIT=SYSDA,SPACE=(CYL,5)
//SORTWK03 DD   UNIT=SYSDA,SPACE=(CYL,5)
//ISYPROG  DD   SYSOUT=*,DCB=(LRECL=80,BLKSIZE=3120,RECFM=FBA)
//ISYSOUT  DD   SYSOUT=*,DCB=(LRECL=80,BLKSIZE=3120,RECFM=FBA)
//ISYPDUM  DD   SYSOUT=*,DCB=(LRECL=80,BLKSIZE=3120,RECFM=FBA)
//PNLLIB   DD   DSN=MAINVIEW.CMR55.BBPLIB,DISP=SHR          <=== CHANGE
//CMRSTATS DD   DSN=stat.data.set,DISP=SHR                  <=== CHANGE
//SYSIN    DD   DSN=MAINVIEW.CMR55.BBSAMP(sample),DISP=SHR   <=== CHANGE
//
```

Figure 7. JCL for CICS Statistical Reports (CMRSTJCL)

Note: You must supply values for the parameters shown in lowercase in Figure 7. Parameters in uppercase must be specified exactly as indicated.

Required Parameters

Following is a description of the JCL you must supply for CMRSTATS in addition to the standard JCL used at your site:

smf.data.set
Is the name of the SMF data set that is to be converted into CICS statistical data.

stat.data.set
Is the name of the output data set to be created.

blksize
Is any valid block size for the output data set in the range of 6000 - 32760.

The BLKSIZE must be at least 6000. All other DCB information is defaulted by the program.

sample
Identifies the report input to be processed.

Note: The SYSPRINT DD statement is required. It is for error messages and, optionally, for a list of parameters, if any are specified. The SYSIN data set is optional and is necessary only if user parameters are specified.

Control Statements

The following rules apply to the control statements you specify with CMRSTATS:

- There is only one control statement to a SYSIN statement.
- The control statement can start anywhere from column 1 but cannot be continued on the next line.
- If you do not supply application names, all CICS data from the SMF data set is processed.

  You can select data from the SMF data set that was collected from a specific CICS region.
- If both generic and specific application IDs are specified, the specific ID is used for selection.

  You can select only one application ID.

Valid control statements are as follows:

FROM TIME=hh:mm:ss
Include SMF data created after the specified time.

TO TIME=hh:mm:ss
Include SMF data created up to and including the specified time.

FROM DATE=mm/dd/yyyy
Include SMF data produced from the specified date onward.

Note: If you specify a date in the old format (mm/dd/yy), yy is interpreted as 19yy.

FROM DATE=*-n
Include the SMF data from today minus n days onward. Yesterday would be *-1.

TO DATE=mm/dd/yyyy
Include SMF data produced up to and including the specified date.

Note: If you specify a date in the old format (mm/dd/yy), yy is interpreted as 19yy.

TO DATE=*-n
Include SMF data up to and including today minus n days. Yesterday would be *-1.

GAPPLID=applid
Include only SMF data for the specified generic application ID.

SAPPLID=applid
Include only SMF data for the specified specific application ID.

APPLID=applid
Synonym for SAPPLID.

Note: Parameter errors cause the run to terminate with a return code of 8 and an appropriate message on SYSPRINT.

SYSPRINT Error Messages

SYSPRINT errors messages are accompanied by a return code of 8.

FT581I Previous parameter was invalid.

The parameter statement listed above the message on SYSPRINT is not valid.

FT582I SMFIN DD statement missing or invalid.

The OPEN for SMFIN failed. Generally, this means the DD statement is missing.

FT583I CMRSTAT DD statement missing or invalid.

The OPEN for the CMRSTATS DD statement failed. Generally, this means the DD statement is missing. However, it also could mean an invalid BLKSIZE parameter. BLKSIZE must be at least 6000.

FT584I Insufficient memory to run the program.

More memory is required to process the data used for a report. Either increase the region size or restrict the report to a specific range of data. The date or time ranges normally have little effect on the amount of required memory.

Memory is allocated above the 16 MB line.

Console Error Messages

The following console error message results from a 2048 ABEND.

FT585I SYSPRINT DD statement missing or invalid.

The OPEN for the SYSPRINT data set failed. Generally, this means the SYSPRINT DD statement is missing.

Reformatting Compressed Detail Transaction Records

Type 6E and 6D records are compressed when they are stored on the CMRDETL data set. You must decompress these records before they can be read by programs other than PERFORMANCE REPORTER programs. The records can be decompressed into standard MAINVIEW for CICS data or a format compatible with CICS/MVS CMP data.

MAINVIEW for CICS offers two programs to decompress Type 6E records:

- CMRCMPW decompresses Type 6E records in a separate batch job.
- CMRCMPR can be called from within a user program to dynamically decompress Type 6E records.

Note: Type 6E records produced by earlier versions of MAINVIEW for CICS are always decompressed to the record format supported by the current version. Any fields that are new to the current version are initialized to zeros or blanks.

CMRCMPW Batch Decompression Program

Figure 8 shows a sample batch job to execute the CMRCMPW program. The CMRCJCL job is in your BBSAMP library.

Compressed Type 6E records can reside on a current, active CMRDETL data set or be archived to tape. You select either source with the appropriate DD statement and an INPUT= control statement (INPUT=VSAM or INPUT=TAPE). Figure 8 shows examples of both DD statements.

```
//S1  EXEC  PGM=CMRCMPW
//STEPLIB DD  DSN=CMR.CMRV3.BBLINK,DISP=SHR
//CMRDETL DD  DSN=CMR.CMRV3.CMRDETL,DISP=SHR    <- IF INPUT=VSAM
//*TAPEIN  DD  DSN=....ARCHIVE.DATA,DISP=SHR    <- IF INPUT=TAPE
//SYSUDUMP DD SYSOUT=*
//OUTPUT  DD  DSN=CMR.PROCESS.DATA,DISP=(,CATLG),SPACE=(TRK,(15,15)),
//   UNIT=SYSDA,DCB=(RECFM=U,LRECL=0,BLKSIZE=12256)
//SYSIN   DD  *
INPUT=VSAM
FORMAT=CMR
```

Figure 8. JCL for CMRCMPW Batch Decompression Program

The LRECL length must be 0 for CMP data format or 4 bytes less than the BLKSIZE for MAINVIEW for CICS.

Control statements normally follow the SYSIN DD statement in the job stream. The following control statements are used with the CMRCMPW batch program:

- **FORMAT=2.1|2.1Y|CMR**

  Specifies the format of the CMRDETL record after it has been decompressed.

FORMAT=2.1|2.1Y — Decompressed records are compatible with CICS/MVS 2.1.2 CMP.

The Julian date will be formatted by report programs according to the value you specify:

2.1 Formatted as *ccyyddds*, where

- *cc* Is the 2-digit century value, either 00 for 1900 or 01 for 2000.
- *yy* Is the 2-digit year value.
- *ddd* Is the 3-digit day value.
- *s* Is a packed decimal sign value.

2.1Y Formatted as *yyyyddds*, where

- *yyyy* Is the 4-digit year value.
- *ddd* Is the 3-digit day value.
- *s* Is a packed decimal sign value.

The output data set that stores the CMP decompressed records must be allocated with the following parameters:

DCB=(RECFM=U,LRECL=0,BLKSIZE=6126)

Note: The BLKSIZE=6126 value is hardcoded into the program. It cannot be changed.

FORMAT=CMR — Decompressed records are compatible with all versions of MAINVIEW for CICS**.**

The output data set that stores the CMR decompressed records must be allocated with the following parameters:

DCB=(RECFM=VB,LRECL=xxxx,BLKSIZE=12000|yyyyy)

Note: The default block size is 12000 **(**BLKSIZE=12000). If you change the block size, the LRECL value must be at least 4 bytes less than the BLKSIZE value.

- **INPUT=VSAM|TAPE**

  Specifies the type of input data set holding the compressed CMRDETL records.

  INPUT=VSAM — Compressed records are stored on the current, active CMRDETL data set.

  INPUT=TAPE — Compressed records are archived to a tape data set.

- **NEWAPPL=xxxxxxxx**

  Is a 1- to 8-character alphanumeric name that identifies the APPLID placed in the SMF header portion of decompressed CMRDETL records. This value replaces existing APPLIDs of compressed input records. Decompressed records retain their existing APPLIDs if the NEWAPPL control statement is not specified.

  The FORMAT control statement must be specified with the NEWAPPL control statement to identify the format of the decompressed CMRDETL records.

- **SELECT=xxxxxxxx|***

  Selects records to be decompressed by the name of the CICS region that produced the CMRDETL record.

  If the SELECT control statement is not specified, the first CICS ID encountered is used.

  SELECT=xxxxxxxx 1- to 8-character alphanumeric name of a CICS region.

  SELECT=* All input records are selected.

CMRCMPR Decompression Program

The CMRCMPR program dynamically decompresses CMRDETL records. Instead of executing CMRCMPW in batch mode, the CMRCMPR program can be called from a user program with an assembler language routine, as shown in Figure 9.

```
      LA     R1,PARMLIST
      CALL   CMRCMPR
      LTR    R15,15          Q. GOOD DECOMPRESS
      BNZ    HANDLERR          NO -  GO HANDLE ERROR
      .
      .
PARMLIST  DS     0D
PARM1     DC     A(DFLAG)
PARM2     DC     A(RECORD)
DFLAG     DC     C'D'
```

Figure 9. Assembler Routine to Dynamically Call CMRCMPR Program

Standard linkages include the following registers:

- Register 1 contains the address of a parameter list that
  - Points to a ‘D’ flag that signifies a decompress request.
  - Points to the record to be decompressed. The field must be large enough to contain the entire decompressed record. LLBB must be the first record field. It must be set to the current length of the record.
- Register 13 contains the address of a standard register save area.
- Register 14 contains the return address.
- Register 15 contains the return code from the CMRCMPR program.

Creating Reports from Summarized Data

This section explains how to use PERFORMANCE REPORTER's CMRSUMD utility to summarize detail transaction records stored on your CMRDETL data set.

CMRSUMD is a batch utility program that creates workloads from summarized CICS performance records. You can summarize data collected from multiple CICS regions in intervals from 1 minute to 24 hours. The summary workloads produced by the CMRSUMD utility are compatible with the COBOL, SAS, and Performance Reporting Language (PRL) report programs of MAINVIEW for CICS.

Figure 10 illustrates how CMRDETL records are summarized. The CMRSUMD utility processes unsummarized records held in a VSAM or sequential data set.

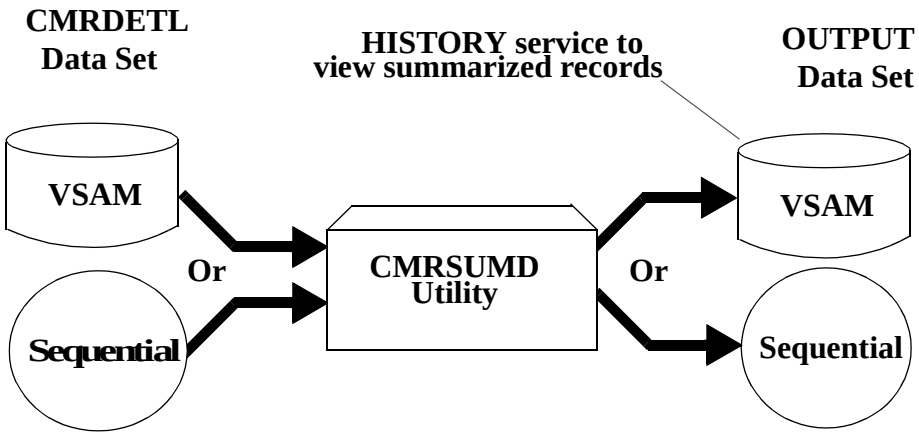

Figure 10. Summarizing CMRDETL Records with the CMRSUMD Utility

After CMRSUMD summarizes the records over the intervals you requested, the newly created summary workloads are stored on VSAM or sequential output data sets. Summary workloads can be created with data obtained from any supported version of CICS.

If you store your summarized records on a VSAM data set, you can view them online with the MAINVIEW for CICS HISTORY service. "Viewing Summary Records" on page 39 describes the procedure to use the HISTORY service.

Summarizing CMRDETL records gives you several benefits. One benefit is that fewer records are required to produce reports that span long periods of time. For example, producing a monthly report of average daily CPU usage requires only one record per day.

Another benefit of using summarized records is that you can write simpler report programs. Fewer records must be specified for each report interval and the batch program to create the reports generally requires less processing time for each query.

Summarized records are useful for identifying performance trends that become apparent only over long intervals. After you locate CICS problem areas with summarized records, you can use unsummarized data to create reports that give you the detail you need to analyze problems.

CMRSUMD JCL

Figure 11 shows an example of JCL to execute the CMRSUMD program and summarize report data.

```
//S1  EXEC  PGM=CMRSUMD
//STEPLIB DD  DSN=CMR.BBLINK,DISP=SHR
//*
//CMRDETL DD  DSN=CMR.DETAIL.DATA,DISP=SHR
//OUTPUT  DD  DSN=CMR.SUMMARY.DATA,DISP=SHR
//COPYDD  DD  DSN=CMR.COPY.CMRDETL,DISP=SHR
//REPORT  DD  SYSOUT=*
//SYSIN   DD  *
```

Figure 11. Sample JCL for Creating Summary Data

Figure 11 contains the following JCL statements:

EXEC — Specifies the name of the program that generates the summarized detail data (PGM=CMRSUMD).

//STEPLIB — Defines the program library containing the MAINVIEW for CICS load modules.

//CMRDETL — Defines the name of the input data set containing the detail records to be summarized. The detail records can be from a single CICS region or multiple CICS regions. For maximum performance, detail records should be sorted in date and time sequence.

If necessary, you can use a sort utility to combine multiple detail files into date and time sequence; for example, you can specify:

SORT FIELDS=(9,20,CH,A) for VSAM
SORT FIELDS=(13,20,CH,A) for sequential (to account for the RDW)

//OUTPUT — Defines the name of the summary output data set. You must specify the BLKSIZE parameter when creating a new sequential output data set.

You can use BBSAMP member CMRDFSUM to allocate and initialize a VSAM data set.

Note: When you run multiple executions of the CMRSUMD program against the same CICS region, workload, and timeframe using a VSAM data set:

- Workloads with the same name as existing records are combined with the records.
- New workloads are inserted.
- A maximum of 999 workloads are supported.

//COPYDD — (Optional) Defines the name of the selected sequential output data set. See the COPY= parameter on page 33 for more information.

Note: When creating a copy data set, specify RECFM=U, LRECL=0, and BLKSIZE=12256 bytes (or greater).

//REPORT	Defines the SYSOUT data set containing the program statistics compiled by CMRSUMD.
//SYSIN	Contains the control statements you must use to specify the input records and summarization options. See "Control Statement Descriptions" on page 27 for a description of each control statement.

CMRSUMD Control Statements

The control statements described in this section run the CMRSUMD utility. They are coded after the SYSIN DD statement in your JCL. Each control statement uses parameters to specify the report data and summarization options. In the descriptions in this section, default parameters are underlined.

Coding Control Statements

The global control statement parameters affect all the workloads defined in the CMRSUMD job. Local parameters apply to only a specific workload. You can code CMRSUMD control statements in a predefined order that sets both global and local conditions for each of the workloads defined in the job.

BMC Software recommends coding the CMRSUMD control statements in the order shown below.

1. **Global Control Statements**

   Global control statements set conditions for the CMRSUMD job itself, and are not directly related to workloads. The global control statements are

   NEWAPPL
   REPLACE
   COPYAPPL

2. **Default control statements**

   Default control statements set the default conditions for the workloads specified in the CMRSUMD job.

   A default control statement can be any control statement except one that is explicitly defined as global or workload-specific.

3. **Workload definition control statements**

   The workload definition control statements define the workloads in the CMRSUMD job. They are coded immediately before the default override and the workload-specific control statements.

   Together, the workload defintion control statements specify the conditions for a specific workload in the CMRSUMD job. They are as follows:

   a. **Default override control statements**

      The workload default override control statements define operating conditions for a specific workload. They may differ from those previously set by the default control statements.

      A default override control statement can be any control statement except one that is defined as global or workload-specific.

b. **Workload-specific control statements**

Workload-specific control statements specify the input data that is used by a specific workload in the CMRSUMD job. The workload-specific control statements are as follows:

SKIPFLIO
PROCFLIO
EXCLxxxx
INCLxxxx

Figure 12 shows the recommended sequence of CMRSUMD control statements. These three sets of control statements are repeated for each workload in the CMRSUMD job stream.

```
REPLACE=YES
TYPE=NOTERM
FILES=TIME
MINUTES=15
WORKLOAD=PAYROLL
INCLTRAN=PAYR
MINUTES=5
EXCLUSER=DRP1CICS
WORKLOAD=ACCOUNTS
MINUTES=10,30
FILES=SUMMARY
INCLTRAN=AA
```

Figure 12. Recommended Control Statement Order in CMRSUMD JCL

Control Statement Descriptions

The CMRSUMD utility has 27 control statements. These control statements fall into four broad classes based upon how often you are expected to use them.

You will use some control statements in almost every CMRSUMD job. Other control statements you will use often, but not for every job. A third class is composed of control statements that are used even less frequently. The last class contains control statements that are used rarely, only to set unique conditions for a summarization job.

The following four sections discuss the CMRSUMD control statements, grouped together by frequency of use.

Commonly Used Control Statements

The four control statements in this class are used for almost every CMRSUMD job.

WORKLOAD=*name*
Specifies the name assigned to the workload. CMRSUMD places the workload name in the T6EPGNM (program) field of the summarized record. If you do not explicitly specify a workload name, the default workload name is SYSTEM.

Note: Up to 999 workloads are supported for a specific VSAM data set.

MINUTES={1|5|<u>10</u>|15|30|60|1440}
Specifies the summarization interval. You can specify multiple intervals; for example:

MINUTES=5,30,60

These summarization intervals are permitted:

1 Increments of 1 minute.

5 Increments of 5 minutes.

10 Increments of 10 minutes (the default interval).

15 Increments of 15 minutes.

30 Increments of 30 minutes.

60 Increments of 1 hour.

1440 Increments of 1 day. MINUTES=DAILY also can be specified.

When the MINUTES control statement precedes the WORKLOAD statement, the summarization interval you specify is in effect for all workloads. To specify a unique summarization interval for each workload, place an appropriate MINUTES control statement after each WORKLOAD statement.

TYPE={ALL|NOTERM|TERM}

Specifies whether non-terminal tasks are included in the workload.

ALL All tasks are included in the workload.

NOTERM Only non-terminal tasks are included in the workload (the default).

TERM Only terminal tasks are included in the workload. Non-terminal tasks are excluded.

When the TYPE control statement precedes the WORKLOAD statement, the type of task you specify is in effect for all workloads. To specify a different type of task for each workload, place an appropriate TYPE control statement after each WORKLOAD statement.

SGROUP=*list*

Specifies a list of CICS regions that are combined to create a workload. The first name in the SGROUP list identifies the summarized records.

Note: SELECT is an alias for SGROUP. That is, you can use SELECT=*list* to specify a list of CICS regions.

Only one SGROUP and its identifier are used in a single execution; subsequent references to the same name use the first definition. For example, if you specify the following statements:

```
SGROUP=AORS,CICS1,CICS2,CICS3
...
. and other statements
...
SGROUP=AORS
...
```

you get the same region list for the second SGROUP as you do for the first SGROUP. This simplifies the definition of CICS system groups.

When the SGROUP control statement precedes the WORKLOAD statement, the list of CICS regions you specify is in effect for all workloads. To specify a different list of CICS regions for each workload, place an appropriate SGROUP control statement after each WORKLOAD statement.

Note: It is not necessary to combine all the CICS regions data into a single execution to produce combined workloads. CMRSUMD combines data from different executions for the same groups and workloads.

Frequently Used Control Statements

The three control statements in this class are used often but not for every CMRSUMD job.

EXCL*xxxx***=list**

Specifies a list of resources to exclude from the summary. The EXCL control statement can be repeated for as many resources as required. EXCL*xxxx* must be specified within a WORKLOAD.

The *xxxx* variable must be one of the following values:

Value	Description
PLAN	Name of the DB2 plan associated with the transaction.
4GLS	Name of the 4GL panel or program associated with the transaction.
OPID	Three-character OPID associated with the transaction.
TERM	Four-character CICS terminal ID associated with the transaction.
TRAN	Transaction ID associated with the transaction.
PROG	Program name associated with the transaction.
NETN	Up to an 8-character net name associated with the transaction.
USER	Up to an 8-character extended user ID associated with the transaction.
FILE	Name of a file referenced by the transaction.

INCL*xxxx***=list**

Specifies a list of resources to include in the summary. The INCL control statement can be repeated for as many resources as required. INCL*xxxx* must be specified at the workload level.

The *xxxx* variable must be selected from the following values:

PLAN Name of the DB2 plan associated with the transaction.

4GLS Name of the 4GL panel or program associated with the transaction.

OPID Three-character OPID associated with the transaction.

TERM Four-character CICS terminal ID associated with the transaction.

> **Note:** If you want to combine summarized records gathered in intervals of 10 minutes into hourly records, you must specify INCLTERM=10 to ensure records that overlap timeframes are not combined to give invalid data.

TRAN Transaction ID associated with the transaction.

PROG Program name associated with the transaction.

NETN Up to an 8-character net name associated with the transaction.

USER Up to an 8-character extended user ID associated with the transaction.

FILE Name of a file referenced by the transaction.

NEWAPPL=*name*

Specifies a new application ID (APPLID) that is written in the key of the output records.

Note: The NEWAPPL control statement is used when you want to view records online. The HISTORY service expects the key of the record to match the name specified in the target field of the display panel. SUMMDATA is the default key. Use NEWAPPL when you want to change the default key.

Less Frequently Used Control Statements

The control statements in this class are used occasionally.

REPLACE={NO|YES}

Specifies whether data collected during the execution of the job replaces any data from previous executions that have the same workloads. This control statement applies to VSAM data sets only.

You must use REPLACE to re-create workloads from detail records that have been previously processed. By default, the data is combined with existing data.

FILES={TIME|SUMMARY|COUNT}

Specifies the summarization option for the file entries in the records. If you specify FILES prior to the first WORKLOAD control statement, it defines the default type of summarization for all workloads.

TIME CMRSUMD summarizes records by file entries. The 255 files with the longest elapsed I/O time are written to the summarized file (the default).

SUMMARY CMRSUMD summarizes all entries and only the first 20 entries are written to the summarized file.

COUNT CMRSUMD summarizes the file entries and the 20 files with the largest number of I/Os are written to the summarized file.

DETAIL={NO|YES}

Specifies whether CMRSUMD treats files as individual entities or as a single entity for each file type. If you specify DETAIL prior to the first WORKLOAD control statement, it defines the default value for all workloads.

NO Summarizes files entries by a common resource, such as CICS, ADABAS, DBCTL, DB2, and so forth (the default).

YES Specifies that you want each file entry processed separately.

Note: Use DETAIL when you want to determine the overall effect of a given area rather than the overall effect of specific files.

ZERODATA={NO|YES}

Specifies whether intervals are written to the summarized file when no tasks are executed for a given workload; for example, when CICS is not active, no tasks are executed.

If you specify ZERODATA before the first WORKLOAD control statement, it defines the default value for all workloads.

NO Specifies that CMRSUMD does not write intervals with zero tasks to the summarized file (the default).

YES Specifies that CMRSUMD writes intervals with zero tasks to the summarized file.

FROM DATE=mm/dd/yyyy

Specifies the starting date of the selected records.

Note: If you specify a date in the old format (mm/dd/yy), yy is interpreted as 19yy.

You can specify the starting date using a relative format that is an offset from the current date. For example, to start the selected records with yesterday's date, specify

```
FROM DATE=*-1
```

If you specify FROM DATE before the first WORKLOAD control statement, it defines the default starting date for all workloads.

TO DATE=mm/dd/yyyy

Specifies the ending date of the selected records.

Note: If you specify a date in the old format (mm/dd/yy), yy is interpreted as 19yy.

You can specify the ending date using a relative format that is an offset from the current date. For example, to end the selected records with yesterday's date, specify

```
TO DATE=*-1
```

If you specify TO DATE before the first WORKLOAD statement, CMRSUMD provides the default ending date for all workloads at the workload level.

FROM TIME=hh:mm:ss

Specifies the starting time of the selected records. The format is hh:mm:ss.

If you specify FROM TIME before the first WORKLOAD control statement, it defines the default starting time for all workloads.

TO TIME=hh:mm:ss

Specifies the ending time for selecting records. The format is hh:mm:ss.

If you specify TO TIME before the first WORKLOAD control statement, it defines the default ending time for all workloads.

START TIME=hh:mm:ss

Specifies the starting time for the selection interval. You can use this time to specify a period, such as the prime shift for a given workload.

STOP TIME=hh:mm:ss

Specifies the ending time for the selection interval. STOP TIME can be used with TO DATE to specify an ending date and time.

The following example shows START TIME, STOP TIME, FROM TIME, and TO TIME control statements together in a job stream.

```
FROM DATE=*-5
FROM TIME=12:00:00
TO DATE=*-1
TO TIME=12:00:00
WORKLOAD=TEST1
INCLTRAN=AA*
START TIME=08:00:00
STOP TIME=17:00:00
WORKLOAD=TEST2
INCLTRAN=AA*
FROM DATE=*-5
TO DATE=*-3
```

In this example, the default date and time ranges for the selected records are from noon five days ago through yesterday at noon.

Workload TEST1 uses records that are collected between 8 am and 5 pm. On the first day, records are collected from noon to 5 pm. On the last day, records are collected from 8 am to noon.

Workload TEST2 collects records from noon four days ago through the following day at noon.

MINRESP=*nnnnn.nnn*

Sets a minimum response time threshold of a transaction record in seconds. Records with transaction response times that exceed the minimum threshold are included in the summarization workload. Records with response times less than the threshold are excluded.

MAXRESP=*nnnnn.nnn*

Sets a maximum response time threshold of a transaction record in seconds. Records with response times less than the maximum threshold are included in the summarization workload. Records that exceed the maximum response time are excluded.

The MINRESP and MAXRESP control statements are often used together to filter transaction records by response times. You can create summary workloads that contain only those transactions with response times that fall within the interval set by the two control statements.

MINCPU=*nnnnn.nnn*

Sets a minimum CPU usage threshold of a transaction record in seconds. Records with CPU usage that exceed the minimum threshold are included in the summarization workload. Records with CPU usage less than the threshold are excluded.

MAXCPU=*nnnnn.nnn*

Sets a maximum CPU usage threshold of a transaction record in seconds. Records with CPU usage less than the maximum threshold are included in the summarization workload. Records that exceed the maximum threshold are excluded.

The MINCPU and MAXCPU control statements can be used together to filter transaction records by CPU usage. You can create summary workloads that contain only those transactions with CPU usage that falls within the interval set by the two control statements.

Rarely Used Control Statements

The control statements in this class set unique conditions that are rarely used for most CMRSUMD jobs.

TABLE=*name*

Specifies the name of a table created using the CMRRAPM macro, which specifies transactions and programs to be included in the workload.

The TABLE control statement

- Is provided for compatibility with the CMRRAPM table
- Has limited flexibility

For example, default values are used for all control statements (other than WORKLOAD and INCLxxxx, which are contained within the CMRRAPM definitions).

COPYAPPL=*name*

Specifies an application ID (APPLID) that is written in the key of the records copied to the copy data set.

COPY={NO|YES}

Specifies whether the selected records are copied to the output file specified with the COPYDD DD statement.

When COPY is specified before the first WORKLOAD control statement, it determines whether selected records are copied to the output file for all workloads.

NO Selected records are not copied. NO is the default.

YES If a record is selected for summarization, it is also copied to the sequential data set specified with the COPYDD DD statement.

Note: These copied records are useful when performing detailed analysis of the data without reading the entire detail data set again.

SKIPFLIO=*list*

Specifies a list of files that are excluded in the summarized file data. SKIPFLIO must be specified at the workload level.

Note: Use of SKIPFLIO does not affect the selection of records, as happens with the EXCLFILE control statement.

PROCFLIO=*list*

Specifies a list of files to include in the summarized file data. Other files are not summarized. Use PROCFLIO to insure that files you specify are reported for a workload. PROCFLIO must be specified at the workload level.

Note: Use of PROCFLIO does not affect the selection of records, as happens with the INCLFILE control statement.

USEREXIT=*name*

Specifies the name of a user-written routine that is given control when a record is processed during the CMRSUMD summarization job. The input record is passed to the exit. The record is tested against conditions set by the user-written routine. The user exit either includes or excludes the record in the summarization job based upon the outcome of the test conditions.

BBSAMP member CMRUSRD is an example of this exit.

Running the CMRSUMD Utility

Figure 13 is an example of a job that runs the CMRSUMD utility and creates summary workloads.

```
//USR1SUM JOB  (3831),'USER NAME',CLASS=T,MSGCLASS=R,
//    NOTIFY=USR1,TIME=60
//*
//S1  EXEC  PGM=CMRSUMD,REGION=4096K
//STEPLIB DD  DSN=CMR34.CMR1.LOAD,DISP=SHR
//CMRDETL DD  DSN=CMR1.DETAIL.DATA,DISP=SHR
//*
//SYSUDUMP DD SYSOUT=*
//OUTPUT  DD  DSN=CMR.SUMMARY.DATA,DISP=SHR
//REPORT   DD SYSOUT=*
//SYSIN DD *
*
*  SAMPLE CMRSUMD INPUT
*  REFER TO MEMBER CMRSUMD FOR EXECUTION JCL
*     THIS MEMBER CREATES DAILY SUMMARY RECORDS FOR 4 WORKLOADS
*       MAINVIEW for CICS TRANSACTIONS
*       CICS TRANSACTIONS
*       ALL OTHER TRANSACTIONS
*       ALL TERMINAL TRANSACTIONS
*
* SET DEFAULT FOR DAILY TIME PERIOD AND ALL TRANSACTION TYPES
*
MINUTES=1440
TYPE=ALL
*
* CREATE MAINVIEW for CICS WORKLOAD
*
WORKLOAD=CMRTRANS
INCLTRAN=FST2,SMN2,FIC2,FCD2,JNL2
*
* CREATE IBM TRANSACTION WORKLOAD
*
WORKLOAD=IBMTRANS
INCLTRAN=C*,DSNC
*
* CREATE ALL TRANSACTION WORKLOAD (EXCEPT THOSE IN PREVIOUS)
*
WORKLOAD=ALLTRANS
EXCLTRAN=FST2,SMN2,FIC2,FCD2,JNL2
EXCLTRAN=C*,DSNC
*
* CREATE ALL TERMINAL TRANSACTION WORKLOAD (OVERRIDE TRANSACTION TYPE)
*
WORKLOAD=ALLTERM
TYPE=TERM
```

Figure 13. CMRSUMD JCL and Control Statements

The control statements shown in Figure 13 are examples from member CMRSUMD1 of the BBSAMP data set. The job creates four different summary workloads each day. A brief description of each workload is given in the comments section of the job shown in Figure 13. A description of the summarized transaction records created for each workload is shown beneath the SYSIN DD statement.

The report shown in Figure 14 is produced by the CMRSUMD utility. It shows the input CMRDETL records that were summarized across the four workloads defined in the CMRSUMD job.

WORKLOAD	GROUP	ID#	MIN	INPUT	ACCEPTED	OUTPUT	UPDATED	MAX-FILES
CMRTRANS	1 DLY	1,583,507	2,346	4	4	4		
IBMTRANS	2 DLY	1,583,507	935,254	4	4	6		
ALLTRANS	3 DLY	1,583,507	645,907	4	4	6		
ALLTERM	4 DLY	1,583,507	1,471,378	4	4	6		

Figure 14. CMRSUMD Workload Summary Report

Input records are summarized daily, and the OUTPUT column shows four records were created for each workload over the four-day interval.

Description of the Report Fields

The report fields shown in Figure 14 are as follows:

WORKLOAD — Workload name assigned to the summarization.

GROUP — Summarization group of combined CICS regions.

ID # — Internal workload ID assigned to the workload and used to make the key unique.

MIN — Number of minutes in the summary.

INPUT — Number of records in the input file that meet the date, time, and CICS system criteria.

ACCEPTED — Number of records in the input file that were accepted for summarization.

OUTPUT — Number of summarized records written.

UPDATED — Number of summary records that were updated with input records from this job.

MAX-FILES — Number of files accessed by the summarized workload.

Note: When MAX-FILES is greater than 20, it indicates some files were not written in the summarized records.

Additional fields appear in the Summary Report if the REPLACE=YES or USEREXIT=*name* control statements are included in the CMRSUMD job. If REPLACE=YES is included, two fields named DELETED and REPLACED appear in the report. The DELETED field shows the number of records that were deleted because the interval contained no records and ZERODATA=NO was specified. The REPLACED field shows the number of records held in the output data set that were replaced by new records.

If USEREXIT=*name* is included in the CMRSUMD job, two fields named INCLUDED and EXCLUDED show the number of records that were included or excluded from the summary workloads due to the test conditions set by the user-written routine.

The INCLUDED field shows the number of records that were summarized that normally would have been excluded if the exclude decision had not been overridden by the user-written routine. The EXCLUDED field shows the number of records that were excluded from summarization that normally would have been included if the include decision had not been overridden by the user-written routine.

Creating PRL Reports from Summary Data

Figure 15 shows the JCL and control statements to produce a Performance Reporting Language (PRL) report from the summary workloads created by the CMRSUMD utility. The JCL is from BBSAMP member CMRL, which is generic JCL to run PRL jobs. The JCL must be edited to your site's conditions before running the job.

The PRL control statements added beneath the SYSIN DD statement are from member CMRPRL28 located in the BBSAMP data set. These control statements produce a PRL report from summarized 6E and 6D records.

The seven control statements shown between the USING and REPORT statements specify the data extracted from the summary records that appears in the PRL report. Each of these seven control statements produces a separate, tabular column in the PRL report.

```
//USR1PRL  JOB (NUMBER),'USER NAME',
//          CLASS=F,
//          MSGCLASS=R,
//          MSGLEVEL=(1,1),
//          NOTIFY=USR1
/*JOBPARM     L=99,COPIES=1,R=10,S=SYSB
//PRL      EXEC PGM=CMRPRL,REGION=2048K,TIME=180
//*
//*  THIS IS SAMPLE JCL TO EXECUTE THE MAINVIEW for CICS PERFORMANCE
//*  REPORTING LANGUAGE (PRL).  CHANGE THE STATEMENTS INDICATED
//*  TO REFLECT YOUR INSTALLATION.
//*
//STEPLIB   DD   DISP=SHR,DSN=CMR34.CMR1.LOAD
//SYSPRINT  DD   SYSOUT=*
//SYSUDUMP  DD   SYSOUT=*
//SYSOUT    DD   SYSOUT=*
//ISYPROG   DD   SYSOUT=*,DCB=(LRECL=80,BLKSIZE=160,RECFM=FBA)
//ISYSOUT   DD   SYSOUT=*,DCB=(LRECL=80,BLKSIZE=160,RECFM=FBA)
//CMRDETL   DD   DISP=SHR,DSN=CMR1.TEMP.CMRDETL1
//SORTWK01  DD   UNIT=SYSDA,SPACE=(CYL,30)
//SORTWK02  DD   UNIT=SYSDA,SPACE=(CYL,30)
//SORTWK03  DD   UNIT=SYSDA,SPACE=(CYL,30)
//SYSIN     DD   *
*
* THIS IS THE SAMPLE REPORT THAT USES THE SUMMARIZED DATA CREATED BY
* CMRSUMD.
*
* (YOU MAY NEED TO MODIFY THE REPORT OUTPUT CLASS ON THE NEXT STATEMENT)
SET CLASS = 'R'
SET ZHEADING = 'SINGLE'
*
SET TITLE = 'SUMMARIZED DATA ANALYSIS'
SELECT TYPE 6E AND 6D RECORDS FROM CMRDETL
  USING CMRDATE  -
       CMRTIME  -
       SUMWKLD  -
       SUMCICS  -
       T6ETASK  -
       T6ERESP  -
       T6ECPUR
  REPORT
END
```

Figure 15. PRL Report JCL and Control Statements

The online PRL report shown in Figure 16 on page 37 is produced by the job shown in Figure 15. The PRL report shows the task count, average response time, and CPU usage of the

summarized workloads over four daily periods. Notice that the seven tabular columns of the report appear in the same order as the PRL control statements in the job to produce the report.

RECORDED DATE	RECORDED TIME	WORKLOAD NAME	CICS GROUP	COUNT OF TASKS IN SUMMARY	RESPONSE TIME	CPU REAL TIME
09/12/1998	24:00:00	CMRTRANS	CICSPROD	265	0.171	0.057
09/12/1998	24:00:00	IBMTRANS	CICSPROD	207831	0.067	0.005
09/12/1998	24:00:00	ALLTRANS	CICSPROD	9017	0.280	0.015
09/12/1998	24:00:00	ALLTERM	CICSPROD	215355	0.075	0.006
09/13/1998	24:00:00	CMRTRANS	CICSPROD	866	17.090	0.067
09/13/1998	24:00:00	IBMTRANS	CICSPROD	614318	0.206	0.005
09/13/1998	24:00:00	ALLTRANS	CICSPROD	140551	1.042	0.022
09/13/1998	24:00:00	ALLTERM	CICSPROD	739681	0.295	0.007
09/14/1998	24:00:00	CMRTRANS	CICSPROD	226	0.135	0.064
09/14/1998	24:00:00	IBMTRANS	CICSPROD	16229	0.035	0.002
09/14/1998	24:00:00	ALLTRANS	CICSPROD	38577	1.192	0.018
09/14/1998	24:00:00	ALLTERM	CICSPROD	46405	0.434	0.014
09/15/1998	24:00:00	CMRTRANS	CICSPROD	989	0.156	0.064
09/15/1998	24:00:00	IBMTRANS	CICSPROD	96876	0.026	0.002
09/15/1998	24:00:00	ALLTRANS	CICSPROD	457762	1.017	0.016
09/15/1998	24:00:00	ALLTERM	CICSPROD	469937	0.750	0.015

Figure 16. PRL Report Using Summary Data

Description of the Report Fields

The fields of the PRL report shown in Figure 16 are as follows:

RECORDED DATE	Ending date of the summarization interval in mm/dd/yyyy format.
RECORDED TIME	Ending time of the summarization interval in hh:mm:ss format.
WORKLOAD NAME	Name of the workloads with summarized data.
CICS GROUP	CICS region from which summary records were created.
COUNT OF TASKS IN SUMMARY	Number of tasks summarized for this program.
RESPONSE TIME	Average internal response time for the summarized tasks.
CPU REAL TIME	Average real CPU time for the summarized tasks.

Notes on Using the CMRSUMD Utility

The remainder of this chapter gives several hints about using the CMRSUMD utility.

Selecting Input Records

The EXCL*xxxx* and INCL*xxxx* control statements are often used together to select CMRDETL records for summarization. As their names suggest, EXCL*xxxx* excludes records and INCL*xxxx* includes records used by the CMRSUMD utility. The parameters of both control statements define the CICS resources whose records are selected for summarization.

Both control statements can be specified more than once for each workload defined in the job to run CMRSUMD. The control statements are interpreted in the following manner during CMRSUMD processing:

- If more than one INCL*xxxx* control statement is specified for a single workload, the parameters are logically ORed together. Records are included if the selected resources meet any parameter condition.
- If more than one EXCL*xxxx* control statement is specified for a single workload, the parameters are logically ORed together. Records are excluded if the selected resources meet any parameter condition.
- INCL*xxxx* processing occurs first.

  If a resource meets a condition specified by the INCL*xxxx* control statement, the included records are then tested against the conditions set by the EXCL*xxxx* control statement.

  Records are summarized if they meet any condition set by the INCL*xxxx* statement and do not meet any condition set by the EXCL*xxxx* statement.

Figure 17 shows the logic of selecting records for summarization when the INCL*xxxx* and EXCL*xxxx* control statements are included in the CMRSUMD job.

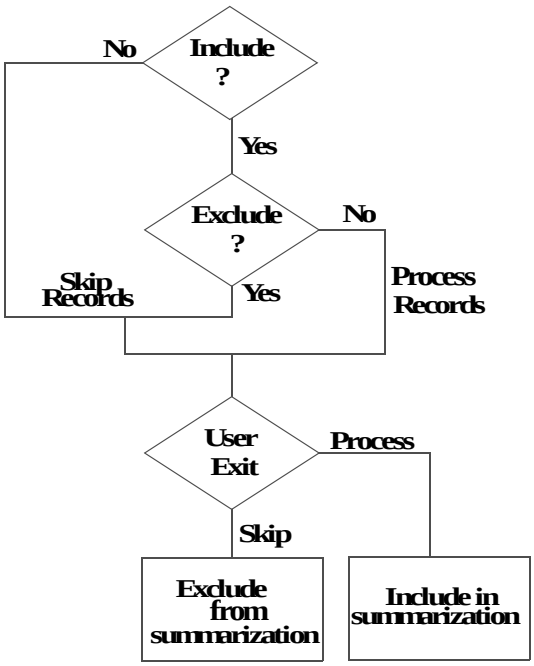

Figure 17. Selecting Records for Summarization

Notice the USEREXIT control statement at the bottom of Figure 17. You can set additional selection criteria with a user-written routine that tests each record. This routine is given control when a record is processed during the CMRSUMD summarization job. In the example shown in Figure 17, the exit to the user-written routine is passed all records that have been tested previously by the INCL*xxxx* and EXCL*xxxx* control statements.

The user-exit routine is the final arbiter of including or excluding records from the summarization job. Records that have been previously excluded can be reinserted into the job

to be summarized. Likewise, records that have been selected for summarization can be overridden and excluded from the job.

Detail File Switch

CMRSUMD's detail file switch provides an opportunity to summarize data. By adding a step after the archive is completed, you can summarize the data from the detail data set as needed.

You can summarize each detail record into multiple workloads in a single execution of the program. Each execution can produce as many workloads as required.

When the output file is VSAM, the summarization program combines data from multiple executions; it is not necessary to summarize only at daily intervals, such as midnight.

Replacing Summary Data

The default summarization program can combine data from the current execution with summary data created earlier if you use a VSAM output data set. Occasionally, you may need to replace an existing workload with new data; for example, you could have omitted a transaction when creating the workload definitions.

To replace a summary workload, specify REPLACE=YES when you run the CMRSUMD utility. Only workloads and summarization intervals in the current execution are affected by the REPLACE=YES option.

Warning: The REPLACE=YES control statement replaces all workload data with duplicate time frames and also deletes any current intervals that no longer contain data.

Viewing Summary Records

If summary records are stored on a VSAM data set, they can be viewed with the MAINVIEW for CICS HISTORY service. Intervals can be selected from the data set and expanded to get varying levels of detail about the records that compose the interval.

To view summary records with the HISTORY service:

1. Create summary records and store them on a VSAM data set. SUMMDATA is the default target name to view summary records. Otherwise, use the NEWAPPL control statement to set the key of the records to a name other than the CICS region.
2. Add SUMMDATA to BBPARM member BBIJNT00 (do not add BBIISP00 block requests).
3. Add SUMMDATA to the BBPARM member CMRDTL00 and point DSN1 to the VSAM data set created in Step 1; for example:

   ```
   TARGET=SUMMDATA,DSN1=SUMMARY.VSAM
   ```

4. Select the HISTORY service from the MAINVIEW for CICS Primary Option Menu.
5. Access the summary records by setting the CICS target to SUMMDATA in the upper right corner of the MAINVIEW for CICS History Selection panel.

   ```
   CICS ===> SUMMDATA
   ```

6. Complete the remaining fields of the History Selection panel to set any filters and the time and date intervals of the records you want to view.

Figure 18 shows the four workloads of daily summary records created earlier with the CMRSUMD utility. You can get more detail about each workload by expanding the HISTORY views.

```
BMC Software -------MAINVIEW FOR CICS HISTORY SUMMARY------ TIME: 08:29:24
COMMAND ===>                                    CICS ===> SUMMDATA
 -- ENDING --      TASK WORKLOAD SUMM  CICS   RESPONSE     CPU    FILE STOR
 DATE    TIME      COUNT   NAME   INTV  GROUP     TIME    TIME   CALLS  (K) A
      24:00:00      989 CMRTRANS 1440 CICSPROD   0.156   0.064      8   10
      24:00:00   96,876 IBMTRANS 1440 CICSPROD   0.026   0.002      1    8
      24:00:00  457,762 ALLTRANS 1440 CICSPROD   1.017   0.016      6   29 *
      24:00:00  469,937 ALLTERM  1440 CICSPROD   0.750   0.015      6   28 *
```

Figure 18. HISTORY Service Display of Summary Records

The HISTORY display of summary records varies from the standard detail data. The ending time shown in the HISTORY display is the end of the summarization interval, not the ending time of the detail records associated with the interval.

Storing Summary Data on VSAM Data Sets

A VSAM data set provides the best repository of summarized data:

- The space required to maintain a month of summarized data is small. The CMRPURG utility of MAINVIEW for CICS can be used to maintain the data set, so you can keep as little or as much data available as you require. “Archiving Data (CMRPURG)” on page 11 gives instructions for removing unwanted records from the VSAM data set with the CMRPURG utility.
- Summary records can be viewed with the HISTORY service.
- The summarization program combines new data with existing data only when the output is VSAM. This provides a complete interval of data even when different jobs summarized the data. For example, a daily summary record can comprise data collected from several CMRDETL data sets when switching is active.
- You can create combined workloads from detail files within multiple CICS regions without first combining the data. Although you can create combined workloads using a sequential data set, data from multiple executions is not combined and the CICS input data must be sorted into date/time sequence.
- The requirement to sort input data is removed. However, performance improves when input data is stored in sorted order.
- You can use BBSAMP member CMRDFSUM to allocate and initialize a VSAM data set.

CMRDETL Fields Altered by CMRSUMD

The CMRSUMD utility alters the values of some CMRDETL record fields during summarization. The following list describes the changes to these fields after they have been summarized:

Field Name	Contents of a Summarized Record
TYPE	Contains 6D, if any input record during the interval is a 6D abend record. See T6EABCD.

CMR$SYS	Assigned the value from the NEWAPPL control statement.
Field Name	**Contents of a Summarized Record**
CMRTIME	Contains the time at the end of the interval.
CMRCLOCK	Contains the name of the region or SGROUP (if multiple CICS regions are combined).
CMRRECID	Contains a value to make each record unique. This comprises a minute value of one byte followed by a sequential number assigned to each workload. This number is in packed format.
T6ETRTY	Contains an X indicating a summary record.
T6EUSER	Contains the name of the CICS region or SGROUP, if multiple CICS regions are combined. The alias, SUMMCICS, can be used by PRL reports to specify the data held in the T6EUSER field. **Note:** CMRCLOCK also sets T6EUSER to the name of the CICS region or SGROUP when multiple CICS regions are combined.
T6ETMID	Contains the number of minutes in the summarization interval. The alias, SUMMINTV, can be used by PRL reports to specify the data held in the T6ETMID field.
T6EPGNM	Contains the WORKLOAD= name. The alias, SUMMWKLD, can be used by PRL reports to specify the data held in the T6EPGNM field.
T6ESTIME	Contains the start time of the interval or the time from the start of data when it is the first interval for a given execution.
T6ETASK	Contains the number of transactions in the summary.
T6EABCD	Contains the number of transactions in the summary that were from type 6D records (abend).
T6EFCNT	Contains the number of files in the summary record, based on the options you specify.
T6EFNnnn	Contains the file type if you specify DETAIL=NO or the actual file name if you specify DETAIL=YES.
T6EFTnnn	Contains the average file time for all requests to the file in T6EFNnnn. **Note:** T6EFTnnn does not contain the average time of all transactions. It contains the average time of only those transactions that access the file.
T6EFCnnn	Contains the average file calls for all requests to the file in T6EFNnnn. **Note:** T6EFCnnn does not contain the average count for all transactions. It contains the average count for those transactions that accessed the file.

Binary, Time, and Character Fields

When you process CMRDETL records with the CMRSUMD utility, several data types of the resulting summary records vary from the original record as a result of summarization. Summary record fields that contain binary, time, or character data are processed during summarization in the following manner:

Data Type	Summary Records
Binary	Contains the average value for all tasks during the interval.
Time	Contains the average time of all tasks during the interval.
Character	Contains asterisks (*), unless all tasks in the interval are the same. When all tasks in the interval are the same, the original characters are used.

Combining Summarized Records

CMRSUMD can combine summarized records. When you process summarized records, you can combine records from multiple workloads to create a single, new workload. You can also combine summarized records together to create a longer interval than the original records. For example, you can combine data summarized in intervals of 10 minutes into hourly summary records.

Note: When you are processing summarized records, you must select records by time period; for example, if you are combining summarized 10-minute records into hourly records, you must specify

```
INCLTERM=10
```

After executing CMRSUMD, the T6ETMID field contains the number of minutes in the summarization interval. This prevents records that overlap the summarization interval from being combined and creating invalid data.

The INCLTERM control statement is explained on page 29.

Part 2. MAINVIEW for CICS Reports

This part describes miscellaneous MAINVIEW for CICS performance reports that you can produce using PERFORMANCE REPORTER.

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Chapter 4. Resource Tracking and Analysis Report

The MAINVIEW for CICS resource analysis program (CMRRAPR) creates the Resource Tracking and Analysis report. This report provides information about resource usage by CICS transactions and programs. A report may show summary, detail, or service data for either an individual transaction or program or a combination of transactions or programs.

You select the transactions or programs that appear in the Resource Tracking and Analysis report. You declare how transactions or programs are combined by specifying parameters with the CMRRAPM macro. After you have created the macro statements, they must be assembled and the resulting module cataloged in the load library. If you do not assign a name to the module, the default name CMRRAPM is used.

Note: If a name is assigned to the CMRRAPM table, you can use the TABLE control statement to associate that name to generate the report. Refer to "Report Control Statements" on page 47 for a description of the TABLE control statement.

The remaining sections of this chapter describe the macro assembly statements, JCL, and control statements used to produce a Resource Tracking and Analysis report.

Creating a Resource Tracking and Analysis Report

To create a Resource Tracking and Analysis report, submit the JCL to execute the BBSAMP (CMRRAPR) report program and any associated control statements as a batch job.

The sample job stream shown in Figure 19 produces the Resource Tracking and Analysis report, shown in Figure 21 on page 49.

```
//jobname JOB user parameters
/*JOBPARM user parameters
//JOBLIB   DD  DISP=SHR,DSN=CMR.CMRV5.BBLINK
//CMRRAPR EXEC PGM=CMRRAPR
//SYSOUT   DD  SYSOUT=*
//SYSPRINT DD  SYSOUT=*
//REPORT   DD  SYSOUT=*
//CMRDETL  DD  DISP=SHR,DSN=CMR.CMRV5.CMRDETL
//SORTWK01 DD  UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSIN DD *
(control statements)
```

Figure 19. Resource Tracking and Analysis Report—Input JCL

The required JCL to produce this report consists of the following statements:

JCL	Use
JOB	Initiates the job.
EXEC	Specifies the name of the program that generates the report (PGM=CMRRAPR).
//JOBLIB	Defines the program library containing the MAINVIEW for CICS load modules (BBLINK).
//CMRDETL	Defines the VSAM data set containing records for each CICS transaction (CMRDETL).
//REPORT	Defines the report output for the predefined reports.
//SORTWK*nn*	Identifies one to nine work data sets that can be defined for CMRRAPR data sorting. *nn* is a numeric value (01-09).
//SYSPRINT	Defines the output class for a sort utility. The name of the DD statement is determined at CICS system generation.
//TAPEIN	Defines the archive data set produced by CMRPURG, described in "Archiving Data (CMRPURG)" on page 11, as input to the report program.
//SYSOUT	Defines the output class.
//SYSIN	Defines PERFORMANCE REPORTER control statements as input to the batch program.

Sample CMRRAPM Macro Assembly Statements

Figure 20 shows an example of BBSAMP (CMRRAPM) macro assembly statements that are needed to create the Resource Tracking and Analysis report.

```
CMRRAPM TYPE=INITIAL
CMRRAPM TYPE=ENTRY,GROUP=xxxxxxxxxxxx,
    MEMBERS=(xxxxxxxx,...,xxxxxxxx), SERVICE=nnn
    (Additional TYPE=ENTRY statements, as needed)
CMRRAPM TYPE=FINAL
END
```

Figure 20. CMRRAPM Macro Assembly Statements

The following list describes each CMRRAPM macro assembly statement.

TYPE=INITIAL

Generates a group of MAINVIEW for CICS modules. This statment must be entered first and placed on a separate line by itself. Specify CMR=YES to create a group that includes all MAINVIEW for CICS transaction IDs (the default); otherwise, specify CMR=NO.

TYPE=ENTRY

Defines one group of transactions or programs and the response time to be compared with the specified service level. One TYPE=ENTRY statement must be specified for each group to be reported, where:

GROUP= Is any 1- to 12-character symbolic identifier for this group.

Note: MAINVIEW for CICS transactions are automatically assigned the group identifier, MAINVIEW for CICS.

MEMBERS= Is the list of transaction IDs or program names (PANL, MAPS, or PSBS, if they have been monitored with the transaction monitor) to be included in this group. A skip character is a plus sign (+), which can be used in IDs or names to indicate generic subgroups of transactions or programs to be included. There is no limit on the number of IDs or names specified. However, a given ID or name can exist in only one group.

SERVICE= Is a service level value to which the response time for each transaction or program is to be compared, expressed in tenths of seconds. The default is 10 (1.0 seconds).

TYPE=FINAL

Ends the generation parameters. It must be the last statement and must be placed on a line by itself.

Note: BBSAMP member CMRASM contains sample code to assemble and link-edit the CMRRAPM module. CMRRAPM must be linked non-reentrant.

Report Control Statements

All control statements are optional. If specified, each statement must begin in column 1.

FROM DATE= Starting date of the data to be included in the report, in mm/dd/yyyy format. If omitted, no data is rejected as too old.

Note: If you specify a date in the old format (mm/dd/yy), yy is interpreted as 19yy.

TO DATE= Ending date of the data to be included in the report, in mm/dd/yyyy format. If omitted, no data is rejected as too new.

Note: If you specify a date in the old format (mm/dd/yy), yy is interpreted as 19yy.

FROM TIME= Starting time of the data to be included in the report, in hh:mm:ss format. If omitted, no data is rejected as too early.

TO TIME= Ending time of the data to be included in the report, in hh:mm:ss format. If omitted, no data is rejected as too late.

SORTWK= Specifies the number of sort work areas to be used. Valid values are 1 to 8. If a value greater than 1 is specified, a corresponding number of DD or DLBL statements must appear in the JCL.

INPUT= Identifies the type of input data set to be used; can be specified as either:

- **VSAM** VSAM data set (the default)
- **TAPE** Sequential tape or disk file

TYPE= Identifies the type of report to be generated, which can be any one of the following:

- **SUMMARY** Reports three lines of transaction execution data for each transaction or program by calendar date. This is the default. A sample of this type of report is in Figure 21 on page 49.
- **DETAIL** Reports three lines of transaction execution data for each transaction or program.
- **SERVICE** Specifies DETAIL information, but only for transactions or programs that did not meet their service levels.

TABLE= Specifies the module name of the customized CMRRAPM table. The default is CMRRAPM.

Sample Report

An example of the Transaction Resource Tracking and Analysis report is shown in Figure 21. The report is created from the JCL shown in Figure 19 on page 45. A description of the report fields and columns follows Figure 21.

```
                    MAINVIEW for CICS TRANSACTION RESOURCE TRACKING AND ANALYSIS

RUN DATE: 09/24/1999    DATA DATE: 09/24/1999 TO 09/24/1999                                  CMRRAPR
RUN TIME: 17:17         DATA TIME: 08:30:00 TO 24:00:00                                    PAGE      1
RUN TYPE: SUMMARY

                                AVG.   AVG.   AVG.   AVG.  AVG.   CICS/ SERVICE
TASK/PGM        TOTAL NO.  AVG.    AVG.   CPU    TASK   I/O  NO. OF FC/DL1  RESP. LEVEL/   FCP    TSP    DL1    JCP    ECB
 ID.    DATE    OF TASKS  RESP.   CPU    REAL   WAIT   TIME   I/O  CALLS LOAD  PCT/CNT  WAIT   WAIT   WAIT   WAIT   WAIT
-------- -------- --------- ------- ------- ------- ------- ------- ------ ------ ------ ------- ------ ------ ------ ------ ------
DRGI    09241999        7 :01.226 :00.290 :00.009 :00.936 :00.000      0      0  18.0%     1.0   0.0%   0.0%   0.0%   0.0%
                                                          0  30.2%   42.8% :00.00 :00.00 :00.00 :00.00 :00.00
                                                                  3     0     0     0     0     0

DRGI    ******          7 :01.226 :00.290 :00.009 :00.936 :00.000      0      0  18.0%     1.0   0.0%   0.0%   0.0%   0.0%   0.0%
                                                          0  30.2%   42.8% :00.00 :00.00 :00.00 :00.00 :00.00
                                                                  3     0     0     0     0     0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
EMNU    09241999        3 :00.054 :00.005 :00.003 :00.049 :00.000      0      0   0.1%     1.0   0.0%   0.0%   0.0%   0.0%   0.0%
                                                          0   0.5%  100.0% :00.00 :00.00 :00.00 :00.00 :00.00
                                                                  3     0     0     0     0     0

EMNU    ******          3 :00.054 :00.005 :00.003 :00.049 :00.000      0      0   0.1%     1.0   0.0%   0.0%   0.0%   0.0%   0.0%
                                                          0   0.5%  100.0% :00.00 :00.00 :00.00 :00.00 :00.00
                                                                  3     0     0     0     0     0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
FINC    09241999       12 :00.502 :00.347 :00.005 :00.155 :00.000      0      0  37.0%     1.0   0.0%   0.0%   0.0%   0.0%   0.0%
                                                          0  21.2%   92.6% :00.00 :00.00 :00.00 :00.00 :00.00
                                                                 11     0     0     0     0     0

FINC    ******         12 :00.502 :00.347 :00.005 :00.155 :00.000      0      0  37.0%     1.0   0.0%   0.0%   0.0%   0.0%   0.0%
                                                          0  21.2%   92.6% :00.00 :00.00 :00.00 :00.00 :00.00
                                                                 11     0     0     0     0     0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
PROV    09241999       11 :00.173 :00.018 :00.004 :00.155 :00.169      0      0   1.7%     1.0  26.6%   0.0%   0.0%   0.0%   0.0%
                                                          0   6.7%   90.9% :00.04 :00.00 :00.00 :00.00 :00.00
                                                                 10     3     0     0     0     0

PROV    ******         11 :00.173 :00.018 :00.004 :00.155 :00.169      0      0   1.7%     1.0  26.6%   0.0%   0.0%   0.0%   0.0%
                                                          0   6.7%   90.9% :00.04 :00.00 :00.00 :00.00 :00.00
                                                                 16    12     0     0     0     0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
RELG    09241999        2 :00.094 :00.093 :00.003 :00.001 :00.000      0      0   1.6%     1.0   0.0%   0.0%   0.0%   0.0%   0.0%
                                                          0   0.6%  100.0% :00.00 :00.00 :00.00 :00.00 :00.00
                                                                  2     0     0     0     0     0

RELG    ******          2 :00.094 :00.093 :00.003 :00.001 :00.000      0      0   1.6%     1.0   0.0%   0.0%   0.0%   0.0%   0.0%
                                                          0   0.6%  100.0% :00.00 :00.00 :00.00 :00.00 :00.00
                                                                  2     0     0     0     0     0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
G:PAYROLL              35 :00.363 :00.144 :00.008 :00.219 :00.075      0      1  99.6%         4.7%   0.0%   0.0%   0.0%   0.0%
                                                          0  99.8%   89.7% :00.01 :00.00 :00.00 :00.00 :00.00
                                                                 70    18     0     0     0     0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
** SELECTED **          35 :00.363 :00.144 :00.008 :00.219 :00.075      0      1  99.6%         4.7%   0.0%   0.0%   0.0%   0.0%
                                                          0  99.8%   89.7% :00.01 :00.00 :00.00 :00.00 :00.00
                                                                 70    18     0     0     0     0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
G:UNSELECTED           27 :00.363 :00.144 :00.008 :00.219 :00.075      1      1  99.6%         4.7%   0.0%   0.0%   0.0%   0.0%
                                                          0  99.8%   89.7% :00.01 :00.00 :00.00 :00.00 :00.00
                                                                 70    18     0     0     0     0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
* UNSELECTED *         27 :00.363 :00.144 :00.008 :00.219 :00.075      0      1  99.6%         4.7%   0.0%   0.0%   0.0%   0.0%
                                                          0  99.8%   89.7% :00.01 :00.00 :00.00 :00.00 :00.00
                                                                 70    18     0     0     0     0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
GRAND TOTALS           62 :00.363 :00.144 :00.008 :00.219 :00.075      0      1  99.6%         4.7%   0.0%   0.0%   0.0%   0.0%
                                                          0  99.8%   89.7% :00.01 :00.00 :00.00 :00.00 :00.00
                                                                 70    18     0     0     0     0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
TRANSACTIONS PER SECOND:   0.00
```

Figure 21. Transaction Resource Tracking and Analysis Report

Report Structure and Conventions

The report shown in Figure 21 on page 49 is produced by the CMRRAPR program. The report run type, SUMMARY, is printed in the top left corner on line 3 below the date and time fields. A summary report shows a summary of transaction performance in chronological order. A subtotal by transaction ID is marked with asterisks (******) in the DATE column before the next transaction begins. Five transaction IDs are included in this report: DRGI, EMNU, FINC, PROV, and RELG.

A detail report shows performance data for every transaction. A service report is also a type of detail report, except it is limited to transactions or programs that did not meet their service levels. Otherwise, the format of both reports is the same as the summary report shown in Figure 21 on page 49.

G:PAYROLL is the name of the group formed by programs DRGI, EMNU, FINC, PROV, and RELG. Values in this row represent the sum of the subtotals reported for DRGI, EMNU, FINC, PROV, and RELG.

The areas marked ** SELECTED ** and * UNSELECTED * show totals for programs whose IDs were either matched (SELECTED) or not matched (UNSELECTED) against the CMRRAPM table. Both program IDs in this report were matched in the table:

- The SELECTED row shows values equal to the combined data for programs DRGI, EMNU, FINC, PROV, and RELG in the G:PAYROLL row.
- The UNSELECTED row shows totals for programs other than the selected programs.

The GRAND TOTALS area shows total counts and percentages for all reported programs. In this report, the GRAND TOTALS field shows the sum of all listed values (SELECTED and UNSELECTED).

The TRANSACTIONS PER SECOND field at the lower left of the report is the average rate calculated for all transactions that occurred during the period that data was collected for the report. This example represents 15.5 hours; thus, the transactions per second are 62 / (15.5 * 60 * 60), or 0.001.

Note: Any count that exceeds the width of its report field is expressed in millions, indicated by an M suffix.

A time that is longer than its report field is forced to a value of 999.999 on the report. The actual time is retained, however, and all values derived from it are maintained correctly.

Column headings in this report are standard; they are described in the following section.

Field Descriptions

TASK/PGM ID

Transaction ID or program name being reported. This field can contain any of the following entries:

- A 4-character transaction ID, unless the selection matches the program name.
- A 1- to 12-character identifier assigned to this group of transactions or programs. This ID is used when subtotals for a group are summarized.

- **SELECTED**, indicating a group of transaction or program IDs that were matched to the CMRRAPM table. This entry is used when a group break is processed.
- *UNSELECTED*, indicating a group of transactions or program IDs that were not matched to the CMRRAPM table. This entry is used when a group break is processed.
- GRAND TOTALS, showing a total for the entire report.

DATE

In a summary report, the Gregorian date of the reported data. The date format is mm/dd/yyyy.

In detail or service reports:

Line 1 shows the Gregorian date of the reported activity.
Line 2 shows the transaction ending time, in hh:mm:ss format.
Line 3 shows the operator identifier that invoked the task or program.

TOTAL NO. OF TASKS

Total number of tasks that reference this task/program.

AVG. RESP.

Average internal response time for this task/program, in seconds.

AVG. CPU

Average elapsed time in seconds that the task was dispatched during each use of this task/program.

AVG. CPU REAL

Average actual CPU time required to execute this task/program, in seconds.

AVG. TASK WAIT

Average wait time of this task/program, in seconds.

AVG. I/O TIME

Average amount of time required to complete an I/O operation, in seconds. (This is the I/O service time experienced by this task/program.)

AVG. NO. OF I/O

Average number of file, journal, temporary storage, and DL/I I/Os issued during the execution of this task/program.

AVG. FC/DLI CALLS

Line 1 shows the average number of file control calls issued during each execution of this task/program.

Line 2 shows the average number of DL/I calls issued during each execution of this task/program.

CICS/RESP. LOAD

Line 1 shows the percentage of CICS CPU used by this task/program.

Line 2 shows the percentage of the total CICS response time used by this task/program.

SERVICE LEVEL/PCT/CNT

Line 1 shows the service level of this task/program.

Line 2 shows the percentage of transactions whose response time met this service level time value.

Line 3 shows the number of transactions whose response time met this service level time value.

FCP WAIT

Line 1 shows the percentage of this task/program's response time that can be attributed to file control access requests.

Line 2 shows the average amount of time attributed to file control access requests, in seconds.

Line 3 shows the total number of file control access requests issued.

TSP WAIT

Line 1 shows the percentage of this task/program's response time attributed to temporary storage access requests.

Line 2 shows the average amount of time attributed to temporary storage access requests, in seconds.

Line 3 shows the total number of temporary storage access requests issued.

DLI WAIT

Line 1 shows the percentage of this task/program's response time attributed to DL/I access requests.

Line 2 shows the average amount of time attributed to DL/I access requests, in seconds.

Line 3 shows the total number of DL/I access requests issued.

JCP WAIT

Line 1 shows the percentage of this task/program's response time attributed to journal control access requests.

Line 2 shows the average amount of time attributed to journal control access requests, in seconds.

Line 3 shows the total number of journal control access requests issued.

ECB WAIT

Line 1 shows the percentage of this task/program's response time attributed to user event control block (ECB) wait requests.

Line 2 shows the average amount of time attributed to ECB wait requests, in seconds.

Line 3 shows the total number of ECB wait requests issued.

Chapter 5. Graphic Histogram Reports

The CMRCHRT member of your BBSAMP data set contains sample JCL and control statements to create histograms from data collected by MAINVIEW for CICS. These reports graphically represent selected CICS resources as horizontal histograms.

Over 260 data elements recorded by MAINVIEW for CICS can be combined to create tabular historical reports and histograms. Using control statements, you select the resources and the type of processing shown in your histograms.

Creating a Histogram Report

The CMRCHRT batch program creates a histogram report. Both the JCL and control statements to run the CMRCHRT program are described in the following sections.

The sample job shown in Figure 22 produces a histogram report for all versions of CICS.

```
//jobname JOB user parameters
/*JOBPARM user parameters
//CMRCHRT EXEC PGM=CMRCHRT
//JOBLIB   DD  DISP=SHR,DSN=CMR.CMRV5.BBLINK
//CMRDETL  DD  DISP=SHR,DSN=CMR.CMRV5.CMRDETL
//CMRSTAT  DD  DISP=SHR,DSN=CMR.CMRV5.CMRSTAT
//TAPEIN   DD  DISP=SHR,DSN=CMR.CMRV5.CMRSTAT
//REPORT   DD  SYSOUT=*
//SORTWK01 DD  UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSPRINT DD  SYSOUT=*
//SYSOUT   DD  SYSOUT=*
//SYSIN    DD   *
      (control statements)
```

Figure 22. Example JCL to Create Histogram Reports

The JCL to execute the CMRCHRT program consists of the following statements:

JOB	Initiates the job.
EXEC	Specifies the name of the program (PGM=CMRCHRT) that generates the report.
//JOBLIB	Defines the program library containing the MAINVIEW for CICS load modules (BBLINK).
//CMRDETL	Defines the VSAM data set containing T6E detail transaction records.
//CMRSTAT	Defines the VSAM data set or sequential file containing records of CICS operation statistics (CMRSTAT).
//TAPEIN	Defines the sequential disk or tape file containing records of CICS operation statistics (CMRSTAT).
//REPORT	Defines the report output for the predefined reports.

//SORTWK*nn*	Identifies one to nine work data sets that can be defined for CMRCHRT data sorting. Define *nn* as a numeric value from 01 to 09.
//SYSPRINT	Defines the output class for a sort utility. The name of the DD statement is determined at CICS system generation.
//SYSOUT	Defines the output class.
//SYSIN	Defines PERFORMANCE REPORTER control statements as input to the batch program.

CMRCHRT runs with the following restrictions:

- Data must be created from the SMF records selected using CMRSTATC options as follows:
  - GAPPLID or SAPPLID must be used to segregate SMF data by CICS regions into separate files. CMRCHRT cannot select by APPLID.
- Only three class types of CMRCHRT can be run:
  - CLASS=CICS
  - CLASS=APPLICATION
  - CLASS=SERVICE
- INPUT=TAPE and a TAPEIN DD statement pointing to the file are required.

Control Statements

Control statements identify the CICS resources and associated performance statistics that appear in histogram reports. A control statement set is a group of control statement keywords and parameters that specify one histogram report. A set can contain valid keywords in any sequence, but each keyword can be specified only once in each set.

A histogram control statement set is structured as follows:

Structure	Description
keyword=value	Optional; sets up date and time ranges, titles, graph scales, and so on for this report. Defaults are used if these keywords are not specified.
class	One required; specifies the CICS resource appearing in the histogram.
data=type	One required; specifies the type of data appearing in the histogram.
END	Required; ends this report request.

Control statements follow these rules:

- Each control statement must begin in column 1.
- If a control statement keyword appears more than once in a set, only its last specification is used.

- If a control statement keyword is not specified in a set, its default is used.
- Multiple control statement sets can be specified in a single execution of the CMRCHRT program to produce multiple histograms. However, separate jobs must be submitted to produce multiple histograms if report data is on tape (see "Archiving Data (CMRPURG)" on page 11).
- Comments can be added to control statements by leaving at least one blank after the statement and then starting the comment.
- Any statement with an asterisk (*) in column 1 is considered to be a comment and is ignored.

Keyword=value Statements

The following keywords specify the range of data, titles, calculation methods, and scales of each histogram report. If any keyword is omitted, the default is used.

TITLE=

Specifies the title of the report; up to 60 characters are allowed, including blanks. The default is 60 blanks.

FROM DATE= TO DATE=

Specifies the date range in mm/dd/yyyy format to select input data. If used, these keywords must be respecified in every control statement set. The defaults are FROM DATE=09/09/0000 and TO DATE=12/31/9999; data from all available dates appears in the histograms.

Note: If you specify a date in the old format (mm/dd/yy), yy is interpreted as 19yy.

FROM TIME= TO TIME=

Specifies the daily time range in hh:mm:ss format to select input data. If used, these keywords must be respecified in every control statement set. The defaults are FROM TIME=00:00:00 and TO TIME=24:00:00; data from all available times appears in the histograms.

MINUTES=

Length of time the requested file data is to be accumulated, in minutes. The accumulated data is used to create a line of report data. Any value from 1 through 99999 is valid; the default is 1 (minute).

The keywords MINUTES= and APPL=(ALL) are mutually exclusive. For more information about APPL=(ALL), see "Applications Class" on page 57.

BREAK={<u>DAILY</u>|HOURLY|MONTHLY}

Divides the date and time ranges into fixed report intervals.

The keywords BREAK= and APPL=(ALL) are mutually exclusive. For more information on APPL=(ALL), see "Applications Class" on page 57. Valid values for BREAK= are

DAILY	Each day's data starts on a new report page (the default).
HOURLY	Each hour's data starts on a new report page.
MONTHLY	Each month's data starts on a new report page.

CALC={PERCENT|AVERAGE|TOTAL}

Specifies the calculation method used to present the data. Valid values are

PERCENT Percentages are reported (the default).

AVERAGE Averages are reported.

TOTAL Total counts are reported.

Note: The CALC keyword is ignored if you specify DATA=PAGING.

SCALE={100|*nnnnn*|FLOAT}

Defines histogram scale values. Valid values are

nnnnn Specifies the highest scale value. Valid scalar numbers include

- From 1 to 99999 for counts.
- Up to 100 for percent.
- Up to 68700 for time; the default scale is 100.

Anything beyond the maximum range is truncated.

FLOAT Calculates the scale to accommodate the largest reported value.

COMPANY=*name*

Specifies the company name to be displayed at the top of the histogram. The default is BMC Software.

Once specified, this parameter remains in effect for the entire program execution or until another COMPANY keyword is encountered.

INPUT={VSAM|TAPE}

Identifies the organization of the input data set. Valid values are

VSAM VSAM data set (the default)

TAPE Sequential tape or disk file

Once specified, this parameter remains in effect either for the entire program execution or until another INPUT keyword is encountered.

Note: If INPUT=TAPE is specified, you must specify a TAPEIN DD statement in your JCL.

TABLE=*name*

Specifies the module name of the modified CMRRAPM table to be used by the Applications Class GROUP parameter. TABLE must be specified before the associated GROUP parameter. The default is CMRRAPM. For more information, see “Applications Class” on page 57.

Once specified, this parameter remains in effect either for the entire program execution or until another TABLE keyword is encountered.

ENDDATA={DATE|FILE}

Specifies whether end of data should correspond with the TO DATE (ENDDATA=DATE) or end of file (ENDDATA=FILE) keyword. The default is DATE.

Once specified, this parameter remains in effect for the entire execution of the program or until another ENDDATA keyword is encountered.

ENDDATA is required if input data is

- Selected from an archive tape that contains data merged from multiple CICS regions (see "Archiving Data (CMRPURG)" on page 11)
- Sorted by criteria other than date and time

CLASS and DATA Control Statements

One CLASS and one DATA statement are required for each histogram report. The CLASS control statement identifies the resource to be reported; the DATA statement identifies the data to be graphed for that class. Each CLASS statement has its own set of data types, and only one DATA type can be selected for each histogram report.

Applications Class

The Applications Class control statements identify a specific type of application or group of applications that appear in histogram reports. The format is as follows:

APPL={*name***|(ALL)}**

where

APPL= Is any of the following applications:

TRAN=	Transaction name
PROG=	Program name
TERM=	Terminal name
PANL=	DMS panel name
MAPS=	Storage map name
PSBS=	PSB name
GROUP=	A group of transactions or programs defined in the CMRRAPM table specified in the TABLE= parameter

name Specifies an application name.

(ALL) Requests all the members in the specified class.

If you specify ALL, it must be enclosed in parentheses.

The keywords MINUTES=, APPL=(ALL), and BREAK= are mutually exclusive. For further information on these keywords, refer to "Keyword=value Statements" on page 55.

One of the following DATA statements must follow the APPL statement, beginning in column 1:

DATA=RESPONSE	Response time
DATA=ALL-WAIT	Total transaction wait time
DATA=CPU	CPU time
DATA=FC-WAIT	File I/O wait time
DATA=FC-IOCNT	Number of file I/Os
DATA=TC-WAIT	Terminal wait time
DATA=TC-IOCNT	Number of terminal I/Os
DATA=JC-WAIT	Journal I/O wait time
DATA=JC-IOCNT	Number of journal I/Os

DATA=TS-WAIT	Temporary storage I/O wait time
DATA=TS-IOCNT	Number of temporary storage I/Os
DATA=ECB-WAIT	User event wait time
DATA=ECB-WCNT	Number of user event wait requests
DATA=SUSPENDT	Suspend wait time
DATA=SUSPENDC	Number of times suspended
DATA=FCPCALLS	Number of file control (FCP) calls or requests
DATA=DLICALLS	Number of DL/I calls
DATA=DL/IWAIT	DL/I I/O wait time
DATA=DL/IOCNT	Number of DL/I I/Os

Service Levels Class

The Service Level Class control statements report about service level performance. The format is

SERVICE

There are no DATA control statements used with the Service Level Class control statement.

CICS System Class

CICS system information is reported, using system data journaled by CICS. The format is

CICS

One of the following DATA control statements must follow the CICS statement, beginning in column 1:

DATA=CICSCPU	Total CICS CPU time and user CPU time
DATA=KCP-CPU	Task control CPU time
DATA=KCP-CPUR	Task control CPU real time
DATA=KCP-CPUC	Task control dispatch count
DATA=TCP-CPU	Terminal control CPU time
DATA=TCP-CPUR	Terminal control CPU real time
DATA=TCP-CPUC	Terminal control dispatch count
DATA=JCP-CPU	Journal control CPU time
DATA=JCP-CPUR	Journal control CPU real time
DATA=JCP-CPUC	Journal control dispatch count
DATA=USERCPU	User CPU time
DATA=USERCPUR	User CPU real time
DATA=USERCPUC	User dispatch count
DATA=PGIN	CICS page-in operations
DATA=PGOT	CICS page-out operations
DATA=PAGING	CICS page-in and page-out rate per second
DATA=TASKRATE	Transaction rate per second

Processing Program Table Class

The Processing Program Table reports about a specific PPT entry or all PPT entries. The format is

PPT={*xxxxxxxx***|(ALL)}**

where *xxxxxxxx* is a valid PPT entry name or (ALL), which reports on all the entries in the PPT.

One of the following DATA statements must follow the PPT statement, beginning in column 1:

DATA=USECNT	Number of times a program was used
DATA=FETCH	Number of times a program was fetched from the OS/MVS load library

Note: If the CALC= keyword is specified as CALC=PERCENT and DATA=FETCH is specified here, a FETCH-PERCENT report is produced.

Program Control Table (PCT) Class

The Program Control Table Class control statement reports about a specific PCT entry or all PCT entries. The format is

PCT={*xxxx***|(ALL)}**

where *xxxx* is a valid PCT entry name or (ALL), which reports on all the entries in the PCT.

One of the following DATA statements must follow the PCT statement, beginning in column 1:

DATA=USECNT	Transaction usage count
DATA=STGVIOL	Number of storage violations
DATA=ADDSTG	Number of additional storage requests

Note: If the CALC= keyword is specified as CALC=PERCENT and DATA=ADDSTG is specified here, the report shows the percentage of time additional storage was needed.

File Control Table Class

The File Control Table Class control statement reports about a specific FCT entry or all entries. The format is

FCT={*xxxxxxxx***|(ALL)}**

where *xxxxxxxx* is a valid FCT entry name. ALL reports on all the entries in the FCT.

One of the following DATA statements must follow the FCT statement, beginning in column 1:

DATA=READ	File READ requests
DATA=READNEXT	File READNEXT requests (BROWSE)
DATA=READ-UPD	File READ FOR UPDATE requests
DATA=UPDATE	File UPDATE requests

DATA=INSERT	File INSERT (add) requests
DATA=DELETE	File DELETE requests
DATA=DATAEXCP	Data component EXCP count
DATA=INDXEXCP	Index component EXCP count
DATA=CI-SPLIT	Count of control interval (CI) splits
DATA=CA-SPLIT	Count of control area (CA) splits

Note: The CALC=PERCENT statement uses file control requests as a divisor. For example, using DATA=DATAEXCP produces a histogram charting the percentage of physical I/O requests in relation to logical I/O requests.

Common System Area Class

The Common System Area Class control statement reports about CSA data. The format is

CSA

One of the following DATA statements must follow the CSA statement, beginning in column 1:

DATA=GETMAINS	Count of GETMAIN requests
DATA=FREEMAIN	Count of FREEMAIN requests
DATA=SOSCNT	Times CICS went short-on-storage (SOS)
DATA=DUMPS	Number of transaction dumps
DATA=ASRA	Number of program checks
DATA=STGWAIT	Number of times transactions waited for storage
DATA=MAXCNT	Number of times CICS maximum task condition was reached
DATA=STGVIOL	Number of storage violations
DATA=DTBLOGS	Number of dynamic transaction log records written
DATA=DTBSPILL	Number of DTB log records that spilled to temporary auxiliary storage (AUX)

Note: The CALC=PERCENT statement uses the total CICS transaction count as a divisor.

Transaction Class Table Class

The Transaction Class Table Class control statements report about a transaction class or all transaction classes. The format is

CSO={*xx***|(ALL)}**

where *xx* is any transaction class ID from 1 through 10 or (ALL), which reports on all transaction classes.

One of the following DATA statements must follow the CSO statement, beginning in column 1:

DATA=MAXCNT	Maximum setting for the class
DATA=HWMCNT	High-water mark reached

Destination Control Table Class

The Destination Control Table Class control statements report about one destination ID or all destination IDs. The format is

DCT={*xxxx***|(ALL)}**

where *xxxx* is any destination ID or (ALL), which reports on all destination IDs.

The only valid DATA statement allowed following the DCT statement is as follows

DATA=USECNT	Number of times the destination was used

Journal Control Table Class

The Journal Control Table Class control statement reports about one journal number or all journal numbers. The format is

JCT={*xx***|(ALL)}**

where *xx* is any journal number from 1 through 99 or (ALL), which reports on all journal numbers.

One of the following DATA statements must follow the JCT statement, beginning in column 1:

DATA=RECCNT	Number of records written
DATA=BLKCNT	Number of blocks written
DATA=FULLCNT	Number of times buffer was full
DATA=SHIFTCNT	Number of buffer shift-ups
DATA=AVEBUF	Average block size written
DATA=MAXBUF	Maximum block size allowed

Note: If the CALC= keyword is set to CALC=PERCENT and DATA=RECCNT is specified here, RECCNT is used as the divisor.

If CALC=PERCENT and AVEBUF or MAXBUF are specified here, MAXBUF is used as the divisor.

DL/I Class

DL/I Class control statements report about DL/I data. The format is

DLZ

One of the following DATA statements must follow the DLZ statement, beginning in column 1:

DATA=PSBCNT	Number of PSBs in the system
DATA=PSTCNT	Number of PSTs in the system
DATA=DBDCNT	Number of DBDs in the system
DATA=SUSPENDS	Number of suspended tasks
DATA=SCHEDULE	Number of scheduling requests
DATA=MAXCNT	Maximum task count
DATA=DEADLOCK	Number of deadlock occurrences

DATA=DUPPSBS Number of duplicate PSBs created

Note: These fields use total DL/I transaction count as a divisor when CALC=PERCENT is specified.

DATA=READS Number of READ requests
DATA=READBUF Number of READs satisfied by data in the buffer pools
DATA=EXCPIN Number of input EXCP commands
DATA=EXCPOUT Number of output EXCP commands
DATA=ALTERS Number of buffer alterations
DATA=IOERRORS Number of I/O errors

Note: These fields use total buffer requests as a divisor when CALC=PERCENT is specified.

DATA=GETUNIQ Number of GET UNIQUE type requests
DATA=GETNEXT Number of GET NEXT type requests

Note: These fields use total user DL/I calls as a divisor when CALC=PERCENT is specified.

Terminal Control Table Class

The Terminal Control Table Class control statement reports about one terminal or all terminals. The format is

TCT={*xxxx***|(ALL)}**

where *xxxx* is any terminal ID or (ALL), which reports on all terminal IDs.

One of the following DATA statements must follow the TCT statement, beginning in column 1:

DATA=INPUTS Number of times the terminal communicates with CICS
DATA=OUTPUTS Number of times CICS communicates with the terminal
DATA=TRANSCNT Number of transactions
DATA=TERMERRS Number of terminal failures, such as a PROG470 abend
DATA=OPERERRS Number of application program failures

Note: These fields use TRANSCCNT as a divisor when CALC=PERCENT is specified.

Temporary Storage Table Class

The Temporary Storage Table Class control statement specifies a histogram report that shows the usage of temporary storage data. The format is

TST

One of the following DATA statements must follow the TST statement, beginning in column 1:

DATA=PUTSS Number of PUT requests (MAIN or AUX)
DATA=PUTSQ Number of PUTQ requests (MAIN or AUX)
DATA=PUTSA Number of PUT or PUTQ requests (AUX)
DATA=IOERROR Number of I/O errors
DATA=EXTENDS Number of TSGID extensions
DATA=SUSPENDS Number of suspensions

DATA=COMPRESS	Number of compressions
DATA=AVAILCI	Number of available control intervals
DATA=TOTALCI	Total control intervals in data set
DATA=VIRTHWM	Virtual storage use high-water mark

Note: All of these fields except AVAILCI use the total temporary storage requests as a divisor when CALC=PERCENT is specified; AVAILCI uses TOTALCI as the divisor.

END Statement

The END statement completes a control statement set for a requested histogram report. Control statements for another histogram report can follow an END statement.

An END statement is required for every requested histogram report specified with a control statement set.

Sample Reports

Table 1 lists some sample histogram reports that can be produced with the CMRCHRT program. These reports offer a broad overview of CICS performance and are recommended for tuning purposes. The remainder of this section contains descriptions and illustrations of the sample reports.

Table 1. Sample Histogram Reports

Sample Report Title	Sample Control Statements	Section Reference
Response Time for All Transactions	TRAN=(ALL) DATA=RESPONSE CALC=AVERAGE SCALE=10 END	“Response Time for All Transactions” on page 65
CPU Used by CICS Execution	CICS INPUT=TAPE DATA=CICSCPU CALC=PERCENT MINUTES=60 FROM TIME=08:30:00 TO TIME=17:00:00 END	“CPU Used by CICS Execution” on page 66
CICS Paging Rate/Second	CICS INPUT=TAPE DATA=PAGING MINUTES=60 FROM DATE=3/24/2000 TO DATE=3/24/2000 SCALE=10 END	“CICS Paging Rate/Second” on page 67
CICS Transaction Rate/Second	CICS INPUT=TAPE DATA=TASKRATE CALC=AVERAGE MINUTES=60 SCALE=10 END	“CICS Transaction Rate/Second” on page 68

Response Time for All Transactions

This report shows histograms representing the average response time over the selected interval for all transactions.

Data

By default, all records stored on the CMRDETL data set are used as input to produce histogram reports.

These control statements are specified:

Statement	Description
TRAN=(ALL)	Reports on all transactions.
DATA=RESPONSE	Reports transaction response times.
CALC=AVERAGE	Calculates averages.
SCALE=10	Sets the histogram scale to 10 seconds.
END	Ends the report request.

The report produced by these control statements is shown in Figure 23.

```
                    MAINVIEW for CICS LICENSED PROPERTY OF BMC SOFTWARE
CMRCHRT                    RESPONSE TIME FOR (ALL) TRANSACTIONS                PAGE NUMBER          1
FROM DATE: 08/01/1999 TO: 08/31/1999   MINUTES.:  N/A              CALCULATION TYPE.: AVERAGE    RUN DATE.....: 09/25/1999
FROM TIME:   00:00:00 TO:   24:00:00   BREAK...:  N/A              AVERAGE VALUE....: 7599.57    RUN TIME.....:   17:39:03
                0.00     1.00     2.00     3.00     4.00     5.00     6.00     7.00     8.00     9.00    10.00
==NAME==        ====TIME=== |---------+---------+---------+---------+---------+---------+---------+---------+---------+
CCMF             0.40 |****    +       +       +       +       +       +       +       +       +       +
FCD2             5.15 |*************************************************      +       +       +       +       +
CATD           654.82 |*****************************************************************************************************
JNL2             0.00 |       +       +       +       +       +       +       +       +       +       +
CRSQ             0.69 |******   +       +       +       +       +       +       +       +       +       +
CXRE             0.63 |******   +       +       +       +       +       +       +       +       +       +
CSFU             2.26 |**********************     +       +       +       +       +       +       +       +
CSGM            29.14 |*****************************************************************************************************
CEDA             0.00 |       +       +       +       +       +       +       +       +       +       +
D8CS             4.46 |*******************************************   +       +       +       +       +       +
SMN2             0.46 |****    +       +       +       +       +       +       +       +       +       +
CSAC             0.00 |       +       +       +       +       +       +       +       +       +       +
CSSF             0.00 |       +       +       +       +       +       +       +       +       +       +
CSPG             0.14 |*       +       +       +       +       +       +       +       +       +       +
CSSN             0.58 |*****   +       +       +       +       +       +       +       +       +       +
CEMT            69.49 |*****************************************************************************************************
CEOT             0.30 |***     +       +       +       +       +       +       +       +       +       +
CSTA             0.00 |       +       +       +       +       +       +       +       +       +       +
DISP             2.54 |************************   +       +       +       +       +       +       +       +
DLZZ             0.00 |       +       +       +       +       +       +       +       +       +       +
DB2              0.00 |       +       +       +       +       +       +       +       +       +       +
TSM4            72.64 |*****************************************************************************************************
TSM5           160.56 |*****************************************************************************************************
TSM2             0.00 |       +       +       +       +       +       +       +       +       +       +
TSM8             0.00 |       +       +       +       +       +       +       +       +       +       +
CECI             0.41 |****    +       +       +       +       +       +       +       +       +       +
HST2             0.00 |       +       +       +       +       +       +       +       +       +       +
CSKP             1.35 |*************     +       +       +       +       +       +       +       +       +
FST2             1.27 |************     +       +       +       +       +       +       +       +       +
CECS             0.07 |       +       +       +       +       +       +       +       +       +       +
JPH1            10.79 |*****************************************************************************************************
CQRY             0.47 |****    +       +       +       +       +       +       +       +       +       +
STAR           308.43 |*****************************************************************************************************
CSTT             1.82 |****************** +       +       +       +       +       +       +       +       +
CSST             0.00 |       +       +       +       +       +       +       +       +       +       +
==NAME==        ====TIME=== |---------+---------+---------+---------+---------+---------+---------+---------+---------+
                0.00     1.00     2.00     3.00     4.00     5.00     6.00     7.00     8.00     9.00    10.00
```

Figure 23. Response Time for All Transactions

CPU Used by CICS Execution

This report shows histograms representing the hourly average percent CPU usage by CICS.

Data

By default, all records on the CMRSTAT data set are used to produce histogram reports. In this example, the histogram is limited to data collected during work hours 8:30 am to 4:30 pm.

These control statements are specified:

Statement	Description
CICS	Reports on CICS system data.
INPUT=TAPE	Using sequential CMRSTAT data set.
DATA=CICSCPU	Reports CICS and user CPU time usage.
MINUTES=60	Accumulates data for 60-minute periods.
FROM TIME=08:30:00	Uses data starting at 8:30 am.
TO TIME=17:30:00	Uses data ending at 5:30 pm.
END	Ends the report request.

The report produced by these statements is shown in Figure 24.

```
:litdata.
                    MAINVIEW FOR CICS LICENSED PROPERTY OF BMC SOFTWARE
CMRCHRT                          CPU USED BY CICS EXECUTION                    PAGE NUMBER          1
FROM DATE: 09/17/1999 TO: 09/17/1999    MINUTES.: 00060              CALCULATION TYPE.: PERCENT    RUN DATE.....: 09/28/1999
FROM TIME:   08:30:00 TO:   17:30:00    BREAK...: DAILY              AVERAGE VALUE....:   1.99   RUN TIME.....:   18:09:04
                0.00    10.00    20.00    30.00    40.00    50.00    60.00    70.00    80.00    90.00   100.00
MM/DD/YYYY HH:MM  ==PERCENT==|---------+---------+---------+---------+---------+---------+---------+---------+---------+
09/17/1999 08:34       2.04 |**      +       +       +       +       +       +       +       +       +       +
09/17/1999 09:34       2.77 |U*      +       +       +       +       +       +       +       +       +       +
09/17/1999 10:34       5.22 |UUU**   +       +       +       +       +       +       +       +       +       +
09/17/1999 11:34       7.97 |UUUUUKT +       +       +       +       +       +       +       +       +       +
09/17/1999 12:24       3.04 |U**     +       +       +       +       +       +       +       +       +       +
09/17/1999 13:24       2.41 |U*      +       +       +       +       +       +       +       +       +       +
09/17/1999 14:24       2.00 |**      +       +       +       +       +       +       +       +       +       +
09/17/1999 15:35      44.06 |UUUUU
```

CICS Paging Rate/Second

This report shows histograms representing the paging activity caused by CICS execution.

Data

One day's worth of input is used from the CMRSTAT data set.

These control statements are specified:

Statement	Description
CICS	Reports on CICS system data.
INPUT=TAPE	Using sequential CMRSTAT data set.
DATA=PAGING	Uses CICS paging data.
MINUTES=60	Accumulates data for 60-minute periods.
FROM DATE=09/17/1999	Selects data starting on September 17, 1999.
TO DATE=09/17/1999	Does not select data after September 17, 1999.
SCALE=10	Sets the histogram scale to 10 seconds.
END	Ends the report request.

The report produced by these statements is shown in Figure 25

```
:litdata.
                    MAINVIEW FOR CICS LICENSED PROPERTY OF BMC SOFTWARE
CMRCHRT                          CICS PAGING RATE/SEC. (PAGE-IN + PAGE-OUT)                PAGE NUMBER          1
FROM DATE: 09/27/1999 TO: 09/27/1999   MINUTES.: 00060                CALCULATION TYPE.: RATE      RUN DATE.....: 09/17/1999
FROM TIME:   00:00:00 TO:   24:00:00   BREAK...: DAILY                AVERAGE VALUE....:   0.00   RUN TIME.....:   18:53:18
                     0.00     1.00     2.00     3.00     4.00     5.00     6.00     7.00     8.00     9.00    10.00
MM/DD/YYYY HH:MM   =RATE/SEC.= |---------+---------+---------+---------+---------+---------+---------+---------+---------+---------+
09/17/1999 07:39          0.00 |        +        +        +        +        +        +        +        +        +        +
09/17/1999 08:39          0.00 |        +        +        +        +        +        +        +        +        +        +
09/17/1999 09:39          0.02 |I*      +        +        +        +        +        +        +        +        +        +
09/17/1999 10:39          0.09 |IIIIIIOOO+        +        +        +        +        +        +        +        +        +
09/17/1999 12:04          0.30 |IIIIIIIIIIIIIIIIOOOOOOOOOOO*        +        +        +        +        +        +        +
09/17/1999 13:04          0.16 |IIIIIIIIIOOOOO*   +        +        +        +        +        +        +        +        +
09/17/1999 14:05          0.32 |IIIIIIIIIIIIIIIIIOOOOOOOOOOOO        +        +        +        +        +        +        +
09/17/1999 15:05          0.05 |IIIOO    +        +        +        +        +        +        +        +        +        +
09/17/1999 16:05          0.11 |IIIIIIOOOOO        +        +        +        +        +        +        +        +        +
09/17/1999 17:05          0.00 |        +        +        +        +        +        +        +        +        +        +
09/17/1999 18:05          0.00 |        +        +        +        +        +        +        +        +        +        +
MM/DD/YYYY HH:MM   =RATE/SEC.= |---------+---------+---------+---------+---------+---------+---------+---------+---------+---------+
                     0.00     1.00     2.00     3.00     4.00     5.00     6.00     7.00     8.00     9.00    10.00
 LEGEND:  I = CICS-PAGE-IN  O = CICS-PAGE-OUT  * = CICS-PAGE-IN + CICS-PAGE-OUT
:elitdata.
```

Figure 25. CICS Paging Rate/Second (Page-in + Page-out)

An asterisk (*) represents the combined total when it exceeds the graphed total due to truncation of stacked values.

CICS Transaction Rate/Second

This report shows histograms representing the average transaction rate per second over the selected interval.

Data

By default, all records on the CMRSTAT data set are used as input to produce histogram reports.

These control statements are specified:

Statement	Description
CICS	Reports on CICS system data.
INPUT=TAPE	Using sequential CMRSTAT data set.
DATA=TASKRATE	Reports transaction rate per second.
CALC=AVERAGE	Calculates averages.
MINUTES=60	Accumulates data for 60-minute periods.
SCALE=10	Sets the histogram scale to 10 seconds.
END	Ends the report request.

The report produced by these control statements is shown in Figure 26.

```
:litdata.
                    MAINVIEW FOR CICS LICENSED PROPERTY OF BMC SOFTWARE
 CMRCHRT                          CICS TRANSACTION RATE/SECOND                    PAGE NUMBER          1
 FROM DATE: 08/01/1999 TO: 08/31/1999   MINUTES.: 00060                CALCULATION TYPE.: RATE      RUN DATE.....: 09/03/1999
 FROM TIME:   00:00:00 TO:   24:00:00   BREAK...: DAILY                AVERAGE VALUE....:    0.02    RUN TIME.....:   07:13:49

                     0.00     1.00     2.00     3.00     4.00     5.00     6.00     7.00     8.00     9.00    10.00
 MM/DD/YYYY HH:MM   =RATE/SEC.= |---------+---------+---------+---------+---------+---------+---------+---------+---------+
 08/25/1999 09:28          0.3 |TTT     +       +       +       +       +       +       +       +       +       +
 08/25/1999 10:28          0.2 |TT      +       +       +       +       +       +       +       +       +       +
 08/25/1999 11:28          0.2 |TT      +       +       +       +       +       +       +       +       +       +
 08/25/1999 12:28          0.5 |TTTTT   +       +       +       +       +       +       +       +       +       +
 08/25/1999 13:28          0.3 |TTT     +       +       +       +       +       +       +       +       +       +
 08/25/1999 14:28          0.2 |TT      +       +       +       +       +       +       +       +       +       +
 08/25/1999 15:28          0.2 |TT      +       +       +       +       +       +       +       +       +       +
 08/25/1999 16:28          0.4 |TTTT    +       +       +       +       +       +       +       +       +       +
 08/25/1999 17:28          0.2 |TT      +       +       +       +       +       +       +       +       +       +
 MM/DD/YYYY HH:MM   =RATE/SEC.= |---------+---------+---------+---------+---------+---------+---------+---------+---------+
                     0.00     1.00     2.00     3.00     4.00     5.00     6.00     7.00     8.00     9.00    10.00

  LEGEND:  T = TERMINAL-ATTACHED-TRANSACTION-RATE     * = TOTAL-TRANSACTION-RATE
:elitdata.
```

Figure 26. CICS Transaction Rate/Second

Chapter 6. Service Level Analysis Report

The Service Level Analysis report shows the distribution of transaction response times over a range of service levels (specified by the SERVICE statement in the CMRSOPT table). This report can be used to monitor the hourly distribution of transactions response times. JCL and a sample Service Level Analysis report are described in the following sections.

Creating a Service Level Analysis Report

Figure 27 shows the JCL to execute the CMRLTXR program as a batch job and create the Service Level Analysis report. The JCL statements are described following Figure 27.

```
//jobname JOB user parameters
/*JOBPARM user parameters
//CMRLTXR EXEC PGM=CMRLTXR
//JOBLIB   DD  DISP=SHR,DSN=CMR.CMRV5.BBLINK
//CMRSTAT  DD  DISP=SHR,DSN=CMR.CMRV5.CMRSTAT
//REPORT   DD  SYSOUT=*
//SORTWK01 DD  UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSPRINT DD  SYSOUT=*
//SYSOUT   DD  SYSOUT=*
//SYSIN    DD  *
```

Figure 27. Service Level Analysis Report—Input JCL

JOB	Initiates the job.
EXEC	Specifies the name of the program (PGM=CMRLTXR) that generates the Service Level Analysis report.
//JOBLIB	Defines the program library containing the MAINVIEW for CICS load modules (BBLINK).
//CMRSTAT	Defines the VSAM or sequential data set containing records of CICS operational statistics (CMRSTAT).
//REPORT	Defines the report output for the predefined reports.
//SORTWK*nn*	Identifies one to nine work data sets that can be defined for data sorting. Define *nn* as a numeric value from 01 to 09.
//SYSPRINT	Defines the output class for a sort utility. The name of the DD statement is determined at CICS system generation.
//SYSOUT	Defines the output class.
//SYSIN	Defines optional control statements.

Control Statements

Control statements identify the CICS regions and date of the input records that create the Service Level Analysis report. Valid control statements are

TARGET=*cics_region*
Name of the CICS region whose input records are used to create the report.

DATE=*mm/dd/yyyy*
Date the records that are used in the report were created.

You can specify the starting date using a relative format that is an offset from the current date. For example, to start the selected records with yesterday's date, specify

DATE=*-1

Note: If you specify a date in the old format (mm/dd/yy), yy is interpreted as 19yy.

Sample Report

Figure 28 shows an example of the Service Level Analysis report. Transactions are shown in hourly intervals by counts and percentage for each service level range.

```
                                MAINVIEW for CICS SERVICE LEVEL ANALYSIS
RUN DATE: 09/17/1999                                                                    PAGE:     1
RUN TIME:   18:53:39                                                                  CMRLTXR
                 0.0  0.5  1.0  1.5  2.0  2.5  3.0  4.0  5.0  6.0  7.0  8.0  9.0 10.0 20.0 30.0 60.0 90.0
 INTVL  INTVL  TOTAL  THRU  THRU  THRU  THRU  THRU  THRU  THRU  THRU  THRU  THRU  THRU  THRU  THRU  THRU  THRU  THRU  THRU  AND
 DATE   TIME   TRANS. 0.5   1.0   1.5   2.0   2.5   3.0   4.0   5.0   6.0   7.0   8.0   9.0  10.0  20.0  30.0  60.0  90.0  OVER
-------- ----- -------- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- ----- -----
09171999 16:01    1807
SERVICE COUNTS :      1547  214   28    9    6    2    0    0    1    0    0    0    0    0    0    0    0    0
CUMULATIVE CNTS:      1547 1761 1789 1798 1804 1806 1806 1806 1807 1807 1807 1807 1807 1807 1807 1807 1807 1807
SERVICE PERCENT:      85.6 11.8  1.5  0.5  0.3  0.0  0.0  0.0  0.1  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
CUMULATIVE PCTS:      85.6 97.4 98.9 99.4 99.7 99.8 99.8 99.8 99.9 99.9 99.9 99.9 99.9 99.9 99.9 99.9 99.9 99.9
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
09171999 17:01      29
SERVICE COUNTS :        24    3    0    0    0    2    0    0    0    0    0    0    0    0    0    0    0    0
CUMULATIVE CNTS:        24   27   27   27   27   29   29   29   29   29   29   29   29   29   29   29   29   29
SERVICE PERCENT:      82.8 10.3  0.0  0.0  0.0  6.9  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
CUMULATIVE PCTS:      82.8 93.1 93.1 93.1 93.1 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
09171999 18:01       3
SERVICE COUNTS :         0    0    0    0    0    0    0    1    0    1    0    0    0    0    0    0    1    0
CUMULATIVE CNTS:         0    0    0    0    0    0    0    1    1    2    2    2    2    2    2    2    3    3
SERVICE PERCENT:       0.0  0.0  0.0  0.0  0.0  0.0  0.0 33.3  0.0 33.3  0.0  0.0  0.0  0.0  0.0  0.0 33.3  0.0
CUMULATIVE PCTS:       0.0  0.0  0.0  0.0  0.0  0.0  0.0 33.3 33.3 66.6 66.6 66.6 66.6 66.6 66.6 66.6 99.9 99.9
```

Figure 28. Service Level Analysis Report

Field Descriptions

The following list describes the fields of the Service Level Analysis report shown in Figure 28 on page 70.

INTVL DATE
Gregorian date of the data in mm/dd/yyyy format

INTVL TIME
Time stamp of the data in hh:mm format

TOTAL TRANS.
Total number of terminal attached transactions executed during this time interval

0.0 THROUGH 0.5 – 90.0 AND OVER
Service level ranges in seconds; you can adjust service level ranges (see the description of the CMRSOPT macro in the *MAINVIEW for CICS Customization Guide* for additional information)

SERVICE COUNTS
Number of transactions completed within the service level specified in the column heading

CUMULATIVE CNTS
Cumulative number of transactions completed within the service level specified in the column heading

SERVICE PERCENT
Percentage of all transactions completed within the service level specified in the column heading

CUMULATIVE PCTS
Cumulative percentage of transactions completed within the service level specified in the column heading

Part 3. COBOL and SAS Reports

This part describes how to use PERFORMANCE REPORTER and MAINVIEW for CICS detail transaction records to create COBOL and SAS reports.

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Chapter 7. COBOL Reports

The PERFORMANCE REPORTER's CMRFRED facility allows COBOL programs to access transaction records stored on the CMRDETL data set. CMRFRED reads CMRDETL transaction records and reformats the fields into a COBOL-compatible format. The reformatted records are then passed back to the COBOL program that originally requested the data. You can produce either standard or custom COBOL reports from the reformatted transaction data.

In addition to the CMRFRED facility, the MAINVIEW for CICS BBSAMP data set contains sample COBOL interface programs. These programs create a variety of predefined MAINVIEW for CICS reports after they have been edited to meet your site's conditions.

These programs must be compiled and linked before they can be run. You should be able to modify these sample programs if you have some COBOL programming experience.

This chapter

- Describes how CMRDETL transaction records are accessed and reformatted
- Provides JCL examples that explain how to compile, link, and run sample COBOL programs
- Explains how to modify sample programs to create customized COBOL reports
- Describes the controls statements used to create COBOL reports.
- Provides an example of each predefined report and a description of its fields.

Note: All COBOL report programs must be re-compiled and re-link edited using the current version of the MAINVIEW for CICS libraries. This step ensures that the copy books for the current Type 6E record format are incorporated into the programs.

Accessing Detail Transaction Records

All data fields in detail transaction records are accessible to COBOL programs. CMRDETL record fields are described in Appendix B, "CMRDETL: Transaction Detail Records" on page 173.

The following COBOL subprograms access CMRDETL records:

Program	Description
CMRFRED	Converts CMRDETL record fields to a recognizable COBOL format. CMRFRED calls the CMRCMPR program to decompress the records that are compressed in the CMRDETL data set.
CMRCOBCP	The communication with CMRFRED is defined in COPYBOOK CMRCOBCP, which describes the format of a CMRDETL record.

The following sections describe these COBOL subprograms.

CMRFRED Subprogram

The CMRFRED subprogram

- Reads CMRDETL records from a VSAM or sequential data set. The maximum input record block size is 32K. The input data set can contain any record types produced by MAINVIEW for CICS, but only CMRDETL records are passed to the calling COBOL program.
- Reformats CMRDETL record fields into a COBOL-compatible form.

When reading records from the CMRDETL data set, CMRFRED

- Calls CMRCMPR to decompress a CMRDETL record
- Converts record fields to a COBOL-compatible format
- Passes a return code back to the calling COBOL program

Parameters

Two parameters are passed from a COBOL program to the CMRFRED subprogram:

- The first parameter defines the function to be performed.
- The second parameter defines the CMRDETL record to be passed back to the calling program.

CMRFRED FT Messages

The CMRFRED subprogram generates FT messages. You can display descriptions of the messages by using the General Service, MESSAGES service, or by browsing the MAINVIEW for CICS BBMLIB data set.

CMRFRED generates any of the following FT messages:

Message	Description
FT256	Cancels the job if a VSAM open, close, or read operation receives a non-zero return code.
FT257	Cancels the job when • The COBOL function passed to CMRFRED is invalid • A read or close operation is requested and the file is closed • The function is open and the file is open
FT258	Cancels the job because of an end-of-file error.
FT260	Cancels the job if program CMRFRED cannot load program CMRCMPR.
FT261	Cancels the job if program CMRCMPR passes a non-zero return code to CMRFRED.

CMRCOBCP (COBOL Copybook) Subprogram

The COBOL copybook contains the formats of the records held in the CMRDETL data set. CMRFRED passes the CMRDETL records to the calling COBOL program. The COBOL copybook is in member CMRCOBCP of the BBSAMP data set.

CMRCOBCP defines three COBOL 01 data structures:

- CMR-CONTROL
- CMRDETL
- COPYRIGHT

The purpose of these data structures is explained in the following sections.

CMR-CONTROL

The CMR-CONTROL data structure passes control fields between CMRFRED and the executing COBOL program.

CMR-CONTROL contains the following fields:

Field	Description
Status	Defined with a COBOL 88-level name to indicate end of file.
Function	Defines the operation to be performed in CMRFRED.

CMRDETL

CMRDETL contains the COBOL-compatible definitions of the record fields. The COBOL versions of CMRDETL records use the same field names described in Appendix B, “CMRDETL: Transaction Detail Records” on page 173.

Note: Because of COBOL’s processing requirements, the definitions of the data types associated with the record fields vary from the descriptions given in Appendix B, “CMRDETL: Transaction Detail Records”.

COBOL CMRDETL field formats are as follows:

Field	Format
Numeric	Packed decimal
Time	Seconds
TYPE	Two bytes: 6D or 6E
T6EQUAL	Two bytes, packed decimal

COPYRIGHT

The COPYRIGHT data structure contains a copyright statement. The copyright also appears in the compiled COBOL object program.

Customizing Sample COBOL Reports

You can fulfill virtually any need your site has for specialized reports using the COBOL interface. The sample COBOL programs use batch processing to create CICS performance reports.

You can use the sample programs to

- Generate the sample reports using your data
- Develop your own COBOL programs

Once you understand how these sample COBOL programs create reports, you can write your own programs to create CICS performance reports from CMRDETL records.

Note: Use of these sample programs requires an understanding of COBOL programming.

The following sections explain how to modify a sample COBOL program, including

- Copying and modifying the sample program
- Compiling and linking the program
- Executing the program

Copying and Modifying the Program

To modify a sample COBOL program:

1. Copy the sample program. (Sample COBOL programs are listed in Table 2 on page 80.)
2. Copy the standard compile and link JCL from your library. If you do not have standard compile and link JCL, member CMRCOBJ1 in your BBSAMP data set contains samples of compile and link JCL that can be used with the sample COBOL programs.
3. Modify the compile and link JCL according to your site standards.

Compiling and Linking the Program

To compile and link the program you modified:

1. Submit the JCL to compile and link the sample program.
2. Verify successful compilation and linking.
3. If you have any JCL errors, make the corrections and resubmit the job.

Note: Be sure to compile and link the program using the current version of the MAINVIEW for CICS libraries. This step ensures that the copy books for the current Type 6E record format are incorporated into the programs.

Running the Program

To run the program:

1. Copy the sample JCL from member CMRCOBJ2. (The JCL is explained in "CMRCOBJ2—Sample Execution JCL" on page 81.)
2. Modify the JCL according to your site standards.
3. Enter the control statements you need to limit the input to the program (on the CARDIN DD statement), using your site standards.
4. Submit the job to run the sample program.
5. Verify successful completion.
6. If you have any JCL errors, make the corrections and resubmit the job.

Note: Be sure to run the program using the current version of the MAINVIEW for CICS libraries.

Sample Programs

There are two types of sample COBOL programs: transaction and file analysis.

The transaction programs create reports that list performance statistics by the transactions recorded in a CICS region:

- Performance Analysis reports contain CICS performance statistics that are summarized with control breaks by

  Transaction ID
  Program name
  Terminal ID
  Node name
  User ID

- Rogues Report lists transactions with the longest response times.
- Abended Transaction Report lists all transactions that abended in a CICS region.

The file analysis program has control breaks based on the file name field of transaction records. This program creates the File Analysis for All Files report, which lists wait time for CICS files by CICS region.

Table 2 on page 80 identifies the sample COBOL programs and their associated reports. The table also includes a reference to a section in this book that shows an example of the COBOL report.

Table 2. Sample COBOL Programs

Sample Report	Sample Library Member/Program Name	Description	Reference
Performance Analysis for All Transactions	CMRCOB11	Produces a report that evaluates task performance by transaction ID.	“Performance Analysis for All Transactions Report (CMRCOB11)” on page 84
Performance Analysis for All Programs	CMRCOB12	Produces a report with control breaks based on the T6EPGNM field. It is useful for evaluating task performance when a Fourth Generation Language (4GL) is used.	“Performance Analysis by Program Report (CMRCOB12)” on page 85
Performance Analysis by Terminal	CMRCOB13	Produces a report that evaluates task performance by terminal ID.	“Performance Analysis by Terminal Report (CMRCOB13)” on page 86
Performance Analysis by Netname	CMRCOB14	Produces a report that evaluates task performance by VTAM symbolic node name.	“Performance Analysis by Netname Report (CMRCOB14)” on page 87
Performance Analysis for All Users	CMRCOB15	Produces a report that evaluates task performance by user ID.	“Performance Analysis for All Users Report (CMRCOB15)” on page 88
File Analysis for All Files	CMRCOB21	Produces a report that evaluates file performance by file name.	“File Analysis for All Files Report (CMRCOB21)” on page 89
Rogues Report	CMRCOB23	Produces a report that lists the 100 tasks that have the longest response times.	“Rogues Report (CMRCOB23)” on page 90
Abended Transaction Report	CMRCOB25	Produces a report that lists all transactions that suffered an abend.	“Abended Transaction Report (CMRCOB25)” on page 91

CMRCOBJ2—Sample Execution JCL

The JCL shown in Figure 29 is in member CMRCOBJ2 of your BBSAMP data set. CMRCOBJ2 runs the sample COBOL programs described in Table 2 on page 80. You must include the program name with the EXEC statement to run a specific sample report program or to run your own COBOL report program.

```
//*
//*  CMRCOBJ2
//*
//*  THIS IS SAMPLE EXECUTION JCL.
//*  THIS JCL MUST BE MODIFIED BEFORE USE.
//*  THE LOAD LIBRARY MUST BE DEFINED IN THE STEPLIB DD STATEMENT.
//*  THE CMRDETL FILE MUST BE DEFINED.
//*  THE CMRDETL FILE MAY BE A VSAM OR SEQUENTIAL DATA SET.
//*  THE CMRDETL FILE HAS A MAXIMUM BLOCK SIZE OF 32K.
//*
//* EXEC
//CMRCOB00 EXEC PGM=CMRCOB00,REGION=3096K
//STEPLIB  DD  DSN=SYS1.VSCOBII.SYS.COB2LIB,DISP=SHR
//        DD  DSN=.....BBLINK,DISP=SHR
//SORTWK01 DD  UNIT=SYSDA,SPACE=(CYL,(5,5))
//SORTWK02 DD  UNIT=SYSDA,SPACE=(CYL,(5,5))
//SORTWK03 DD  UNIT=SYSDA,SPACE=(CYL,(5,5))
//CMRDETL  DD  DISP=SHR,DSN=CMR.CMRV5.CMRDETL
//CARDIN   DD  *
//REPORT   DD  SYSOUT=*
//SYSABOUT DD  SYSOUT=*
//SYSOUT   DD  SYSOUT=*
//SYSPRINT DD  SYSOUT=*
//
```

Figure 29. JCL Execution Statements for All COBOL Reports

The sample JCL contains the following statements:

JCL	Use
JOB	Initiates the job.
EXEC	Specifies the name of the program that creates the report (PGM=).

Program Name	Report Generated
CMRCOB11	Transaction Analysis for All Transactions
CMRCOB12	Transaction Analysis by Program
CMRCOB13	Transaction Analysis by Terminal
CMRCOB14	Transaction Analysis by Node Name
CMRCOB15	Transaction Analysis by User ID
CMRCOB21	File Analysis for All Files
CMRCOB23	Rogues Report
CMRCOB25	Abended Transaction

//STEPLIB	Defines your program library and the MAINVIEW for CICS load modules.
//SORTWK01	Defines the first sort area data set.
//SORTWK02	Defines the second sort area data set.

//SORTWK03 Defines the third sort area data set.

//CMRDETL Defines VSAM or sequential data sets containing T6E detail transaction records.

//CARDIN Defines PERFORMANCE REPORTER control statements to use as input to the report program. Some examples of control statements are as follows:

Control Statement	Description
CICS=	Provides the CICS region name (for example, CICS=cicsprod).
DATE=	Provides the start date for processing in the format *yyyymmdd* (for example, DATE=19990917).
TIME=	Provides the start time for processing in the format *hhmmss* (for example, TIME=081133).

//REPORT Defines the report output for the predefined reports.

//SYSABOUT Defines the abbreviated dump data set.

//SYSOUT Defines the output class.

//SYSPRINT Defines the output class for the sort utility. The name of the DD statement is determined at sort system generation.

COBOL Report Fields

The following column headings appear in all sample COBOL reports described in this chapter:

CICS REGION
Name of the CICS region associated with the data.

RUN DATE
Gregorian date associated with the data in yyyy/mm/dd format.

TRAN CODE
Transaction identification of the T6ECICS task.

PROGRAM NAME
Name of the program associated with the data.

TERM ID
Identification number of the terminal.

NETNAME
Name of the net node.

USER ID
Identification of the CICS user.

FILE NAME
Name of the file being accessed.

RUN TIME
Time associated with the data in hh:mm:ss format.

ABEND CODE
Code associated with this abended transaction.

TRAN COUNT
Number of transactions executed from this terminal.

AVERAGE CPU REAL
Average amount of CPU real time used by each transaction (in seconds).

AVG FILE WAIT TIME
Average time that a transaction waits for called files (in seconds).

AVG FILE CALLS
Average number of times files were called for each transaction.

AVG DB WAIT TIME
Average time that a transaction waited for access to a database.

AVG DB CALLS
Average number of calls to the database for each transaction.

AVERAGE STRG HWM
Average storage high-water mark in bytes during this time interval.

STORAGE OCCUPANCY
Usage of storage over time. A value of 1 is equivalent to 250 bytes held for .25 seconds. This value can be used to evaluate the impact on available storage caused by a transaction.

AVG PROG STRG HWM
Average program storage high-water mark reached, in bytes, for all transactions.

Performance Analysis for All Transactions Report (CMRCOB11)

The CMRCOB11 sample program produces the Performance Analysis for All Transactions report. This report has control breaks based on the T6ETRID (transaction ID) field.

Generate this report to evaluate task performance subdivided by transaction.

Sample Report

```
PROGRAM: CMRCOB11                    PERFORMANCE ANALYSIS FOR ALL TRANSACTIONS                    DATE: 1999/09/17
                                                                  TIME:   16:06:33
                                                                  PAGE:        1
 CICS            TRAN     TRAN  AVERAGE    AVERAGE   AVG FILE  AVG FILE    AVG DB    AVG DB   AVERAGE   STORAGE  AVG PROG
 REGION   RUN DATE   CODE    COUNT  RESPONSE   CPU REAL  WAIT TIME    CALLS  WAIT TIME    CALLS  STRG HWM OCCUPANCY  STRG HWM
-------- ---------- ------- -------- --------- --------- --------- --------- --------- --------- --------- --------- --------

PRODCICS  1999/09/17 MATD       1    .369     .018     .000     .000     .000     .000    8,360       31    16,232
PRODCICS  1999/09/17 PC00     161    .017     .001     .000     .000     .000     .000    4,913        0       752
PRODCICS  1999/09/17 RXD2       1    .937     .007     .000     .000     .000     .000    5,744       78       784
PRODCICS  1999/09/17 TSFU       1   1.570     .008     .000     .000     .000     .000    6,000      131       544
PRODCICS  1999/09/17 TSGM       1    .986     .007     .000     .000     .000     .000    6,568       85     1,632
PRODCICS  1999/09/17 MC01       6    .056     .006     .000     .000     .000     .000    5,976        5     3,016
PRODCICS  1999/09/17 MC02       2    .323     .007     .000     .000     .000     .000    6,924      265     7,384
PRODCICS  1999/09/17 MC00       1    .354     .038     .000     .000     .000     .000    5,744       29     3,664
PRODCICS  1999/09/17 DSNC     311    .015     .001     .000     .000     .000     .000    6,416        1     7,752
PRODCICS  1999/09/17 FITX     161    .041     .001     .014    2.180     .000     .000   10,314        3     8,337
PRODCICS  1999/09/17 NN02       1    .002     .001     .000     .000     .000     .000    6,856        0     4,616
PRODCICS  1999/09/17 MCP2       1   5.066     .013     .018    1.000     .000     .000   81,704    3,579   152,952
PRODCICS  1999/09/17 MC00      24   3.177     .048     .004    1.125    1.581   12.250   79,683    3,612   190,087
PRODCICS  1999/09/17 *TOTAL*   672    .150     .003     .003     .563     .056     .437    9,717      137    12,872

PRODCICS  1999/09/23 MATD       1    .373     .019     .000     .000     .000     .000    8,360       31    16,232
PRODCICS  1999/09/23 PC00     738    .025     .001     .000     .000     .000     .000    4,905        1       752
PRODCICS  1999/09/23 RXD2       2    .512     .004     .000     .000     .000     .000    5,332       42       784
PRODCICS  1999/09/23 TSFU       1   1.587     .008     .000     .000     .000     .000    6,000      132       544
PRODCICS  1999/09/23 TSGM       7    .100     .002     .000     .000     .000     .000    6,689       10     1,632
PRODCICS  1999/09/23 MC01      22    .034     .001     .000     .000     .000     .000    5,793        2     3,096
PRODCICS  1999/09/23 MC02       5    .189     .004     .000     .000     .000     .000    8,481       18     7,408
PRODCICS  1999/09/23 CUA        1   5.448     .032     .000     .000     .000     .000   80,192    4,004   150,936
PRODCICS  1999/09/23 TERE       1    .401     .084     .000     .000     .000     .000    6,040       34     3,664
PRODCICS  1999/09/23 DSNC   1,236   3.159     .001     .000     .000     .000     .000    6,446   12,337     7,746
PRODCICS  1999/09/23 FITX     738    .055     .002     .019    3.699     .000     .000   10,312        5     8,330
PRODCICS  1999/09/23 NN01       2    .002     .000     .000     .000     .000     .000    6,340        0     3,856
PRODCICS  1999/09/23 MCP2       6   1.937     .027     .004    1.000     .000     .000   82,549    1,356   152,962
PRODCICS  1999/09/23 MC00     223   1,336     .036     .005    1.206     .676    7.156   90,923    1,624   197,186
PRODCICS  1999/09/23 *TOTAL*  2,983   1.436     .004     .005    1.007     .050     .535   13,513    5,239    20,604

PRODCICS  *TOTAL*           3,655   1.200     .004     .004     .925     .051     .517   12,815    4,301    19,183

    RUN  *TOTAL*            3,655   1.200     .004     .004     .925     .051     .517   12,815    4,301    19,183
```

Figure 30. Performance Analysis for All Transactions Report

Performance Analysis by Program Report (CMRCOB12)

The CMRCOB12 sample program produces the Performance Analysis by Program report. This report has control breaks based on the T6EPGNM (program name) field.

Generate this report to evaluate task performance subdivided by program name.

Note: This report is most useful when a fourth-generation language (4GL) is used.

Sample Report

```
PROGRAM: CMRCOB12                    PERFORMANCE ANALYSIS FOR ALL PROGRAMS                    DATE: 1999/09/24
                                                                    TIME:   16:19:46
                                                                    PAGE:        1
 CICS            PROGRAM     TRAN  AVERAGE   AVERAGE  AVG FILE  AVG FILE    AVG DB   AVG DB   AVERAGE   STORAGE  AVG PROG
 REGION   RUN DATE    NAME    COUNT  RESPONSE  CPU REAL  WAIT TIME    CALLS  WAIT TIME    CALLS  STRG HWM OCCUPANCY  STRG HWM
-------- ---------- -------- ------- -------- --------- -------- --------- -------- -------- --------- --------

PRODCICS  1999/09/17  CMRJRNL      1    .002     .001     .000     .000     .000     .000    6,856       0    4,616
PRODCICS  1999/09/17  CMRROLL    161    .041     .001     .014    2.180     .000     .000   10,314       3    8,337
PRODCICS  1999/09/17  DFHCCMF    161    .017     .001     .000     .000     .000     .000    4,913       0      752
PRODCICS  1999/09/17  DFHCRQ       1    .937     .007     .000     .000     .000     .000    5,744      78      784
PRODCICS  1999/09/17  DFHFCU       1   1.570     .008     .000     .000     .000     .000    6,000     131      544
PRODCICS  1999/09/17  DFHGMM       1    .986     .007     .000     .000     .000     .000    6,568      85    1,632
PRODCICS  1999/09/17  DFHSNP       2    .323     .007     .000     .000     .000     .000    6,924     265    7,384
PRODCICS  1999/09/17  DFHTPQ       6    .056     .006     .000     .000     .000     .000    5,976       5    3,016
PRODCICS  1999/09/17  DFHZATD      1    .369     .018     .000     .000     .000     .000    8,360      31   16,232
PRODCICS  1999/09/17  DFHZXRE      1    .354     .038     .000     .000     .000     .000    5,744      29    3,664
PRODCICS  1999/09/17  DSNCCOM1    311    .015     .001     .000     .000     .000     .000    6,416       1    7,752
PRODCICS  1999/09/17  T2CINIT      25   3.252     .050     .005    1.120    1.517   11.760   79,764   3,610  188,601
PRODCICS  1999/09/17   *TOTAL*    672    .150     .003     .003     .563     .056     .437    9,717     137   12,872

PRODCICS  1999/09/23  CMRJRNL      2    .002     .000     .000     .000     .000     .000    6,340       0    3,856
PRODCICS  1999/09/23  CMRROLL    738    .055     .002     .019    3.699     .000     .000   10,312       5    8,330
PRODCICS  1999/09/23  DFHCCMF    738    .025     .001     .000     .000     .000     .000    4,905       1      752
PRODCICS  1999/09/23  DFHCRQ       2    .512     .004     .000     .000     .000     .000    5,332      42      784
PRODCICS  1999/09/23  DFHFCU       1   1.587     .008     .000     .000     .000     .000    6,000     132      544
PRODCICS  1999/09/23  DFHGMM       7    .100     .002     .000     .000     .000     .000    6,689      10    1,632
PRODCICS  1999/09/23  DFHSNP       5    .189     .004     .000     .000     .000     .000    8,481      18    7,408
PRODCICS  1999/09/23  DFHTPQ      22    .034     .001     .000     .000     .000     .000    5,793       2    3,016
PRODCICS  1999/09/23  DFHZATD      1    .373     .019     .000     .000     .000     .000    8,360      31   16,232
PRODCICS  1999/09/23  DFHZXRE      1    .401     .084     .000     .000     .000     .000    6,040      34    3,664
PRODCICS  1999/09/23  DSNCCOM1  1,236   3.159     .001     .000     .000     .000     .000    6,446  12,337    7,746
PRODCICS  1999/09/23  T2CINIT     230   1.369     .035     .005    1.196     .656    6.939   90,658   1,628  195,831
PRODCICS  1999/09/23   *TOTAL*  2,983   1.436     .004     .005    1.007     .050     .535   13,513   5,239   20,604

PRODCICS  *TOTAL*            3,655    1.200     .004     .004     .925     .051     .517   12,815   4,301   19,183

    RUN  *TOTAL*            3,655    1.200     .004     .004     .925     .051     .517   12,815   4,301   19,183
```

Figure 31. Performance Analysis by Program Report

Performance Analysis by Terminal Report (CMRCOB13)

The CMRCOB13 sample program produces the Performance Analysis by Terminal report. This report has control breaks based on the T6ETMID (terminal ID) field.

Generate this report to evaluate task performance subdivided by terminal.

Sample Report

PROGRAM: CMRCOB13 PERFORMANCE ANALYSIS BY TERMINAL 10:27 FRIDAY, SEPTEMBER 20, 1999 1

CICS REGION	TERM RUN DATE	TRAN ID	AVERAGE COUNT	AVERAGE RESPONSE	AVG FILE CPU REAL	AVG FILE WAIT TIME	AVG DB CALLS	AVG DB WAIT TIME	AVERAGE CALLS	STORAGE STRG HWM	AVG PROG OCCUPANCY	STRG HWM
PRODCICS	1999/09/17		3,582	4.387	.001	.008	1.770	.000	.000	7,384	7,151	6,899
PRODCICS	1999/09/17	E202	1,008	.743	.042	.000	1.083	.334	9.391	98,364	920	198,420
PRODCICS	1999/09/17	E210	27	1.811	.036	.013	1.518	.785	7.629	74,227	2,072	167,457
PRODCICS	1999/09/17	S211	84	.678	.054	.013	1.511	.147	9.285	92,671	598	183,859
PRODCICS	1999/09/17	S214	4	1.706	.470	.000	.000	.000	.000	23,130	4,281	19,422
PRODCICS	1999/09/17	TERC	2	6.312	.087	.000	.000	.924	10.000	98,348	6,003	96,360
PRODCICS	1999/09/17	*TOTAL*	4,707	3.524	.012	.007	1.615	.079	2.224	28,825	5,667	52,040
PRODCICS	1999/09/18		3,442	13.937	.001	.004	.535	.000	.000	7,061	6,831	6,010
PRODCICS	1999/09/18	X002	79	1.123	.012	.004	1.101	.172	1.367	66,515	872	173,636
PRODCICS	1999/09/18	X003	2	.051	.004	.000	.500	.000	.000	45,788	44	77,292
PRODCICS	1999/09/18	*TOTAL*	3,523	13.642	.001	.004	.548	.003	.030	8,417	6,693	9,802
PRODCICS	1999/09/21		1,986	13.340	.001	.006	.898	.000	.000	7,086	4,234	5,915
PRODCICS	1999/09/21	S201	25	3.457	.040	.010	1.200	1.734	6.640	70,617	3,301	171,156
PRODCICS	1999/09/21	S202	11	.333	.007	.014	1.272	.115	.818	35,663	3,181	82,848
PRODCICS	1999/09/21	TN03	8	1.427	.014	.000	.375	.595	3.000	52,203	1,623	89,860
PRODCICS	1999/09/21	X003	181	.620	.019	.016	1.718	.186	4.558	82,966	598	175,692
PRODCICS	1999/09/21	*TOTAL*	2,211	12.079	.004	.007	.969	.037	.463	14,322	3,911	22,368
PRODCICS	1999/09/17		644	.027	.001	.003	.545	.000	.000	7,012	2	6,084
PRODCICS	1999/09/17	E209	28	2.962	.046	.004	1.000	1.355	10.500	71,947	3,245	168,980
PRODCICS	1999/09/17	*TOTAL*	672	.150	.003	.003	.563	.056	.437	9,717	137	12,872
PRODCICS	1999/09/23		2,741	1.447	.001	.005	.996	.000	.000	7,066	5,565	5,973
PRODCICS	1999/09/23	CZE3	20	2.112	.036	.016	1.650	1.034	9.150	85,640	2,278	178,929
PRODCICS	1999/09/23	E206	9	1.168	.018	.019	1.777	.077	.777	54,978	814	137,496
PRODCICS	1999/09/23	E207	17	1.924	.032	.008	1.411	.705	5.296	82,023	2,079	172,496
PRODCICS	1999/09/23	S204	163	.996	.035	.001	1.036	.538	6.802	93,258	1,355	198,442
PRODCICS	1999/09/23	S210	13	2.649	.028	.016	.615	1.198	10.615	59,868	2,210	150,362
PRODCICS	1999/09/23	X002	2	3.125	.063	.014	.500	.000	.000	47,016	2,182	77,292
PRODCICS	1999/09/23	X003	18	1.582	.026	.013	1.333	.786	3.777	70,284	1,797	160,321
PRODCICS	1999/09/23	*TOTAL*	2,983	1.436	.004	.005	1.007	.050	.535	13,513	5,239	20,604

Figure 32. Performance Analysis by Terminal Report

Performance Analysis by Netname Report (CMRCOB14)

The CMRCOB14 sample program produces the Performance Analysis by Netname report. This sample report has control breaks based on the T6ENETNM (network node name) field.

Generate this report to evaluate task performance subdivided by VTAM symbolic node name.

Sample Report

```
PROGRAM: CMRCOB14                    PERFORMANCE ANALYSIS BY NETNAME                    DATE: 1999/09/24
                                                          TIME:   16:27:44
                                                          PAGE:        1
 CICS            NETNAME    TRAN   AVERAGE   AVERAGE   AVG FILE  AVG FILE    AVG DB    AVG DB   AVERAGE   STORAGE  AVG PROG
 REGION   RUN DATE           COUNT  RESPONSE  CPU REAL  WAIT TIME    CALLS  WAIT TIME    CALLS  STRG HWM OCCUPANCY  STRG HWM
-------- ---------- -------- ------- --------- -------- --------- -------- --------- -------- -------- --------- --------

PRODCICS  1999/09/18          3,442   13.937     .001     .004     .535     .000     .000    7,061    6,831    6,010
PRODCICS  1999/09/18  A100A02      79    1.123     .022     .004    1.101     .172    1.367   66,515      872  173,636
PRODCICS  1999/09/18  A100A03       2     .051     .004     .000     .500     .000     .000   45,788       44   77,292
PRODCICS  1999/09/18   *TOTAL*  3,523   13.642     .001     .004     .548     .003     .030    8,417    6,693    9,809

PRODCICS  1999/09/21          1,986   13.340     .001     .006     .898     .000     .000    7,086    4,234    5,915
PRODCICS  1999/09/21  A051A03       8    1.427     .014     .000     .375     .596    3.000   52,203    1,623   89,860
PRODCICS  1999/09/21  A100A03     181     .620     .029     .016    1.718     .186    4.558   82,966      598  175,692
PRODCICS  1999/09/21  SWTCA201     25    3.457     .040     .010    1.200    1.734    6.640   70,617    3,301  171,156
PRODCICS  1999/09/21  SWTCA202     11     .333     .007     .014    1.272     .115     .818   35,663    3,181   82,848
PRODCICS  1999/09/21   *TOTAL*  2,211   12.079     .004     .007     .969     .037     .463   14,322    3,911   22,368

PRODCICS  1999/09/17            644     .027     .001     .003     .545     .000     .000    7,012        2    6,084
PRODCICS  1999/09/17  SWTAE209     28    2.962     .046     .004    1.000    1.355   10.500   71,947    3,245  168,980
PRODCICS  1999/09/17   *TOTAL*    672     .150     .003     .003     .563     .056     .437    9,717      137   12,872

PRODCICS  1999/09/23          2,741    1.447     .001     .005     .996     .000     .000    7,066    5,565    5,973
PRODCICS  1999/09/23  A100A02       2    3.125     .063     .014     .500     .000     .000   47,016    2,182   77,292
PRODCICS  1999/09/23  A100A03      18    1.582     .026     .013    1.333     .786    3.777   70,284    1,797  160,321
PRODCICS  1999/09/23  LCZHA1E4     20    2.112     .036     .016    1.650    1.034    9.150   85,640    2,278  178,929
PRODCICS  1999/09/23  SWTAE206      9    1.168     .018     .019    1.777     .077     .777   54,978      814  137,496
PRODCICS  1999/09/23  SWTAE207     17    1.964     .032     .008    1.411     .705    5.294   82,023    2,079  172,496
PRODCICS  1999/09/23  SWTCA204    163     .994     .035     .001    1.036     .538    6.801   93,258    1,355  198,442
PRODCICS  1999/09/23  SWTCA210     13    2.649     .028     .016     .615    1.198   10.615   59,868    2,210  150,362
PRODCICS  1999/09/23   *TOTAL*  2,983    1.436     .004     .005    1.007     .050     .535   13,513    5,239   20,604

PRODCICS  *TOTAL*             9,389    8.430     .003     .005     .794     .030     .321   11,519    5,107   16,416

    RUN  *TOTAL*              9,389    8.430     .003     .005     .794     .030     .321   11,519    5,107   16,416
```

Figure 33. Performance Analysis by Netname Report

Performance Analysis for All Users Report (CMRCOB15)

The CMRCOB15 sample program produces the Performance Analysis for All Users report. This sample report has control breaks based on the T6EUSER (user ID) field.

Generate this report to evaluate task performance subdivided by user ID.

Sample Report

```
PROGRAM: CMRCOB15                    PERFORMANCE ANALYSIS FOR ALL USERS                    DATE: 1999/09/24
                                                                  TIME:   12:00:46
                                                                  PAGE:        1
 CICS            USER ID    TRAN    AVERAGE   AVERAGE   AVG FILE  AVG FILE    AVG DB    AVG DB   AVERAGE   STORAGE  AVG PROG
 REGION   RUN DATE           COUNT   RESPONSE  CPU REAL  WAIT TIME    CALLS  WAIT TIME    CALLS  STRG HWM OCCUPANCY  STRG HWM
-------- ---------- -------- ------- --------- -------- --------- -------- --------- -------- -------- --------- --------

PRODCICS  1999/09/15 ________     33     .298     .030     .002    1.393     .103    4.787   68,281      275   142,680
PRODCICS  1999/09/15 CPS19     2,678    1.253     .001     .004    1.147     .000     .000    7,076    5,520     5,999
PRODCICS  1999/09/15 CMR4        174    1.240     .038     .003    1.040     .618    9.264   78,969    1,477   164,303
PRODCICS  1999/09/15  *TOTAL*  2,885    1.242     .004     .004    1.144     .038     .613   12,112    5,216    17,110

PRODCICS  1999/09/16 ________    186     .613     .021     .005    1.198     .177    3.112   68,075      580   165,676
PRODCICS  1999/09/16 JEN1      3,402   13.994     .001     .006    2.126     .000     .000    7,069    6,825     6,020
PRODCICS  1999/09/16 CMR4        661     .970     .040     .000     .989     .468   10.028   88,636    1,191   187,063
PRODCICS  1999/09/16  *TOTAL*  4,256   11.387     .008     .005    1.909     .080    1.693   22,403    5,677    41,115

PRODCICS  1999/09/17 ________  1,204     .733     .042     .005    1.151     .309    8.698   92,132    1,709   185,907
PRODCICS  1999/09/17 CMR4      3,503    4.483     .001     .007    1.774     .000     .000    7,066    7,028     6,030
PRODCICS  1999/09/17  *TOTAL*  4,707    3.524     .012     .007    1.615     .079    2.224   28,825    5,667    52,040

PRODCICS  1999/09/18 ________     98     .910     .018     .003     .897     .139    1.102   55,559      704   142,087
PRODCICS  1999/09/18 CMRG      3,425   14.006     .001     .004     .538     .000     .000    7,068    6,864     6,024
PRODCICS  1999/09/18  *TOTAL*  3,523   13.642     .001     .004     .548     .003     .030    8,417    6,693     9,809

PRODCICS  1999/09/21 ________    233     .858     .027     .013    1.463     .331    4.253   72,762      965   155,302
PRODCICS  1999/09/21 CMR7      1,967   13.468     .001     .006     .907     .000     .000    7,099    4,275     5,942
PRODCICS  1999/09/21 CMR8         11    1.313     .016     .014    1.545     .549    3.000   68,080    1,280   143,877
PRODCICS  1999/09/21  *TOTAL*  2,211   12.079     .004     .007     .969     .037     .463   14,322    3,911    22,368

PRODCICS  1999/09/17 ________      3     .544     .007     .000     .000     .000     .000    6,805      205     5,466
PRODCICS  1999/09/17 CMR5        638     .027     .001     .003     .550     .000     .000    7,021        2     6,113
PRODCICS  1999/09/17 CMR1         31    2.634     .042     .004     .903    1.224    9.483   65,482    2,912   152,697
PRODCICS  1999/09/17  *TOTAL*    672     .150     .003     .003     .563     .056     .437    9,717      137    12,872

PRODCICS  1999/09/23 ________    264    1.202     .031     .005    1.041     .571    6.045   79,803    1,419   171,052
PRODCICS  1999/09/23 CMR6      2,719    1.459     .001     .005    1.004     .000     .000    7,076    5,610     5,997
PRODCICS  1999/09/23  *TOTAL*  2,983    1.436     .004     .005    1.007     .050     .535   13,513    5,239    20,604

PRODCICS  *TOTAL*             21,237    6.959     .006     .005    1.247     .052    1.058   17,617    5,360    29,356

    RUN  *TOTAL*              21,237    6.959     .006     .005    1.247     .052    1.058   17,617    5,360    29,356
```

Figure 34. Performance Analysis for All Users Report

File Analysis for All Files Report (CMRCOB21)

The CMRCOB21 sample program produces the File Analysis for All Files report. This report has control breaks based on the T6EFN (file name) field.

Generate this report to evaluate file performance.

Note: A CMRDETL data set may contain two forms of T6E records, original and expanded. Any program that you run against T6E file data needs to know which type of record it is processing. CMRCOB21 uses the expanded record flag (field T6EQUAL) to determine whether a given record is expanded or not. This program illustrates how to process both original and expanded format records in the same file.

Sample Report

```
PROGRAM: CMRCOB21                    FILE ANALYSIS FOR ALL FILES                    DATE: 1999/09/24
                                                              TIME:   16:36:20
                                                              PAGE:        1
 CICS              FILE     FILE      TOTAL     TOTAL   AVG. WAITS     AVERAGE    AVG. TIME
 REGION   RUN DATE    NAME      TYPE      TRANS     WAITS    PER TRAN    WAIT TIME     PER WAIT
-------- ---------- -------- -------- --------- ---------- ---------- ---------- ----------

PRODCICS  1999/09/23  CMRSTAT   CICS FCT      148       198       1.337       .096       .071
PRODCICS  1999/09/23  CUDCNLOG  CICS FCT        1         2       2.000       .035       .017
PRODCICS  1999/09/23  CUISCNTL  CICS FCT        2         7       3.500       .088       .025
PRODCICS  1999/09/23  CUPFR01   DB2            1        50      50.000      7.246       .144
PRODCICS  1999/09/23  CUPINIT   DB2            3         6       2.000       .862       .431
PRODCICS  1999/09/23  CUPSSON   DB2            2        82      41.000      2.875       .070
PRODCICS  1999/09/23  DFHRPL    PSEUDO       241     1,829       7.589       .275       .036
PRODCICS  1999/09/23  DFHUECB   PSEUDO         1         1       1.000       .346       .346
PRODCICS  1999/09/23  M2DCNLOG  CICS FCT        1         2       2.000       .052       .026
PRODCICS  1999/09/23  M2DPCT    CICS FCT        3         4       1.333       .046       .035
PRODCICS  1999/09/23  M2ISCNTL  CICS FCT       12        27       2.250       .078       .034
PRODCICS  1999/09/23  M2PACHP   DB2            4        42      10.500       .811       .077
PRODCICS  1999/09/23  M2PIB21   DB2            2        34      17.000      2.517       .148
PRODCICS  1999/09/23  M2PIG21   DB2            5       112      22.400      3.621       .161
PRODCICS  1999/09/23  M2PINIT   DB2           65       167       2.569       .172       .067
PRODCICS  1999/09/23  M2PMC01   DB2            1        67      67.000      3.647       .054
PRODCICS  1999/09/23  M2PMC06   DB2            4        61      15.250       .354       .023
PRODCICS  1999/09/23  M2PMC21   DB2            2         5       2.500      1.031       .412
PRODCICS  1999/09/23  M2PMC43   DB2            2         8       4.000       .336       .084
PRODCICS  1999/09/23  M2PMD21   DB2           15       507      33.800      2.096       .061
PRODCICS  1999/09/23  M2PMI03   DB2            3        59      19.666      1.624       .082
PRODCICS  1999/09/23  M2PMI04   DB2            1         6       6.000      1.951       .325
PRODCICS  1999/09/23  M2PRA01   DB2            1        18      18.000       .422       .023
PRODCICS  1999/09/23  M2PRA21   DB2            4        50      12.500      2.396       .191
PRODCICS  1999/09/23  M2PRB01   DB2            2        14       7.000       .071       .010
PRODCICS  1999/09/23  M2PRB21   DB2            6       104      17.333      2.566       .148
PRODCICS  1999/09/23  M2PRC21   DB2            1        17      17.000      5.219       .307
PRODCICS  1999/09/23  M2PRD21   DB2            2        84      42.000      5.057       .120
PRODCICS  1999/09/23  M2PRK50   DB2            1         4       4.000      2.383       .596
PRODCICS  1999/09/23  M2PSSON   DB2            5        99      19.800      1.682       .084
PRODCICS  1999/09/23   *TOTAL*             541     3,666       6.776       .430       .063

PRODCICS  *TOTAL*                          541     3,666       6.776       .430       .063

    RUN  *TOTAL*                           541     3,666       6.776       .430       .063
```

Figure 35. File Analysis for All Files Report

Rogues Report (CMRCOB23)

The CMRCOB23 sample program produces the Highest Response Times All Transactions Report. This report is also known as the Rogues Report. The report is produced by

- Reading the CMRDETL file
- Calculating response times of tasks

  Note: Response times under 1.000 seconds are bypassed.

- Producing a list of the 100 tasks with the longest response times

Generate this report to evaluate tasks with the greatest response times. Modify the report control statements in the JCL stream to limit the input for your report.

Sample Report

PROGRAM: CMRCOB23 HIGHEST RESPONSE TIMES ALL TRANSACTIONS DATE: 1999/09/24
TIME: 17:03:32
PAGE: 1

CICS REGION	RUN DATE	RUN TIME	TRAN CODE	FILE RESPONSE	FILE CPU	DB REAL	DB WAIT	STORAGE TIME	CALLS	PROGRAM WAIT TIME	CALLS	STRG HWM	OCCUPANCY	STRG HWM
PRODCICS	1999/09/17	09:06:50	MC00	17.045	.157	.000	1.000	10.664	33.000	165,360	29,066	198,856		
PRODCICS	1999/09/10	12:41:21	MC00	17.278	.105	.000	1.000	14.631	38.000	126,128	30,117	194,440		
PRODCICS	1999/09/05	11:48:39	MC01	17.522	.126	.000	1.000	13.545	48.000	147,104	27,343	192,448		
PRODCICS	1999/09/23	10:03:28	MC00	17.538	.121	.000	1.000	13.143	24.000	121,168	23,743	189,632		
PRODCICS	1999/09/17	11:58:22	MC00	17.686	.156	.000	2.000	12.921	47.000	168,104	29,506	214,288		
PRODCICS	1999/09/06	10:16:29	MC01	17.784	.123	.000	1.000	14.172	41.000	126,944	30,053	194,440		
PRODCICS	1999/09/12	10:33:21	MC00	17.912	.084	.000	1.000	14.355	10.000	122,080	29,601	211,400		
PRODCICS	1999/09/15	08:16:53	MC00	17.996	.121	.000	1.000	15.335	55.000	123,592	29,806	200,120		
PRODCICS	1999/09/17	12:39:15	JC02	18.554	.127	.000	1.000	14.967	46.000	128,656	31,397	198,872		
PRODCICS	1999/09/15	14:22:13	JC02	18.682	.118	.000	1.000	15.834	48.000	148,280	31,336	215,496		
PRODCICS	1999/09/07	10:15:13	MC00	19.178	.136	.076	4.000	11.469	82.000	74,488	16,249	189,744		
PRODCICS	1999/09/10	12:41:50	MC00	19.477	.082	.000	1.000	15.437	18.000	121,288	29,911	211,696		
PRODCICS	1999/09/08	12:59:26	MC00	19.861	.029	.000	1.000	.000	.000	67,344	14,934	181,784		
PRODCICS	1999/09/03	15:00:35	JC00	20.027	.133	.177	4.000	10.800	82.000	74,488	16,795	189,744		
PRODCICS	1999/09/05	11:18:39	JC00	20.820	.123	.000	1.000	16.772	42.000	126,544	35,143	194,440		
PRODCICS	1999/09/06	10:15:15	MC00	21.177	.167	.123	4.000	12.261	82.000	74,648	17,916	189,744		
PRODCICS	1999/09/03	14:53:07	MC00	21.232	.112	.178	4.000	12.337	81.000	74,312	18,052	189,744		
PRODCICS	1999/09/14	13:58:44	MC00	22.130	.112	.000	2.000	18.572	40.000	138,864	44,330	217,496		
PRODCICS	1999/09/06	11:00:53	MC00	22.449	.161	.305	4.000	11.313	82.000	74,648	19,387	189,744		
PRODCICS	1999/09/23	10:02:22	MC00	22.509	.139	.118	4.000	10.282	81.000	74,488	19,002	189,744		
PRODCICS	1999/09/14	12:29:10	PC01	22.661	.077	.000	1.000	19.436	19.000	136,120	35,632	193,528		
PRODCICS	1999/09/17	08:00:34	PC01	24.136	.105	.000	1.000	18.302	49.000	148,080	36,061	192,680		
PRODCICS	1999/09/16	10:29:20	PC02	24.159	.124	.000	1.000	20.919	54.000	131,104	40,124	194,440		
PRODCICS	1999/09/08	02:38:47	PC02	25.308	.086	.000	1.000	22.968	19.000	146,816	39,550	212,960		
PRODCICS	1999/09/23	13:40:50	MC00	30.297	.112	.000	1.000	25.396	38.000	126,992	51,905	196,424		
PRODCICS	1999/09/14	11:21:51	MC00	33.303	.173	.000	1.000	27.457	60.000	160,616	63,766	178,656		
PRODCICS	1999/09/14	10:59:21	MC00	37.881	.136	.136	4.000	23.105	81.000	74,488	31,827	189,744		

Figure 36. COBOL Rogues Report

Abended Transaction Report (CMRCOB25)

The CMRCOB25 sample program produces the Abended Transaction report by

- Reading the CMRDETL file
- Listing all transactions with an abend code

Generate this report to list all transactions that suffered an abend during the recorded interval. Modify the report control statements in the JCL stream to limit the input for your report.

Sample Report

PROGRAM: CMRCOB25 ABENDED TRANSACTION REPORT DATE: 1999/09/24
TIME: 17:04:54
PAGE: 1

CICS REGION	RUN DATE	TRAN RUN TIME	ABEND CODE	FILE CODE	FILE RESPONSE	CPU	REAL	DB WAIT	DB TIME	STORAGE CALLS	WAIT TIME	CALLS	STRG HWM	OCCUPANCY
PRODCICS	1999/09/05	18:09:07	AEY9	MC00	3.016	.057	.059	1.000	.000	.000	67,344	2,456		
PRODCICS	1999/09/15	13:33:20	AEY9	MC00	2.714	.063	.035	1.000	.000	.000	67,344	2,098		
PRODCICS	1999/09/15	13:41:31	AEY9	MC00	.110	.014	.000	1.000	.000	.000	74,176	80		
PRODCICS	1999/09/15	15:52:03	AEY9	MC00	.321	.014	.000	1.000	.000	.000	66,928	222		
PRODCICS	1999/09/08	13:02:52	QUIT	MC00	3.171	.067	.068	6.000	.049	2.000	87,208	3,038		
PRODCICS	1999/09/08	14:03:19	QUIT	MC00	.850	.028	.077	6.000	.064	2.000	87,208	758		
PRODCICS	1999/09/08	14:53:43	QUIT	MC00	.165	.027	.052	6.000	.006	2.000	87,208	142		
PRODCICS	1999/09/08	15:02:38	ATNI	FITX	1.946	.023	.000	.000	.000	.000	30,962	204,839		
PRODCICS	1999/09/09	18:19:39	AEY9	MC00	3.382	.059	.020	1.000	.000	.000	67,344	2,670		
PRODCICS	1999/09/15	08:11:48	DB2E	MC00	4.760	.087	.090	6.000	1.120	1.000	116,080	7,269		
PRODCICS	1999/09/15	08:19:29	DB2E	MC00	.802	.023	.087	6.000	.230	3.000	64,544	618		
PRODCICS	1999/09/15	08:21:03	DB2E	MC00	2.316	.035	.140	6.000	.064	1.000	112,176	3,692		
PRODCICS	1999/09/15	08:37:47	DB2E	MC00	.209	.034	.045	6.000	.004	1.000	112,176	243		
PRODCICS	1999/09/17	13:12:22	ASRA	MC00	12.296	.133	.080	6.000	3.665	12.000	128,848	20,458		
PRODCICS	1999/09/17	13:17:54	ASRA	MC00	1.699	.089	.052	6.000	.013	5.000	111,056	2,574		
PRODCICS	1999/09/17	13:25:39	ASRA	MC00	.483	.033	.081	6.000	.042	12.000	124,944	698		
PRODCICS	1999/09/17	13:34:35	ASRA	MC00	1.069	.033	.329	6.000	.033	10.000	110,816	1,404		
PRODCICS	1999/09/17	14:00:19	LLL	MC00	717.335	.014	.000	.000	.000	.000	96,208	1,029,337		
PRODCICS	1999/09/17	14:34:24	LLL	MC00	1,712.149	.075	.650	24.000	.000	.000	103,248	2,461,196		
PRODCICS	1999/09/17	14:57:22	ATNI	FITX	.145	.003	.000	.000	.000	.000	31,048	28,320		
PRODCICS	1999/09/18	18:46:08	AEY9	MC00	3.243	.060	.020	1.000	.000	.000	67,344	2,567		

Figure 37. Abended Transaction Report

Chapter 8. SAS Reports

Sample programs are included in your BBSAMP data set to create SAS reports from data collected by MAINVIEW for CICS. Copies of these sample programs can be modified to create unique SAS reports.

This chapter contains

- Control statements to specify the input data for SAS programs
- Descriptions of SAS report fields
- Examples of SAS reports

Detail transaction records are compressed when they are stored on the CMRDETL data set. You have the choice of creating SAS reports from compressed or decompressed 6E and 6D records. You must run a separate job if you want to create SAS reports with decompressed CMRDETL records.

Member CMRSAS10 of your BBSAMP data set decompresses 6E and 6F records. The decompressed output records are compatible with SAS programs. Edit a copy of CMRSAS10 and run the program to create decompressed detail transaction records before running your SAS report programs.

Note: Be sure to run your SAS report programs using the current version of the MAINVIEW for CICS libraries.

Sample SAS Programs

The interface routines in MAINVIEW for CICS give SAS programs access to records held in the CMRDETL and CMRSTATS data sets. SAS reports are created from these records. See Appendix B, “CMRDETL: Transaction Detail Records” on page 173 for the format of CMRDETL records and Appendix C, “CMRSTATS: Operational Statistics Records” on page 233 for the format of CMRSTATS records.

Table 3 on page 94 identifies the sample SAS programs and their associated reports. The table also includes a reference to a section in this book that shows an example of the SAS report.

Table 3. Sample SAS Programs

Sample Report Title	Sample Library Member/Program Name	Description	Section Reference
Performance Ananlysis for All Transactions	CMRSAS11	Produces a report with control breaks based on the T6ETRID field. This report gives an evaluation of task performance subdivided by transaction.	“Performance Analysis for All Transactions Report (CMRSAS11)” on page 97
Performance Analysis by Program	CMRSAS12	Produces a report with control breaks based on the T6EPGNM field. This report is useful for evaluating task performance subdivided by T6EPGNM. This is most helpful when a Fourth Generation Language (4GL) is used. The report is almost identical to the report produced by CMRSAS11.	“Performance Analysis by Program Report (CMRSAS12)” on page 98
Performance Analysis by Terminal	CMRSAS13	Produces a report with control breaks based on the T6ETMID field. This report is useful for evaluating task performance subdivided by terminal. The report is almost identical to the report produced by CMRSAS11.	“Performance Analysis by Terminal Report (CMRSAS13)” on page 99
Performance Analysis by VTAM Symbolic Node Name	CMRSAS14	Produces a report with control breaks based on the T6ENETNM field. This report is useful for evaluating task performance subdivided by VTAM symbolic node name. The report is almost identical to the report produced by CMRSAS11.	“Performance Analysis by Node Name Report (CMRSAS14)” on page 100
Performance Analysis by User ID	CMRSAS15	Produces a report with control breaks based on the T6EUSER field. This report is useful for evaluating task performance subdivided by user ID. The report is almost identical to the report produced by CMRSAS11.	“Performance Analysis by User ID Report (CMRSAS15)” on page 101
File Analysis for All Files	CMRSAS21	Produces a report with control breaks based on the T6EFN field. This report is useful for evaluating file performance by file name.	“File Analysis for All Files Report (CMRSAS21)” on page 102
Rogues Report	CMRSAS23	Produces a report that lists the tasks with the longest response times.	“Rogues Report (CMRSAS23)” on page 103

Table 3. Sample SAS Programs (Continued)

Sample Report Title	Sample Library Member/Program Name	Description	Section Reference
Abended Transaction Roster	CMRSAS25	Produces a report of all transactions that had an abend during execution.	"Abended Transaction Roster Report (CMRSAS25)" on page 104
Operational Statistics Report	CMRSAS6F	Produces a report that lists overall transaction performance across CICS regions.	"Operational Statistics Report (CMRSAS6F)" on page 105

Control Statements

Control statements are processed by the SAS programs to select data from specific CICS regions. You also can provide a starting date and a starting time.

Use the following report control statements to select the data that appears in the SAS reports:

CICS= Name of the CICS region providing data for the reports (for example, CICS=cicsprod).

DATE= Processing start date in yyyymmdd format (for example, DATE=19990924).

TIME= Processing start time in hhmmss format (for example, TIME=082314).

SAS Report Fields

The following describes the columnar data shown in the SAS sample reports in this chapter:

CICS REGION
Name of the CICS region associated with the data.

RUN DATE
Gregorian date associated with the data, in yyyy/mm/dd format.

TRAN CODE
Transaction identification of the CICS task.

PROGRAM NAME
Name of the program associated with the data.

TERM ID
Terminal identifier.

NETNAME
VTAM symbolic node name.

USER ID
Identification of the CICS user.

FILE NAME
Name of the file.

RUN TIME
Task termination time associated with the data, in hh:mm:ss format.

ABEND CODE
Abend code of an abended transaction.

TRAN COUNT
Number of executed transactions.

AVERAGE CPU REAL
Average amount of real CPU time used by each transaction (in seconds).

AVG FILE WAIT TIME
Average time waiting for files during this transaction (in seconds).

AVG FILE CALLS
Average number of file calls for each transaction.

AVG DB WAIT TIME
Average amount of wait time to access a database for each transaction.

AVG DB CALLS
Average number of database calls per transaction.

AVERAGE STRG HWM
Average storage high-water mark during this time interval.

STORAGE OCCUPANCY
Average storage usage in kilobytes. A value of 1 is equivalent to 250 bytes held for .25 seconds. This value can be used to evaluate the impact on available storage caused by a transaction.

AVG PROG STRG HWM
Average program storage high-water mark for all transactions.

Performance Analysis for All Transactions Report (CMRSAS11)

The CMRSAS11 sample program produces the Performance Analysis for All Transactions report. This report has control breaks based on the T6ETRID (transaction ID) field.

Generate this report to evaluate task performance subdivided by transaction.

Sample Report

PROGRAM: CMRSAS11 PERFORMANCE ANALYSIS FOR ALL TRANSACTIONS 10:27 WEDNESDAY, SEPTEMBER 18, 1999 1

CICS REGION	RUN DATE	TRAN CODE	TRAN COUNT	AVERAGE RESPONSE	AVERAGE CPU REAL	AVG FILE WAIT TIME	AVG FILE CALLS	AVG DB WAIT TIME	AVG DB CALLS	AVERAGE STRG HWM	STORAGE OCCUPANCY	AVG PROG STRG HWM
PRODCICS	1999/09/22	CATD	1	.369	.018	.000	.000	.000	8,360	31	16,232	
PRODCICS	1999/09/22	CCMF	161	.017	.001	.000	.000	.000	4,913	0	752	
PRODCICS	1999/09/22	CRSQ	1	.937	.007	.000	.000	.000	5,744	78	784	
PRODCICS	1999/09/22	CSFU	1	1.570	.008	.000	.000	.000	6,000	131	544	
PRODCICS	1999/09/22	CSGM	1	.986	.007	.000	.000	.000	6,568	85	1,632	
PRODCICS	1999/09/22	CSPQ	6	.056	.006	.000	.000	.000	5,976	5	3,096	
PRODCICS	1999/09/22	CSSN	2	.323	.007	.000	.000	.000	6,924	265	7,384	
PRODCICS	1999/09/22	CXRE	1	.354	.038	.000	.000	.000	5,744	29	3,664	
PRODCICS	1999/09/22	DSNC	311	.015	.001	.000	.000	.000	6,416	1	7,752	
PRODCICS	1999/09/22	FIC2	161	.041	.001	.014	2.180	.000	10,314	3	8,337	
PRODCICS	1999/09/22	JNL2	1	.002	.001	.000	.000	.000	6,856	0	4,616	
PRODCICS	1999/09/22	MCP2	1	5.066	.093	.028	1.000	.000	81,704	3,579	152,952	
PRODCICS	1999/09/22	MC00	24	3.177	.048	.004	1.125	1.581	12.250	79,683	3,612	190,087
PRODCICS	1999/09/22	*TOTAL*	672	.150	.003	.003	.563	.056	.437	9,717	137	12,872
PRODCICS	1999/09/23	CATD	1	.373	.019	.000	.000	.000	8,360	31	16,232	
PRODCICS	1999/09/23	CCMF	738	.025	.001	.000	.000	.000	4,905	1	752	
PRODCICS	1999/09/23	CRSQ	2	.512	.004	.000	.000	.000	5,332	42	784	
PRODCICS	1999/09/23	CSFU	1	1.587	.008	.000	.000	.000	6,000	132	544	
PRODCICS	1999/09/23	CSGM	7	.100	.002	.000	.000	.000	6,689	10	1,632	
PRODCICS	1999/09/23	CSPQ	22	.034	.001	.000	.000	.000	5,793	2	3,096	
PRODCICS	1999/09/23	CSSF	5	.189	.004	.000	.000	.000	8,481	18	7,408	
PRODCICS	1999/09/23	CUA	1	5.448	.032	.000	.000	.000	80,192	4,004	150,936	
PRODCICS	1999/09/23	CXRE	1	.401	.084	.000	.000	.000	6,040	34	3,664	
PRODCICS	1999/09/23	DSNC	1,236	3.159	.001	.000	.000	.000	6,446	12,337	7,746	
PRODCICS	1999/09/23	FIC2	738	.055	.002	.019	3.699	.000	10,312	5	8,330	
PRODCICS	1999/09/23	JNL2	2	.002	.000	.000	.000	.000	6,340	0	3,856	
PRODCICS	1999/09/23	MCP2	6	1.937	.027	.004	1.000	.000	82,549	1,356	152,952	
PRODCICS	1999/09/23	MC00	223	1.336	.036	.005	1.206	.676	7.156	90,923	1,624	197,186
PRODCICS	1999/09/23	*TOTAL*	2,983	1.436	.004	.005	1.007	.050	.535	13,513	5,239	20,604

Figure 38. Performance Analysis for All Transactions Report

Performance Analysis by Program Report (CMRSAS12)

The CMRSAS12 sample program produces the Performance Analysis by Program report. This report has control breaks based on the T6EPGNM (program name) field.

Generate this report to evaluate task performance subdivided by program name.

Note: This report is most useful when a fourth-generation language (4GL) is used.

Sample Report

PROGRAM: CMRSAS12 PERFORMANCE ANALYSIS BY PROGRAM 10:27 WEDNESDAY, SEPTEMBER 25, 1999 1

CICS REGION	RUN DATE	PROGRAM NAME	TRAN COUNT	AVERAGE RESPONSE	AVERAGE CPU REAL	AVG FILE WAIT TIME	AVG FILE CALLS	AVG DB WAIT TIME	AVG DB CALLS	AVERAGE STRG HWM	STORAGE OCCUPANCY	AVG PROG STRG HWM
PRODCICS	1999/09/22	CMRJRNL	1	.002	.001	.000	.000	.000	.000	6,856	0	4,616
PRODCICS	1999/09/22	CMRROLL	161	.041	.001	.014	2.180	.000	.000	10,314	3	8,337
PRODCICS	1999/09/22	DFHCCMF	161	.017	.001	.000	.000	.000	.000	4,913	0	752
PRODCICS	1999/09/22	DFHCRQ	1	.937	.007	.000	.000	.000	.000	5,744	78	784
PRODCICS	1999/09/22	DFHFCU	1	1.570	.008	.000	.000	.000	.000	6,000	131	544
PRODCICS	1999/09/22	DFHGMM	1	.986	.007	.000	.000	.000	.000	6,568	85	1,632
PRODCICS	1999/09/22	DFHSNP	2	.323	.007	.000	.000	.000	.000	6,924	265	7,384
PRODCICS	1999/09/22	DFHTPQ	6	.056	.006	.000	.000	.000	.000	5,976	5	3,096
PRODCICS	1999/09/22	DFHZATD	1	.369	.018	.000	.000	.000	.000	8,360	31	16,232
PRODCICS	1999/09/22	DFHZXRE	1	.354	.038	.000	.000	.000	.000	5,744	29	3,664
PRODCICS	1999/09/22	DSNCCOM1	311	.015	.001	.000	.000	.000	.000	6,416	1	7,752
PRODCICS	1999/09/22	T2CINIT	25	3.252	.050	.005	1.120	1.517	11.760	79,764	3,610	188,601
PRODCICS	1999/09/22	*TOTAL*	672	.150	.003	.003	.563	.056	.437	9,717	137	12,872
PRODCICS	1999/09/23	CMRJRNL	2	.002	.000	.000	.000	.000	.000	6,340	0	3,856
PRODCICS	1999/09/23	CMRROLL	738	.055	.009	.019	3.699	.000	.000	10,312	5	8,330
PRODCICS	1999/09/23	DFHCCMF	738	.025	.001	.000	.000	.000	.000	4,905	1	752
PRODCICS	1999/09/23	DFHCRQ	2	.512	.004	.000	.000	.000	.000	5,332	42	784
PRODCICS	1999/09/23	DFHFCU	1	1.587	.008	.000	.000	.000	.000	6,000	132	544
PRODCICS	1999/09/23	DFHGMM	7	.100	.002	.000	.000	.000	.000	6,689	10	1,632
PRODCICS	1999/09/23	DFHSNP	5	.189	.004	.000	.000	.000	.000	8,481	18	7,408
PRODCICS	1999/09/23	DFHTPQ	22	.034	.001	.000	.000	.000	.000	5,793	2	3,096
PRODCICS	1999/09/23	DFHZATD	1	.373	.019	.000	.000	.000	.000	8,360	31	16,232
PRODCICS	1999/09/23	DFHZXRE	1	.401	.084	.000	.000	.000	.000	6,040	34	3,664
PRODCICS	1999/09/23	DSNCCOM1	1,236	3.159	.001	.000	.000	.000	.000	6,446	12,337	7,746
PRODCICS	1999/09/23	T2CINIT	230	1.369	.035	.005	1.195	.656	6.939	90,658	1,628	195,831
PRODCICS	1999/09/23	*TOTAL*	2,983	1.436	.004	.005	1.007	.050	.535	13,513	5,239	20,604

Figure 39. Performance Analysis by Program Report

Performance Analysis by Terminal Report (CMRSAS13)

The CMRSAS13 sample program produces the Performance Analysis by Terminal report. This report has control breaks based on the T6ETMID (terminal ID) field.

Generate this report to evaluate task performance subdivided by terminal.

Sample Report

PROGRAM: CMRSAS13 PERFORMANCE ANALYSIS BY TERMINAL 10:27 FRIDAY, SEPTEMBER 27, 1999 1

CICS REGION	RUN DATE	TERM ID	TRAN COUNT	AVERAGE RESPONSE	AVERAGE CPU REAL	AVG FILE WAIT TIME	AVG FILE CALLS	AVG DB WAIT TIME	AVG DB CALLS	AVERAGE STRG HWM	STORAGE OCCUPANCY	AVG PROG STRG HWM
PRODCICS	1999/09/17		3,582	4.387	.001	.008	1.770	.000	.000	7,384	7,151	6,899
PRODCICS	1999/09/17	E202	1,008	.743	.042	.000	1.083	.334	9.391	98,364	940	198,420
PRODCICS	1999/09/17	E210	27	1.811	.036	.013	1.518	.785	7.629	74,227	2,072	167,457
PRODCICS	1999/09/17	S211	84	.678	.054	.013	1.511	.147	9.285	94,671	598	183,859
PRODCICS	1999/09/17	S214	4	1.706	.470	.000	.000	.000	.000	23,130	4,281	19,422
PRODCICS	1999/09/17	TERC	2	6.312	.087	.000	.000	.924	10.000	98,348	6,003	95,360
PRODCICS	1999/09/17	*TOTAL*	4,707	3.524	.012	.007	1.615	.079	2.224	28,825	5,667	52,040
PRODCICS	1999/09/18		3,442	13.937	.001	.004	.535	.000	.000	7,061	6,831	6,010
PRODCICS	1999/09/18	X002	79	1.123	.022	.004	1.101	.172	1.367	66,515	872	173,636
PRODCICS	1999/09/18	X003	2	.051	.004	.000	.500	.000	.000	45,788	44	77,292
PRODCICS	1999/09/18	*TOTAL*	3,523	13.642	.001	.004	.548	.003	.030	8,417	6,693	9,809
PRODCICS	1999/09/21		1,986	13.340	.001	.006	.898	.000	.000	7,086	4,234	5,915
PRODCICS	1999/09/21	S201	25	3.457	.040	.010	1.200	1.734	6.640	70,617	3,301	171,156
PRODCICS	1999/09/21	S202	11	.333	.007	.014	1.272	.115	.818	35,663	3,181	82,848
PRODCICS	1999/09/21	TN03	8	1.427	.014	.000	.375	.595	3.000	52,203	1,623	89,860
PRODCICS	1999/09/21	X003	181	.620	.029	.016	1.718	.186	4.558	82,966	598	175,692
PRODCICS	1999/09/21	*TOTAL*	2,211	12.079	.004	.007	.969	.037	.463	14,322	3,911	22,368
PRODCICS	1999/09/22		644	.027	.001	.003	.545	.000	.000	7,012	2	6,084
PRODCICS	1999/09/22	E209	28	2.962	.046	.004	1.000	1.355	10.500	71,947	3,245	168,980
PRODCICS	1999/09/22	*TOTAL*	672	.150	.003	.003	.563	.056	.437	9,717	137	12,872
PRODCICS	1999/09/23		2,741	1.447	.001	.005	.995	.000	.000	7,066	5,565	5,973
PRODCICS	1999/09/23	CZE3	20	2.112	.036	.016	1.650	1.034	9.150	85,640	2,278	178,929
PRODCICS	1999/09/23	E206	9	1.168	.018	.019	1.777	.077	.777	54,978	814	137,496
PRODCICS	1999/09/23	E207	17	1.924	.032	.008	1.411	.705	5.294	82,023	2,079	172,495
PRODCICS	1999/09/23	S204	163	.994	.035	.001	1.036	.538	6.809	93,258	1,355	198,442
PRODCICS	1999/09/23	S210	13	2.649	.028	.016	.615	1.198	10.615	59,868	2,210	150,362
PRODCICS	1999/09/23	X002	2	3.125	.063	.014	.500	.000	.000	47,016	2,182	77,292
PRODCICS	1999/09/23	X003	18	1.582	.026	.013	1.333	.786	3.777	70,284	1,797	160,321
PRODCICS	1999/09/23	*TOTAL*	2,983	1.436	.004	.005	1.007	.050	.535	13,513	5,239	20,604

Figure 40. Performance Analysis by Terminal Report

Performance Analysis by Node Name Report (CMRSAS14)

The CMRSAS14 sample program produces the Performance Analysis by Node Name report. This sample report has control breaks based on the T6NETNM VTAM symbolic node name.

Generate this report to evaluate task performance subdivided by VTAM symbolic node name.

Sample Report

PROGRAM: CMRSAS14 PERFORMANCE ANALYSIS BY VTAM SYMBOLIC NODE NAME 10:27 FRIDAY, SEPTEMBER 27, 1999 1

CICS REGION	RUN DATE	NETNAME	TRAN COUNT	AVERAGE RESPONSE	AVERAGE CPU REAL	AVG FILE WAIT TIME	AVG FILE CALLS	AVG DB WAIT TIME	AVG DB CALLS	AVERAGE STRG HWM	STORAGE OCCUPANCY	AVG PROG STRG HWM
PRODCICS	1999/09/18		3,442	13.937	.001	.004	.535	.000	.000	7,061	6,831	6,010
PRODCICS	1999/09/18	A100A02	79	1.123	.022	.004	1.101	.172	1.367	66,515	872	173,636
PRODCICS	1999/09/18	A100A03	2	.051	.004	.000	.500	.000	.000	45,788	44	77,292
PRODCICS	1999/09/18	*TOTAL*	3,523	13.642	.001	.004	.548	.003	.030	8,417	6,693	9,809
PRODCICS	1999/09/21		1,986	13.340	.001	.006	.898	.000	.000	7,086	4,234	5,915
PRODCICS	1999/09/21	A051A03	8	1.427	.014	.000	.375	.595	3.000	52,203	1,623	89,860
PRODCICS	1999/09/21	A100A03	181	.620	.029	.016	1.718	.186	4.558	82,966	598	175,692
PRODCICS	1999/09/21	SWTCA201	25	3.457	.040	.010	1.200	1.734	6.640	70,617	3,301	171,156
PRODCICS	1999/09/21	SWTCA202	11	.333	.007	.014	1.272	.115	.818	35,663	3,181	82,848
PRODCICS	1999/09/21	*TOTAL*	2,211	12.079	.004	.007	.969	.037	.463	14,322	3,911	22,368
PRODCICS	1999/09/22		644	.027	.001	.003	.545	.000	.000	7,012	2	6,084
PRODCICS	1999/09/22	SWTAE209	28	2.962	.046	.004	1.000	1.355	10.500	71,947	3,245	168,980
PRODCICS	1999/09/22	*TOTAL*	672	.150	.003	.003	.563	.056	.437	9,717	137	12,872
PRODCICS	1999/09/23		2,741	1.447	.001	.005	.995	.000	.000	7,066	5,565	5,973
PRODCICS	1999/09/23	A100A02	2	3.125	.063	.014	.500	.000	.000	47,016	2,182	77,292
PRODCICS	1999/09/23	A100A03	18	1.582	.026	.013	1.333	.786	3.777	70,284	1,797	160,321
PRODCICS	1999/09/23	LCZHA1E4	20	2.112	.036	.016	1.650	1.034	9.150	85,640	2,278	178,929
PRODCICS	1999/09/23	SWTAE206	9	1.168	.018	.019	1.777	.077	.777	54,978	814	137,496
PRODCICS	1999/09/23	SWTAE207	17	1.924	.032	.008	1.411	.705	5.294	82,093	2,079	172,495
PRODCICS	1999/09/23	SWTCA204	163	.994	.035	.001	1.036	.538	6.809	93,258	1,355	198,442
PRODCICS	1999/09/23	SWTCA210	13	2.649	.028	.016	.615	1.198	10.615	59,868	2,210	150,362
PRODCICS	1999/09/23	*TOTAL*	2,983	1.436	.004	.005	1.007	.050	.535	13,513	5,239	20,604

Figure 41. Performance Analysis by VTAM Symbolic Node Name Report

Performance Analysis by User ID Report (CMRSAS15)

The CMRSAS15 sample program produces the Performance Analysis by User ID report. This sample report has control breaks based on the T6EUSER (user ID) field.

Generate this report to evaluate task performance subdivided by user ID.

Sample Report

PROGRAM: CMRSAS15 PERFORMANCE ANALYSIS BY USER ID 10:27 FRIDAY, SEPTEMBER 27, 1999 1

CICS REGION	RUN DATE	USER ID	TRAN COUNT	AVERAGE RESPONSE	AVERAGE CPU	AVG FILE REAL	AVG FILE WAIT TIME	AVG FILE CALLS	AVG DB WAIT TIME	AVG DB CALLS	AVERAGE STRG HWM	STORAGE OCCUPANCY	AVG PROG STRG HWM
PRODCICS	1999/02/15		33	.298	.030	.009	1.393	.103	4.787	68,281	275	142,680	
PRODCICS	1999/09/15	CICS	2,678	1.253	.001	.004	1.147	.000	.000	7,076	5,520	5,999	
PRODCICS	1999/09/15	OH@01	174	1.240	.038	.003	1.040	.618	9.264	78,969	1,477	164,303	
PRODCICS	1999/09/15	*TOTAL*	2,885	1.242	.004	.004	1.144	.038	.613	12,112	5,216	17,110	
PRODCICS	1999/09/16		186	.613	.021	.005	1.198	.177	3.112	68,075	580	165,676	
PRODCICS	1999/09/16	CICS	3,409	13.994	.001	.006	2.126	.000	.000	7,069	6,825	6,020	
PRODCICS	1999/09/16	OH@01	661	.970	.040	.000	.989	.468	10.028	88,636	1,191	187,063	
PRODCICS	1999/09/16	*TOTAL*	4,256	11.387	.008	.005	1.909	.080	1.693	22,403	5,677	41,115	
PRODCICS	1999/09/17		1,204	.733	.042	.005	1.151	.309	8.698	94,132	1,709	185,907	
PRODCICS	1999/09/17	CICS	3,503	4.483	.001	.007	1.774	.000	.000	7,066	7,028	6,030	
PRODCICS	1999/09/17	*TOTAL*	4,707	3.524	.012	.007	1.615	.079	2.224	28,825	5,667	52,040	
PRODCICS	1999/09/18		98	.910	.018	.003	.897	.139	1.102	55,559	704	142,087	
PRODCICS	1999/09/18	CICS	3,425	14.006	.001	.004	.538	.000	.000	7,068	6,864	6,024	
PRODCICS	1999/09/18	*TOTAL*	3,523	13.642	.001	.004	.548	.003	.030	8,417	6,693	9,809	
PRODCICS	1999/09/21		233	.858	.027	.013	1.463	.331	4.253	72,762	965	155,302	
PRODCICS	1999/09/21	CICS	1,967	13.468	.001	.006	.907	.000	.000	7,099	4,275	5,942	
PRODCICS	1999/09/21	OH@01	11	1.313	.016	.014	1.545	.549	3.000	68,080	1,280	143,877	
PRODCICS	1999/09/21	*TOTAL*	2,211	12.079	.004	.007	.969	.037	.463	14,322	3,911	22,368	
PRODCICS	1999/09/22		3	.544	.007	.000	.000	.000	.000	6,805	205	5,466	
PRODCICS	1999/09/22	CICS	638	.027	.001	.003	.550	.000	.000	7,021	2	6,113	
PRODCICS	1999/09/22	OH@01	31	2.634	.042	.004	.903	1.224	9.483	65,482	2,912	152,697	
PRODCICS	1999/09/22	*TOTAL*	672	.150	.003	.003	.563	.056	.437	9,717	137	12,872	
PRODCICS	1999/09/23		264	1.202	.031	.005	1.041	.571	6.045	79,803	1,419	171,052	
PRODCICS	1999/09/23	CICS	2,719	1.459	.001	.005	1.004	.000	.000	7,076	5,610	5,997	
PRODCICS	1999/09/23	*TOTAL*	2,983	1.436	.004	.005	1.007	.050	.535	13,513	5,239	20,604	

Figure 42. Performance Analysis by User ID Report

File Analysis for All Files Report (CMRSAS21)

The CMRSAS21 sample program produces the File Analysis for All Files report. This report has control breaks based on the T6EFN (file name) field.

Generate this report to evaluate file performance.

Note: A CMRDETL data set may contain two forms of T6E records, original and expanded. Any program that you run against T6E file data needs to know which type of record it is processing. CMRSAS21 uses the expanded record flag (field T6EQUAL) to determine whether a given record is expanded or not. This program also uses field T6EOFFFL as a pointer to the file information area. CMRSAS21 illustrates how to process both original and expanded format records in the same file.

Sample Report

PROGRAM: CMRSAS21 FILE ANALYSIS FOR ALL FILES 10:27 FRIDAY, SEPTEMBER 27, 1999 1

CICS REGION	RUN DATE	FILE NAME	FILE TYPE	TOTAL TRANS	TOTAL WAITS	AVG. WAITS PER TRAN	AVERAGE WAIT TIME	AVG. TIME PER WAIT
PRODCICS	1999/09/23	CMRSTAT	CICS FCT	148	198	1.337	.095	.071
PRODCICS	1999/09/23	CUDCNLOG	CICS FCT	1	2	2.000	.035	.017
PRODCICS	1999/09/23	CUISCNTL	CICS FCT	2	7	3.500	.088	.025
PRODCICS	1999/09/23	CUPFR01	DB2	1	50	50.000	7.246	.144
PRODCICS	1999/09/23	CUPINIT	DB2	3	6	2.000	.862	.431
PRODCICS	1999/09/23	CUPSSON	DB2	2	82	41.000	2.875	.070
PRODCICS	1999/09/23	DFHRPL	PSEUDO	241	1,829	7.589	.275	.036
PRODCICS	1999/09/23	DFHUECB	PSEUDO	1	1	1.000	.346	.346
PRODCICS	1999/09/23	M2DCNLOG	CICS FCT	1	2	2.000	.052	.026
PRODCICS	1999/09/23	M2DPCT	CICS FCT	3	4	1.333	.046	.035
PRODCICS	1999/09/23	M2ISCNTL	CICS FCT	12	27	2.250	.078	.034
PRODCICS	1999/09/23	M2PACHP	DB2	4	42	10.500	.811	.077
PRODCICS	1999/09/23	M2PIB21	DB2	2	34	17.000	2.517	.148
PRODCICS	1999/09/23	M2PIG21	DB2	5	112	22.400	3.621	.161
PRODCICS	1999/09/23	M2PINIT	DB2	65	167	2.569	.172	.067
PRODCICS	1999/09/23	M2PMC01	DB2	1	67	67.000	3.647	.054
PRODCICS	1999/09/23	M2PMC06	DB2	4	61	15.250	.354	.023
PRODCICS	1999/09/23	M2PMC21	DB2	2	5	2.500	1.031	.412
PRODCICS	1999/09/23	M2PMC43	DB2	2	8	4.000	.336	.084
PRODCICS	1999/09/23	M2PMD21	DB2	15	507	33.800	2.095	.061
PRODCICS	1999/09/23	M2PMI03	DB2	3	59	19.666	1.624	.082
PRODCICS	1999/09/23	M2PMI04	DB2	1	6	6.000	1.951	.325
PRODCICS	1999/09/23	M2PRA01	DB2	1	18	18.000	.422	.023
PRODCICS	1999/09/23	M2PRA21	DB2	4	50	12.500	2.396	.191
PRODCICS	1999/09/23	M2PRB01	DB2	2	14	7.000	.071	.010
PRODCICS	1999/09/23	M2PRB21	DB2	6	104	17.333	2.566	.148
PRODCICS	1999/09/23	M2PRC21	DB2	1	17	17.000	5.219	.307
PRODCICS	1999/09/23	M2PRD21	DB2	2	84	42.000	5.057	.120
PRODCICS	1999/09/23	M2PRK50	DB2	1	4	4.000	2.383	.595
PRODCICS	1999/09/23	M2PSSON	DB2	5	99	19.800	1.682	.084
PRODCICS	1999/09/23	*TOTAL*	DB2	541	3,666	6.776	.430	.063

Figure 43. File Analysis for All Files Report

Rogues Report (CMRSAS23)

The CMRSAS23 sample program creates the Performance Analysis for All Transactions report. This report is also known as the Rogues Report. CMRSAS23 produces the report by

- Reading records from the CMRDETL file
- Calculating task response times

  Note: Response times under 1.000 second are omitted from the report.

- Producing a list of the tasks with the longest response times.

Generate this report to evaluate tasks with the longest response times. Modify the report control statements in the JCL stream to limit the range of input data for the report.

Sample Report

PROGRAM: CMRSAS23 PERFORMANCE ANALYSIS FOR ALL TRANSACTIONS 10:27 THURSDAY, SEPTEMBER 26, 1999 1

CICS REGION	RUN DATE	RUN TIME	TRAN CODE	RESPONSE	FILE CPU	FILE REAL	DB WAIT TIME	DB CALLS	STORAGE WAIT TIME	STORAGE CALLS	PROGRAM STRG HWM	OCCUPANCY	STRG HWM
PRODCICS	1999/09/23	13:40:50	MC00	30.297	.112	.000	1.000	25.395	38.000	126,992	51,905	195,424	
PRODCICS	1999/09/23	10:02:22	MC00	22.509	.139	.118	4.000	10.282	81.000	74,488	19,002	189,744	
PRODCICS	1999/09/23	10:03:28	MC00	17.538	.121	.000	1.000	13.143	24.000	121,168	23,743	189,632	
PRODCICS	1999/09/23	13:48:21	MC01	15.534	.136	.000	1.000	13.165	56.000	167,504	33,529	189,512	
PRODCICS	1999/09/22	08:00:34	PC01	24.136	.105	.000	1.000	18.302	49.000	148,080	36,061	192,680	
PRODCICS	1999/09/21	10:59:21	MC00	37.881	.136	.136	4.000	23.105	81.000	74,488	31,827	189,744	
PRODCICS	1999/09/18	11:59:31	MC00	16.295	.120	.091	4.000	6.760	81.000	74,312	13,598	189,744	
PRODCICS	1999/09/18	11:59:06	MCP2	14.855	.125	.070	1.000	.000	.000	84,664	11,905	152,952	
PRODCICS	1999/09/17	11:58:22	MC00	17.686	.156	.000	2.000	12.921	47.000	168,104	29,506	214,288	
PRODCICS	1999/09/17	09:06:50	MC00	17.045	.157	.000	1.000	10.664	33.000	165,360	29,066	198,856	
PRODCICS	1999/09/17	12:23:54	MC00	14.631	.120	.000	2.000	13.057	49.000	154,792	29,272	217,496	
PRODCICS	1999/09/16	10:29:20	PC02	24.159	.124	.000	1.000	20.919	54.000	131,104	40,124	195,440	
PRODCICS	1999/09/16	12:34:02	MC00	15.062	.151	.000	1.000	8.983	50.000	153,464	22,786	196,832	
PRODCICS	1999/09/16	09:54:31	MC00	14.531	.121	.000	1.000	11.422	42.000	127,408	24,691	195,512	
PRODCICS	1999/09/15	14:22:13	JC02	18.682	.118	.000	1.000	15.834	48.000	148,280	31,336	215,496	
PRODCICS	1999/09/15	08:16:53	MC00	17.995	.121	.000	1.000	15.335	55.000	123,592	29,806	200,120	
PRODCICS	1999/09/14	11:21:51	MC00	33.303	.173	.000	1.000	27.457	60.000	160,616	63,766	178,656	
PRODCICS	1999/09/14	12:29:10	PC01	22.661	.077	.000	1.000	19.436	19.000	136,120	35,632	193,528	
PRODCICS	1999/09/14	13:58:44	MC00	22.130	.112	.000	2.000	18.572	40.000	138,864	44,330	217,496	
PRODCICS	1999/09/10	07:27:13	MC19	15.323	.131	.076	4.000	6.956	81.000	74,488	12,909	189,744	
PRODCICS	1999/09/08	02:38:47	PC02	25.308	.086	.000	1.000	22.958	19.000	146,816	39,550	212,960	
PRODCICS	1999/09/08	12:59:26	MC00	19.861	.029	.000	1.000	.000	.000	67,344	14,934	181,784	
PRODCICS	1999/09/04	10:12:08	MC01	14.605	.110	.000	1.000	11.859	37.000	126,896	25,073	196,664	
PRODCICS	1999/09/03	14:53:07	MC00	21.232	.112	.178	4.000	12.337	81.000	74,312	18,052	189,744	
PRODCICS	1999/09/17	12:39:15	JC02	18.554	.127	.000	1.000	14.967	46.000	128,656	31,397	198,872	
PRODCICS	1999/09/17	12:05:36	MC00	14.800	.137	.159	4.000	7.566	82.000	74,488	12,512	189,744	
PRODCICS	1999/09/15	19:01:45	MC00	15.225	.138	.000	1.000	11.878	41.000	127,600	25,607	195,424	
PRODCICS	1999/09/14	06:21:25	MC00	15.374	.116	.000	1.000	11.970	39.000	126,608	25,630	194,440	

Figure 44. SAS Rogues Report

Abended Transaction Roster Report (CMRSAS25)

The CMRSAS25 sample program produces the Abended Transaction Roster report by

- Reading records from the CMRDETL data set
- Listing all transactions with an abend code

The CMRSAS25 program fails and no report is created when there are no abended transactions in the selected data.

Sample Report

PROGRAM: CMRSAS25 ABENDED TRANSACTION ROSTER 10:27 FRIDAY, SEPTEMBER 06, 1999 1

CICS REGION	RUN DATE	RUN TIME	TRAN CODE	RESPONSE	FILE CPU	FILE REAL	DB WAIT	DB TIME	STORAGE CALLS	WAIT TIME	PROGRAM CALLS	STRG HWM	OCCUPANCY	STRG HWM
PRODCICS	1999/09/05	18:09:07	MC00	3.095	.057	.059	1.000	.000	.000	67,344	2,456	298,480		
PRODCICS	1999/09/05	18:11:52	MC00	.120	.014	.000	1.000	.000	.000	74,176	89	242,072		
PRODCICS	1999/09/15	13:33:20	MC00	2.714	.063	.035	1.000	.000	.000	67,344	2,098	298,480		
PRODCICS	1999/09/15	13:41:31	MC00	.110	.014	.000	1.000	.000	.000	74,176	80	242,072		
PRODCICS	1999/09/15	15:52:03	MC00	.321	.014	.000	1.000	.000	.000	66,928	222	242,072		
PRODCICS	1999/09/08	13:02:52	MC00	3.171	.067	.068	6.000	.049	2.000	87,208	3,038	193,312		
PRODCICS	1999/09/08	14:03:19	MC00	.850	.028	.077	6.000	.064	2.000	87,208	758	193,312		
PRODCICS	1999/09/08	14:15:09	MC00	.431	.028	.246	6.000	.037	2.000	87,208	458	193,312		
PRODCICS	1999/09/08	14:53:43	MC00	.165	.027	.052	6.000	.006	2.000	87,208	142	193,312		
PRODCICS	1999/09/08	15:02:38	CEMT	1.926	.023	.000	.000	.000	.000	30,952	204,839	8,896		
PRODCICS	1999/09/09	18:19:39	MC00	3.382	.059	.020	1.000	.000	.000	67,344	2,670	298,480		
PRODCICS	1999/09/15	08:11:48	MC00	4.760	.087	.090	6.000	1.120	1.000	116,080	7,269	217,496		
PRODCICS	1999/09/15	08:19:29	MC00	.802	.023	.087	6.000	.230	3.000	64,544	618	189,808		
PRODCICS	1999/09/15	08:21:03	MC00	2.316	.035	.140	6.000	.064	1.000	112,176	3,692	217,496		
PRODCICS	1999/09/15	08:27:57	MC00	.198	.024	.024	6.000	.018	5.000	64,544	136	189,808		
PRODCICS	1999/09/15	08:33:50	MC00	.276	.035	.068	6.000	.006	1.000	112,176	338	217,496		
PRODCICS	1999/09/15	08:37:47	MC00	.209	.034	.045	6.000	.004	1.000	112,176	243	217,496		
PRODCICS	1999/09.15	08:40:13	MC00	.299	.024	.080	6.000	.015	5.000	64,544	217	189,808		
PRODCICS	1999/09/17	13:12:22	MC00	12.296	.133	.080	6.000	3.665	12.000	128,848	20,458	214,760		
PRODCICS	1999/09/17	13:17:54	MC00	1.699	.089	.052	6.000	.013	5.000	111,056	2,574	214,760		
PRODCICS	1999/09/17	13:25:39	MC00	.483	.033	.081	6.000	.042	12.000	124,944	698	214,760		
PRODCICS	1999/09/17	13:34:35	MC00	1.069	.033	.329	6.000	.033	10.000	110,816	1,404	214,760		
PRODCICS	1999/09/17	13:48:21	MC00	2.044	.077	.548	21.000	.413	2.000	108,440	2,901	214,760		
PRODCICS	1999/09/17	14:00:19	MC00	717.335	.014	.000	.000	.000	.000	96,208	1,029,337	8,896		
PRODCICS	1999/09/17	14:34:24	MC00	1,712.149	.075	.650	24.000	.000	.000	103,248	2,461,194	54,072		
PRODCICS	1999/09/17	14:57:22	CEMT	.145	.003	.000	.000	.000	.000	31,048	28,320	8,896		
PRODCICS	1999/09/18	18:46:08	MC00	3.243	.060	.020	1.000	.000	.000	67,344	2,567	298,480		

Figure 45. Abended Transaction Roster Report

Operational Statistics Report (CMRSAS6F)

The CMRSAS6F sample program generates a report that lists overall transaction performance across CICS regions. The program produces the Operational Statistics report by

- Reading records from the CMRSTATS data set
- Reporting the CPU resource usage and response times of transactions by CICS regions.

The program variable PERIOD controls the processing of CMRSTATS records and the appearance of resulting performance statistics shown in the CMRSAS6F report. Based upon the value of the PERIOD variable, performance statistics produced by each transaction record can be listed as individual report lines or they can be summarized over several fixed intervals. Permissible values for the PERIOD variable are as follows:

PERIOD=1 Produces a report with one print line for each input record.

PERIOD=*xx* Produces a report with one print line for each *xx* minutes of CICS execution time, where *xx* may be 10, 15, 20, 30, or 60 minutes. The default is 15 minutes.

Sample Report

PROGRAM: CMRSAS6F CICS OPERATIONAL STATISTICS REPORT 12:07 WEDNESDAY, SEPTEMBER 25, 1999 1

CICS REGION	RUN DATE	ALL RUN TIME	TOTAL TRANSACTIONS	AVERAGE CPU REAL	TERMINAL CPU REAL	AVG. TERM TRANSACTIONS	MAXIMUM RESPONSE	ACTIVE TASKS
CICSPROD	1999/09/09	08/00/00	118	4.884	0.041	83	0.355	3
CICSPROD	1999/09/09	08/15/00	32	0.844	0.026	1	0.008	3
CICSPROD	1999/09/09	08/30/00	37	1.205	0.033	5	1.165	3
CICSPROD	1999/09/09	08/45/00	31	0.901	0.029	5	0.254	3
CICSPROD	1999/09/09	06/00/00	31	0.896	0.029	0	0.000	3
CICSPROD	1999/09/09	06/15/00	32	0.872	0.027	2	0.010	3
CICSPROD	1999/09/09	06/30/00	32	0.877	0.027	0	0.000	3
CICSPROD	1999/09/09	06/45/00	24	0.865	0.036	0	0.000	3
CICSPROD	1999/09/09	10/00/00	32	0.903	0.028	0	0.000	3
CICSPROD	1999/09/09	10/15/00	31	0.862	0.028	0	0.000	3
CICSPROD	1999/09/09	10/30/00	31	0.860	0.028	0	0.000	3
CICSPROD	1999/09/09	10/45/00	32	0.841	0.026	0	0.000	3
CICSPROD	1999/09/09	11/00/00	24	0.898	0.037	0	0.000	3
CICSPROD	1999/09/09	11/15/00	32	0.862	0.027	0	0.000	3
CICSPROD	1999/09/09	11/30/00	31	0.860	0.028	0	0.000	3
CICSPROD	1999/09/09	11/45/00	31	0.829	0.027	0	0.000	3
CICSPROD	1999/09/09	12/00/00	32	0.890	0.028	0	0.000	3
CICSPROD	1999/09/09	12/15/00	30	1.444	0.048	12	0.515	3
CICSPROD	1999/09/09	12/30/00	31	0.692	0.022	0	0.000	3
CICSPROD	1999/09/09	12/45/00	32	0.827	0.026	0	0.000	3
CICSPROD	1999/09/09	13/00/00	31	0.861	0.028	4	1.572	3
CICSPROD	1999/09/09	13/15/00	31	0.698	0.023	0	0.000	3
CICSPROD	1999/09/09	13/30/00	32	0.595	0.019	0	0.000	3
CICSPROD	1999/09/09	13/45/00	24	0.803	0.033	0	0.000	3
CICSPROD	1999/09/09	14/00/00	32	0.641	0.020	0	0.000	3

Figure 46. Operational Statistics Report

Column Descriptions

The following describes the columnar data specific to Figure 46 on page 105.

ALL TRANSACTIONS
Total number of transactions.

TOTAL CPU REAL
Total amount of CPU real time used during this transaction.

AVERAGE CPU REAL
Average amount of CPU real time used during this transaction.

TERMINAL TRANSACTIONS
Number of transactions executed from this terminal during this time interval.

AVG. TERM RESPONSE
Average response time per transactions executed from this terminal during this time interval.

MAXIMUM ACTIVE TASKS
AMXT value from the CICS region at the time this data is collected.

Part 4. Performance Reporting Language Reports

This part explains how to create custom reports using the MAINVIEW for CICS Performance Reporting Language (PRL).

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Chapter 9. User-Defined Reports (CMRPRL)

You can create custom reports by writing a program with the MAINVIEW for CICS Performance Reporter Language (PRL). With PRL, you select records from the CMRDETL and CMRSTATS data sets that hold CICS transaction and statistical data. Your program determines how these records are processed and formatted in a printed report.

You create PRL reports by executing a batch job that runs a program called CMRPRL and its associated control statements. CMRPRL processes these user-written PRL control statements to select the input VSAM records and to define the format of the report. The most efficient way to execute PRL programs is by running them against small volumes of data during CICS execution or at daily CICS shutdown. Long-term trends can be reported for analysis or debugging by archiving the MAINVIEW for CICS-collected data to tape (see "Archiving Data (CMRPURG)" on page 11), and then specifying the tape as input to the PRL program (see "Selecting Archive Data" on page 152).

Sample PRL programs are located in your BBSAMP library. They are named CMRPRL*nn*, where *nn* is a two-digit suffix that identifies an individual report.

The JCL for submitting the programs is in the CMRL member of your BBSAMP data set. This JCL is distributed as an in-stream procedure. The JCL can be changed and installed in your site's procedure library. You should execute the sample programs to learn PRL and to obtain copies of the default reports.

Performance Reporting Language (PRL)

A typical PRL program consists of the following statements:

Verbs Perform an action.

Operators Symbolically indicate the action to be performed in a mathematical expression.

Substrings For character string evaluation.

Variables For value substitution. Variables can be symbolic for user-defined data or predefined for system-provided data.

You write these statements in a PRL program to generate a user-defined batch report. The statements can assign a value to a variable, establish a condition, or control PRL execution.

A PRL program is created with an interactive editor as a member of a data set. The member can be part of a PRL procedure library. BMC Software distributes sample PRL programs as members in the BBSAMP data set.

The program is executed as a batch job that defines the input data and type of report produced. Sample JCL is provided in the CMRL member of the BBSAMP data set.

Samples

Table 4 shows a list of PRL sample programs distributed with MAINVIEW for CICS.

Table 4. PRL Samples

BBSAMP Member	Report Type
CMRPRL6	Service Level Analysis Report
CMRPRL7	Service Level Analysis Graph
CMRPRL10	Service Level Analysis Report for Terminal Attached Transactions
CMRPRL12	Transaction Activity Graph
CMRPRL24	DB2 Plan Usage Report
CMRPRL25	SQL Activity Report by DB2 Plan
CMRPRL30	DB2 data from variable file entries
CMRPRL31	MQ data from variable file entries
CMRPX0BD	Program Control Detail Report
CMRPX0BS	Program Control Summary Report
CMRPX0C	Transaction Class Report
CMRPX22D	Terminal Control Detail Report
CMRPX22S	Terminal Control Summary Report
CMRPX30D	Temporary Storage Detail Report
CMRPX30S	Temporary Storage Summary Report
CMRPX43D	File Control Detail Report
CMRPX43S	File Control Summary Report

Expressions and Operators

Use any arithmetic, comparative, or logical operator in a statement expression. An expression combines variables, whole numbers, and character strings with operators. Operators are as follows:

=	(equal to)
>	(greater than)
<	(less than)
¬	(not)
+	(plus)
-	(minus)

*****	(multiply)
/	(divided by)
(start-n:length-n)	(substring)

Information about specifying substrings is provided next.

Substrings

Substrings are portions of a character string. They are selected by specifying a numeric range enclosed in parentheses such as

(start-n:length-n)

where

(start-n:length-n) Is an expression that specifies a count of alphanumeric characters from the beginning of a string and a length:

- start-n — Specifies the start of the substring as indicated by n, which is the number of alphanumeric characters from the beginning of a string or referenced field.
- length-n — Specifies the number of alphanumeric characters for the substring as indicated by n. This is the length of the substring.

Examples

The following example selects the fourth character of a string and specifies a substring length of three characters. The substring, FEB, is assigned to the M2 variable.

```
SET Q1 = 'JANFEBMAR'
SET M2 = Q1(4:3)
```

The next example shows how substrings can be used to determine a value, in this case the name of the month:

```
SET MONS = 'JANFEBMARAPRMAYJUNJULAUGSEPOCTNOVDEC'
SET MM   = ZDATE(1:2)
SET V1   = MM - 1
SET V2   = V1 * 3
SET V3   = V2 + 1
SET MNTH = MONS(&V3:3)
```

The substring expression ZDATE(1:2) specifies the first character, for a length of two characters, of the mm/dd/yyyy value passed to ZDATE (03 for example). The substring expression, MONS(&V3:3), selects the portion of the character string determined by the value of the V3 variable and limits the substring to 3 characters. If 03/15/2000 is passed to the ZDATE predefined variable, the variables are assigned the following values:

Variable	Assigned Value
V1	2
V2	6
V3	7
MNTH	MAR

Symbolic Variables

PERFORMANCE REPORTER supports symbolic variables. Variables are symbolic characters used as a substitute for a real value. They are predefined or user-defined. User-defined variables can be any alphanumeric character string that is eight bytes long and starts with an alphabetic character. A symbolic variable name can be preceded by an ampersand (&) to distinguish it from a literal, as described in “PRL Control Statement Syntax” on page 122.

Predefined Variables

PRL provides predefined, reserved variables. Use these variables to obtain information about the current CICS environment. The following descriptions of predefined variables show variable characters in uppercase, to indicate that these exact characters must be specified for that variable.

CDATE (Day Date Month, Year)

This variable passes the current date in the form:

Wednesday 11th September, 1999

It can be used to look for certain conditions on a specific day of the week or month, or to print a more descriptive title; for example:

```
SET TITLE = 'TRANSACTION DAILY REPORT'
SET TITLE1 = &CDATE
```

ZDATE (mm/dd/yyyy)

The ZDATE variable passes the current date, expressed as mm/dd/yyyy; for example:

```
SELECT TYPE 6E RECORDS FROM CMRDETL
WHERE CMRDATE = &ZDATE
```

ZTIME (hh:mm:ss)

The ZTIME variable passes the current time, expressed as hh:mm:ss; for example:

```
PRINT 'REPORT GENERATED AT' &ZTIME
```

The following section describes how to create PRL CICS performance reports.

Generating PRL Reports

A JCL batch job executes your PRL program to create a report. An example of the job to run a PRL program can be found in member CMRL of your site's BBSAMP data set. Figure 47 shows an example of the JCL found in CMRL.

```
//jobname JOB user parameters                <-- CHANGE AS NEEDED
/*JOBPARM user parameters                    <-- CHANGE AS NEEDED
//CMRL PROC
//PRL       EXEC PGM=CMRPRL
//STEPLIB   DD   DISP=SHR,DSN=CMR.CMRV3.BBLINK    <-- CHANGE AS NEEDED
//SYSPRINT  DD   SYSOUT=*
//SYSUDUMP  DD   SYSOUT=*
//SYSOUT    DD   SYSOUT=*
//ISYPROG   DD   SYSOUT=*,DCB=(LRECL=80,BLKSIZE=160,RECFM=FBA)
//ISYSOUT   DD   SYSOUT=*,DCB=(LRECL=80,BLKSIZE=160,RECFM=FBA)
//PNLLIB    DD   DISP=SHR,DSN=CMR.CMRV3.BBPLIB    <-- CHANGE AS NEEDED
//CMRDETL   DD   DISP=SHR,DSN=CMR.CMRV3.CMRDETL
//CMRSTATS  DD   DISP=SHR,DSN=CMR.CMRV3.CMRSTATS
//SORTWK01  DD   UNIT=SYSDA,SPACE=(CYL,5)        <-- CHANGE AS NEEDED
//SORTWK02  DD   UNIT=SYSDA,SPACE=(CYL,5)        <-- CHANGE AS NEEDED
//SORTWK03  DD   UNIT=SYSDA,SPACE=(CYL,5)        <-- CHANGE AS NEEDED
//     PEND
//RUNSTEP   EXEC CMRL
//SYSIN     DD *
```

Figure 47. JCL Used for PRL Batch Execution

Job Control Statements

The JCL for PRL batch execution is used as follows:

JCL	Use
//procname PROC	Indicates procedural JCL. Defaults can be assigned to parameters in the procedure.
//stepname EXEC	Specifies the name of the program that processes user-written PRL statements, which is PGM=CMRPRL. **Note:** It might be necessary to specify a region size of 2048K.
//STEPLIB	Defines the program library containing the MAINVIEW for CICS load modules (BBLINK). **Note:** Alternatively, you can specify a //JOBLIB statement.
//SYSPRINT	Defines the output class for a sort utility. The name of the DD statement is determined at CICS system generation.
//SYSUDUMP	Defines the output for a job that abnormally terminates.
//SYSOUT	Defines the output class.
//ddname	(Optional) Is the name of the Data Definition (DD) statement. The ddname must start with an alphabetic character, can comprise any alphanumeric characters, and is from one to eight characters in length.

The DD statement defines the output for a user-defined report. The report is allocated as defined by the DD statement if the ddname is the same as the value specified by the PRL SET REPORTID statement, as described in “SET (Assign a Value)” on page 139.

Multiple DD statements can be used to direct the output of multiple reports if the ddname for each output allocation is the same as a REPORTID value, as described in “Routing Report Output” on page 149.

Note: A report DD statement, if used, must have DCB specifications that correspond to the report generated (the LRECL size must be large enough to accommodate all the variables specified with the USING statement).

A DD statement is not needed for report output allocation. If the DD statement is omitted and SET CLASS or SET FORM is not used, PERFORMANCE REPORTER allocates a default output class and form number. The defaults are A for the output class and STD for the form number.

//ISYPROG	Defines an output class for the Performance Reporting Language program (CMRPRL) listing.
//ISYSOUT	Defines an output class for the CMRPRL messages.
//PNLLIB	Defines the data set (BBPLIB) containing the data dictionary (CMRDETL and CMRSTATS members). PERFORMANCE REPORTER uses the data dictionary to generate report column headings for the CMRDETL and CMRSTATS records that you select, as described in “Predefined Data Dictionary Descriptions” on page 150.
//CMRSTATS	Defines a VSAM disk or tape data set containing records of CICS operational statistics (CMRSTATS).
//CMRDETL	Defines a VSAM disk or tape data set containing records for each CICS transaction (CMRDETL).
//SORTWKnn	Identifies one to nine work data sets that can be defined for data sorting. Define *nn* as a numeric value from 01 to 09. A minimum of one work data set is required for each user-written report.
//SYSIN	Defines PRL control statements as input to the batch program.

Basic PRL Verbs to Create a Report

The following verbs generate a basic PRL report. For a complete description of each PRL verb, refer to Chapter 10, “PRL Control Statement Verbs” on page 121.

Verb	Function
SET	Sets the report structure and defines any variables to be processed and reported with the CMRSTATS or CMRDETL data.
SELECT	Specifies the CMRSTATS or CMRDETL data to be processed.
USING	Specifies the data to be reported.
REPORT	Reports the data until end of file.
END	Terminates the PRL program.

You can select and report abend transaction data by combining the basic statements shown in Figure 48 with the JCL described in “Job Control Statements” on page 113

```
SET TITLE = 'TRANSACTIONS THAT ABENDED'
SELECT TYPE 6D RECORDS FROM CMRDETL
USING T6ETRID -
      CMRDATE  -
      CMRTIME  -
      T6EABCD  -
      T6EOPID  -
      T6ETMID  -
      T6ERESP  -
      T6ECPUR
  REPORT
  END
```

Figure 48. Basic PRL Verbs for Creating a Report

PRL Processing

As shown in the previous section, some PRL statements are required for proper report execution. The use of other PRL statements depends upon what you want your report to do. This section describes how PERFORMANCE REPORTER processes a PRL program.

Logic Flow

The sequence that follows shows the order in which PRL statements are processed. Those steps that are noted as optional are user dependent. If the PRL described in an optional step is used, it should be written as sequenced.

1. Set the titles and size of your report (optional).
2. Set any variables that you want as constants (optional).

   A value assigned to a variable before a SELECT statement does not change unless the variable is used again after the SELECT statement.

   Note: If DETAIL, SUMMARY, or USING will be used with a COMPUTE or SET statement, the variable should be defined first (the DEFINE statement).
3. Select the record types as input to your report using the SELECT statement.
4. Qualify record selection with a WHERE statement (optional).
5. Evaluate data with a COMPUTE statement (optional).
6. Specify the data to be reported with a USING statement.
7. Sort the data with ORDER BY (optional).

   If DETAIL or SUMMARY is specified, the first variable of ORDER BY must be the same as the first variable of the USING statement. The records are selected and ordered until end of file, and then reported.
8. Tabulate the data with DETAIL or SUMMARY (optional).

   DETAIL or SUMMARY causes a break in the reporting whenever the first variable of the USING statement changes. A summary is computed at each break.
9. Report each selected record using the REPORT statement.

   Any variables defined after a SELECT statement and before a REPORT statement are assigned a specified value every time a record is reported and a new record selected, until end of file.
10. (Optional) Print footnotes, calculated variables, or comments after all records are reported using the PRINT statement.

    Note: PRINT is processed wherever it is used in the PRL program.
11. End the PRL program (the END statement).

Record Processing

PERFORMANCE REPORTER processes records chosen in the SELECT statement according to the PRL verbs used between the SELECT and REPORT statements until the end of file is reached. These records are processed in chronological order unless an ORDER BY statement is used. If an ORDER BY statement is used, the processing takes place according to the PRL verbs used between the SELECT and ORDER BY statements, and the resulting data is processed by the REPORT statement. The END statement specifies the end of file.

Reporting Selected Data

SELECT requires a REPORT statement to show the results of each record processed by the PRL statements between SELECT and REPORT, until there are no more records; for example.

```
 SET TITLE = 'ANALYSIS OF FILE CONTROL TABLE'
 SET WIDTH = 132
 DEFINE FILFNAM  CHAR 08
 DEFINE FILDSRD  EDIT ZZZZ,ZZ9
 DEFINE FILDSWRU EDIT ZZZZ,ZZ9
 DEFINE FILDSWRA EDIT ZZZZ,ZZ9
 DEFINE FILDSDEL EDIT ZZZ,ZZ9
 DEFINE FILDSXCP EDIT ZZZ,ZZ9
 DEFINE FILDSIXP EDIT ZZZ,ZZ9
*
* ADD STARTING AT CLAUSE TO BEGIN AT A SPECIFIC DATE AND TIME
*
 SELECT TYPE 43 RECORDS FROM CMRSTATS
 WHERE FILDSRD > 0
 OR FILDSWRU   > 0
 OR FILDSWRA   > 0
 OR FILDSDEL   > 0

 USING CMRDATE  -
     CMRTIME  -
     FILFNAM  -
     FILDSRD  -
     FILDSWRA -
     FILDSWRU -
     FILDSDEL -
     FILDSXCP -
     FILDSIXP
 ORDER BY FILFNAM
 DETAIL
 REPORT
 END
```

Figure 49. Detail File Control Table Analysis—Sample PRL

The PRL statements shown in Figure 49 search the CMRSTATS data set for records identified by hexadecimal 43 in the TYPE field. The statements then report each specified field until end of file.

Sorting and Reporting Data

Data shown in PRL reports is in chronological order. Use the ORDER BY statement to change the order. ORDER BY sorts the data by the record variable specified with the statement.

The data is arranged in ascending order (low to high), unless IN DESCENDING SEQUENCE (high to low) is specified. Adding ORDER BY before REPORT in the preceding example, such as ORDER BY FCTNAME, processes each record between SELECT and ORDER BY until end of file, and then sorts each record by file name (FCTNAME) and reports the sorted data. Only one ORDER BY variable can be used per report set.

Note: The ORDER BY variable should be the same as the first USING variable if SUMMARY is used after ORDER BY. If it is not, unexpected results can occur.

Example: Reporting Average Terminal Response Time

The example in Figure 50 on page 119 shows the use of PRL to average and report terminal response time. The reported results are shown in Figure 51 on page 120.

```
** REPORT1 ************************************************************
*                                                                    *
* RESPONSE TIME SUMMARY FOR ALL TERMINAL ATTACHED TRANSACTIONS  -     *
* BASED ON THE CC RECORD TYPE 5 MINUTE RECORDING INTERVAL -          *
**********************************************************************

** PRINT CONTROL SECTION ***********************************************
*                                                                    *
**********************************************************************

SET CASE     = 'UPPER'
SET CLASS    = 'R'
SET FORM     = 'STD '
SET LINES    =  50
SET REPORTID = 'REPORT1'
SET WIDTH    = '132'
SET TITLE    = 'TRANSACTION RESPONSE TIME'
SET TITLE1   = 'Terminal-Attached Transactions'
SET TITLE2   = ' '

** USER DEFINED VARIABLES **********************************************
*                                                                    *
* VARIABLES DEFINED BEFORE THE SELECT STATEMENT WILL ONLY BE         *
* INITIALIZED ONCE.                                                  *
*                                                                    *
**********************************************************************
**********************************************************************
* INCLUDE A RANGE OF DAYS.  DAYS AFTER 09/11, IE 09/12.  DAYS BEFORE  *
* 09/14, IE 09/13.                                                   *
**********************************************************************
SET FDATE    = '09/19/1999'
SET LDATE    = '09/22/1999'

**********************************************************************
* INCLUDE A RANGE OF TIMES.  HOURS AFTER 7:59 AM AND HOURS BEFORE     *
* 8:00 PM.                                                           *
**********************************************************************
SET FTIME    = '07:59:00'
SET LTIME    = '20:00:01'
** SELECT CONTROL SECTION **********************************************
*                                                                    *
* BEGIN LOOP: THE SELECT STATEMENT BEGINS A REPORT LOOP FOR EACH      *
*          RECORD UNTIL END OF FILE.                                 *
*                                                                    *
**********************************************************************

SELECT TYPE CC RECORDS FROM CMRSTATS
  WHERE CMRDATE > FDATE -
  AND   CMRDATE < LDATE -
  AND   CMRTIME > FTIME -
  AND   CMRTIME < LTIME

** USER AND OTHER PRL VARIABLES ****************************************
*                                                                    *
* VARIABLES DEFINED HERE WILL BE ASSIGNED EVERY TIME A RECORD IS      *
* SELECTED.                                                          *
*                                                                    *
**********************************************************************

COMPUTE AVTRMRSP = T6FRSPTM / T6FTRMCT

USING -
  CMRTIME     -
  AVTRMRSP    -
  T6FTRMCT    -
  T6FSSHWM    -
  T6FSPGIN    -
  T6FSPGOU
REPORT
END
```

Figure 50. Sample PRL Using the COMPUTE Statement

Figure 51 is the result of using COMPUTE as shown in the PRL example in Figure 50 on page 119.

```
REPORT1            TRANSACTION RESPONSE TIME              VERS: REL5.4.0
             TERMINAL-ATTACHED TRANSACTIONS           TIME:   06:27:33
                                   DATE: 09/22/1999
                                   PAGE:        1

RECORDED                 TERMINAL       DSA     PAGE-IN      PAGEOUT
 TIME        AVTRMRSP      TASKS        HWM      COUNT        COUNT
-------- --------------- ----------- ----------- ------------ -------------

12:33:00      0.00000        0        1310        165          26
12:38:01      0.00000        0        1310        172          31
12:43:00      0.25196       32        1321        312          27
12:48:00      0.07513      118        1404        215          67
12:53:00      0.14303       62        1424        293         124
12:58:00      0.12650       42        1421        319          67
13:03:00      3.05300        1        1415        174          18
13:08:00      0.00000        0        1415        100          20
```

Figure 51. Terminal-Attached Transaction Response Time Report

Chapter 10. PRL Control Statement Verbs

The first word of every PRL statement is a verb or a condition (IF, FOR, WHERE) with a verb in the expression. This chapter describes PRL verbs in alphabetical order. Each verb is discussed in a separate section that includes a description of the verb, its uses, syntax, and a coding example.

Table 5. PRL Control Statement Verbs

PRL Verb	Description	See page
COMPUTE	Calculates a mathematical expression	124
DEFINE	Assigns the data characteristics of a variable	125
DETAIL	Creates a tabular summary at each control break	127
DIAGNOSE	Creates a system snap dump and diagnostic report	128
END	Terminates the execution of a PRL program	129
FOR and NEXT	Repeats a series of instructions in a loop	130
GOTO	Branches to another location of a PRL program identified by a label	131
IF and THEN	Tests conditions and makes a program branch according to the outcome	132
LET	Assigns a length to variable 1 from the length of variable 2	133
ORDER BY	Sorts data	134
PRINT	Prints a report	135
REPORT	Creates a report from the data processed by PRL statements	136
SCAN	Reads a variable and performs an editing function on the data	137
SELECT	Selects records from CMRDETL and CMRSTAT data sets	138
SET	Assigns a value to a variable	139
SUMMARY	Creates a tabular summary of the first preceding variable in the USING statement	142

Table 5. PRL Control Statement Verbs (Continued)

PRL Verb	Description	See page
USING	Designates column headings and the data shown in a report based upon record fields	144
WHERE	Qualifies record selection based upon whether a condition is met	145

PRL Control Statement Syntax

PRL is a free-form language with minimal restrictions. It allows approximately 1200 user-defined variables. The number of allowed PRL statements is limited by the available memory. The leftmost word of the statement is the verb.

Conventions

To enter statements and comments:

- Start each statement with the verb. Each of the PRL verbs is described in this section. PRL verbs must be written in uppercase.
- Write the PRL statements between columns 1 through 72. Characters between columns 73 and 80 are ignored.
- Use one or more blank spaces to separate the verb and parameters in a statement.
- Use indentation and blank lines to improve readability.
- Describe statements with comments. Comments are indicated by an asterisk (*) in column 1. Each comment should be on a separate line preceding the statement it describes.
- Use the END verb followed by a semicolon (END;) to indicate the end of a set of PRL verbs that specify an IF-THEN-BEGIN branching routine. Place each verb on a separate line for readability.

To terminate execution:

- The END verb terminates PRL execution.

To use labels:

Labels direct program flow to another statement. They

- Are used with GOTO statements
- Must be unique within the PRL program
- Should be on a separate line
- Can start in any column
- Can be any length
- Can have special characters but no blank characters
- Must end with a colon (:) sign

To specify a literal:

- Enclose a literal in single quotation marks to distinguish it from a variable.

To specify a variable:

- Begin each variable with an alphabetic character; remaining characters for the variable can be alphanumeric. All variables must be eight characters or less. Predefined variables must be written as shown.
- Put an ampersand (&) sign in front of a variable used within a quoted literal. If there is no & preceding any characters enclosed in quotes, all characters are processed as literals. For example:

  ```
  SET V1 = 'ABC'
  SET V2 = 'DE'
  SET V3 = '&V1&V2.F'
  ```

  sets V3 to ABCDEF. If the last statement in this example used 'V1V2.F', V3 would be set to V1V2.F. (See “SET (Assign a Value)” on page 139.)

To concatenate variables and literals:

- Use a period to concatenate a variable to a literal within single quotes, as shown above.

To assign a numeric value to a variable:

- Use a decimal point, a sign, or commas (no blank characters) with a number used in an expression or assigned as a value to a variable, as described in “SET (Assign a Value)” on page 139. The numeric value is not enclosed in single quotation marks.

  For example:

  ```
  SET DAYS = 7
  ```

To specify a substring:

- Use (start-n:length-n) to select a portion of a character string, as described in “Substrings” on page 111. Start-n specifies the number of characters from the beginning of the string. Length-n is the length of the substring. The numerics must be delimited with a colon and enclosed in parentheses, such as (4:2), which counts to the fourth character of a string and limits the substring to two characters.

To continue the USING or PRINT statement:

- The USING and PRINT statements may be continued on more than one line. Use a minus (-) sign to continue the statement from one line to another.

PRL Reserved Words

The following list shows PRL reserved words. None of these reserved words should be used as variable names in PRL jobs to create batch reports.

&	ALARM	ALTERVS
AND	BLINK	CCMD
CDATE	COLOR	COMPUTE
CTIME	CURSOR	CYCLE
Dnnnnnnn[7]	DEFINE	DELAY
DETAIL	DIAGNOSE	DUMP
END	EXEC	EXIT
FACT	FCMD	FIND

FOR	GCMD	GET
GOTO	GRAF	HEADING
HELP	HIGHLIGHT	HISTORY
IF	LET	LIN001
LOGOFF	NEW	NEXT
OR	ORDER	PAD
PANELID	PRINT	PROFCNT
PROFMEM	PROFRC	PUT
RAND	REPORT	RETURN
REVERSE	RVIDEO	SCAN
SCMD	SELECT	SET
SUMMARY	SYMBOLISE	SYMBOLIZE
TCOL	TRACE	TRIM
TROW	TUTOR	Unnnnnnn[7]
UNDERSCORE	USING	WHERE
ZCARD	ZCICS	ZCSA
ZCT	ZCURSOR	ZCW
ZDATE	ZERRMSG	ZIFX
ZIFY	ZLAST	ZLINE
ZLINES	ZLOC	ZMEMBER
ZMSG	ZOPTERR	ZPF
ZREQUEST	ZSCREEN	ZSHOW
ZTIME	ZTITLE	ZTRAN
ZUSER	ZWRAP	ZXDT

[7] where nnnnnnn are numbers, Dnnnnnnn are numbers reserved for titles, and Unnnnnnn are numbers reserved for details.

COMPUTE (Calculate Mathematical Expression)

COMPUTE calculates a mathematical expression and places the results in a variable. The expression specified by the COMPUTE statement uses CMRSTAT or CMRDETL records as variables.

The SELECT statement declares the CMRSTAT or CMRDETL records that are used as COMPUTE variables. The SELECT statement usually precedes the COMPUTE statement in a PRL program.

The results assigned to the variable by COMPUTE can be reported by naming the variable in the USING statement. The COMPUTE statement usually appears before the USING statement in a PRL program.

Syntax

COMPUTE V1 = *expression*

where

V1 — Is a 1- to 8-byte user-specified alphanumeric character string beginning with an alphabetic character.

expression — Sets the user-specified variable to the results of the calculation as expressed by the = sign with any of the following operators:

- **+** — Adds two record variables together
- **-** — Subtracts one record variable from another

*	Multiplies record variables
/	Divides record variables

Whole numbers with signs, commas, or decimal points can be used with any of these operators. They also can be used alone to represent real numbers.

Usage

When the variable being computed is used with DETAIL, SUMMARY, or USING statements, a DEFINE statement should be inserted before the COMPUTE statement.

The computations on printouts can result in the maximum of a 16-digit mathematical expression.

Example

In the following example, COMPUTE uses a simple addition expression and places the results in TOTALPG. The results of the computation are reported for each selected record until the end of file. The USING statement specifies the user-defined TOTALPG variable as a column heading.

```
SET TITLE = 'DAILY PAGING AND TASK ANALYSIS'
SELECT TYPE 6F RECORDS FROM CMRSTAT

 COMPUTE TOTALPG = T6FSPGIN + T6FSPGOU
 USING CMRDATE T6FSPGIN T6FSPGOU TOTALPG T6FTRNCT

SUMMARY
REPORT
END
```

DEFINE (Define Variable Attributes - Optional)

DEFINE fixes the picture of a variable for the duration of the PRL run. This occurs on the first use; it is ignored for subsequent uses. The use of this verb causes the variable attribute length and decimal significance to be unalterable. In addition, it provides you with the means to specify an edited pattern for display of fields. This is particularly useful if the variable is to appear on the report with USING.

This function also can be particularly useful when used with the SUMMARY or DETAIL functions. DEFINE ensures that the column width accommodates the totals without decimal truncation or alteration.

DEFINE can be used only with alphabetic or numeric fields. It cannot be used with DATE, TIME, or HEX fields.

Syntax

DEFINE *variable* {CHAR *nn*|EDIT ZZ,ZZ9.99}

where

variable
Is a symbolic variable. The symbolic variable can be predefined or user-defined. User-defined variables must start with an alphabetic character, can be up to eight characters long, and can comprise any alphanumeric character. For a further discussion on variables see "SET (Assign a Value)" on page 139.

CHAR *nn*
Identifies the verb as a DEFINE for a character variable; *nn* specifies the number of characters to be shown.

EDIT ZZ,ZZ9.99
Identifies the verb as a DEFINE for a numeric variable; ZZ,ZZ9.99 are symbols representing the digits in the number. The description can contain up to 25 digits. The following symbols are supported:

'.' Decimal placement and representation

, Numerical editing

9 Decimal significance

'Z' Decimal significance; zero suppresses digits

' ' Blanks

- Sign characters

Note: The edit pattern should be at least as long as the default title for that field.

Usage

Use the DEFINE statement only once per variable. Define the variable before using it in another statement.

A DEFINE statement should be inserted before a COMPUTE or SET statement when the COMPUTE or SET statements are used with DETAIL, SUMMARY, or USING.

Example

```
DEFINE T6ERESP EDIT ZZ9.99
SELECT TYPE 6E RECORDS FROM CMRDETL
USING T6ETRID T6ERESP
SUMMARY
REPORT
END
```

DETAIL (Tabulate and Summarize Each Record)

DETAIL requests a tabular summary at each control break based on the first variable mentioned in the USING statement that precedes it. A count is maintained for each item that has a common value matching the first variable. When the value of the first variable changes, a control break occurs and the totals and averages are printed. If neither SUMMARY nor DETAIL is used, a tabular report with no control breaks is printed.

Syntax

DETAIL

Usage

DETAIL can be coded only after the USING statement but prior to REPORT. If ORDER BY is used, DETAIL must follow this statement.

Example

The report shown in Figure 52 is produced when the following PRL is executed:

```
SET TITLE = 'DETAIL TRANSACTION ROSTER'
SELECT TYPE 6E RECORDS FROM CMRDETL
  USING CMRDATE CMRTIME T6ETRID T6ERESP T6ECPUR T6ETMID T6EOPID
  DETAIL
REPORT
END
```

```
REPORT1          DETAIL TRANSACTION ROSTER            VERS:   REL3.5.0
                                     TIME:   06:27:25
                                     DATE: 09/17/1998
                                     PAGE:         1

 RECORDED    RECORDED  TRAN            RESPONSE     CPU REAL  TERM  OPR
  DATE       TIME    NAME     TOTAL       TIME        TIME  ID.   ID.
 ---------- -------- ---------------  ----------- ------------ ----  ---

 09/17/1998  10:21:12  ETI0              3.511        0.067
 09/17/1998  10:31:12  ETI0              0.186        0.021
                ETI0        2      3.697        0.088
                    AVG *****       1.848        0.044

 09/17/1998  10:21:23  ETMO              5.633        0.321  L06B  R01
 09/17/1998  10:22:31  ETMO              0.906        0.078  L06B  R01
                ETMO        2      6.539        0.399
                    AVG *****       3.269        0.199

 09/17/1998  10:21:33  ETM2              5.504        0.174  L06B  R01
 09/17/1998  10:22:14  ETM2              1.353        0.155  L06B  R01
 09/17/1998  10:22:26  ETM2              1.099        0.138  L06B  R01
                ETM2        3      7.956        0.467
                    AVG *****       2.652        0.156
```

Figure 52. Detail Report

DIAGNOSE (Perform Diagnostics)

DIAGNOSE forces entry into the PRL diagnostic environment with a system snap dump to produce a diagnostic report that helps BMC Software isolate any problems that might occur. The report shows

- Name
- Length
- Assigned value
- Data type (E is numeric; blank indicates characters)
- Significant decimal places (3 is .001)

Syntax

DIAGNOSE

Usage

The DIAGNOSE statement should be used only for PRL program execution analysis.

Example

The following example shows the use of DIAGNOSE to analyze a previously executed PRL program. DIAGNOSE is added before the END statement.

```
SET TITLE = 'MAINVIEW for CICS COMMON SYSTEM AREA (CSA) ANALYSIS'
SELECT TYPE 11 RECORDS FROM CMRSTAT

  USING CMRDATE CMRTIME CSATSKCT CSAGTMAN CSAFRMAN -
      CSADUMPS CSASOSCT
  ORDER BY CSATSKCT

REPORT
*****************************************************************
* Insert DIAGNOSE statement before END if PRL does not execute  *
* properly.  DIAGNOSE produces system snap dump and list of     *
* variable pool elements showing variable attributes.           *
*****************************************************************
DIAGNOSE
END
```

END (Stop Execution)

END terminates PRL execution.

Syntax

```
END
```

Usage

Use END

- To indicate PRL report termination.
- In the THEN clause of an IF statement to force termination of PRL execution. For example, to get only the first 50 selected records, use END with IF-THEN as follows:

  ```
  SET Y = Y + 1
  IF Y > 51 THEN END
  ```

  (See the example for “IF and THEN (Do Statement to Test Conditions)” on page 132.)
- After DIAGNOSE.

Example

```
SET TITLE = 'TRANSACTIONS THAT ABENDED'
SELECT TYPE 6D RECORDS FROM CMRDETL
USING T6ETRID -
      CMRDATE  -
      CMRTIME  -
      T6EABCD  -
      T6EOPID  -
      T6ETMID  -
      T6ERESP  -
      T6ECPUR
 REPORT
 END
```

FOR and NEXT (Do a Set of Statements on a Condition)

FOR and NEXT perform a series of instructions a given number of times in a loop and cause a variable to be used repeatedly.

Syntax

```
FOR V1 = V2 TO V3
statement
statement
NEXT V1
```

where

V1	Is the counter value. The value should be defined using the SET verb.
V2	Is the initial value of the counter. The length attribute of V2 must be the same as the V3 length attribute.
V3	Is the final value of the counter. If a variable name is used, it must have an ampersand (&) prefix.
statement	Can be any PRL statement.

The set of statements following the FOR statement are executed until a NEXT statement is encountered and a specific condition is met. There is at least one execution of the series of statements, even if the final counter value is less than the initial value. After each execution, the V1 value is incremented by 1. Processing loops back to the beginning of the set of statements after the FOR statement until the final value is reached. When the counter value is greater than the final value, the statement following the NEXT statement is executed.

Usage

You can

- Use FOR and NEXT anywhere within the PRL. The FOR-NEXT loop usually follows a SELECT statement.
- Nest FOR and NEXT loops, as shown in the following example. The counter within each nested loop must have a unique variable name. The NEXT statement for the inner FOR-NEXT loop must appear before the NEXT statement for the outer FOR-NEXT loop.
- Use any of the variables described in “Symbolic Variables” on page 112 or “Predefined Variables” on page 112.

Example

```
FOR &X = 001 TO 100
  FOR &Y = 001 TO 100
    SET Z = X + Y
  NEXT &Y
NEXT &X
```

GOTO (Continue Processing at Label with : Suffix)

GOTO branches to the PRL marked by a label ending with a colon (:) sign. Execution continues at the first statement following the label.

Syntax

GOTO *label*

where

GOTO — Directs program flow to another set of PRL statements.

label — Is the name of a set of PRL statements. The label must have a colon (:) suffix.

The label is alphanumeric, can include special characters but no blank characters, and must end with a colon (:) sign. The label should be on a line by itself and must be unique. It can be any length and can start in any column, as follows:

```
IF V1 = V2 THEN GOTO LABEL
        statement
        statement
LABEL:
        statement
        END
```

Example

```
SELECT TYPE 6E AND 6D RECORDS FROM CMRDETL
    WHERE T6ETMID ¬= '    '
  IF TYPE = '6D' THEN GOTO ABEND
  SET CIC = T6ETRID(1:1)
  IF CIC = 'C' THEN GOTO CICS
ABEND:
  SET REPORTID = 'TRANAB'
  SET TITLE = 'TRANSACTIONS THAT ABENDED'
  SET CLASS = 'R'
  USING CMRDATE CMRTIME T6ERESP T6ECPUR T6ETRID T6EOPID T6ETMID
  REPORT
CICS:
  SET REPORTID = 'CICSTRAN'
  SET TITLE = 'CICS-SUPPLIED TRANSACTIONS'
  SET CLASS = 'R'
  SET HH = &CMRTIME(1:4)
  SET TIME = '&HH.0  '
  USING TIME T6ETMID T6EOPID T6ECPUR T6ETCWT T6ETRID T6ERESP
  DETAIL
  REPORT
  END
```

IF and THEN (Do Statement to Test Conditions)

The IF and THEN statements test conditions. The results of the test determine the action to be taken by the PRL program.

Syntax

IF *expression* THEN *statement*|BEGIN

where the IF-THEN statement is all on one line, and

expression Consists of variables, whole numbers, or character strings connected by operators (see "Expressions and Operators" on page 110).

Note: The first parameter is used to define the length in an alphabetic compare.

THEN Is required and can be followed by a PRL statement or a BEGIN clause terminated by an END statement with a semicolon (;) suffix.

statement Can be any of the following PRL statements: BEGIN, GOTO, END, SET, or EXEC; for example:

```
IF V1 = V2 THEN SET V3 = V4
```

BEGIN Indicates there is a series of PRL statements following the IF-THEN condition. More than one statement can be nested within the IF condition when a true condition results from the test. The end of the statements is signaled by an END statement followed by a semicolon (END;):

```
IF V1 = V2 THEN BEGIN
        statement
        statement
        END;
```

The semicolon (;) suffix distinguishes this END statement from an END that terminates PRL execution.

END without a semicolon (;) suffix terminates PRL execution as follows:

```
IF V1 > V2 THEN END
```

The entire report generation sequence can be coded in an IF statement. For example, to produce a report that outlines, among other things, the 20 busiest CPU users in your system, keep a variable called COUNT and increment it just before REPORT. Follow this with a conditional statement that terminates the job when 20 are reported.

Example

```
SET TITLE = 'HIGHEST 20 USERS OF CPU TIME - &ZDATE'
SELECT TYPE 6E RECORDS FROM CMRDETL
WHERE &CMRDATE = &ZDATE
USING T6ETRID -
      CMRDATE  -
      CMRTIME  -
      T6EUSER  -
      T6ETMID  -
      T6ERESP  -
      T6ECPUR
  ORDER BY T6ECPUR IN DESCENDING SEQUENCE
  SET &COUNT = &COUNT + 1
  IF COUNT > 20 THEN END
  REPORT
 END
```

LET (Set Variable Length)

LET, in combination with the LENGTH parameter, sets variable1 in a statement to the length of variable2. As a result, the first variable becomes a 3-digit value between 000 and 256, depending on the length of the second variable.

Syntax

LET *variable1* = LENGTH *variable2*

where

variable1 Is the name of a variable or array element to receive a length value. *variable1* can be a character string, a numeric variable, or an array element.

variable2 Is the variable whose length will be assigned to *variable1*.

Example

The following example keeps the length of file and transaction names to 70 characters or less:

```
LET &LTR = LENGTH &TRNID(&K)
IF &LTR > 70 THEN GOTO LAB3
```

ORDER BY (Sort Selected Records)

ORDER BY sorts variables into a different order from that presented by the SELECT verb.

If the report is to be in chronological order, there is no need to sort your data. This is because all of the records are time-stamped with CMRDATE and CMRTIME. Occasionally, you may want to arrange the report by transaction code or by response time. This is useful if you are interested in summaries based on a group of transactions, a range of execution periods, or whatever you have in mind.

The ORDER BY statement relies upon the IBM Sort Facility to pass user data to a sort exit as the second parameter in the list. Other sort facilities can be used if they are compatible with the IBM Sort Facility (use standard sort exits E15 and E35).

The ORDER BY statement can be overridden with your own sort control statement, such as

```
//SORTCNTL DD *
 options - -
/*
```

Syntax

```
ORDER BY v1 [IN DESCENDING SEQUENCE]
```

Usage

- Only one ORDER BY statement is allowed per report set.
- Only one variable can be specified with ORDER BY. It can be either a user-defined or predefined variable.
- If DETAIL or SUMMARY is used, the ORDER BY variable must be the same as the first variable in the USING statement, as shown below.
- IN DESCENDING SEQUENCE orders the data from high to low values.

Example

```
SELECT TYPE 6E RECORDS FROM CMRDETL
USING T6ETRID -
    T6ERESP -
    T6ECPUR -
    T6EFCWT -
    T6ESHWM -
    T6EPAGCT
ORDER BY T6ETRID
SUMMARY
REPORT
END
```

PRINT (Print One-Line Message)

PRINT causes a one-line message, the value of a variable, or a combination of these to be printed in a report whenever the PRINT statement is processed.

Syntax

PRINT [V1|*'string'*|V1..Vn *'string'*|*fieldname*]

where

PRINT	With no parameters, prints a blank line.
V1	Is a variable that is assigned a value by the SET statement. The value of the variable is printed.
'string'	Is a literal character string enclosed in single quotes. The string can contain alphanumeric, blank, or special characters.
fieldname	Is the name of a field in a CMRDETL or CMRSTAT record (see Appendix B, "CMRDETL: Transaction Detail Records" on page 173). The field value is printed.

Example

```
SET DOWN  = '          * * * MAINVIEW for CICS NOT ACTIVE * * *'
SET TITLE = 'MAINVIEW for CICS GLOBAL PERFORMANCE ANALYSIS'
SELECT TYPE 6F RECORDS FROM CMRSTAT
USING CMRDATE CMRTIME T6FSUCP T6FSTCCP T6FSJCCP T6FSKCCP T6FSOSCP
  IF T6FSFLAG = 'L' THEN BEGIN
          PRINT
          PRINT DOWN
          PRINT
           END;
  REPORT
 END
```

REPORT (Report Selected Record)

REPORT produces a report that shows the results of each record processed by the PRL statements between SELECT and REPORT. Each field specified by the USING statement is reported until end of file.

The default report size is 50 lines x 132 print positions. The report size can be changed by SET LINES = and SET WIDTH = as shown by “SET (Assign a Value)” on page 139. The width of the body of the report is determined by the record fields and variables specified in the USING statement (see “USING (Designate Column Headings and Record Fields)” on page 144.)

The statement following REPORT receives control when all selection criteria presented by the SELECT verb have been met and the file has reached its end.

Syntax

```
REPORT
```

Example

```
SELECT TYPE 6F RECORDS FROM CMRSTAT
  USING CMRDATE T6FSPGIN T6FSPGOU
  SUMMARY
  REPORT
END
```

SCAN (Scan a Variable Field)

SCAN scans a variable and edits it.

Syntax

```
SCAN &Vn {REMOVING|REPLACING}
      {LEADING|ALL}
      {BLANK|NULL|c}
      [WITH|[{BLANK|NULL|c}]]
```

where

&V*n*	Is the name of a defined variable that contains the target data to be edited.
REMOVING| REPLACING	Indicates the editing to be performed on the data of the target variable.
LEADING|ALL	Edits the leading or trailing data to one byte or all the data as indicated.
WITH	Must be used if REPLACING is specified.
BLANK	Specifies blank characters.
NULL	Specifies null characters.
c	Represents any alphanumeric characters.

Example

```
SET BB = '&vbarSELECT TYPE 6F RECORDS FROM CMRSTAT
 WHERE CMRDATE = '09/17/1998'
   SET Y = T6FTRNCT / 5
   SET Y = Y + 1
   IF Y > THEN 51 THEN SET Y = 52
   SCAN &Y REMOVING LEADING 0
   SET &X = BB(1:&Y)
 USING CMRDATE CMRTIME T6FTRNCT X
REPORT
END
```

SELECT (Find Record Type)

SELECT picks out records from CMRDETL or CMRSTAT by the record type. Optionally, the starting point of the SELECT can be qualified with a date and time.

Syntax

SELECT TYPE *xx* RECORDS FROM *dataset*
SELECT TYPE *xx xx* RECORDS FROM *dataset*
SELECT TYPE *xx* AND xx RECORDS FROM *dataset*
SELECT TYPE *xx xx xx ... xx* RECORDS FROM *dataset*
SELECT ALL RECORDS FROM *dataset*
SELECT TYPE *xx* RECORDS FROM *dataset* STARTING AT *time* ON *date*

where

TYPE *xx* or ALL

Names the specific records to be used from the MAINVIEW for CICS CMRSTAT or CMRDETL data sets; *xx* is the hexadecimal identifier of the record as described in "Collecting Report Data" on page 7 and shown in Appendix B, "CMRDETL: Transaction Detail Records" on page 173. As shown in the syntax example, more than one record type can be selected from a data set with a single SELECT statement. A maximum of nine record types can be specified on one line.

ALL selects all record types from a single data set. The specified records must reside in the same data set. Type 6E and 6D records reside in the CMRDETL data set, while all other record types are in CMRSTAT. A maximum of nine specific record types can be selected.

RECORDS FROM

Is a required clause.

dataset

Can be either CMRSTAT or CMRDETL on tape or disk, as defined by the JCL. PERFORMANCE REPORTER searches the data set for a record ID that matches the value specified by SELECT TYPE *xx* and makes those records available for PRL processing.

STARTING AT *time* ON *date*

Specifies when reporting is to begin. MAINVIEW for CICS performance data is arranged in chronological order with date and time stamps. The date is always represented as mm/dd/yyyy and the time as hh:mm:ss. To concentrate on a particular time period, add this parameter on the end of the SELECT statement. The selection process will not start until the first record is found. Today's date is given by using the variable ZDATE. The current time is given by the variable ZTIME.

For example, the following statement reports CICS activity since the start of business today:

```
SELECT TYPE 6F RECORDS FROM CMRSTAT STARTING AT 08:00:00 ON &ZDATE
```

This job can be run on any day and the start date does not need to be changed.

Note: If records are to be selected from an archive tape, STARTING AT has no effect and should not be used. Records can be selected from an archive tape by using WHERE as follows:

```
SELECT TYPE 6F RECORDS FROM CMRSTAT
  WHERE CMRDATE = '09/17/1998'
```

Usage

Only one SELECT control statement per CMRDETL or CMRSTAT per run can be specified in each PRL program. You could receive unpredictable results if you do use more than one SELECT control statement in your program.

Example

```
SET TITLE = 'D E T A I L    T R A N S A C T I O N    R O S T E R'
 SELECT TYPE 6E RECORDS FROM CMRDETL
   USING CMRDATE CMRTIME T6ERESP T6EFCWTC T6ETRID T6ENETNM
 REPORT
END
```

SET (Assign a Value)

SET, in combination with the = operator, assigns a value (characters or numerics) to a variable. It can be used to specify report headings and the contents of variables and to control the printing of the report.

Syntax

SET *variable = expression*

where

variable Is a symbolic variable. The symbolic variable can be predefined or user-defined. A user-defined variable must start with an alphabetic character, can be up to eight characters long, and can comprise any alphanumeric character. It can be preceded by an ampersand (&) to distinguish it from a literal.

expression Can be variables, whole numbers, or character strings alone or in combination with operators (see "Expressions and Operators" on page 110).

A value assigned to a variable before a SELECT statement does not change.

Usage

When the variable being set is used with DETAIL, SUMMARY, or USING statements, a DEFINE statement should be inserted before the SET statement.

A symbolic variable can be set to

- The value of another variable, which can be symbolic or predefined (see "Predefined Variables" on page 112).

```
SET WEEK = &DAYS
```

Note: Ampersand (&) is a reserved word and should not be used as a variable value. In other words, &a is a variable while & or && is not.

- A character string.

  Enclose characters in single quotation marks. Begin a variable inside quotation marks with an ampersand. Use a period to delimit a variable from a literal. The characters can be a direct substitute for the variable, a substring, or concatenated with other variables, as follows:

  Substitute ABCDEF is substituted for the symbolic variable, ALPHA.

  ```
  SET ALPHA = 'ABCDEF'
  ```

  Substring In this example, B is assigned to the symbolic variable, BETA. The substring expression specifies that the second character of the string be substituted for &ALPHA, for a length of one character.

  ```
  SET BETA = &ALPHA(2:1)
  ```

  Concatenation Character strings can be concatenated with other variables and literals. Identify variables with an ampersand prefix and add a period at the end of the variable to delimit it from a literal, as follows:

  ```
  SET ALPHA = 'A'
  SET DELTA = 'DEF'
  SET AD    = '&ALPHA.BC&DELTA'
  ```

  The AD variable is assigned a value of ABCDEF.

  If an ampersand prefix or a period suffix is not used to delimit the variables from the literals, the characters are assigned to the AD variable; for example:

  ```
  SET AD    = 'ALPHABCDELTA'
  ```

  In the above example, the AD variable is assigned a value of ALPHABCDELTA.

- A numeric integer to be used as a counter. For decimal arithmetic, use the COMPUTE verb.

  ```
  SET DAYS = 7
  ```

  A number can be an integer from 0 to 9. The number can have one decimal point, a sign, or commas, but it cannot contain any blank characters or be enclosed in single quotation marks.

  A numeric value also can be assigned to a variable as a counter. The number of digits is initially set to 00000 as a default. When 99999 is reached, the value resets to 00000. The default digits can be changed with the SET statement. For example, SET number = 01 establishes a two-digit counter that, at 99, resets to 00; for example:

  ```
  SET NUMBER = 01
  SET V1 = V2 + NUMBER
  ```

  Note: SET does not keep track of decimals or signs.

Report output can be set as follows (all specified values must be enclosed in single quotation marks):

CASE = Specifies that the output characters be in uppercase or mixed case. The default is uppercase. SET CASE must precede other PRL statements and is written as

```
SET CASE = 'MIXED'
SET CASE = 'UPPER'
```

CLASS = Specifies the output class for the report. It is a 1-byte, site-defined character. A is the default.

Note: Report output also can be allocated with a DD statement, as described in "Routing Report Output" on page 149, that has the same name as the value of SET REPORTID.

FORM = Specifies four characters defining the type of paper on which the report is to be printed. STD is the default.

Note: Instead of specifying SET FORM, a DD allocation that has the same name as the value of SET REPORTID can specify the form type.

LINES = Specifies the report page length. The default is 50 lines. The minimum value is 001 and the maximum value is 255.

REPORTID = Specifies a 1- to 8-character alphanumeric ID for the report. The ID is in the upper left corner of the report. The execution jobname is the default.

If a DD output allocation has the same name as the user-specified value for REPORTID, the report is allocated to the DD output, as described in "Routing Report Output" on page 149.

TITLE = Specifies the first of four lines to be generated by PRL on every page. Specify any alphanumeric string up to a maximum of 80 characters. The default is MAINVIEW for CICS. The title is centered automatically at the top of each page.

TITLE1 =
TITLE2 = Specifies a subtitle for the second line (TITLE1) or third line (TITLE2) of every page. The subtitle length is 80 characters. Each specified subtitle is centered automatically at the top of each page. Blank is the default.

WIDTH = Specifies the width of the report title. The default is 132 print positions. From 32 to 255 print positions can be specified for your report. Report titles are adjusted to the specified width. The USING statement determines the column data to be reported. The reported data is truncated if it does not fit within the specified width. If USING specifies only a few variables and the WIDTH is at a large value, the column data is reported as formatted by the PNLLIB data dictionary. It is not adjusted to the specified WIDTH value.

ZHEADING = Specifies the print characteristics of the column headings of PRL tabular reports. If ZHEADING is not specified, the default prints each column heading three times without a carriage return. The default should be used

with line printers to create bold text in the column headings by printing each word three times.

Use ZHEADING = 'SINGLE' to create viewable online reports. Use ZHEADING = 'NONE' to create PRL reports without column headings.

Example

```
SET CLASS = 'R'
SET FORM = 'C012'
SET WIDTH = 70
SET LINES = 58
SET REPORTID = 'CICSM16'
SET TITLE = 'MAINVIEW for CICS - Monthly System Status'
SET TITLE1 = '       User Logon Times          '

  SELECT TYPE 6E RECORDS FROM CMRDETL
     WHERE  T6ETMID   NOT EQUAL '    '
        SET COUNT = COUNT + 1

  USING CMRDATE CMRTIME T6ETRID T6ERESP T6ECPUR T6ETMID T6EOPID
  REPORT
  PRINT COUNT
 END
```

SUMMARY (Total and Average Selected Records)

SUMMARY requests a tabular summary based on the first variable mentioned in the USING statement that precedes it. A count is maintained for each item that has a common value matching the first variable. Only the totals appear on the report, followed by an average, for each and every numeric variable on the print line.

Even after all selection criteria have been met, each record generates a separate report line; the report could become quite large if a large volume of data is being processed.

If you provide summaries, your nominated summary fields will gather and condense all detail records into two lines of print for each control break.

If neither SUMMARY nor DETAIL is used, a tabular report is printed.

Syntax

```
SUMMARY
```

Usage

SUMMARY can be coded only after the USING statement but prior to REPORT. If ORDER BY is used, SUMMARY must follow this statement.

Note: Character data can only be included in a summary report if it is specified as the first USING variable.

Example

The following example produces the report shown in Figure 53 on page 143:

```
SET CLASS = 'R'
SET REPORTID = 'RES2RPT2'
SET TITLE = 'SUMMARY TRANSACTION ROSTER'
SELECT TYPE 6E RECORDS FROM CMRDETL
  USING CMRDATE T6ERESP T6ECPUR T6EDIST T6EFCWT T6ESUST T6ETSWT
  SUMMARY
REPORT
END
```

```
RES2RPT2          SUMMARY TRANSACTION ROSTER        VERS:   REL5.3.0
                                   TIME:   16:21:18
                                   DATE: 09/17/1998
                                   PAGE:         1

 RECORDED           RECORDED  TRAN   RESPONSE   CPU REAL  TERM  OPR
  DATE       TOTAL     TIME  NAME      TIME      TIME   ID.  ID.
  ----     -------  --------  ----  --------  --------  ----  ---

 1998/09/17       2                  4.808     0.248
        AVG *****                    2.404     0.124

 1998/09/17       2                  1.495     0.297
        AVG *****                    0.747     0.148
```

Figure 53. Summary Report

USING (Designate Column Headings and Record Fields)

USING designates column headings and record contents for each named record field specified with USING. Only one USING statement is required. The USING statement selects the column heading from an internal data dictionary. To specify your own column heading that is not in the dictionary, set a variable to a literal (maximum of eight alphanumeric characters). Then specify the variable name in the USING statement, as described in "User-Defined Data" on page 151. Column headings are printed on lines 5 and 6, with the corresponding underlines on line 7 of the report.

Column headings and data appear on the report line in the order specified by the USING statement, reading from left to right. If an undefined field name or variable is specified, it does not appear on the report. If the column headings do not fit within the page width, the headings are truncated.

Syntax

USING V*n* . . . V*n*

where V*n* represents the record field names shown in Appendix B, "CMRDETL: Transaction Detail Records" on page 173 or user variables defined by SET.

Note: Depending on the record field widths, use of more than eight names can cause truncation. More than 11 field names generally cause both truncation and unpredictable results.

Usage

To continue a list of variables on the next line, use a hyphen (-). A hyphen can be used only to continue variables to another line, not to continue statements.

Note: The variables listed on the USING statement have implied DEFINE statements associated with them that are used unless a previous DEFINE statement for the variable has been specified.

USING fixes the meaning of a variable for the duration of the PRL run. This occurs on the first use; subsequent uses are ignored. The effect of the USING statement is to make the variable attribute length and the decimal significance unalterable.

If the variables listed in a USING statement require special editing characteristics, consider placing a DEFINE statement before the USING statement. For further information on DEFINE, see "DEFINE (Define Variable Attributes - Optional)" on page 125.

The maximum number of variables in a USING statement is limited to the number of variables that can fit on a print line. The default print line is 132 characters long.

To change the width of the print line, use

SET WIDTH=*xxx*

You can increase the size of the print line to up to 255 print positions.

Example

```
SET TITLE = 'SUMMARY TRANSACTION ROSTER'
SET TITLE = 'MAINVIEW for CICS PAGE ALLOCATION MAP ANALYSIS'
SELECT TYPE 17 RECORDS FROM CMRSTAT
USING CMRDATE CMRTIME -
        PAMCTLP -
        PAMTELP -
        PAMMIXP -
        PAMISOP -
        PAMSHRP -
        PAMRPLP -
        PAMPGMP -
        PAMDSAT -
        PAMTREE -
        PAMGETVT
  REPORT
 END
```

WHERE (Qualify Record Selection)

WHERE qualifies record selections. If the condition is matched, control flows to the next statement.

Syntax

WHERE V*n* = *value*

where

V*n* Is the field name of a CMRSTAT or CMRDETL record (see Appendix B, “CMRDETL: Transaction Detail Records” on page 173).

value Can be a literal character string or a defined variable.

WHERE is written after the SELECT statement and is used with any of the following operators to qualify a selected record:

= (equal to)

> (greater than)

< (less than)

¬ = (not equal to)

¬ < (greater than or equal to)

¬ > (less than or equal to)

AND

OR

Usage

The argument in the WHERE clause can be repeated with other arguments, appropriately using the operators AND and OR. Only one variable can be qualified per line. The following example restricts the selection to activity by user DJD, at terminal SC32, with a response time that is greater than two seconds:

```
SELECT TYPE 6E RECORDS FROM CMRDETL
WHERE T6ETMID = 'SC32'
  AND T6EOPID = 'DJD'
  AND T6ERESP  > 2
```

Note: AND must be used if NOT (¬) is specified with another qualifying condition for WHERE; for example:

```
SELECT TYPE 6E RECORDS FROM CMRDETL
WHERE CMRDATE = '09/27/1998'
  AND T6ETMID ¬= '    '
```

Alternative data can be selected for the same variable by adding an OR operator to the right of the WHERE expression; for example:

```
SELECT TYPE 6E RECORDS FROM CMRDETL
  WHERE T6ETRID = 'CSSN' OR 'CSSF' OR 'CSTT'
```

This example selects 6E records created by transactions CSSN, CSSF, or CSTT.

This same WHERE condition could also be repeated with OR as follows:

```
WHERE T6ETRID = 'CSSN'
 OR   T6ETRID = 'CSSF'
 OR   T6ETRID = 'CSTT'
```

An AND operator with WHERE combines specific data from selected records. The following example selects 6E records that had activity on 09/27/1998 between 10:00 AM and 11:00 AM:

```
SET DATE = '09/27/1998'
SET FTIME = '09:59:59'
SET LTIME = '11:00:01'
SELECT TYPE 6E RECORDS FROM CMRDETL
  WHERE CMRDATE = DATE
  AND CMRTIME > FTIME
  AND CMRTIME < LTIME
```

These PRL statements select data from 6E records based upon the date and time specified in the CMRDATE and CMRTIME fields that

- Match the 09/27/1998 date assigned to the DATE variable.
- Have a time stamp (recorded in the CMRTIME common header field) greater than the time assigned to the FTIME variable (start at 10:00).
- Have a time stamp less than the time assigned to the LTIME variable (end at 11:00).

Any number of AND or OR conditions can be used with a WHERE statement. However, a condition must be defined with either all ANDs or all ORs because combining them may create a logically ambiguous condition.

If ¬= is used with more than one AND or OR clause, the not condition inverts the logic and should be avoided:

- Use an all positive condition.
- Relegate a single ¬= to the last clause.

The following example shows the use of OR statements to select alternative data from the same field (T6ETRID - transaction identifier). An AND statement adds another required condition to the WHERE condition that further restricts data collected from the field. The expression ¬= is used last and qualifies the record selection to identified terminals.

```
SELECT TYPE 6E RECORDS FROM CMRDETL
  WHERE T6ETRID = 'CSSN' OR 'CSSF' OR 'CSTT'
  AND T6ETMID ¬= '    '
```

Note: Use AND last for NOT (¬) conditions.

Example

```
SET WIDTH  = '80'
SET TITLE  = 'T E R M I N A L E R R O R S'

SELECT TYPE 6E RECORDS FROM CMRDETL
   WHERE T6EPGNM   = 'DFHACP  '
      USING CMRDATE CMRTIME T6ETRID T6ETMID T6EOPID T6ECPUR T6ERESP REPORT
END
```

Chapter 11. PRL Programming Techniques

This chapter describes additional programming techniques to produce specialized PRL reports. Using these techniques, you can create programs that do the following functions:

- Route report output
- Format report output
- Select archive data
- Expedite record retrieval
- Index detail (CMRDETL) records
- Index by qualifying variable names
- Produce graphs with PRL reports
- Summarize data
- Sort by more than one field
- Report fourth-generation language (4GL) database activity
- Create worst transaction response time reports

Routing Report Output

The output class and format of a user-defined report can be defined with a DD statement in the JCL and the PRL SET REPORTID statement. The output class and format also can be defined with the PRL statements SET CLASS and SET FORM, described in "SET (Assign a Value)" on page 139.

If neither the JCL nor the PRL report allocation is specified, PERFORMANCE REPORTER allocates the report to a default output class of A and a default form of STD. The user-written PRL program (DD statement named ISYPROG) and the JCL output listing (MSGCLASS parameter of JOB statement) are allocated as specified in the MVS JCL, described in "Generating PRL Reports" on page 113.

Defining Output with JCL and PRL SET REPORTID

To define report output with JCL, the ddname of the DD statement must be the same as the value of the SET REPORTID statement or its default (the execution jobname). For example, if the PRL program specified

```
SET REPORTID = 'TRANAB'
```

the name of the DD statement defining the report output must be

```
//TRANAB  DD  user parameters for report output
```

Note: The user parameters must follow the rules and conventions for coding a DD statement, as described in the IBM publication, *MVS Extended Architecture JCL Reference Manual*.

If more than one report is created and DD statements are used to define each report output, there must be a corresponding report ID for each named DD allocation. For example:

```
//TRANAB   DD ......
//TRANSUM  DD ......
//TRANDET  DD ......
```

allocates the report as specified in the JCL if

- There is a user-written PRL program that contains a SET REPORTID = 'TRANAB' declaration for the TRANAB allocation.
- There is a user-written PRL program that contains a SET REPORTID = 'TRANSUM' declaration for the TRANSUM allocation.
- There is a user-written PRL program that contains a SET REPORTID = 'TRANDET' declaration for the TRANDET allocation.

If there is a DD allocation for the report in the JCL and SET REPORTID is not specified or the value is not the same as the ddname of the report output DD statement, the JCL DD allocation is ignored. When there is no SET REPORTID declaration in a PRL program, the execution jobname is the default value.

Defining Output with PRL SET CLASS and SET FORM

You can define report output with JCL as described in "Defining Output with JCL and PRL SET REPORTID" on page 149 or you can use the PRL SET CLASS and SET FORM statements. However, if SET CLASS and SET FORM allocate the report output and the JCL contains a named DD statement that matches a SET REPORTID value, the report is allocated as specified by the DD statement. The output defaults to a CLASS of A and a form of STD when there is no user-specified allocation.

Formatting Report Output

A PRL report is formatted according to the parameters specified with the SET and USING statements. SET can be used to size and title the report and to define a variable to be reported. USING specifies the CMRDETL and CMRSTAT records to be reported as reformatted by the BBPLIB data dictionary (see "Data Storage Layout" on page 173). The data dictionary descriptions for each record field are printed as column headings with each specified field name.

Predefined Data Dictionary Descriptions

PERFORMANCE REPORTER provides a data dictionary in a partitioned data set called BBPLIB that automatically creates column headings for the CMRDETL and CMRSTAT record fields specified with the PRL. A description of each CMRDETL and CMRSTAT record field is stored by the PRL processor in the data dictionary. These descriptions are used in the report as column headings.

The USING statement (discussed in "USING (Designate Column Headings and Record Fields)" on page 144) and the field names of a CMRDETL or CMRSTAT record (shown in Appendix B, "CMRDETL: Transaction Detail Records" on page 173) specify the data dictionary headings to be printed.

For example, as shown in the “Time Versus Activity Graph” on page 155:

```
SELECT TYPE 6F RECORDS FROM CMRSTAT
      .
      .
      .
USING CMRDATE CMRTIME T6FTRNCT
REPORT

END
```

selects the CMRSTAT Type 6F record and specifies the data dictionary descriptions for the CMRDATE, CMRTIME, and T6FTRNCT fields, which correspond to the following column headings:

RECORDED DATE

RECORDED TIME

TOTAL TASKS

User-Defined Data

To define data to be reported, assign a value to a variable, and then specify the variable with the USING statement. For example:

```
SELECT TYPE 6E RECORDS FROM CMRDETL
      .
      .
SET TRANTERM = ’&T6ETRID.  &T6ETMID’

USING TRANTERM
      .
      .
REPORT

END
```

prints the variable name, TRANTERM, as a column heading, and its assigned value as the column contents. The transaction identifier (&T6ETRID field of the CMRDETL record) and the terminal identifier (&T6ETMID field of the CMRDETL record) are reported in the TRANTERM column.

The variable name must start with an alphabetic character and can comprise any alphanumeric string up to a maximum of eight characters. If the name is longer than the width of the column data, the name is truncated to the column width.

PERFORMANCE REPORTER right-justifies user-defined headings and adds two blank characters at the beginning of the column heading. The column headings can be aligned with the column data either by examining the BBPLIB data dictionary or running the report. The printed report shows where to align the headings. The character string assigned to a column heading variable can then be adjusted to the width of the column data. Or the BBPLIB data dictionary can be examined for the length and type (see “Data Storage Layout” on page 173 for a description of the type key definition) of each CMRDETL or CMRSTAT field, which together determine the column width.

Selecting Archive Data

As described in “Archiving Data (CMRPURG)” on page 11, CMRDETL and CMRSTAT records can be archived to tape. The SELECT statement does not have to be changed to distinguish a tape data set from VSAM; the PRL does this automatically. Therefore, change the CMRDETL or CMRSTAT DD statement to point to a tape data set, as shown in Figure 54.

```
//jobname JOB user parameters                <-- CHANGE AS NEEDED
/*JOBPARM user parameters                    <-- CHANGE AS NEEDED
//CMRL PROC
//PRL      EXEC PGM=CMRPRL
//STEPLIB  DD  DISP=SHR,DSN=CMR.CMRV3.BBLINK      <-- CHANGE AS NEEDED
//SYSPRINT DD  SYSOUT=*
//SYSUDUMP DD  SYSOUT=*
//SYSOUT   DD  SYSOUT=*
//ISYPROG  DD  SYSOUT=*,DCB=(LRECL=80,BLKSIZE=160,RECFM=FBA)
//ISYSOUT  DD  SYSOUT=*,DCB=(LRECL=80,BLKSIZE=160,RECFM=FBA)
//PNLLIB   DD  DISP=SHR,DSN=CMR.CMRV3.BBPLIB      <-- CHANGE AS NEEDED
//CMRDETL  DD  DSN=CMR.MERGED.ARCHIVE,DISP=OLD,UNIT=TAPE,VOL=SER=TP0001
//SORTWK01 DD  UNIT=SYSDA,SPACE=(CYL,5)
//SORTWK02 DD  UNIT=SYSDA,SPACE=(CYL,5)
//SORTWK03 DD  UNIT=SYSDA,SPACE=(CYL,5)
//SYSIN    DD  *
SET TITLE = 'TRANSACTION ANALYSIS FOR ALL TRANSACTIONS'
SET CLASS = 'R'
SELECT TYPE 6E RECORDS FROM CMRDETL
WHERE CMRDATE = '09/17/1999'
SET COUNT = COUNT + 1

USING T6ETRID -
     CMRDATE -
     CMRTIME -
     T6ERESP -
     T6ECPUR -
     T6ETMID -
     T6EOPID
  ORDER BY T6ETRID
  DETAIL
  REPORT
     PRINT COUNT
END
```

Figure 54. DD Statement Change to Point to a Tape Data Set

Expediting Record Retrieval

The data collected in CMRDETL and CMRSTAT is arranged in chronological order with date and time stamps. A record can be selected and the selection process can start at a specific time or date by use of STARTING AT with the SELECT statement; for example:

```
SELECT TYPE 6F RECORDS FROM CMRSTAT STARTING AT 08:00:00 ON 09/30/1999
```

begins selection of only 6F records collected on 09/30/1999 at 8:00 in the morning.

Note: If records are being selected from an archive tape, STARTING AT has no effect and should not be used. Records can be selected from an archive tape by using WHERE; for example:

```
SELECT TYPE 6F RECORDS FROM CMRSTAT
  WHERE CMRDATE = '09/30/1999'
```

The archive data set name must be defined in the JCL as shown in “Archiving Data (CMRPURG)” on page 11.

Indexing Detail (CMRDETL) Records

CMRDETL record file data can be indexed to obtain information from the T6E and T6D records. To report the data in these fields, use a FOR-NEXT statement to set up a counter. Within the FOR-NEXT loop, index the fields by the variable counter, assign the value of the indexed fields to variables, and report each variable using the variable names and column headings.

Note: A CMRDETL data set may contain two forms of T6E records, original and expanded. Be sure to check the expanded record flag (field T6EQUAL) to determine whether a given record is expanded or not. The sample program CMRPRL16, which is distributed in the BBSAMP data set, illustrates how to process both original and expanded format records in the same file.

Table 6 lists the T6E and T6D fields that can be used for indexing.

Table 6. T6E and T6D Fields for Indexing Detail Records

Field Name	Use
T6EQUAL	Format of the file data, as a decimal value of • 127 or less for an original format record • 128 or greater for an expanded format record
T6EFCNT	Number of files per task. The maximum value is 60 for expanded format records and 255 for original format records.
T6EFI	File type, identified by • A (Adabas) • C (CICS) • D (DATACOM/DB) • K (System 2000) • P (MAINVIEW for CICS) • S (SUPRA) • U (User value) • 1 (DL/I) • 2 (DB/2)
T6EFN	File or database name
T6EFT	Elapsed I/O request time
T6EFC	Number of I/O requests to the file
T6ERD	Number of file read or DB2 select requests
T6ERU	Number of file read for update or DB2 open requests
T6EWR	Number of file write or DB2 close requests
T6ERW	Number of file rewrite or DB2 insert requests
T6EDL	Number of file delete or DB2 delete requests
T6EUL	Number of file unlock or DB2 update requests

Table 6. T6E and T6D Fields for Indexing Detail Records (Continued)

Field Name	Use
T6ESB	Number of file start browse or DB2 fetch requests
T6ERN	Number of file read next or DB2 commit requests
T6ERP	Number of file read previous or DB2 other requests
T6EEB	Number of file end browse requests
T6ERB	Number of file reset browse requests
T6EOT	Number of file other requests
T6EV1	First volume serial number associated with the file
T6EV2	Second volume serial number associated with the file
T6EV3	Third volume serial number associated with the file

Indexing by Qualified Variable Name

The parenthetical value used to qualify a variable is appended to the variable name. This qualified name must be used consistently by the TRANS variable within the PRL program, as shown in Figure 55.

```
SET TITLE = '-*- TOTAL USER TRANSACTION SUMMARY -*-'
SELECT TYPE 6E RECORDS FROM CMRDETL
SET PGMNAM = T6EPGNM(1:4)
SET TRAN  = T6ETRID(1:1)
SET HOUR = CMRTIME(1:2)
WHERE PGMNAM ¬= 'FACT'
     AND TRAN ¬= 'C'
     AND CMRDATE = '09/04/1999'
COMPUTE TRANS(&HOUR) = TRANS(&HOUR) + 1
USING T6ETRID T6ERESP T6EDIST T6EDISTC T6EFCWT T6EFCWTC T6ESUST
ORDER BY T6ETRID
SUMMARY
REPORT
PRINT 'TOTAL TRANSACTIONS PER HOUR'
FOR &X = 00 TO 24
   SET &Y = &X + 01
   PRINT 'FROM' &X ': 00 TO ' &Y ': 00     TOTAL:' &TRANS(&X)
NEXT &X
END
```

Figure 55. Qualified Variable Names PRL Statement Example

Producing Graphs with PRL Reports

The following case studies show how to create PRL graph reports with CMRDETL or CMRSTAT data. The first case study can use any record stored on either data set. The PRL program described in the second study can use 1C records only.

Time Versus Activity Graph

Member	CMRPRL12
Objective	To show graphically the activity over time within a given CICS.
Data	Global Performance Records (Type 6F) from the CMRSTAT file.
Scenario	Every 5 minutes, MAINVIEW for CICS produces a Global Performance Record containing the task count for the 5-minute interval (T6FTRNCT) along with other fields. PRL records these values in chronological order and represents them on a bar chart, as seen in Figure 57 on page 156.

The control statements shown in Figure 56 specify the input data and the format of the report:

```
SET CLASS  = 'R'
 SET REPORTID = 'PRL12'
 SET TITLE  = 'T I M E   V S   A C T I V I T Y'
 SET WIDTH  = '82'
 SET FORM   = 'STD '
 DEFINE GRAPH CHAR 52
 DEFINE T6FTRNCT EDIT ZZZZZ9
 DEFINE NUMSTAR  EDIT 99999999999999
 SET BB = '&vbar SELECT TYPE 6F RECORDS FROM CMRSTAT
      WHERE CMRDATE = '09/17/1999'
  COMPUTE NUMSTAR = T6FTRNCT / 10
  COMPUTE NUMSTAR = NUMSTAR + 1
  IF NUMSTAR > 51 THEN BEGIN
    COMPUTE NUMSTAR = 52
  END;
  SET &GRAPH = BB(1:&NUMSTAR)
  USING CMRDATE  -
      CMRTIME  -
      T6FTRNCT -
      GRAPH
 REPORT
 END
```

Figure 56. Time versus Activity PRL Statements

Note that a variable BB is used to define a string of asterisks (*); the substring feature of the SET statement is used to pick as many asterisks (*) as needed to represent the value. The minimum activity is 15 transactions in the 5-minute period, since MAINVIEW for CICS uses this many transactions to monitor the system. T6FTRNCT was divided by 5 to extract activity for a particular day that was not busy. If the line were all asterisks, this would represent a count in excess of 250 transactions in the 5-minute interval. If your daily transaction rate is 50,000, 100,000, or more, divide by 10, 20, or even 30.

```
PRL12          T I M E   V S   A C T I V I T Y        VERS:  REL5.4.0
                                        TIME:   11:16:27
                                        DATE: 09/08/1999
                                        PAGE:         1

RECORDED   RECORDED  TOTAL
 DATE      TIME    TASKS                                GRAPH
--------- -------- ------ ---------------------------------------------------

09/17/1999  12:14:00    79  |*******
09/17/1999  12:19:00    94  |********
09/17/1999  12:24:00   127  |*************
09/17/1999  12:29:00   147  |*****************
09/17/1999  12:34:00    81  |*******
09/17/1999  12:39:00   104  |*********
09/17/1999  12:44:00    86  |********
09/17/1999  12:49:00   102  |*********
09/17/1999  12:54:00   171  |*****************
09/17/1999  12:59:00   147  |***************
09/17/1999  13:04:00   113  |**********
09/17/1999  13:09:00   232  |***********************
09/17/1999  13:14:00   253  |************************
09/17/1999  13:19:00   199  |*******************
09/17/1999  13:24:00   237  |***********************
09/17/1999  13:29:00   229  |**********************
09/17/1999  13:34:00   273  |**************************
09/17/1999  13:39:00   383  |*************************************
09/17/1999  13:44:00   279  |***************************
09/17/1999  13:49:00   312  |********************************
09/17/1999  13:54:00   275  |***************************
09/17/1999  13:59:00   399  |****************************************
09/17/1999  14:04:00   360  |************************************
09/17/1999  14:09:00   401  |*****************************************
09/17/1999  14:14:00   337  |**********************************
09/17/1999  14:19:00   424  |*******************************************
09/17/1999  14:24:00   339  |**********************************
09/17/1999  14:29:00   347  |***********************************
09/17/1999  14:34:00   328  |********************************
09/17/1999  14:39:00   288  |****************************
```

Figure 57. Time versus Activity within One Day

A look at the sample output in Figure 57 shows the highs and lows of the day's activity. Use T6FTRMCT instead of T6FTRNCT if you are interested in only terminal activity as opposed to asynchronous tasks; add other 6F fields to the USING statement as needed.

Adding a particular time of day in a WHERE clause, like this

```
SELECT TYPE 6F RECORDS FROM CMRSTAT
  SET TIME =  CMRTIME(1:2)
WHERE TIME = '12'
```

permits you to chart, on a single page, information about peak periods, such as 12 noon to 12:59 pm, over several months (see Figure 58 on page 157).

```
PRL12          T I M E   V S   A C T I V I T Y        VERS:  REL5.4.0
                                        TIME:  11:05:36
                                        DATE: 09/28/1999
                                        PAGE:        1

 RECORDED   TOTAL
  DATE     TASKS                                GRAPH
 --------- ------ ---------------------------------------------------

09/03/1999   102 |*********
09/04/1999   171 |****************
09/05/1999   147 |**************
09/09/1999   113 |**********
09/07/1999   232 |**********************
09/10/1999   253 |************************
10/09/1999   199 |*******************
10/09/1999   237 |************************
10/13/1999   229 |************************
10/14/1999   273 |***************************
10/17/1999   383 |***************************
10/18/1999   279 |****************************************
10/19/1999   312 |****************************
10/20/1999   275 |*******************************
10/21/1999   399 |***************************
10/24/1999   360 |****************************************
10/25/1999   409 |************************************
10/26/1999   337 |****************************************
10/27/1999   424 |**********************************
10/28/1999   339 |*******************************************
11/02/1999   328 |**********************************
11/03/1999   288 |*********************************
11/04/1999   254 |****************************
11/05/1999   278 |********************************
```

Figure 58. Time versus Activity over Several Months

Service Level Analysis Graph

Member	CMRPRL7
Objective	To graphically represent service levels as defined by CMRSOPT and collected by MAINVIEW for CICS.
Data	Service Level Analysis records (Type 1C) from the CMRSTAT file. Each record contains 18 service level counts.
Scenario	MAINVIEW for CICS produces service level records every hour, on the hour. There are 17 default service levels defined in CMRSOPT, ranging from half a second to 90 seconds. In addition, an extra service level is kept, recording response times greater than 90 seconds. The ranges of values in the various service levels can be changed through the customization macro CMRSOPT. A different recording frequency can be specified on the Service Level Analysis field of the PERFORMANCE REPORTER Statistics File Recording Frequencies screen. Note that the transaction counts only involve transactions that run at terminals and are, therefore, not biased by fast asynchronous transactions. The control statements shown in Figure 59 on page 159 show how service levels can be represented. The example in Figure 59 is not intended to cover instances where there has been no activity whatsoever. Thus, the WHERE clause presumes that this is an idle timeframe when there has been no activity in the first three LTX values. If this is an incorrect assumption for your site, repeat the OR clause with LTX004, LTX005, and so on as far as is necessary. The LTX fields in the FOR loop in the above example are represented by as many asterisks (*) as needed by substringing field BB. If there are more than 50 asterisks (*), the plus (+) is added. If you have a lot of asterisks (*) in your report, increase the frequency of 1C records on the file by reducing the interval between records through transaction FSET or by dividing the transaction count by a scaling factor. Each line containing the LTX values and their graphical representation is then printed. Ideally, the chart shows a high percentage of transactions appearing in the first service level, with the frequency rapidly diminishing as the higher service level buckets are reached. Any activity above the ninth or tenth service level slot, with a response time of seven seconds or more, is cause for concern. At this point, the time and date from the 6E records can be noted for a detailed analysis.

```
SET CLASS  = 'R'
SET REPORTID = 'PRL7'
SET TITLE  = 'S E R V I C E    L E V E L    A N A L Y S I S'
SET WIDTH  = '86'
SET LINES  = '43'
DEFINE NUMTRAN EDIT Z,ZZZ,ZZ9
DEFINE NUMSTAR EDIT 99999999999999
SET BB = '|**************************************************+'
SET GRAPHS  = '|....5....10...15...20...25...30...35...40...45...50'
SET GRAPH = '              '
READ:
SELECT TYPE 1C RECORDS FROM CMRSTAT
      WHERE CMRDATE = '09/17/1999'
        AND LTX001 >  0
         OR LTX002 >  0
         OR LTX003 >  0
  USING CMRDATE -
       CMRTIME
  PRINT ' '
  PRINT CMRDATE CMRTIME '     ' GRAPHS
  PRINT '    RESPONSE      COUNT   |        (SCALE = 1 : 5 (ROUNDED))'
  FOR &IX = 001 TO 018
     COMPUTE NUMSTAR = LTX(&IX) / 5
     COMPUTE NUMSTAR = NUMSTAR  + 1
     IF LTIM(&IX) = 0 THEN SET LTIM(&IX) = '     100.000'
     IF NUMSTAR > 51 THEN BEGIN
       COMPUTE NUMSTAR = 52
     END;
     SET STARS =  BB(1:&NUMSTAR)
     COMPUTE NUMTRAN = LTX(&IX)
     PRINT LTIM(&IX) NUMTRAN STARS
  NEXT &IX
GOTO READ
REPORT
END
```

Figure 59. Service Level Analysis PRL Statements

As shown in the report in Figure 60 on page 160, the CMRDATE and CMRTIME field contents are reported when the REPORT statement is processed. The headings, RESPONSE, COUNT, and the scale are printed when the PRINT statement is processed. Enclosing a character string in single quotation marks defines the characters to be printed. To print the value of the variable, specify a defined variable, not enclosed in single quotation marks, with PRINT.

Note: To use the PRINT statement, as in this example, the number of data lines per page must be defined, for example, SET LINES=21, and the reporting of data within those lines must be controlled, for example, FOR &IX = 001 TO 018. SET LINES determines each page break and generates a new page with titles and column headings.

```
PRL7      S E R V I C E    L E V E L    A N A L Y S I S   VERS:   REL5.4.0
                                        TIME:   12:10:56
                                        DATE: 09/17/1999
                                        PAGE:         1

 RECORDED RECORDED
  DATE     TIME
 -------- --------


 09/17/1999 15:59:00     |....5....10...15...20...25...30...35...40...45...50
    RESPONSE    COUNT   |       (SCALE = 1 : 5 (ROUNDED))
      0.500    4,687   |*****************************************************+
      1.000      281   |*****************************************************+
      1.500      153   |*******************************
      2.000      123   |*************************
      2.500       36   |*******
      3.000        5   |*
      4.000        2   |
      5.000        2   |
      6.000        2   |
      7.000        4   |*
      8.000        2   |
      9.000        2   |*
     10.000        3   |**
     20.000       12   |
     30.000        0   |
     60.000        0   |
     90.000        0   |
   34359.738       0   |
```

Figure 60. Service Level Analysis Output

Summarizing Data

Each selected record is reported on one line, which can cause the report to become quite large. Use the PRL statement SUMMARY to report all of the records on just two lines whenever there is a control-break in the report, as shown in Figure 61 and in Figure 62 on page 162. A control-break is the point in a report when the first variable specified with USING changes. For this reason, it is best to always make the first USING variable the same as the ORDER BY variable.

```
SET CLASS = 'R'
SET REPORTID = 'REPORT1'
SET TITLE = 'TRANSACTION ANALYSIS FOR ALL TRANSACTIONS'
SELECT TYPE 6E RECORDS FROM CMRDETL
 USING T6ETRID -
      T6ERESP -
      T6ECPUR -
      T6EFCWT -
      T6ESHWM -
      T6EPAGCT
 ORDER BY T6ETRID
 SUMMARY
 REPORT
END
```

Figure 61. SUMMARY PRL Statement

The PRL for this report is in the CMRPRL3 member of the sample library (BBSAMP). As shown in Figure 62, the first of the two summary lines contains totals for all numeric fields. The second line contains the computed averages. The totals and averages are shown whenever there is a change in the first reported variable. These two lines of totals and averages also are shown when the PRL statement DETAIL is used. One selected record is reported per line, and when the first variable changes, the totals and averages are reported as SUMMARY.

Note: Character data only can be included in a summary report if it is specified as the first USING variable.

```
REPORT01                    TRANSACTION ANALYSIS FOR ALL TRANSACTIONS                    VERS: REL5.4.0
                                                          TIME:   17:03:11
                                                          DATE: 09/17/1999
                                                          PAGE:        1

TRAN            RESPONSE     CPU REAL   FILE_CONTROL        STORAGE          TOTAL
NAME     TOTAL        TIME        TIME      I/O TIME   HI_WATER_MARK      PAGE_COUNT
-------------- ------------- ------------- ------------- -------------- --------------

CSGM       52       29.530       0.264       0.000        354984            58
    AVG *****        0.568       0.005       0.000          6827             1

CSMT        6        4.380       0.062       0.000         72952            13
    AVG *****        0.730       0.010       0.000         12159             2

CSPG       13        0.418       0.022       0.000        102048            18
    AVG *****        0.032       0.002       0.000          7850             1

CSSF       33       24.234       0.496       0.000        321368           137
    AVG *****        0.734       0.015       0.000          9738             4

CSSN        4        2.339       0.021       0.000         31776             7
    AVG *****        0.585       0.005       0.000          7944             2

CSST        5        0.206       0.017       0.000         39432             0
    AVG *****        0.041       0.003       0.000          7886             0

DB2        16        9.879       0.224       0.000         99040             1
    AVG *****        0.617       0.014       0.000          6190             0

DISP        3        7.617       0.756       0.000         39328            37
    AVG *****        2.539       0.252       0.000         13109            12

FCD2        6        5.147       0.088       0.000         88624             8
    AVG *****        0.858       0.015       0.000         14771             1

FIC2    28922     6788.137     132.645    2275.220     305450768         14799
    AVG *****        0.235       0.005       0.079         10561             1

FST2        4        2.539       0.014       0.000         54400            28
    AVG *****        0.635       0.003       0.000         13600             7

HST2       72       15.729       1.789       8.092       1259048            23
    AVG *****        0.218       0.025       0.112         17487             0

JNL2       56      156338.884    13.032       0.000        409264           397
    AVG *****     2791.766       0.233       0.000          7308             7

JPH1      929      10020.464     4.830       0.000     599785928             5
    AVG *****       10.786       0.005       0.000        645625             0

SMN2       62       19.769       0.308       0.000        436824            33
    AVG *****        0.319       0.005       0.000          7046             1

STAR     5360      308.284      10.726       0.000      32212464             2
    AVG *****        0.058       0.002       0.000          6010             0

TSM2       30      964.988       0.327       0.000        911808            17
    AVG *****       32.166       0.011       0.000         30394             1

TSM4       16       72.636       0.235       0.000        483792            14
    AVG *****        4.540       0.015       0.000         30237             1

TSM5       15      160.559       0.262       0.000        455016             3
    AVG *****       10.704       0.017       0.000         30334             0
```

Figure 62. Transaction Analysis for All Transactions Summary Report

Sorting by More than One Field

To sort by more than one field and report these fields:

- Set a variable to more than one field
- Specify the variable name with USING and ORDER BY

An example is shown in Figure 63.

```
*****************************************************************
*                                                               *
* This report selects transaction records and then places      *
* them into one of ten response ranges.  These ranges are      *
* then summarized to show resource usage for a given           *
* transaction and response range.                               *
*                                                               *
*****************************************************************
SET CLASS = 'R'
SET REPORTID = 'REPORT1'
SET TITLE = 'TRANSACTION RESPONSE ANALYSIS BY RESPONSE RANGE'
SELECT TYPE 6E RECORDS FROM CMRDETL
SET &VAR2 = '9> '
IF &T6ERESP < 9 THEN SET &VAR2 = '8-9'
IF &T6ERESP < 8 THEN SET &VAR2 = '7-8'
IF &T6ERESP < 7 THEN SET &VAR2 = '6-7'
IF &T6ERESP < 6 THEN SET &VAR2 = '5-6'
IF &T6ERESP < 5 THEN SET &VAR2 = '4-5'
IF &T6ERESP < 4 THEN SET &VAR2 = '3-4'
IF &T6ERESP < 3 THEN SET &VAR2 = '2-3'
IF &T6ERESP < 2 THEN SET &VAR2 = '1-2'
IF &T6ERESP < 1 THEN SET &VAR2 = '0-1'
SET &VAR3 = T6ETRID
SET ID-RANGE = '&VAR3. &VAR2. '
  USING ID-RANGE -
       T6ERESP  -
       T6ECPUR  -
       T6EDIST  -
       T6EFCWT  -
       T6ESUST  -
       T6ETSWT  -
       T6EPCWT
  ORDER BY ID-RANGE
  SUMMARY
  REPORT
END
```

Figure 63. Set Variables to Sort by More than One Field PRL Statement

This technique is used in the case study described in “Creating Longest Transaction Response Time Reports” on page 165.

Reporting 4GL Database Activity

To retrieve and process the fourth-generation language (4GL) database activity collected in the CMRDETL and CMRSTAT data sets, use PRL and JCL DD statements to specify the input for your reports. The databases and 4GLs are identified by the following field names used in PRL statements:

T6EPGNM The program name of any 4GL or database (except MANTIS, which is identified through T6EMNTIS) represented by T6EPTYPE.

T6EPTYPE The program name type identified by a 1-character database or 4GL designation.

T6EFI The file type identified by a 1-character file or database name represented by T6EFN.

T6EFN The file or database name.

For example, the statements shown in Figure 64, submitted as an MVS batch job, report on NATURAL performance on a given day.

```
SET TITLE = 'NATURAL RESPONSE TIMES'
 SET TITLE1 = 'On 09/17/1999'

  SELECT TYPE 6E RECORDS FROM CMRDETL
     WHERE CMRDATE = '09/17/1999'
     AND T6EPTYPE = 'N'

 USING CMRTIME  -
     T6EPGNM  -
     T6EUSER  -
     T6ERESP  -
     T6EFCNT

  REPORT

  END
```

Figure 64. NATURAL Performance PRL Statements

Creating Longest Transaction Response Time Reports

Detailed transaction information stored on the CMRDETL data set can be used to create daily reports. Sample member CMRPRL14 of your BBSAMP data set creates a report from 6E detail transaction records. This report shows the 30 longest transactions recorded over a daily interval.

Figure 65 shows sample PRL statements from member CMRPRL14 to create a report of the transactions with the longest response time. In this example, the control statements restrict the report to terminal transactions that occurred on a single day.

```
SET CLASS = 'R'
 SET REPORTID = 'PRL14'
 SET TITLE = 'WORST RESPONSE TIMES'
 SET TITLE1 = 'RESTRICTED TO 09/18/1999 '
 SET TITLE2 = 'TERMINAL ATTACHED TRANSACTIONS ONLY'
 SELECT TYPE 6E RECORDS FROM CMRDETL
      WHERE CMRDATE = '09/18/1999'
       AND T6ETMID ¬= '   '
  COMPUTE LINE_I/O = T6ECHARI + T6ECHARO
  USING CMRTIME  -
      T6ETRID  -
      T6EPGNM  -
      T6ERESP  -
      T6ECPUR  -
      T6ETMID  -
      T6EOPID  -
      T6EFCWT  -
      T6EFCCAL -
      LINE_I/O
 ORDER BY T6ERESP IN DESCENDING SEQUENCE
  SET COUNT = COUNT + 1
  IF COUNT > 30 THEN GOTO DDD
 REPORT
 DDD:
 PRINT '   * * * * * * * * * * * * * * * * *'
 PRINT '   *                               *'
 PRINT '   * W O R S T   3 0   R E S P O N S E S    *'
 PRINT '   *                               *'
 PRINT '   * * * * * * * * * * * * * * * * *'
 END
```

Figure 65. Longest Transaction Response Time PRL Statements

Figure 66 on page 166 shows the left-most portion of an example report created by these PRL control statements. This report lists 30 transactions with the longest response times over a daily period.

```
PRL14                WORST RESPONSE TIMES            VERS:   REL5.4.0
                 RESTRICTED TO 09/18/1999          TIME:   14:38:01
            TERMINAL ATTACHED TRANSACTIONS ONLY      DATE: 09/19/1999
                                   PAGE:        1

 RECORDED  TRAN   PROGRAM     RESPONSE     CPU REAL  TERM  OPR  FILE CONTROL
  TIME    NAME     NAME        TIME         TIME   ID.  ID.     I/O TIME
  ----    ----     ----        ----        ----   ---  ---     --- ----

 10:22:23  DGNH  LDG0000       33.515       0.629  SC32  DJD       0.377
 16:55:30  PCXR  PCXRDRVR      20.658       0.028  L072  RGN       0.000
 13:10:21  DRVA  ADRIVER       16.632       0.156  L072  RGN       0.000
 16:55:42  GRSD  GRS2500       16.577       0.387  SB24            0.000
 16:55:58  PCXR  PCXRDRVR      13.263       0.027  L072  RGN       0.000
 17:14:10  GRSD  GRS2500       11.990       0.384  SB24            0.000
 10:22:45  DGNH  SYSEDIR        8.708       0.398  SC32  DJD       2.095
 17:08:02  GRSD  GRS2500        8.537       0.388  SB24            0.000
 12:03:52  FSET  CMRMAP         8.370       0.078  SB24            0.000
 17:06:45  GRSD  GRS2500        7.713       0.405  SB24            0.000
 15:58:43  DGNH  SYSEDIT        7.201       0.087  SC32  DJD       4.279
 17:02:34  GRSD  DFB20001       6.490       0.020  SC26            0.000
 15:58:35  GRSD  GRS2500        6.402       0.418  SB24            0.000
 11:28:59  CSPK  DFHPRK         5.696       0.113  L064            0.068
 16:13:18  GRSD  GRS2500        5.368       0.418  SB24            0.000
 13:27:07  CEMT  DFHEMTP        4.620       0.953  L072  RGN       0.000
 12:02:53  CSGM  DFHGMM         4.612       0.017  SB24            0.000
 16:52:40  PCXR  PCXRDRVR       4.494       0.026  L072  RGN       0.000
 16:10:26  GRSD  GRS2500        4.418       0.384  SB24            0.000
 10:22:08  PCXR  PCXRDRVR       4.270       0.022  L064            0.000
 17:14:06  PCXR  PCXRDRVR       4.253       0.025  L072  RGN       0.000
 16:04:32  GRSD  GRS2500        4.151       0.385  SB24            0.000
 15:58:41  GRSD  GRS2500        4.034       0.386  SB24            0.000
 16:42:13  GRSD  GRS2500        3.984       0.436  SB24            0.000
 15:28:49  DGNH  LDG0000        3.949       0.098  SC32  DJD       3.823
 17:12:50  PCXR  PCXRDRVR       3.907       0.035  L072  RGN       0.248
 16:04:31  PCXR  PCXRDRVR       3.615       0.021  L072  RGN       0.000
 16:13:05  FRED  GRS2500        3.570       0.380  SB24            0.000
 13:28:47  CEMT  DFHEMTP        3.561       0.929  L072  RGN       0.000
 13:31:58  GRSD  GRS2500        3.559       0.390  SB24            0.000
   * * * * * * * * * * * * * * * * *
   *                               *
   * W O R S T   3 0   R E S P O N S E S    *
   *                               *
   * * * * * * * * * * * * * * * * *
```

Figure 66. Longest Transaction Response Times Report

Transactions are sorted in descending order by response time. The longest transaction is at the top of the report.

Part 5. Appendixes and Index

This part contains appendixes that describe

- BBSAMP data set members
- MAINVIEW for CICS data record formats

This part also contains an index of the information presented in this book.

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Appendix A. BBSAMP Data Set Members

The BBSAMP data set contains sample members of batch JCL, user exit routines, and control statements to produce MAINVIEW for CICS reports. Table 7 lists the members and gives a functional description of each member.

Table 7. BBSAMP Data Set Members for PERFORMANCE REPORTER

BBSAMP Member Name	Description
BAC0762x	Various USERMODs to suppress the recording of CICS Monitoring Program (CMP) data to CICS journals. Each USERMOD is for a specific CICS release.
CMRADAX	Sample exit for Adabas Version 5 to capture MAINVIEW for CICS data after a database call.
CMRADBX	Sample exit for Adabas Version 5 to capture data before a database call.
CMRBARC	Sample JCL to copy a trace log data set to a sequential data set for archival.
CMRBRLOD	Sample JCL to reload an archived copy of a trace to a new trace log data set for online viewing.
CMRCHRT	Sample batch report JCL and control statements.
CMRCOBCP	Sample VS/COBOL II copybook containing CMRDETL record definitions for CMRFRED program communication.
CMRCOBnn	VS/COBOL II batch program samples for generating CICS performance statistics reports.
CMRCOBJ1 CMRCOBJ2	Sample JCL to compile and execute VS/COBOL II programs.
CMRCSAR	Sample PRL to produce the Common System Area short-term report.
CMRCSOR	(Obsolete) Sample PRL control statements that use CMRSTATC output to produce the Transaction Class Usage report.
CMRDCTRD CMRDCTRS	(Obsolete) Sample PRL control statements that use CMRSTATC output to produce detail and summary reports about the Destination Control Table.
CMRDDTL	Sample JCL to delete and define CMRDETL VSAM data sets.
CMRDFSUM	Sample JCL to delete and define the VSAM data sets holding summarized records created by the CMRSUMD utility.
CMRDJCL	Sample JCL to archive data from the CMRDETL data set.
CMRDLDF	Sample JCL to delete and define CMRDETL VSAM files and load the initial record into CMRDETL.
CMRDPARM	Sample CMRPURG parameters to archive or purge data sets.
CMRFCTRD CMRFCTRS	(Obsolete) Sample PRL control statements that use CMRSTATC output to produce the File Control Table summary and detail reports.
CMRFRED	Sample program to reformat CMRDETL data into COBOL-readable format.

Table 7. BBSAMP Data Set Members for PERFORMANCE REPORTER (Continued)

BBSAMP Member Name	Description
CMRJCTRD CMRJCTRS	(Obsolete) Sample PRL control statements that use CMRSTATC output to produce the Journal Control Table short-term report.
CMRJCTXn	Sample JCT user journal definitions for various CICS releases.
CMRL	Sample JCL to execute PRL programs.
CMRMCTXn	Sample Monitor Control Table entries required to record DL/I performance statistics for various releases of CICS.
CMRPCTR	(Obsolete) Sample PRL control statements that use CMRSTATC output to produce the Program Control Table short-term report.
CMRPPTR	(Obsolete) Sample PRL control statements that use CMRSTATC output to produce the Processing Program Table short-term report.
CMRPRBT	Macro to generate the problem threshold definitions table. Refer to member CMRUPRBT for its use.
CMRPRLn	Various examples of Performance Reporting Language (PRL) control statements to generate reports.
CMRPURGE	Sample JCL to purge and merge recorder file data.
CMRRACF	CLIST that provides an interactive dialog to build SAF resource definitions.
CMRRAP	Sample JCL to generate the Resource Analysis Report.
CMRRAPM	Macro used to define the resource analysis table used by CMRRAPR and CMRCHRT.
CMRSASxx	Various SAS programs to read CMRDETL data and create reports.
CMRSITR	Sample PRL statements to generate a SIT report.
CMRSOPT	Macro that specifies monitored resources, collection intervals, and response time service levels.
CMRCSTATC	(Obsolete) Sample JCL to run the CMRSTATC conversion routine for CICS statistical records.
CMRSTATX	Sample JCL to process CICS 110 records stored on the SMF data set prior to their use by the CICS statistics program, DFHSTUP, and other products that use 110 records.
CMRCSTJCL	Sample JCL to run the CMRSTATS conversion routine for CICS statistical records.
CMRSUMD	Sample program to create four workloads of daily summary records.
CMRSUMDx	Sample CMRSUMD control statements to create summary records for various intervals.
CMRS2AX	Sample exit for SYS2K Version 12.0 to capture activity after a database call.
CMRS2BX	Sample exit for SYS2K Version 12.0 to capture activity before a database call.
CMRTCTRD CMRTCTRS	(Obsolete) Sample PRL control statements that use CMRSTATC output to produce Analysis of Terminal Control Table summary and detail reports.
CMRTCTR	Sample PRL control statements to produce the Terminal Control Table short-term report.

Table 7. BBSAMP Data Set Members for PERFORMANCE REPORTER (Continued)

BBSAMP Member Name	Description
CMRTSTRD CMRTSTRS	(Obsolete) Sample PRL control statements that use CMRSTATC output to produce the Temporary Storage Table short-term report.
CMRUACMP	Sample user exit to call the CMRCUEX program.
CMRUAPLT	Sample PLT program to start CMRUACMP.
CMRUPRBT	Sample to define the problem threshold table.
CMRURAPM	Sample to define the resource analysis table.
CMRUSOPT	Sample macro options that define the options table.
CMRUSRSD	Sample exit called by CMRSUMD summarization utility to give control to a user-written routine when a CMRDETL record is processed.
CMRUSR01	Sample of a user exit to switch CMRDETL data sets when one becomes full and needs to be archived.
DCCTXPR	Sample exit to the DATACOM DCCTXPR routine.
FACTRECM	Sample assembler DSECTs.
GENEROL	Sample user exit for inclusion in the GENER/OL user task program.
LPCZZMON	Sample modification of the MSA LPCZZMON exit.
RDOCMRxx	Samples that define all required programs and transactions to CICS.
SAPCMROT	A sample program to capture SAP data in the T6E record of CMRDETL. SAPCMROT captures SAP data by calls to the exit, CMRCUEX, which is described in the *MAINVIEW for CICS Customization Guide*. SAPCMROT must be included in the SAP statistics exit (SAPSTEC) to pass data to MAINVIEW for CICS through a call to CMRCUEX.
SAPCMROW	Sample of the SAPSTEC exit called by the SAP system to pass data to MAINVIEW for CICS through a call to CMRCUEX.
SASINxx	(Obsolete) SAS control statements to process statistical and transaction records.
SASINXxx	SAS control statements to process statistical and transaction records.

Appendix B. CMRDETL: Transaction Detail Records

PERFORMANCE REPORTER constructs reports from the transaction data that MAINVIEW for CICS collects from CICS regions. Transaction data statistics are stored as transaction detail records in the CMRDETL data set. PERFORMANCE REPORTER uses BBPLIB member CMRDETL as a data dictionary to reformat these records for PRL reports.

This appendix describes the format of CMRDETL transaction detail records, which have a record type of 6D or 6E. A Type 6E record is written to the CMRDETL data set for every successful transaction. If a task abends, a Type 6D record is written instead. A Type 6D record has the same format as a Type 6E record.

Data Storage Layout

Table 8 describes the storage of CICS transaction data by MAINVIEW for CICS for PRL, COBOL, and SAS reports. The type keys in the table represent

- Type of data stored on the CMRDETL data set

  The tables in this appendix identify the type of data stored in a record field by these keys.

- Data type key specified in the CMRDETL member of the BBPLIB data dictionary

  PERFORMANCE REPORTER uses this key to identify the user-selected fields from the collected records.

Table 8. CMRDETL Data Storage Layout

Type	Recorded Data Format	Description	Type	Data Dictionary Format
C		Character	C	
X	*mmddyyyy*	Date	D	*mm*/*dd*/*yyyy*
P	*hhmmsst*	Time	T	*hh*:*mm*:*ss*
X		Hexadecimal	X	
B		Binary	B	
B		Clock (recorded in binary, converted to decimal, then divided by 62,500 for *ss.sss*)	K	*ss.sss*
P		Packed	P	

where the following variables represent numeric values:

mm = month (in a Date field)
dd = day
yyyy = year
hh = hours
mm = minutes (in a Time field)
ss = seconds
t = tenths of a second

Record Header Information

Each CMRDETL transaction detail record has a header area that identifies the data source, the type of record, and when it was collected. Table 9 shows the layout of this header area. The header fields can be referenced by their names.

Table 9. CMRDETL Record Header Fields

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
00 (00)	CMR$SYS	08 - C	CICS System ID
08 (08)	CMRDATE	04 - X	Date of data creation. This value is also the task detach date. The date is recorded in the form YYYYMMDD.
0C (12)	CMRTIME	04 - P	Time of data creation. This value is also the task detach time. Time is recorded as HHMMSS using a 24-hour clock.
10 (16)	CMRCLOCK	08 - X	Time of data creation in hexadecimal format.
18 (24)	CMRRECID	03 - P	Three-byte packed record ID assigned by MAINVIEW for CICS. This value is the CICS task number assigned to the transaction.
1B (27)	TYPE	01 - X	Record Identifier

Record Format

The tables in this section show the format of a Type 6D or 6E transaction detail record. Table 10 on page 175 lists the fields of a Type 6D or 6E record in ascending offset order. Table 11 on page 195 lists the fields of the record by function (such as task or terminal).

Note: To compute the actual value for a 4-byte time field, such as T6ERESP, convert the binary value to decimal and divide by 62,500. The resulting time is in ss.sss second format.

CMRDETL Record Fields by Offset

Table 10 lists the fields of a Type 6D or 6E transaction detail record. The fields are listed in ascending offset order. The name of a field, its length, and a description of its contents are listed on each line of the table.

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	T6ETRID	04 - C	Transaction ID
20 (32)	T6EPGNM	08 - C	Program Name (see T6EPTYPE)
28 (40)	T6ETMID	04 - C	Terminal ID
2C (44)	T6EOPID	03 - C	Operator ID
2F (47)	T6ECPRID	01 - C	Compression ID
30 (48)	T6ECMPBM	12 - X	Record Compress Field Bit Map
3C (60)	T6ERESP	04 - K	Response Time Total
Note: T6ERESP is an unsigned 32-bit binary field rather than a signed 31-bit binary field. If there is the possibility that a lengthy transaction will exceed 9.5 hours, T6ERESP must be transformed into a doubleword binary field before converting it to decimal. If any transaction exceeds 19 hours, the T6ERESP field overflows and no longer contains a valid response time.			
40 (64)	T6EDISTT	04 - K	Dispatch (CPU) Clock Time
44 (68)	T6EDISTC	02 - B	Dispatch (CPU) Clock Time Count
46 (70)	T6EDIOTT	04 - K	DL/I I/O Time
4A (74)	T6EDIOTC	02 - B	DL/I I/O Time Count
4C (76)	T6EFCWTT	04 - K	File Control I/O Time
50 (80)	T6EFCWTC	02 - B	File Control I/O Time Count
52 (82)	T6ESUSTT	04 - K	Suspend Time
56 (86)	T6ESUSTC	02 - B	Suspend Count
58 (88)	T6ETCWTT	04 - K	Terminal Control Time
5C (92)	T6ETCWTC	02 - B	Terminal Control Count
5E (94)	T6ETSWTT	04 - K	Temporary Storage Time
62 (98)	T6ETSWTC	02 - B	Temporary Storage Count
64 (100)	T6EJCWTT	04 - K	Journal Control Time
68 (104)	T6EJCWTC	02 - B	Journal Control Count
6A (106)	T6EECWWT	04 - K	User ECB Wait Time
6E (110)	T6EECWTC	02 - B	User ECB Wait Count

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
70 (112)	T6ETDWWT	04 - K	Transient Data Wait Time
74 (116)	T6ETDWTC	02 - B	Transient Data Wait Count
76 (118)	T6EPCWWT	04 - K	DFHRPL Wait Time
7A (122)	T6EPCWTC	02 - B	DFHRPL Wait Count
7C (124)	T6ETSWK	04 - K	Temporary Storage String Wait Time
80 (128)	T6ETSWC	02 - B	Temporary Storage String Wait Count
82 (130)	T6EVSTWT	04 - K	File Control String Wait Time
86 (134)	T6EVSTWC	02 - B	File Control String Wait Count
88 (136)	T6EFCCAL	04 - B	File Control Call Count
8C (140)	T6EDLIC	04 - B	DL/I Call Count
90 (144)	T6EPAGCT	04 - B	Unused - Obsolete
94 (148)	T6ESHWM	04 - B	Storage High-Water Mark
98 (152)	T6EUSER	08 - C	CICS User ID
A0 (160)	T6EMSGI	04 - B	Messages from the Terminal to CICS
A4 (164)	T6EMSGO	04 - B	Messages from a Program to the Terminal
A8 (168)	T6ECHARI	04 - B	Number of Bytes in Messages from the Terminal to CICS
AC (172)	T6ECHARO	04 - B	Number of Bytes in Messages from a Program to the Terminal
B0 (176)	T6EABCD	08 - C	Multiple Abend Codes
B8 (184)	T6EDSPQ	04 - B	First Dispatch Queue Time Only
Note: Storage occupancy overlay field			
BC (188)	T6EUSTGO	08 - X	Storage Occupancy (8 byte, IBM default)
BC (188)	T6EUSTG1	02 - B	Unused - Filler
BE (190)	T6EUSTGS	04 - B	Storage Occupancy (4 byte, preferred)
C2 (194)	T6EUSTG2	02 - B	Unused - Filler
Note: End of storage occupancy overlay field			
C4 (196)	T6ENETNM	08 - C	Network ID of Terminal
CC (204)	T6EDBRQT	04 - B	Non-DL/I Database Request Time
D0 (208)	T6EDBRQC	02 - B	Non-DL/I Database Request Count
D2 (210)	T6EUDATA	18 - C	User data

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
E4 (228)	T6EPTYPE	01 - C	Program Name Type A = SAP C = CSP D = DMS G = GENER/OL I = IDEAL L = Millennium M = Mantis N = Natural S = PCS U = UFO blank = CICS program name
E5 (229)	T6ETRTY	01 - C	Transaction Subtype: A ATI-attached C Conversational task D Transient data trigger-attached F FEPI S System-internal task T Terminal-attached Z Pseudo-conversational X MAINVIEW for CICS summary record
E6 (230)	T6ETASK	04 - B	Count of Tasks in Summary
EA (234)	T6ECPUR	04 - X	CPU Real time
EE (238)	T6EFCGC	04 - B	File GET Count (Total for Task)
F2 (242)	T6EFCPC	04 - B	File PUT Count (Total for Task)
F6 (246)	T6EFCBC	04 - B	File BROWSE Count (Total for Task)
FA (250)	T6EFCAC	04 - B	File ADD Count (Total for Task)
FE (254)	T6EFCDC	04 - B	File DELETE Count (Total for Task)
102 (258)	T6EFCOC	04 - B	Other File Call Count (Total for Task)
106 (262)	T6ETDGC	04 - B	Transient Data GET Count
10A (266)	T6ETDPC	04 - B	Transient Data PUT Count
10E (270)	T6ETDRC	04 - B	Transient Data PURGE Count
112 (274)	T6ETSGC	04 - B	Temporary Storage GET Count
116 (278)	T6ETSPAC	04 - B	Auxiliary Temporary Storage PUT Count
11A (282)	T6ETSPMC	04 - B	Temporary Storage PUT Main Count
11E (286)	T6ESCUC	04 - B	Storage Control User GET Count
122 (290)	T6EPCLIC	04 - B	Program Control Link Count
126 (294)	T6EPCXC	04 - B	Program Control Transfer Control Count
12A (298)	T6EPCLOC	04 - B	Program Control Load Count
12E (302)	T6EJCC	04 - B	Journal Control PUT/WRITE Count

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
132 (306)	T6EICC	04 - B	Interval Control PUT/INITIATE Count
136 (310)	T6ESPPC	04 - B	Sync Point Count
Note: MANTIS and SAP overlay the same record storage			
13A (314)	T6EMNTIS	33 - C	MANTIS Program Name
13A (314)	T6ESAPLT	04 - C	SAP Transaction ID
13E (318)	T6ESAPTY	01 - C	SAP Task Type
13F (319)	T6ESAPMN	02 - C	SAP Authorization Code
141 (321)	T6ESAPAC	12 - C	SAP Account Code
14D (333)	T6ESAPWA	8 - C	SAP Work Area
155 (341)	T6ESAPWT	1 - C	SAP Weight Indicator
156 (342)	T6ESAPTM	4 - C	SAP Terminal ID
Note: End of MANTIS and SAP record overlay			
15B (347)	T6EUCLT1	04 - K	DL/I PSB Schedule Time
15F (351)	T6EUCLC1	02 - B	DL/I PSB Schedule Count
161 (353)	T6EUCLT2	04 - K	DL/I PSB Active Time
165 (357)	T6EUCLC2	02 - B	DL/I PSB Active Count
167 (359)	T6EUCLT3	04 - K	DL/I Database Call Time
16B (363)	T6EUCLC3	02 - B	DL/I Database Call Count
16D (365)	T6EUCLT4	04 - K	DL/I I/O Wait Time
171 (369)	T6EUCLC4	02 - B	DL/I I/O Wait Count
173 (371)	T6ECORR	08 - C	DB2 Correlation ID
17B (379)	T6EAUTH	08 - C	DB2 Authorization ID
183 (387)	T6ESPAR	02 - B	Traced Statements
185 (389)	T6EUCNT1	04 - B	DL/I GU Requests
189 (393)	T6EUCNT2	04 - B	DL/I GN Requests
18D (397)	T6EUCNT3	04 - B	DL/I GNP Requests
191 (401)	T6EUCNT4	04 - B	DL/I GHU Requests
195 (405)	T6EUCNT5	04 - B	DL/I GHN Requests
199 (409)	T6EUCNT6	04 - B	DL/I GHNP Requests
19D (413)	T6EUCNT7	04 - B	DL/I ISRT Requests

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1A1 (417)	T6EUCNT8	04 - B	DL/I DLET Requests
1A5 (421)	T6EUCNT9	04 - B	DL/I REPL Requests
1A9 (425)	T6EUCNTA	04 - B	DL/I TOTAL Requests
Note: The T6EUCxxx fields report DL/I activity for DBCTL. Monitoring data is returned by DBCTL for CICS tasks when the correct event monitoring point IDs (DBCTL.1 and DBCTL.2) are specified in the Monitor Control Table (MCT). For DBCTL, the DBDNAME is not recorded; the activity is attributed to a generic DBCTL bucket.			
1AD (429)	T6EORIG	20 - C	Originating System
1C1 (449)	T6EUOW	08 - X	Unit of Work ID
1C9 (457)	T6ETSKFG	02 - X	Unused - Obsolete
1CB (459)	T6EPSHWM	04 - B	Program Storage High-Water Mark Total
1CF (463)	T6EPSBN	08 - C	Partition Specification Block, if used
1D7 (471)	T6EBMSN	08 - C	Mapset Name, if used
1DF (479)	T6EIRWWT	04 - B	Interregion (IRC) Wait Time
1E3 (483)	T6EIRWTC	02 - B	Interregion (IRC) Wait Count
1E5 (485)	T6ESTIME	04 - P	Transaction Start Time
1E9 (489)	T6EDB2P	08 - C	DB2 Plan Name
Note: DBCTL task record overlay field			
1F1 (497)	T6EDBCCP	04 - B	DBCTL Task CPU Time
1F1 (497)	T6EDSQL1	04 - B	DB2 First SQL Elapsed Time
Note: End of DBCTL task record overlay field			
1F5 (501)	T6EDSLCT	04 - B	DB2 SELECT Count (Total for Task)
1F9 (505)	T6EDOPEN	04 - B	DB2 OPEN Count (Total for Task)
1FD (509)	T6EDCLOS	04 - B	DB2 CLOSE Count (Total for Task)
201 (513)	T6EDINS	04 - B	DB2 INSERT Count (Total for Task)
205 (517)	T6EDDEL	04 - B	DB2 DELETE Count (Total for Task)
209 (521)	T6EDUPD	04 - B	DB2 UPDATE Count (Total for Task)
20D (525)	T6EDFTCH	04 - B	DB2 FETCH Count (Total for Task)
211 (529)	T6EDCOMT	04 - B	DB2 COMMIT Count (Total for Task)
215 (533)	T6EDOTHR	04 - B	DB2 OTHER SQL Count (Total for Task)

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
219 (537)	T6EDB2T	01 - C	DB2 Thread Type Used: P = POOL G = GROUP
21A (538)	T6EDB2W	01 - C	DB2 Thread Wait Indicator: 1 = YES 0 = NO
21B (539)	T6EXCWWT	04 - K	Exception Wait Time
21F (543)	T6EXCWC	02 - B	Exception Wait Count
221 (545)	T6EDQWWT	04 - K	Dispatch Queue Wait Time
225 (549)	T6EDQWC	02 - B	Dispatch Queue Wait Count
227 (551)	T6EXSTOR	01 - C	Storage Exception Indicator
228 (552)	T6EXTEMP	01 - C	Temporary Storage Exception Indicator
229 (553)	T6EXTBUF	01 - C	Temporary Storage Buffer Exception
22A (554)	T6EXTSTR	01 - C	Temporary Storage String Exception
22B (555)	T6ETCLAS	02 - B	Transaction Class at Task Start
22D (557)	T6ETPRI	02 - B	Transaction Priority at Task Start
22F (559)	T6ESHWME	04 - B	Extended Storage High-Water Mark
233 (563)	T6ESTGOE	04 - B	Extended Storage Occupancy
237 (567)	T6ESCUCE	04 - B	Extended Storage GETMAIN Count
23B (571)	T6EP24HW	04 - B	Below 16 MB Storage Used
23F (575)	T6EXFSTR	01 - C	File Control String Wait
240 (576)	T6EXFBUF	01 - C	File Control Buffer Wait
241 (577)	T6ETRTY2	01 - C	Extension for Transaction Type
242 (578)	T6EQUAL	01 - B	Record Extension Flags: X’01’ = CICS Version 4.1 Data X’02’ = CICS Version 5.1/5.2 (CTS Version 1.1/1.2) Data X’04’ = CICS Version 5.3 (CTS Version 1.3) Data X’08’ = CICS Version 6.1/6.2 (CTS Version 2.1/2.2) Data X’80’ = Expanded File Data A value greater than X’80’ indicates expanded file data and data for a particular version of CICS is included in the record.

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
243 (579)	T6EFCNT	01 - B	Count of Files that Follow If CMRSOPT parameter FILEXPND=NO, the maximum number of files is 255. If FILEXPND=YES, the maximum is 40.
244 (580)	T6EEXPID	04 - C	Area Identifier
248 (584)	T6ECMPB2	08 - X	Record Compress Field Bit Map
250 (592)	T6EOFFXT	04 - B	Offset to Extensions
254 (596)	T6EOFFFL	04 - B	Offset to File Data
258 (600)	T6EMVREL	04 - C	MAINVIEW for CICS Release Level
25C (604)	T6ECIREL	04 - C	CICS Release Level
260 (608)	T6ESMFID	04 - C	MVS SMF ID
264 (612)	T6ETKSTR	08 - X	Task Start Time (Store Clock Format)
26C (620)	T6ETKSTO	08 - X	Task Stop Time (Store Clock Format)
274 (628)	T6EAPLID	08 - C	CICS Application ID
27C (636)	T6EDB2SS	04 - C	DB2 Subsystem ID
280 (640)	T6EDB2AL	08 - C	DB2 Alias Name
288 (648)	T6EUCPUT	08 - X	Total CPU Time (USRCPUT)
290 (656)	T6ESSNMS	08 - C	Reserved
298 (664)	T6ECPROR	01 - C	Original Compression ID
299 (665)		01 - B	Available
29A (666)	T6EFENLN	02 - B	File Entry Length
29C (668)	T6EFCWFC	04 - B	File IO Count
2A0 (672)	T6EDLIFC	04 - B	DLI IO Count
2A4 (676)	T6ECVTTZ	04 - X	Time Zone Offset
2A8 (680)	T6E62XCT	04 - B	Count of CICS Version 6.1 and 6.2 (CTS Version 2.1 and 2.2) Extensions in Summary
2AC (684)	T6ETTSUS	04 - X	Suspend Time
2B0 (688)	T6ETCSUS	04 - X	Suspend Time Count
2B4 (692)	T6EMQRTT	04 - K	Total Time for all MQ Requests
2B8 (696)	T6EMQRTC	04 - B	Total Count for all MQ Requests
2BC (700)	T6EFXSP1	14 - B	Expansion Space

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
2CA (714)	T6EFXSP2	02 - B	Expansion Space
2CC (716)	T6E53XCT	04 - B	Count of CICS Version 5.3 (CTS Version 1.3) Extensions in Summary
2D0 (720)	T6E52XCT	04 - B	Count of CICS Version 5.1 and 5.2 (CTS Version 1.1 and 1.2) Extensions in Summary
2D4 (724)	T6E41XCT	04 - B	Count of CICS Version 4.1 Extensions in Summary
2D8 (728)	T6EFLXCT	04 - B	Count of Expanded Files in Summary
2DC (732)	T6E41ID	04 - C	Area Identifier
2E0 (736)	T6ECMP41	08 - X	Record Compress Field Bit Map
2E8 (744)	T6ESUSPT	04 - K	Suspend Time - Other
2EC (748)	T6ESUSPC	02 - B	Suspend Count - Other
2EE (750)	T6EBMMC	04 - B	Basic Mapping Support (BMS) Map Requests
2F2 (754)	T6EBMIC	04 - B	BMS In Requests
2F6 (758)	T6EBMOC	04 - B	BMS Out Requests
2FA (762)	T6EBMTC	04 - B	BMS Total Requests
2FE (766)	T6ETDTC	04 - B	Transient Data Requests
302 (770)	T6ETSTC	04 - B	Temporary Storage Requests
306 (774)	T6EPC31R	04 - B	Program Storage High-Water Mark in ERDSA
30A (778)	T6EFDDLT	04 - K	First Dispatch Delay Time
30E (782)	T6EFDDLC	02 - B	First Dispatch Delay Count
310 (784)	T6EFDTCT	04 - K	Dispatch Delay for Transaction Class Wait Time
314 (788)	T6EFDTCC	02 - B	Dispatch Delay for Transaction Class Wait Count
316 (790)	T6EFDMWT	04 - K	Dispatch Delay for Max Tasks Wait Time
31A (794)	T6EFDMXC	02 - B	Dispatch Delay for Max Tasks Wait Count
31C (796)	T6ENQDLT	04 - K	Enqueue Delay Time
320 (800)	T6ENQDLC	02 - B	Enqueue Delay Count
322 (802)	T6ERSYS	04 - C	Remote CICS SYSID
326 (806)	T6E61WWT	04 - K	LU6.1 Wait Time
32A (810)	T6E61WTC	02 - B	LU6.1 Wait Count
32C (812)	T6E62WWT	04 - K	LU6.2 Wait Time

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
330 (816)	T6E62WTC	02 - B	LU6.2 Wait Count
332 (818)	T6E62IMC	04 - B	LU6.2 Alternate Messages Received
336 (822)	T6E62OMC	04 - B	LU6.2 Alternate Messages Sent
33A (826)	T6E62ICH	04 - B	LU6.2 Alternate Bytes Received
33E (830)	T6E62OCH	04 - B	LU6.2 Alternate Bytes Sent
342 (834)	T6EPC31H	04 - B	Program Storage High-Water Mark above the 16 MB Line
346 (838)	T6EPC31C	04 - B	Program Storage High-Water Mark in ECDSA
34A (842)	T6EPC24C	04 - B	Program Storage High-Water Mark in CDSA
34E (846)	T6ESZACT	04 - B	Front-End Programming Interface (FEPI) Conversations Allocated
352 (850)	T6ESZRCT	04 - B	FEPI Receive/Converse Count
356 (854)	T6ESZSCT	04 - B	FEPI Send/Converse Count
35A (858)	T6ESZTCT	04 - B	FEPI Start Count
35E (862)	T6ESZCOT	04 - B	FEPI Characters Sent
362 (866)	T6ESZCIN	04 - B	FEPI Characters Received
366 (870)	T6ESZWWT	04 - B	FEPI Wait Time
36A (874)	T6ESZWTC	02 - B	FEPI Wait Count
36C (876)	T6ESZATO	04 - B	FEPI Timeouts for Allocate
370 (880)	T6ESZRTO	04 - B	FEPI Timeouts for Receive
374 (884)	T6ESZTOT	04 - B	FEPI Total Requests
378 (888)	T6EPC24S	04 - B	Program Storage High-Water Mark in SDSA
37C (892)	T6EPC31S	04 - B	Program Storage High-Water Mark in ESDSA
380 (896)	T6EPC24R	04 - B	Program Storage High-Water Mark in RDSA
384 (900)	T6ETCLNM	08 - C	Transaction Class Name
38C (908)	T6ERMITT	04 - K	Resource Manager Interface (RMI) Elapsed Time
390 (912)	T6ERMITC	02 - B	RMI Elapsed Count
392 (914)	T6ERMIST	04 - K	RMI Suspend Time
396 (918)	T6ERMISC	02 - B	RMI Suspend Count
398 (920)	T6EDSPDT	04 - K	Dispatch Delay Time
39C (924)	T6EDSPDC	02 - B	Dispatch Delay Count

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
39E (926)	T6ETCTAL	04 - B	TCTTE Allocate Requests
3A2 (930)	T6EFCAM	04 - B	File Control Access Count
3A6 (934)	T6ETASKF	04 - X	Task Error Flags
3AA (938)	T6ERTYPE	02 - C	CICS Performance Record Type: C = Terminal Converse S = Sync Point D = User EMP Deliver T = Task Termination F = Long Running Transaction
3AC (940)	T6EMSGI2	04 - B	TCMSGIN2 Field from CICS Performance Record
3B0 (944)	T6EMSGO2	04 - B	TCMSGOU2 Field from CICS Performance Record
3B4 (948)	T6ECHRI2	04 - B	TCCHRIN2 Field from CICS Performance Record
3B8 (952)	T6ECHRO2	04 - B	TCCHROU2 Field from CICS Performance Record
3BC (956)	T6EUSTO	08 - B	SCUSRSTG Field from CICS Performance Record
3C4 (964)	T6EEUSTO	08 - B	SCUCRSTG Field from CICS Performance Record
3CC (972)	T6E31OCC	08 - B	SC31COCC Field from CICS Performance Record
3D4 (980)	T6E24OCC	08 - B	SC24COCC Field from CICS Performance Record
3DC (988)	T6E31UHW	04 - B	SC31CHWM Field from CICS Performance Record
3E0 (992)	T6E24UHW	04 - B	SC24CHWM Field from CICS Performance Record
3E4 (996)	T6EGMCD	04 - B	SCCGETCT (117) Field from CICS Performance Record
3E8 (1000)	T6EGMECD	04 - B	SCCGETCT (120) Field from CICS Performance Record
3EC (1004)	T6E52ID	04 - C	Area Identifier
3F0 (1008)	T6ECMP52	04 - X	Record Compress Field Bit Map
3F4 (1012)	T6EICTC	04 - B	Interval Control Requests
3F8 (1016)	T6EPCLUC	04 - B	Program Link URM Requests
3FC (1020)	T6EBRTID	04 - C	3270 Bridge Transaction ID
400 (1024)	T6ELMDLT	04 - K	Lock Manager Delay Time
404 (1028)	T6ELMDLC	02 - B	Lock Manager Delay Count
406 (1030)	T6ERMUOW	08 - X	Unit of Recovery ID
40E (1038)	T6ESC24S	04 - B	GETMAIN Requests in CDSA/SDSA
412 (1042)	T6ESC24G	04 - B	Number of Bytes GETMAINed in CDSA/SDSA
416 (1046)	T6ESC24F	04 - B	Number of Bytes FREEMAINed in CDSA/SDSA

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
41A (1050)	T6ESC31S	04 - B	GETMAIN Requests in ECDSA/ESDSA
41E (1054)	T6ESC31G	04 - B	Number of Bytes GETMAINed in ECDSA/ESDSA
422 (1058)	T6ESC31F	04 - B	Number of Bytes FREEMAINed in ECDSA/ESDSA
426 (1062)	T6EFCTY	04 - C	Facility Name
42A (1066)	T6ESRVCL	08 - C	MVS WLM Service Class Name
432 (1074)	T6ERPTCL	08 - C	MVS WLM Report Class Name
43A (1082)	T6ETECNM	04 - C	Terminal Session Connection Name
43E (1086)	T6ELGWCT	04 - B	Log Stream Write Count
442 (1090)	T6ESYNTT	04 - K	Sync Point Elapsed Time
446 (1094)	T6ESYNCC	02 - B	Sync Point Elapsed Count
448 (1096)	T6ERLSWT	04 - K	Record-Level Sharing (RLS) Wait Time
44C (1100)	T6ERLSWC	02 - B	RLS Wait Count
44E (1102)	T6ERLSCT	04 - K	RLS SRB CPU Time
452 (1106)	T6ERLSCC	02 - B	RLS SRB CPU Count
454 (1108)	T6ETSSWT	04 - K	Temporary Storage Shared Wait Time
458 (1112)	T6ETSSWC	02 - B	Temporary Storage Shared Wait Count
45A (1114)	T6EWTXWT	04 - K	External Wait Time
45E (1118)	T6EWTXWC	02 - B	External Wait Count
460 (1120)	T6EWCEWT	04 - K	CICS Wait Time
464 (1124)	T6EWCEWC	02 - B	CICS Wait Count
466 (1126)	T6EICDLT	04 - K	Interval Control Wait Time
46A (1130)	T6EICDLC	02 - B	Interval Control Wait Count
46C (1132)	T6EGVPWT	04 - K	Give Up Control Wait Time
470 (1136)	T6EGVPWC	02 - B	Give Up Control Wait Count
472 (1138)	T6ETRNFG	08 - X	Transaction Flags
47A (1146)	T6ETMINF	04 - X	Terminal Information
47E (1150)	T6ERECCT	04 - B	Number of CICS Performance Records
482 (1154)	T6E53ID	04 - C	Area Identifier
486 (1158)	T6ECMP53	12 - X	Record Compress Field Bit Map
492 (1170)	T6EGQDLT	04 - K	Global Enqueue Time

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
496 (1174)	T6EGQDLC	02 - B	Global Enqueue Count
498 (1176)	T6ECFDWT	04 - K	Coupling Facility Data Tables (CFDT) Wait Time
49C (1180)	T6ECFDTC	02 - B	CFDT Wait Count
49E (1182)	T6ESYWT	04 - K	CFDT Sync/Resync Time
4A2 (1186)	T6ESYWTC	02 - B	CFDT Sync/Resync Count
4A4 (1188)	T6EIMSWT	04 - K	IMS (DBCTL) Request Wait Time
4A8 (1192)	T6EIMSWC	02 - B	IMS (DBCTL) Request Wait Count
4AA (1194)	T6ERDQWT	04 - K	DB2 Thread Wait Time
4AE (1198)	T6ERDQWC	02 - B	DB2 Thread Wait Count
4B0 (1200)	T6ECONTT	04 - K	DB2 Wait for Subtask Time
4B4 (1204)	T6ECONWC	02 - B	DB2 Wait for Subtask Count
4B6 (1206)	T6EDB2WT	04 - K	DB2 SQL/IFI Wait Time
4BA (1210)	T6EDB2WC	02 - B	DB2 SQL/IFI Wait Count
4BC (1212)	T6ERRSWT	04 - K	In-doubt RRS for EXCI Wait Time
4C0 (1216)	T6ERRSWC	02 - B	In-doubt RRS for EXCI Wait Count
4C2 (1218)	T6ERTRWT	04 - K	Business Transaction Service (BTS) Wait Time
4C6 (1222)	T6ERTRWC	02 - B	BTS Wait Count
4C8 (1224)	T6ESYDLT	04 - K	BTS Parent Transaction Wait Time
4CC (1228)	T6ESYDLC	02 - B	BTS Parent Transaction Wait Count
4CE (1230)	T6ESIOWT	04 - K	Socket I/O Wait Time
4D2 (1234)	T6ESIOWC	02 - B	Socket I/O Wait Count
4D4 (1236)	T6EQRDLT	04 - K	Redispatch on Quasi-Reentrant TCB Wait Time
4D8 (1240)	T6EQRDLC	02 - B	Redispatch on Quasi-Reentrant TCB Wait Count
4DA (1242)	T6ETADLT	04 - K	CICS Open TCB Wait Time
4DE (1246)	T6ETADLC	02 - B	CICS Open TCB Wait Count
4E0 (1248)	T6EJVMST	04 - K	JAVA Virtual Machine Wait Time
4E4 (1252)	T6EJVMSC	02 - B	JAVA Virtual Machine Wait Count
4E6 (1254)	T6EJVMTT	04 - K	JAVA Virtual Machine Elapsed Time
4EA (1258)	T6EJVMTC	02 - B	JAVA Virtual Machine Elapsed Count
4EC (1260)	T6EQRDTT	04 - K	Quasi-Reentrant TCB Elapsed Time

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
4F0 (1264)	T6EQRDTC	02 - B	Quasi-Reentrant TCB Elapsed Count
4F2 (1266)	T6EQRPTT	04 - K	Quasi-Reentrant TCB Processor Time
4F6 (1270)	T6EQRPTC	02 - B	Quasi-Reentrant TCB Processor Count
4F8 (1272)	T6EMSDTT	04 - K	Other TCB Elapsed Time
4FC (1276)	T6EMSDTC	02 - B	Other TCB Elapsed Count
4FE (1278)	T6EMSPTT	04 - K	Other TCB Processor Time
502 (1282)	T6EMSPTC	02 - B	Other TCB Processor Count
504 (1284)	T6EL8PTT	04 - K	L8 TCB Processor Time
508 (1288)	T6EL8PTC	02 - B	L8 TCB Processor Count
50A (1290)	T6EJ8PTT	04 - K	J8 TCB Processor Time
50E (1294)	T6EJ8PTC	02 - B	J8 TCB Processor Count
510 (1296)	T6ES8PTT	04 - K	S8 TCB Processor Time
514 (1300)	T6ES8PTC	02 - B	S8 TCB Processor Count
516 (1302)	T6EPRCSN	36 - C	BTS Process Name
53A (1338)	T6EPRCST	08 - C	BTS Process Type
542 (1346)	T6EPRCSD	52 - C	BTS Root Activity ID
576 (1398)	T6EACTID	52 - C	BTS Activity ID
5AA (1450)	T6EACTNM	16 - C	BTS Activity Name
5BA (1466)	T6EBTSYN	04 - B	BTS Synchronous Run Requests
5BE (1470)	T6EBTASY	04 - B	BTS Asynchronous Run Requests
5C2 (1474)	T6EBTLNK	04 - B	BTS Link Requests
5C6 (1478)	T6EBTDFP	04 - B	BTS Define Process Requests
5CA (1482)	T6EBTDFA	04 - B	BTS Activity Process Requests
5CE (1486)	T6EBTRES	04 - B	BTS Reset Requests
5D2 (1490)	T6EBTSUP	04 - B	BTS Suspend Requests
5D6 (1494)	T6EBTRSM	04 - B	BTS Resume Requests
5DA (1498)	T6EBTDEL	04 - B	BTS Delete Requests
5DE (1502)	T6EBTACQ	04 - B	BTS Acquire Requests
5E2 (1506)	T6EBTTLR	04 - B	BTS Total Requests
5E6 (1510)	T6EPDCCT	04 - B	BTS Process Data Container Requests

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
5EA (1514)	T6EADCCT	04 - B	BTS Activity Data Container Requests
5EE (1518)	T6ETLCCT	04 - B	BTS Total Data Container Requests
5F2 (1522)	T6EBTRRE	04 - B	BTS Retrieve/Reattach Event Requests
5F6 (1526)	T6EBTDIE	04 - B	BTS Define Input Event Requests
5FA (1530)	T6EBTTME	04 - B	BTS Timer Event Requests
5FE (1534)	T6EBTTEV	04 - B	BTS Total Event Requests
602 (1538)	T6EAPICT	04 - B	Foundation Class Requests
606 (1542)	T6EDBCCT	04 - B	IMS (DBCTL) Requests
60A (1546)	T6EDB2CT	04 - B	DB2 (EXEC SQL and IFI) Requests
60E (1550)	T6EDHCCT	04 - B	Document Header Create Requests
612 (1554)	T6EDHICT	04 - B	Document Header Insert Requests
616 (1558)	T6EDHSCT	04 - B	Document Header Set Requests
61A (1562)	T6EDHRCT	04 - B	Document Header Retrieve Requests
61E (1566)	T6EDHTCT	04 - B	Document Header Total Requests
622 (1570)	T6EDHTLN	04 - B	Total Length of Documents
626 (1574)	T6EDPLCT	04 - B	DPL Requests
62A (1578)	T6ESBECT	04 - B	Socket Bytes Encrypted
62E (1582)	T6ESBDCT	04 - B	Socket Bytes Decrypted
632 (1586)	T6ESIPAD	16 - C	Client IP Address
642 (1602)	T6EURID	16 - C	Resource Recovery Management Services MVS Unit of Recovery ID
652 (1618)	T6ECGTCT	04 - B	TCB Change Modes Count
656 (1622)	T6ETCBCT	04 - B	TCBs Attached Count
65A (1626)	T6EWBRCT	04 - B	Web Receive Requests
65E (1630)	T6EWBCHI	04 - B	Total Web Characters Received
662 (1634)	T6EWBSCT	04 - B	Web Send Requests
666 (1638)	T6EWBCHO	04 - B	Total Web Characters Sent
66A (1642)	T6EWBTCT	04 - B	Total Web Requests
66E (1646)	T6EWBRRD	04 - B	Web Repository Reads
672 (1650)	T6EWBRWR	04 - B	Web Repository Writes

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
676 (1654)	T6ETGPID	28 - C	Transaction Group ID
692 (1682)	T6E62ID	04 - C	Area Indentifier
696 (1686)	T6ECMP62	12 - X	Compression Bits
6A2 (1698)	T6ESOOTT	04 - K	Outbound Socket Time
6A6 (1702)	T6ESOOWC	02 - B	Outbound Socket Count
6A8 (1704)	T6EOTSTT	04 - K	OTS Indoubt Time
6AC (1708)	T6EOTSWC	02 - B	OTS Indoubt Count
6AE (1710)	T6ERQRTT	04 - K	CIRR Reply Time
6B2 (1714)	T6ERQRWC	02 - B	CIRR Reply Count
6B4 (1716)	T6ERQPTT	04 - K	CIRP Reply Time
6B8 (1720)	T6ERQPWC	02 - B	CIRP Reply Count
6BA (1722)	T6EK8DTT	04 - K	Key8 Dispatch Time
6BE (1726)	T6EK8DTC	02 - B	Key8 Dispatch Count
6C0 (1728)	T6EK8PTT	04 - K	Key8 CPU Time
6C4 (1732)	T6EK8PTC	02 - B	Key8 CPU Count
6C6 (1734)	T6ERODTT	04 - K	RO TCB Dispatch Time
6CA (1738)	T6ERODTC	02 - B	RO TCB Dispatch Count
6CC (1740)	T6EROPTT	04 - K	RO TCB CPU Time
6D0 (1744)	T6EROPTC	02 - B	RO TCB CPU Count
6D2 (1746)	T6EJVMIT	04 - K	JVM Init Time
6D6 (1750)	T6EJVMIC	02 - B	JVM Init Count
6D8 (1752)	T6EJVMRT	04 - K	JVM Reset Time
6DC (1756)	T6EJVMRC	02 - B	JVM Reset Count
6DE (1758)	T6EJTDLT	04 - K	MAXTCBS Wait Time
6E2 (1762)	T6EJTDLC	02 - B	MAXTCBS Wait Count
6E4 (1764)	T6EHTDLT	04 - K	MAPHPTCBS Wait Time
6E8 (1768)	T6EHTDLC	02 - B	MAPHPTCBS Wait Count
6EA (1770)	T6EBPDLT	04 - K	3270 Partner Time
6EE (1774)	T6EBPDLC	02 - B	3270 Partner Count
6F0 (1776)	T6ETCPSV	08 - C	TCP/IP Service Name

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
6F8 (1784)	T6EPORTN	04 - B	TCP/IP Port Number
6FC (1788)	T6ESOERC	04 - B	Count of Extract TCP/IP and Certificate
700 (1792)	T6ESOCNS	04 - B	Non-persistent Outbound Socket Request Count
704 (1796)	T6ESOCPS	04 - B	Persistent Outbound Socket Request Count
708 (1800)	T6ESONHW	04 - B	Peak Number of Non-persistent Outbound Sockets Owned by Task
70C (1804)	T6ESOPHW	04 - B	Peak Number of Persistent Outbound Sockets Owned by Task
710 (1808)	T6ESORCT	04 - B	Receive Requests Issued for Outbound Sockets
714 (1812)	T6ESOCIN	04 - B	Bytes Received on Outbound Sockets
718 (1816)	T6ESOSCT	04 - B	Send Requests Issued for Outbound Sockets
71C (1820)	T6ESOCOT	04 - B	Receive Requests Issued for Outbound Sockets
720 (1824)	T6ESOTC	04 - B	Socket Requests Count
724 (1828)	T6ESOIMC	04 - B	Inbound Socket Receive Request Count
728 (1832)	T6ESOI1C	04 - B	Number of Characters Received by Inbound Receive Requests
72C (1836)	T6ESOOMC	04 - B	Inbound Socket Send Request Count
730 (1840)	T6ESOO1C	04 - B	Number of Characters Sent by Inbound Send Requests
734 (1844)	T6EOTSID	128 - X	Object Transaction Service (OTS) ID
7B4 (1972)	T6ENETID	08 - C	NETID
7BC (1980)	T6ERLUNM	08 - C	Real Network Name
7C4 (1988)	T6EWBRRC	04 - B	Read Requests for HTTP Header/Form Field
7C8 (1992)	T6EWBWRC	04 - B	Write Requests for HTTP Header
7CC (1996)	T6EWBERC	04 - B	Extract Requests
7D0 (2000)	T6EWBBRC	04 - B	Browse Requests for HTTP Header/Form Field
7D4 (2004)	T6EFI	01 - C	File Type Represented by T6EFN: A = Adabas C = CICS D = Datacom K = System 2000 User value P = Pseudo file S = Supra Z = SAP 1 = DL/I 2 = DB2 Q = MQ Series
7D5 (2005)	T6EFN	08 - C	File or Database Name
7DD (2013)		01	Reserved for Future Use
7DE (2014)	T6EFT	04 - K	Elapsed File Time for Waits

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
7E2 (2018)	T6EFC	02 - B	Number of File I/O Waits or Calls
Note: If CMRSOPT parameter FILEXPND=NO, repeat offset 7D4 (2004) through 7E2 (2018), up to 255 times. If FILEXPND=YES, repeat offset 7D4 (2004) through 8AC (2220), up to 40 times. The following fields are on a per file basis.			
7E4 (2020)	T6ERD	04 - B	File READ (Into) Count
7E8 (2024)	T6ERU	04 - B	File READ FOR UPDATE (Into) Count
7EC (2028)	T6EWR	04 - B	File WRITE Count
7F0 (2032)	T6ERW	04 - B	File REWRITE Count
7F4 (2036)	T6EDL	04 - B	File DELETE Count
7F8 (2040)	T6EUL	04 - B	File UNLOCK Count
7FC (2044)	T6ESB	04 - B	File START BROWSE or DB2 FETCH Count
800 (2048)	T6ERN	04 - B	File READ NEXT (Into) Count
804 (2052)	T6ERP	04 - B	File READ PREVIOUS (Into) Count
808 (2056)	T6EEB	04 - B	File END BROWSE Count
80C (2060)	T6ERB	04 - B	File RESET BROWSE Count
810 (2064)	T6EOT	04 - B	File OTHER Count
814 (2068)	T6EV1	06 - C	First Volume Serial Number
81A (2074)	T6EV2	06 - C	Second Volume Serial Number
820 (2080)	T6EV3	06 - C	Third Volume Serial Number
826 (2086)	T6EX1	02 - B	Reserved for future use
828 (2088)	T6EF1	04 - B	File READ NEXT UPDATE (Into) count
82C (2092)	T6EF2	04 - B	File READ PREVIOUS UPDATE (Into) count
830 (2096)	T6EF3	04 - B	File REWRITE DELETE count
834 (2100)	T6EF4	04 - B	File READ (Set) count
838 (2104)	T6EF5	04 - B	File READ UPDATE (Set) count
83C (2108)	T6EF6	04 - B	File READ NEXT (Set) count
840 (2112)	T6EF7	04 - B	File READ PREVIOUS (Set) count
844 (2116)	T6EF8	04 - B	File READ NEXT UPDATE (Set) count
848 (2120)	T6EF9	04 - B	File READ PREVIOUS UPDATE (Set) count
84C (2124)	T6ETA	04 - K	File READ (Into) Time

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
850 (2128)	T6ETB	04 - K	File READ UPDATE (Into) Time
854 (2132)	T6ETD	04 - K	File WRITE Time
858 (2136)	T6ETE	04 - K	File REWRITE Time
85C (2140)	T6ETG	04 - K	File DELETE Time
860 (2144)	T6ETH	04 - K	File UNLOCK Time
864 (2148)	T6ETJ	04 - K	File START BROWSE Time
868 (2152)	T6ETK	04 - K	File READ NEXT (Into) Time
86C (2156)	T6ETL	04 - K	File READ PREVIOUS (Into) Time
870 (2160)	T6ETM	04 - K	File END BROWSE Time
874 (2164)	T6ETO	04 - K	File RESET BROWSE Time
878 (2168)	T6ETP	04 - K	File OTHER Time
87C (2172)	T6ET1	04 - K	File READ NEXT UPDATE (Into) Time
880 (2176)	T6ET2	04 - K	File READ PREVIOUS UPDATE (Into) Time
884 (2180)	T6ET3	04 - K	File REWRITE DELETE Time
888 (2184)	T6ET4	04 - K	File READ (Set) Time
88C (2188)	T6ET5	04 - K	File READ UPDATE (Set) Time
890 (2192)	T6ET6	04 - K	File READ NEXT (Set) Time
894 (2196)	T6ET7	04 - K	File READ PREVIOUS (Set) Time
898 (2200)	T6ET8	04 - K	File READ NEXT UPDATE (Set) Time
89C (2204)	T6ET9	04 - K	File READ PREVIOUS UPDATE (Set) Time
8A0 (2208)	T6ETQ	04 - B	Total File Requests
8A4 (2212)	T6ETR	04 - K	Total File Request Time
8A8 (2216)	T6ETS	04 - B	Number of File I/O Waits
8AC (2220)	T6ESR	04 - B	Summarization Record Count
Note: The following is a redefinition for DB2 data. These fields are on a DB2 plan basis.			
7E4 (2020)	DB2SL	04 - B	DB2 SELECT Count
7E8 (2024)	DB2OP	04 - B	DB2 OPEN Count
7EC (2028)	DB2CL	04 - B	DB2 CLOSE Count
7F0 (2032)	DB2IN	04 - B	DB2 INSERT Count
7F4 (2036)	DB2DL	04 - B	DB2 DELETE Count

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
7F8 (2040)	DB2UP	04 - B	DB2 UPDATE Count
7FC (2044)	DB2FT	04 - B	DB2 FETCH Count
800 (2048)	DB2CM	04 - B	DB2 COMMIT Count
804 (2052)	DB2OT	04 - B	DB2 OTHER Count
808 (2056)	DBTSL	04 - K	DB2 SELECT Time
80C (2060)	DBTOP	04 - K	DB2 OPEN Time
810 (2064)	DBTCL	04 - K	DB2 CLOSE Time
814 (2068)	DBTIN	04 - K	DB2 INSERT Time
818 (2072)	DBTDL	04 - K	DB2 DELETE Time
81C (2076)	DBTUP	04 - K	DB2 UPDATE Time
820 (2080	DBTFT	04 - K	DB2 FETCH Time
824 (2084)	DBTCM	04 - K	DB2 COMMIT Time
828 (2088)	DBTOT	04 - K	DB2 OTHER Time
8A0 (2208)	DBTFN	04 - B	Total DB2 Functions
8A4 (2212)	DBTFT	04 - K	Total DB2 Function Time
8A8 (2216)	DBTWC	04 - B	Total Wait/Function Count
8AC (2220)	DBTSR	04 - B	Summarization Record Count
Note: The following is a redefinition for MQ Series data. These fields are ona queue name basis.			
7E4 (2020)	MQSOP	04 - B	MQ Series OPEN Count
7E8 (2024)	MQSCL	04 - B	MQ Series CLOSE Count
7EC (2028)	MQSGT	04 - B	MQ Series GET Count
7F0 (2032)	MQSPT	04 - B	MQ Series PUT Count
7F4 (2036)	MQSP1	04 - B	MQ Series PUT1 Count
7F8 (2040)	MQSOT	04 - B	MQ Series OTHER Count
7FC (2044)	MQSNM	48 - C	MQ Series Queue Name
82C (2092)	MQTOP	04 - K	MQ Series OPEN Time
830 (2096)	MQTCL	04 - K	MQ Series CLOSE Time
834 (2100)	MQTGT	04 - K	MQ Series GET Time
838 (2104)	MQTPT	04 - K	MQ Series PUT Time
83C (2108)	MQTP1	04 - K	MQ Series PUT1 Time

Table 10. Type 6D or 6E Transaction Detail Record Fields by Offset (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
840 (2112)	MQTOT	04 - K	MQ Series OTHER Time
8A0 (2208)	MQTFN	04 - B	Total MQ Series Functions
8A4 (2212)	MQTFT	04 - K	Total MQ Series Function Time
8A8 (2216)	MQTWC	04 - B	Total Wait/Function Time
8AC (2220)	MQTSR	04 - B	Summarization Record Count
*			End of Record

CMRDETL Record Fields by Function

Table 11 lists the fields of a Type 6D or 6E transaction detail record by function. Related fields are grouped by the major categories of information contained within a record (such as task, terminal, and so on). The fields are listed alphabetically within each category.

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
Task			
3270 Bridge Transaction ID	T6EBRTID	3FC (1020)	04 - C
Business Transaction Service (BTS) Wait Count	T6ERTRWC	4C6 (1222)	02 - B
BTS Wait Time	T6ERTRWT	4C2 (1218)	04 - K
BTS Parent Transaction Wait Count	T6ESYDLC	4CC (1228)	02 - B
BTS Parent Transaction Wait Time	T6ESYDLT	4C8 (1224)	04 - K
CICS User ID	T6EUSER	98 (152)	08 - C
CICS Wait Count	T6EWCEWC	464 (1124)	02 - B
CICS Wait Time	T6EWCEWT	460 (1120)	04 - K
CPU Real Time	T6ECPUR	EA (234)	04 - X
Dispatch (CPU) Clock Count	T6EDISTC	44 (68)	02 - B
Dispatch (CPU) Clock Time	T6EDISTT	40 (64)	04 - K
Dispatch Delay for Max Tasks Count	T6EFDMXC	31A (794)	02 - B
Dispatch Delay for Max Tasks Time	T6EFDMTT	316 (790)	04 - K
Dispatch Delay for Transaction Class Count	T6EFDTCC	314 (788)	02 - B
Dispatch Delay for Transaction Class Time	T6EFDTCT	310 (784)	04 - K
Dispatch Delay Count	T6EDSPDC	39C (924)	02 - B
Dispatch Delay Time	T6EDSPDT	398 (920)	04 - K
Dispatch Queue Wait Count	T6EDQWC	225 (549)	02 - B
Dispatch Queue Wait Time	T6EDQWWT	221 (545)	04 - K
Enqueue Delay Count	T6ENQDLC	320 (800)	02 - B
Enqueue Delay Time	T6ENQDLT	31C (796)	04 - K
Exception Wait Count	T6EXCWC	21F (543)	02 - B
Exception Wait Time	T6EXCWWT	21B (539)	04 - K
External Wait Count	T6EWTXWC	45E (1118)	02 - B
External Wait Time	T6EWTXWT	45A (1114)	04 - K

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
Facility Name	T6EFCTY	426 (1062)	04 - C
First Dispatch Delay Count	T6EFDDLC	30E (782)	02 - B
First Dispatch Delay Time	T6EFDDLT	30A (778)	04 - K
First Dispatch Queue Time Only	T6EDSPQ	B8 (184)	04 - B
Give Up Control Wait Count	T6EGVPWC	470 (1136)	02 - B
Give Up Control Wait Time	T6EGVPWT	46C (1132)	04 - K
Global Enqueue Count	T6EGQDLC	496 (1174)	02 - B
Global Enqueue Time	T6EGQDLT	492 (1170)	04 - K
In-Doubt RRS for EXCI Count	T6ERRSWC	4C0 (1216)	02 - B
In-Doubt RRS for EXCI Time	T6ERRSTT	4BC (1212)	04 - K
Interregion (IRC) Wait Count	T6EIRWTC	1E3 (483)	02 - B
Interregion (IRC) Wait Time	T6EIRWWT	1DF (479)	04 - K
Interval Control Put/Initiate Count	T6EICC	132 (306)	04 - B
Interval Control Requests	T6EICTC	3F4 (1012)	04 - B
Interval Control Wait Count	T6EICDLC	46A (1130)	02 - B
Interval Control Wait Time	T6EICDLT	466 (1126)	04 - K
J8 TCB Processor Count	T6EJ8PTC	50E (1294)	02 - B
J8 TCB Processor Time	T6EJ8PTT	50A (1290)	04 - K
JAVA Virtual Machine Elapsed Count	T6EJVMTC	4EA (1258)	02 - B
JAVA Virtual Machine Elapsed Time	T6EJVMTT	4E6 (1254)	04 - K
JAVA Virtual Machine Wait Count	T6EJVMSC	4E4 (1252)	02 - B
JAVA Virtual Machine Wait Time	T6EJVMST	4E0 (1248)	04 - K
L8 TCB Processor Count	T6EL8PTC	508 (1288)	02 - B
L8 TCB Processor Time	T6EL8PTT	504 (1284)	04 - K
Lock Manager Delay Count	T6ELMDLC	404 (1028)	02 - B
Lock Manager Delay Time	T6ELMDLT	400 (1024)	04 - K
Mapset Name	T6EBMSN	1D7 (471)	08 - C
CICS Open TCB Wait Count	T6ETADLC	4DE (1246)	02 - B
CICS Open TCB Wait Time	T6ETADLT	4DA (1242)	04 - K
Multiple Abend Codes	T6EABCD	B0 (176)	08 - C

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
Operator ID	T6EOPID	2C (44)	03 - C
Originating System	T6EORIG	1AD (429)	20 - C
Other TCB Elapsed Count	T6EMSDTC	4FC (1276)	02 - B
Other TCB Elapsed Time	T6EMSDTT	4F8 (1272)	04 - K
Other TCB Processor Count	T6EMSPTC	502 (1282)	02 - B
Other TCB Processor Time	T6EMSPTT	4FE (1278)	04 - K
Quasi-Reentrant TCB Elapsed Count	T6EQRDTC	4F0 (1264)	02 - B
Quasi-Reentrant TCB Elapsed Time	T6EQRDTT	4EC (1260)	04 - K
Quasi-Reentrant TCB Processor Count	T6EQRPTC	4F6 (1270)	02 - B
Quasi-Reentrant TCB Processor Time	T6EQRPTT	4F2 (1266)	04 - K
Redispatch on Quasi-Reentrant TCB Wait Count	T6EQRDLC	4D8 (1240)	02 - B
Redispatch on Quasi-Reentrant TCB Wait Time	T6EQRDLT	4D4 (1236)	04 - K
Response Time Total	T6ERESP	3C (60)	04 - B
Resource Manager (RMI) Elapsed Count	T6ERMITC	390 (912)	02 - B
RMI Elapsed Time	T6ERMITT	38C (908)	04 - K
RMI Suspend Count	T6ERMISC	396 (918)	02 - B
RMI Suspend Time	T6ERMIST	392 (914)	04 - K
Resource Recovery Management Services MVS Unit of Recovery ID	T6EURID	642 (1602)	16 - C
S8 TCB Processor Count	T6ES8PTC	514 (1300)	02 - B
S8 TCB Processor Time	T6ES8PTT	510 (1296)	04 - K
Suspend Count	T6ESUSTC	56 (86)	02 - B
Suspend Count - Other	T6ESUSPC	2EC (748)	02 - B
Suspend Time	T6ESUST	52 (82)	04 - K
Suspend Time - Other	T6ESUSPT	2E8 (744)	04 - K
Sync Point Count	T6ESPPC	136 (310)	04 - B
Sync Point Elapsed Count	T6ESYNCC	446 (1094)	02 - B
Sync Point Elapsed Time	T6ESYNTT	442 (1090)	04 - K
Task Error Flags	T6ETASKF	3A6 (934)	04 - X
Task Start Time (Store Clock Format)	T6ETKSTR	264 (612)	08 - X

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
Task Stop Time (Store Clock Format)	T6ETKSTO	26C (620)	08 - X
TCBs Attached Count	T6ETCBCT	656 (1622)	04 - B
TCB Change Modes Count	T6ECGTCT	652 (1618)	04 - B
Transaction Class at Task Start	T6ETCLAS	22B (555)	02 - B
Transaction Class Name	T6ETCLNM	384 (900)	08 - C
Transaction Flags	T6ETRNFG	472 (1138)	08 - X
Transaction Priority at Task Start	T6ETPRI	22D (557)	02 - B
Transaction Start Time	T6ESTIME	1E5 (485)	04 - P
Transaction Subtype: A ATI-attached C Conversational task D Transient data trigger-attached F FEPI S System-internal task T Terminal-attached Z Pseudo-conversational X MAINVIEW for CICS summary record	T6ETRTY	E5 (229)	01 - C
Extension for Transaction Type	T6ETRTY2	241 (577)	01 - C
Total CPU Time (USRCPUT)	T6EUCPUT	288 (648)	08 - X
Unit of Recovery ID	T6ERMUOW	406 (1030)	08 - X
Unit of Work ID	T6EUOW	1C1 (449)	08 - X
User Data	T6EUDATA	D2 (210)	18 - C
User ECB Wait Count	T6EECWTC	6E (110)	02 - B
User ECB Wait Time	T6EECWT	6A (106)	04 - K
OTS Indoubt Time	T6EOTSTT	6A8 (1704)	04 - K
OTS Indoubt Count	T6EOTSWC	6AC (1708)	02 - B
CIRR Reply Time	T6ERQRTT	6AE (1710)	04 - K
CIRR Reply Count	T6ERQRWC	6B2 (1714)	02 - B
CIRP Reply Time	T6ERQPTT	6B4 (1716)	04 - K
CIRP Reply Count	T6ERQPWC	6B8 (1720)	02 - B
Key8 Dispatch Time	T6EK8DTT	6BA (1722)	04 - K
Key8 Dispatch Count	T6EK8DTC	6BE (1726)	02 - B

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
Key8 CPU Time	T6EK8PTT	6C0 (1728)	04 - K
Key8 CPU Count	T6EK8PTC	6C4 (1732)	02 - B
RO TCB Dispatch Time	T6ERODTT	6C6 (1734)	04 - K
RO TCB Dispatch Count	T6ERODTC	6CA (1738)	02 - B
RO TCB CPU Time	T6EROPTT	6CC (1740)	04 - K
RO TCB CPU Count	T6EROPTC	6D0 (1744)	02 - B
JVM Init Time	T6EJVMIT	6D2 (1746)	04 - K
JVM Init Count	T6EJVMIC	6D6 (1750)	02 - B
JVM Reset Time	T6EJVMRT	6D8 (1752)	04 - K
JVM Reset Count	T6EJVMRC	6DC (1756)	02 - B
MAXTCBS Wait Time	T6EJTDLT	6DE (1758)	04 - K
MAXTCBS Wait Count	T6EJTDLC	6E2 (1762)	02 - B
MAPHPTCBS Wait Time	T6EHTDLT	6E4 (1764)	04 - K
MAPHPTCBS Wait Count	T6EHTDLC	6E8 (1768)	02 - B
3270 Partner Time	T6EBPDLT	6EA (1770)	04 - K
3270 Partner Count	T6EBPDLC	6EE (1774)	02 - B
Object Transaction Service (OTS) ID	T6EOTSID	734 (1844)	128 - X
Transaction Group ID	T6ETGPID	676 (1654)	28 - C
Terminal			
LU6.1 Wait Count	T6E61WTC	32A (810)	02 - B
LU6.1 Wait Time	T6E61WWT	326 (806)	04 - K
LU6.2 Alternate Bytes Received	T6E62ICH	33A (826)	04 - B
LU6.2 Alternate Bytes Sent	T6E62OCH	33E (830)	04 - B
LU6.2 Alternate Messages Received	T6E62IMC	332 (818)	04 - B
LU6.2 Alternate Messages Sent	T6E62OMC	336 (822)	04 - B
LU6.2 Wait Count	T6E62WTC	330 (816)	02 - B
LU6.2 Wait Time	T6E62WWT	32C (812)	04 - K
Messages from a Program to the Terminal	T6EMSGO	A4 (164)	04 - B
Messages from the Terminal to CICS	T6EMSGI	A0 (160)	04 - B
Network ID of Terminal	T6ENETNM	C4 (196)	08 - C

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
Number of Bytes in Messages from a Program to the Terminal	T6ECHARO	AC (172)	04 - B
Number of Bytes in Messages from the Terminal to CICS	T6ECHARI	A8 (168)	04 - B
TCMSGIN2 Field from CICS Performance Record	T6EMSGI2	3AC (940)	04 - B
TCMSGOU2 Field from CICS Performance Record	T6EMSGO2	3B0 (944)	04 - B
TCCHRIN2 Field from CICS Performance Record	T6ECHRI2	3B4 (948)	04 - B
TCCHROU2 Field from CICS Performance Record	T6ECHRO2	3B8 (952)	04 - B
TCTTE Allocate Requests	T6ETCTAL	39E (926)	04 - B
Terminal Control Count	T6ETCWTC	5C (92)	02 - B
Terminal Control Time	T6ETCWT	58 (88)	04 - K
Terminal ID	T6ETMID	28 (40)	04 - C
Terminal Information	T6ETMINF	47A (1146)	04 - X
Terminal Session Connection Name	T6ETECNM	43A (1082)	04 - C
NETID	T6ENETID	7B4 (1972)	08 - C
Real Network Name	T6ERLUNM	7BC (1980)	08 - C
Program			
DFHRPL Wait Count	T6EPCWTC	7A (122)	02 - B
DFHRPL Wait Time	T6EPCWT	76 (118)	04 - K
DPL Requests	T6EDPLCT	626 (1574)	04 - B
Program Name (see T6EPTYPE)	T6EPGNM	20 (32)	08 - C
Program Storage High-Water Mark above the 16 MB Line	T6EPC31H	342 (834)	04 - B
Program Storage High-Water Mark in CDSA	T6EPC24C	34A (842)	04 - B
Program Storage High-Water Mark in ECDSA	T6EPC31C	346 (838)	04 - B
Program Storage High-Water Mark in ERDSA	T6EPC31R	306 (774)	04 - B
Program Storage High-Water Mark in ESDSA	T6EPC31S	37C (892)	04 - B
Program Storage High-Water Mark in RDSA	T6EPC24R	380 (896)	04 - B
Program Storage High-Water Mark in SDSA	T6EPC24S	378 (888)	04 - B
Program Storage High-Water Mark Total	T6EPSHWM	1CB (459)	04 - B

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
Storage			
Below 16 MB Storage Used	T6EP24HW	23B (571)	04 - B
Extended Storage GETMAIN Count	T6ESCUCE	237 (567)	04 - B
Extended Storage High-Water Mark	T6ESHWME	22F (559)	04 - B
Extended Storage Occupancy	T6ESTGOE	233 (563)	04 - B
GETMAIN Requests in CDSA/SDSA	T6ESC24S	40E (1038)	04 - B
GETMAIN Requests in ECDSA/ESDSA	T6ESC31S	41A (1050)	04 - B
Number of Bytes FREEMAINed in CDSA/SDSA	T6ESC24F	416 (1046)	04 - B
Number of Bytes FREEMAINed in ECDSA/ESDSA	T6ESC31F	422 (1058)	04 - B
Number of Bytes GETMAINed in CDSA/SDSA	T6ESC24G	412 (1042)	04 - B
Number of Bytes GETMAINed in ECDSA/ESDSA	T6ESC31G	41E (1054)	04 - B
SC24CHWM Field from CICS Performance Record	T6E24UHW	3E0 (992)	04 - B
SC31CHWM Field from CICS Performance Record	T6E31UHW	3DC (988)	04 - B
SC24COCC Field from CICS Performance Record	T6E24OCC	3D4 (980)	08 - B
SC31COCC Field from CICS Performance Record	T6E31OCC	3CC (972)	08 - B
SCCGETCT (117) Field from CICS Performance Record	T6EGMCD	3E4 (996)	04 - B
SCCGETCT (120) Field from CICS Performance Record	T6EGMECD	3E8 (1000)	04 - B
SCUCRSTG Field from CICS Performance Record	T6EEUSTO	3C4 (964)	08 - B
SCUSRSTG Field from CICS Performance Record	T6EUSTO	3BC (956)	08 - B
Storage Control User Get Count	T6ESCUC	11E (286)	04 - B
Storage Exception Indicator	T6EXSTOR	227 (551)	01 - C
Storage High-Water Mark	T6ESHWM	94 (148)	04 - B
Storage Occupancy (4 byte, preferred)	T6EUSTGS	BE (190)	04 - B
Storage Occupancy (8 byte, IBM default)	T6EUSTGO	BC (188)	08 - X
File			
Count of Files That Follow If CMRSOPT parameter FILEXPND=NO, the maximum number of files is 255. If FILEXPND=YES, the maximum is 40.	T6EFCNT	243 (579)	01 - B

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
Record Extension Flags A value of X'80' (128) or greater indicates that expanded file data is available.	T6EQUAL	242 (578)	01 - B
Elapsed File Time for Waits	T6EFT	7DE (2014)	04 - K
File ADD Count (Total for Task)	T6EFCAC	FA (250)	04 - B
File BROWSE Count (Total for Task)	T6EFCBC	F6 (246)	04 - B
File Name	T6EFN	7D5 (2005)	08 - C
File DELETE Count	T6EDL	7F4 (2036)	04 - B
File DELETE Count (Total for Task)	T6EFCDC	FE (254)	04 - B
File END BROWSE Count	T6EEB	808 (2056)	04 - B
File GET Count (Total for Task)	T6EFCGC	EE (238)	04 - B
File OTHER Count	T6EOT	810 (2064)	04 - B
File PUT Count (Total for Task)	T6EFCPC	F2 (242)	04 - B
File READ (Into) Count	T6ERD	7E4 (2020)	04 - B
File READ FOR UPDATE (Into) Count	T6ERU	7E8 (2024)	04 - B
File READ NEXT (Into) Count	T6ERN	800 (2048)	04 - B
File READ PREVIOUS (Into) Count	T6ERP	804 (2052)	04 - B
File RESET BROWSE Count	T6ERB	808 (2056)	04 - B
File REWRITE Count	T6ERW	7F0 (2032)	04 - B
File START BROWSE Count	T6ESB	7FC (2044)	04 - B
File Type Represented by T6EFN: A =Adabas P = Pseudo file Q = MQ Series C = CICS S = Supra D = Datacom Z = SAP K = System 2000 1 = DL/I User value 2 = DB2	T6EFI	244 (580)	01 - C
File UNLOCK Count	T6EUL	7F8 (2040)	04 - B
File WRITE Count	T6EWR	7EC (2028)	04 - B
First Volume Serial Number	T6EV1	814 (2068)	06 - C
Number of File I/O Waits or Calls	T6EFC	7E2 (2018)	02 - B
Other File Call Count (Total for Task)	T6EFCOC	102 (258)	04 - B

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
Second Volume Serial Number	T6EV2	81A (2074)	06 - C
Third Volume Serial Number	T6EV3	820 (2080)	06 - C
Reserved for future use	T6EX1	826 (2086)	02 - B
File READ NEXT UPDATE (Into) count	T6EF1	828 (2088)	04 - B
File READ PREVIOUS UPDATE (Into) count	T6EF2	82C (2092)	04 - B
File REWRITE DELETE count	T6EF3	830 (2096)	04 - B
File READ (Set) count	T6EF4	834 (2100)	04 - B
File READ UPDATE (Set) count	T6EF5	838 (2104)	04 - B
File READ NEXT (Set) count	T6EF6	83C (2108)	04 - B
File READ PREVIOUS (Set) count	T6EF7	840 (2112)	04 - B
File READ NEXT UPDATE (Set) count	T6EF8	844 (2116)	04 - B
File READ PREVIOUS UPDATE (Set) count	T6EF9	848 (2120)	04 - B
File READ (Into) Time	T6ETA	84C (2124)	04 - K
File READ UPDATE (Into) Time	T6ETB	850 (2128)	04 - K
File WRITE Time	T6ETD	854 (2132)	04 - K
File REWRITE Time	T6ETE	858 (2136)	04 - K
File DELETE Time	T6ETG	85C (2140)	04 - K
File UNLOCK Time	T6ETH	860 (2144)	04 - K
File START BROWSE Time	T6ETJ	864 (2148)	04 - K
File READ NEXT (Into) Time	T6ETK	868 (2152)	04 - K
File READ PREVIOUS (Into) Time	T6ETL	86C (2156)	04 - K
File END BROWSE Time	T6ETM	870 (2160)	04 - K
File RESET BROWSE Time	T6ETO	874 (2164)	04 - K
File OTHER Time	T6ETP	878 (2168)	04 - K
File READ NEXT UPDATE (Into) Time	T6ET1	87C (2172)	04 - K
File READ PREVIOUS UPDATE (Into) Time	T6ET2	880 (2176)	04 - K
File REWRITE DELETE Time	T6ET3	884 (2180)	04 - K
File READ (Set) Time	T6ET4	888 (2184)	04 - K
File READ UPDATE (Set) Time	T6ET5	88C (2188)	04 - K
File READ NEXT (Set) Time	T6ET6	890 (2192)	04 - K

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
File READ PREVIOUS (Set) Time	T6ET7	894 (2196)	04 - K
File READ NEXT UPDATE (Set) Time	T6ET8	898 (2200)	04 - K
File READ PREVIOUS UPDATE (Set) Time	T6ET9	89C (2204)	04 - K
Total File Requests	T6ETQ	8A0 (2208)	04 - B
Total File Request Time	T6ETR	8A4 (2212)	04 - K
Number of File I/O Waits	T6ETS	8A8 (2216)	04 - B
Summarization Record Count	T6ESR	8AC (2220)	04 - B
DL/I (DBCTL)			
DBCTL Task CPU Time	T6EDBCCP	1F1 (497)	04 - B
DL/I Call Count	T6EDLIC	8C (140)	04 - B
DL/I Database Call Count	T6EUCLC3	16B (363)	02 - B
DL/I Database Call Time	T6EUCLT3	167 (359)	04 - K
DL/I DLET Requests	T6EUCNT8	1A1 (417)	04 - B
DL/I GHN Requests	T6EUCNT5	195 (405)	04 - B
DL/I GHNP Requests	T6EUCNT6	199 (409)	04 - B
DL/I GHU Requests	T6EUCNT4	191 (401)	04 - B
DL/I GN Requests	T6EUCNT2	189 (393)	04 - B
DL/I GNP Requests	T6EUCNT3	18D (397)	04 - B
DL/I GU Requests	T6EUCNT1	185 (389)	04 - B
DL/I ISRT Requests	T6EUCNT7	19D (413)	04 - B
DL/I I/O Count	T6EDIOTC	4A (74)	02 - B
DL/I I/O Time	T6EDIOTT	46 (70)	04 - K
DL/I I/O Wait Count	T6EUCLC4	171 (369)	02 - B
DL/I I/O Wait Time	T6EUCLT4	16D (365)	04 - K
DL/I PSB Active Count	T6EUCLC2	165 (357)	02 - B
DL/I PSB Active Time	T6EUCLT2	161 (353)	04 - K
DL/I PSB Schedule Count	T6EUCLC1	15F (351)	02 - B
DL/I PSB Schedule Time	T6EUCLT1	15B (347)	04 - K
DL/I REPL Requests	T6EUCNT9	1A5 (421)	04 - B
DL/I TOTAL Requests	T6EUCNTA	1A9 (425)	04 - B

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
IMS (DBCTL) Requests	T6EDBCCT	606 (1542)	04 - B
IMS (DBCTL) Request Wait Count	T6EIMSWC	4A8 (1192)	02 - B
IMS (DBCTL) Request Wait Time	T6EIMSWT	4A4 (1188)	04 - K
Non-DL/I Database Request Time	T6EDBRQT	CC (204)	04 - K
Non-DL/I Database Request Count	T6EDBRQC	D0 (208)	02 - B
Partition Specification Block	T6EPSBN	1CF (463)	08 - C
4GL/Database Products			
MANTIS Program Name	T6EMNTIS	13A (314)	33 - C
Program Name Type A = SAP C = CSP D = DMS G = GENER/OL I = IDEAL L = Millennium M = Mantis N = Natural S = PCS U = UFO blank = CICS program name	T6EPTYPE	E4 (228)	01 - C
SAP Account Code	T6ESAPAC	141 (321)	12 - C
SAP Authorization Code	T6ESAPMN	13F (319)	02 - C
SAP Task Type	T6ESAPTY	13E (318)	01 - C
SAP Terminal ID	T6ESAPTM	156 (342)	4 - C
SAP Transaction ID	T6ESAPLT	13A (314)	04 - C
SAP Weight Indicator	T6ESAPWT	155 (341)	1 - C
SAP Work Area	T6ESAPWA	14D (333)	8 - C
DB2			
Alias Name	T6EDB2AL	280 (640)	08 - C
Authorization ID	T6EAUTH	17B (379)	08 - C
CLOSE Count	T6EWR	7EC (2028)	04 - B
CLOSE Count (Total for Task)	T6EDCLOS	1FD (509)	04 - B
COMMIT Count	T6ERN	800 (2048)	04 - B
COMMIT Count (Total for Task)	T6EDCOMT	211 (529)	04 - B
Correlation ID	T6ECORR	173 (371)	08 - C
DELETE Count (Total for Task)	T6EDDEL	205 (517)	04 - B
DELETE Count	T6EDL	7F4 (2036)	04 - B
EXEC SQL and IFI Requests	T6EDB2CT	60A (1546)	04 - B

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
FETCH Count	T6ESB	7FC (2044)	04 - B
FETCH Count (Total for Task)	T6EDFTCH	20D (525)	04 - B
First SQL Elapsed Time	T6EDSQL1	1F1 (497)	04 - K
INSERT Count	T6ERW	7F0 (2032)	04 - B
INSERT Count (Total for Task)	T6EDINS	201 (513)	04 - B
OPEN Count	T6ERU	7E8 (2024)	04 - B
OPEN Count (Total for Task)	T6EDOPEN	1F9 (505)	04 - B
OTHER SQL Count	T6ERP	804 (2052)	04 - B
OTHER SQL Count (Total for Task)	T6EDOTHR	215 (533)	04 - B
Plan Name	T6EDB2P	1E9 (489)	08 - C
SELECT Count	T6ERD	7E4 (2020)	04 - B
SELECT Count (Total for Task)	T6EDSLCT	1F5 (501)	04 - B
SQL/IFI Wait Count	T6EDB2WC	4BA (1210)	02 - B
SQL/IFI Wait Time	T6EDB2WT	4B6 (1206)	04 - K
Subsystem ID	T6EDB2SS	27C (636)	04 - C
Thread Type Used: P = POOL G = GROUP	T6EDB2T	219 (537)	01 - C
Thread Wait Count	T6ERDQWC	4AE (1198)	02 - B
Thread Wait Indicator 1 = YES 0 = NO	T6EDB2W	21A (538)	01 - C
Thread Wait Time	T6ERDQWT	4AA (1194)	04 - B
UPDATE Count	T6EUL	7F8 (2040)	04 - B
UPDATE Count (Total for Task)	T6EDUPD	209 (521)	04 - B
Wait for Subtask Count	T6ECONWC	4B4 (1204)	02 - B
Wait for Subtask Time	T6ECONTT	4B0 (1200)	04 - K
DB2 SELECT Count	DB2SL	7E4 (2020)	04 - B
DB2 OPEN Count	DB2OP	7E8 (2024)	04 - B
DB2 CLOSE Count	DB2CL	7EC (2028)	04 - B
DB2 INSERT Count	DB2IN	7F0 (2032)	04 - B

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
DB2 DELETE Count	DB2DL	7F4 (2036)	04 - B
DB2 UPDATE Count	DB2UP	7F8 (2040)	04 - B
DB2 FETCH Count	DB2FT	7FC (2044)	04 - B
DB2 COMMIT Count	DB2CM	800 (2048)	04 - B
DB2 OTHER Count	DB2OT	804 (2052)	04 - B
DB2 SELECT Time	DBTSL	808 (2056)	04 - K
DB2 OPEN Time	DBTOP	80C (2060)	04 - K
DB2 CLOSE Time	DBTCL	810 (2064)	04 - K
DB2 INSERT Time	DBTIN	814 (2068)	04 - K
DB2 DELETE Time	DBTDL	818 (2072)	04 - K
DB2 UPDATE Time	DBTUP	81C (2076)	04 - K
DB2 FETCH Time	DBTFT	820 (2080	04 - K
DB2 COMMIT Time	DBTCM	824 (2084)	04 - K
DB2 OTHER Time	DBTOT	828 (2088)	04 - K
Total DB2 Functions	DBTFN	8A0 (2208)	04 - B
Total DB2 Function Time	DBTFT	8A4 (2212)	04 - K
Total Wait/Function Count	DBTWC	8A8 (2216)	04 - B
Summarization Record Count	DBTSR	8AC (2220)	04 - B
Journal			
Journal Control Count	T6EJCWTC	68 (104)	02 - B
Journal Control PUT/WRITE Count	T6EJCC	12E (302)	04 - B
Journal Control Time	T6EJCWT	64 (100)	04 - K
Log Stream Write Count	T6ELGWCT	43E (1086)	04 - B

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
File Control			
Coupling Facility Data Tables (CFDT) Wait Count	T6ECFDTC	49C (1180)	02 - B
CFDT Wait Time	T6ECFDWT	498 (1176)	04 - K
CFDT Sync/Resync Count	T6ESYWTC	4A2 (1186)	02 - B
CFDT Sync/Resync Time	T6ESYWT	49E (1182)	04 - K
File Control Access Count	T6EFCAM	3A2 (930)	04 - B
File Control Buffer Wait	T6EXFBUF	240 (576)	01 - C
File Control Call Count	T6EFCCAL	88 (136)	04 - B
File Control I/O Time	T6EFCWTT	4C (76)	04 - K
File Control I/O Count	T6EFCWTC	50 (80)	02 - B
File Control String Wait	T6EXFSTR	23F (575)	01 - C
File Control String Wait Count	T6EVSTWC	86 (134)	02 - B
File Control String Wait Time	T6EVSTW	82 (130)	04 - K
Record-Level Sharing (RLS) SRB CPU Count	T6ERLSCC	452 (1106)	02 - B
RLS SRB CPU Time	T6ERLSCT	44E (1102)	04 - K
RLS Wait Count	T6ERLSWC	44C (1100)	02 - B
RLS Wait Time	T6ERLSWT	448 (1096)	04 - K
Temporary Storage			
Auxiliary Temporary Storage PUT Count	T6ETSPAC	116 (278)	04 - B
Temporary Storage Buffer Exception	T6EXTBUF	229 (553)	01 - C
Temporary Storage Count	T6ETSWTC	62 (98)	02 - B
Temporary Storage Exception Indicator	T6EXTEMP	228 (552)	01 - C
Temporary Storage GET Count	T6ETSGC	112 (274)	04 - B
Temporary Storage PUT MAIN Count	T6ETSPMC	11A (282)	04 - B
Temporary Storage Requests	T6ETSTC	302 (770)	04 - B
Temporary Storage Shared Wait Count	T6ETSSWC	458 (1112)	02 - B
Temporary Storage Shared Wait Time	T6ETSSWT	454 (1108)	04 - K
Temporary Storage String Exception	T6EXTSTR	22A (554)	01 - C

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
Temporary Storage String Wait Count	T6ETSWC	80 (128)	02 - B
Temporary Storage String Wait Time	T6ETSW	7C (124)	04 - K
Temporary Storage Time	T6ETSWT	5E (94)	04 - K
Program Control			
Program Control Link Count	T6EPCLIC	122 (290)	04 - B
Program Control Transfer Control Count	T6EPCXC	126 (294)	04 - B
Program Control Load Count	T6EPCLOC	12A (298)	04 - B
Program Link URM Requests	T6EPCLUC	3F8 (1016)	04 - B
Transient Data			
Transaction ID	T6ETRID	1C (28)	04 - C
Transient Data GET Count	T6ETDGC	106 (262)	04 - B
Transient Data PURGE Count	T6ETDRC	10E (270)	04 - B
Transient Data PUT Count	T6ETDPC	10A (266)	04 - B
Transient Data Requests	T6ETDTC	2FE (766)	04 -B
Transient Data Wait Count	T6ETDWTC	74 (116)	02 - B
Transient Data Wait Time	T6ETDWT	70 (112)	04 - K
CICS Data			
CICS Application ID	T6EAPLID	274 (628)	08 - C
Foundation Class Requests	T6EAPICT	602 (1538)	04 - B
MVS WLM Report Class Name	T6ERPTCL	432 (1074)	08 - C
MVS WLM Service Class Name	T6ESRVCL	42A (1066)	08 - C
Number of Performance Records	T6ERECCT	47E (1150)	04 - B
Performance Record Type: C = Terminal Converse S = Sync Point D = User Emp Deliver T = Task Termination F = Long Running Transaction	T6ERTYPE	3AA (938)	02 - C
Remote CICS SYSID	T6ERSYS	322 (802)	04 - C

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
Basic Mapping Support (BMS)			
In Requests	T6EBMIC	2F2 (754)	04 - B
Map Requests	T6EBMMC	2EE (750)	04 - B
Out Requests	T6EBMOC	2F6 (758)	04 - B
Total Requests	T6EBMTC	2FA (762)	04 - B
Front-End Programming Interface (FEPI)			
Characters Received	T6ESZCIN	362 (866)	04 - B
Characters Sent	T6ESZCOT	35E (862)	04 - B
Conversations Allocated	T6ESZACT	34E (846)	04 - B
Receive/Converse Count	T6ESZRCT	352 (850)	04 - B
Send/Converse Count	T6ESZSCT	356 (854)	04 - B
Start Count	T6ESZTCT	35A (858)	04 - B
Timeouts for Allocate	T6ESZATO	36C (876)	04 - B
Timeouts for Receive	T6ESZRTO	370 (880)	04 - B
Total Requests	T6ESZTOT	374 (884)	04 - B
Wait Count	T6ESZWTC	36A (874)	02 - B
Wait Time	T6ESZWWT	366 (870)	04 - K
CICS Business Transaction Service (CBTS)			
Acquire Requests	T6EBTACQ	5DE (1502)	04 - B
Activity Data Container Requests	T6EADCCT	5EA (1514)	04 - B
Activity ID	T6EACTID	576 (1398(	52 - C
Activity Name	T6EACTNM	5AA (1450)	16 - C
Activity Process Requests	T6EBTDFA	5CA (1482)	04 - B
Asynchronous Run Requests	T6EBTASY	5BE (1470)	04 - B
Define Input Event Requests	T6EBTDIE	5F6 (1526)	04 - B
Define Process Requests	T6EBTDFP	5C6 (1478)	04 - B
Delete Requests	T6EBTDEL	5DA (1498)	04 - B
Link Requests	T6EBTLNK	5C2 (1474)	04 - B
Process Data Container Requests	T6EPDCCT	5E6 (1510)	04 - B
Process Name	T6EPRCSN	516 (1302)	36 - C

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
Process Type	T6EPRCST	53A (1338)	08 - C
Reset Requests	T6EBTRES	5CE (1486)	04 - B
Resume Requests	T6EBTRSM	5D6 (1494)	04 - B
Retrieve/Reattach Event Requests	T6EBTRRE	5F2 (1522)	04 - B
Root Activity ID	T6EPRCSD	542 (1346)	52 - C
Suspend Requests	T6EBTSUP	5D2 (1490)	04 - B
Synchronous Run Requests	T6EBTSYN	5BA (1466)	04 - B
Timer Event Requests	T6EBTTME	5FA (1530)	04 - B
Total Data Container Requests	T6ETLCCT	5EE (1518)	04 - B
Total Event Requests	T6EBTTEV	5FE (1534)	04 - B
Total Requests	T6EBTTLR	5E2 (1506)	04 - B
Socket Layer			
Client IP Address	T6ESIPAD	632 (1586)	16 - C
Socket Bytes Decrypted	T6ESBDCT	62E (1582)	04 - B
Socket Bytes Encrypted	T6ESBECT	62A (1578)	04 - B
Socket I/O Wait Count	T6ESIOWC	4D2 (1234)	02 - B
Socket I/O Wait Time	T6ESIOWT	4CE (1230)	04 - K
Outbound Socket Time	T6ESOOTT	6A2 (1698)	04 - K
Outbound Socket Count	T6ESOOWC	6A6 (1702)	02 - B
Non-persistent Outbound Socket Request Count	T6ESOCNS	700 (1792)	04 - B
Persistent Outbound Socket Request Count	T6ESOCPS	704 (1796)	04 - B
Peak Number of Non-persistent Outbound Sockets Owned by Task	T6ESONHW	708 (1800)	04 - B
Peak Number of Persistent Outbound Sockets Owned by Task	T6ESOPHW	70C (1804)	04 - B
Receive Requests Issued for Outbound Sockets	T6ESORCT	710 (1808)	04 - B
Bytes Received on Outbound Sockets	T6ESOCIN	714 (1812)	04 - B
Send Requests Issued for Outbound Sockets	T6ESOSCT	718 (1816)	04 - B
Receive Requests Issued for Outbound Sockets	T6ESOCOT	71C (1820)	04 - B
Socket Requests Count	T6ESOTC	720 (1824)	04 - B
Inbound Socket Receive Request Count	T6ESOIMC	724 (1828)	04 - B

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
Number of Characters Received by Inbound Receive Requests	T6ESOI1C	728 (1832)	04 - B
Inbound Socket Send Request Count	T6ESOOMC	72C (1836)	04 - B
Number of Characters Sent by Inbound Send Requests	T6ESOO1C	730 (1840)	04 - B
TCP/IP Port Number	T6EPORTN	6F8 (1784)	04 - B
Count of Extract TCP/IP and Certificate	T6ESOERC	6FC (1788)	04 - B
TCP/IP Service Name	T6ETCPSV	6F0 (1776)	08 - C
Document Handler			
Document Header Create Requests	T6EDHCCT	60E (1550)	04 - B
Document Header Insert Requests	T6EDHICT	612 (1554)	04 - B
Document Header Retrieve Requests	T6EDHRCT	61A (1562)	04 - B
Document Header Set Requests	T6EDHSCT	616 (1558)	04 - B
Document Header Total Requests	T6EDHTCT	61E (1566)	04 - B
Total Length of Documents	T6EDHTLN	622 (1570)	04 - B
Web Interface			
Total Web Characters Received	T6EWBCHI	65E (1630)	04 - B
Total Web Characters Sent	T6EWBCHO	666 (1638)	04 - B
Total Web Requests	T6EWBTCT	66A (1642)	04 - B
Web Receive Requests	T6EWBRCT	65A (1626)	04 - B
Web Send Requests	T6EWBSCT	662 (1634)	04 - B
Web Repository Reads	T6EWBRRD	66E (1646)	04 - B
Web Repository Writes	T6EWBRWR	672 (1650)	04 - B
Read Requests for HTTP Header/Form Field	T6EWBRRC	7C4 (1988)	04 - B
Write Requests for HTTP Header	T6EWBWRC	7C8 (1992)	04 - B
Extract Requests	T6EWBERC	7CC (1996)	04 - B
Browse Requests for HTTP Header/Form Field	T6EWBBRC	7D0 (2000)	04 - B
MQ Series			
MQ Series OPEN Count	MQSOP	7E4 (2020)	04 - B
MQ Series CLOSE Count	MQSCL	7E8 (2024)	04 - B
MQ Series GET Count	MQSGT	7EC (2028)	04 - B
MQ Series PUT Count	MQSPT	7F0 (2032)	04 - B

Table 11. Type 6D or 6E Transaction Detail Record Fields by Function (Continued)

Field Description	Field Name	Offset HEX (DEC)	Length (DEC) - Type
MQ Series PUT1 Count	MQSP1	7F4 (2036)	04 - B
MQ Series OTHER Count	MQSOT	7F8 (2040)	04 - B
MQ Series Queue Name	MQSNM	7FC (2044)	48 - C
MQ Series OPEN Time	MQTOP	82C (2092)	04 - K
MQ Series CLOSE Time	MQTCL	830 (2096)	04 - K
MQ Series GET Time	MQTGT	834 (2100)	04 - K
MQ Series PUT Time	MQTPT	838 (2104)	04 - K
MQ Series PUT1 Time	MQTP1	83C (2108)	04 - K
MQ Series OTHER Time	MQTOT	840 (2112)	04 - K
Total MQ Series Functions	MQTFN	8A0 (2208)	04 - B
Total MQ Series Function Time	MQTFT	8A4 (2212)	04 - K
Total Wait/Function Time	MQTWC	8A8 (2216)	04 - B
Summarization Record Count	MQTSR	8AC (2220)	04 - B

CMRDETL Record Fields by Field Name

Table 12 lists the fields of a Type 6D or 6E transaction detail record in alphabetic order by field name..

Table 12. Type 6D or 6E Transaction Detail Record Fields by Field Name

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
299 (665)		01 - B	Available
7DD (2013)		01	Reserved for Future Use
7EC (2028)	DB2CL	04 - B	DB2 CLOSE Count
800 (2048)	DB2CM	04 - B	DB2 COMMIT Count
7F4 (2036)	DB2DL	04 - B	DB2 DELETE Count
7FC (2044)	DB2FT	04 - B	DB2 FETCH Count
7F0 (2032)	DB2IN	04 - B	DB2 INSERT Count
7E8 (2024)	DB2OP	04 - B	DB2 OPEN Count
804 (2052)	DB2OT	04 - B	DB2 OTHER Count
7E4 (2020)	DB2SL	04 - B	DB2 SELECT Count
7F8 (2040)	DB2UP	04 - B	DB2 UPDATE Count
810 (2064)	DBTCL	04 - K	DB2 CLOSE Time
824 (2084)	DBTCM	04 - K	DB2 COMMIT Time
818 (2072)	DBTDL	04 - K	DB2 DELETE Time
8A0 (2208)	DBTFN	04 - B	Total DB2 Functions
820 (2080	DBTFT	04 - K	DB2 FETCH Time
8A4 (2212)	DBTFT	04 - K	Total DB2 Function Time
814 (2068)	DBTIN	04 - K	DB2 INSERT Time
80C (2060)	DBTOP	04 - K	DB2 OPEN Time
828 (2088)	DBTOT	04 - K	DB2 OTHER Time
808 (2056)	DBTSL	04 - K	DB2 SELECT Time
8AC (2220)	DBTSR	04 - B	Summarization Record Count
81C (2076)	DBTUP	04 - K	DB2 UPDATE Time
8A8 (2216)	DBTWC	04 - B	Total Wait/Function Count
7E8 (2024)	MQSCL	04 - B	MQ Series CLOSE Count
7EC (2028)	MQSGT	04 - B	MQ Series GET Count

Table 12. Type 6D or 6E Transaction Detail Record Fields by Field Name (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
7FC (2044)	MQSNM	48 - C	MQ Series Queue Name
7E4 (2020)	MQSOP	04 - B	MQ Series OPEN Count
7F8 (2040)	MQSOT	04 - B	MQ Series OTHER Count
7F4 (2036)	MQSP1	04 - B	MQ Series PUT1 Count
7F0 (2032)	MQSPT	04 - B	MQ Series PUT Count
830 (2096)	MQTCL	04 - K	MQ Series CLOSE Time
8A0 (2208)	MQTFN	04 - B	Total MQ Series Functions
8A4 (2212)	MQTFT	04 - K	Total MQ Series Function Time
834 (2100)	MQTGT	04 - K	MQ Series GET Time
82C (2092)	MQTOP	04 - K	MQ Series OPEN Time
840 (2112)	MQTOT	04 - K	MQ Series OTHER Time
83C (2108)	MQTP1	04 - K	MQ Series PUT1 Time
838 (2104)	MQTPT	04 - K	MQ Series PUT Time
8AC (2220)	MQTSR	04 - B	Summarization Record Count
8A8 (2216)	MQTWC	04 - B	Total Wait/Function Time
3D4 (980)	T6E24OCC	08 - B	SC24COCC Field from CICS Performance Record
3E0 (992)	T6E24UHW	04 - B	SC24CHWM Field from CICS Performance Record
3CC (972)	T6E31OCC	08 - B	SC31COCC Field from CICS Performance Record
3DC (988)	T6E31UHW	04 - B	SC31CHWM Field from CICS Performance Record
2DC (732)	T6E41ID	04 - C	Area Identifier
2D4 (724)	T6E41XCT	04 - B	Count of CICS Version 4.1 Extensions in Summary
3EC (1004)	T6E52ID	04 - C	Area Identifier
2D0 (720)	T6E52XCT	04 - B	Count of CICS Version 5.1 and 5.2 (CTS Version 1.1 and 1.2) Extensions in Summary
482 (1154)	T6E53ID	04 - C	Area Identifier
2CC (716)	T6E53XCT	04 - B	Count of CICS Version 5.3 (CTS Version 1.3) Extensions in Summary
32A (810)	T6E61WTC	02 - B	LU6.1 Wait Count
326 (806)	T6E61WWT	04 - K	LU6.1 Wait Time
33A (826)	T6E62ICH	04 - B	LU6.2 Alternate Bytes Received

Table 12. Type 6D or 6E Transaction Detail Record Fields by Field Name (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
692 (1682)	T6E62ID	04 - C	Area Indentifier
332 (818)	T6E62IMC	04 - B	LU6.2 Alternate Messages Received
33E (830)	T6E62OCH	04 - B	LU6.2 Alternate Bytes Sent
336 (822)	T6E62OMC	04 - B	LU6.2 Alternate Messages Sent
330 (816)	T6E62WTC	02 - B	LU6.2 Wait Count
32C (812)	T6E62WWT	04 - K	LU6.2 Wait Time
2A8 (680)	T6E62XCT	04 - B	Count of CICS Version 6.1 and 6.2 (CTS Version 2.1 and 2.2) Extensions in Summary
B0 (176)	T6EABCD	08 - C	Multiple Abend Codes
576 (1398)	T6EACTID	52 - C	BTS Activity ID
5AA (1450)	T6EACTNM	16 - C	BTS Activity Name
5EA (1514)	T6EADCCT	04 - B	BTS Activity Data Container Requests
602 (1538)	T6EAPICT	04 - B	Foundation Class Requests
274 (628)	T6EAPLID	08 - C	CICS Application ID
17B (379)	T6EAUTH	08 - C	DB2 Authorization ID
2F2 (754)	T6EBMIC	04 - B	BMS In Requests
2EE (750)	T6EBMMC	04 - B	Basic Mapping Support (BMS) Map Requests
2F6 (758)	T6EBMOC	04 - B	BMS Out Requests
1D7 (471)	T6EBMSN	08 - C	Mapset Name, if used
2FA (762)	T6EBMTC	04 - B	BMS Total Requests
6EE (1774)	T6EBPDLC	02 - B	3270 Partner Count
6EA (1770)	T6EBPDLT	04 - K	3270 Partner Time
3FC (1020)	T6EBRTID	04 - C	3270 Bridge Transaction ID
5DE (1502)	T6EBTACQ	04 - B	BTS Acquire Requests
5BE (1470)	T6EBTASY	04 - B	BTS Asynchronous Run Requests
5DA (1498)	T6EBTDEL	04 - B	BTS Delete Requests
5CA (1482)	T6EBTDFA	04 - B	BTS Activity Process Requests
5C6 (1478)	T6EBTDFP	04 - B	BTS Define Process Requests
5F6 (1526)	T6EBTDIE	04 - B	BTS Define Input Event Requests
5C2 (1474)	T6EBTLNK	04 - B	BTS Link Requests

Table 12. Type 6D or 6E Transaction Detail Record Fields by Field Name (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
5CE (1486)	T6EBTRES	04 - B	BTS Reset Requests
5F2 (1522)	T6EBTRRE	04 - B	BTS Retrieve/Reattach Event Requests
5D6 (1494)	T6EBTRSM	04 - B	BTS Resume Requests
5D2 (1490)	T6EBTSUP	04 - B	BTS Suspend Requests
5BA (1466)	T6EBTSYN	04 - B	BTS Synchronous Run Requests
5FE (1534)	T6EBTTEV	04 - B	BTS Total Event Requests
5E2 (1506)	T6EBTTLR	04 - B	BTS Total Requests
5FA (1530)	T6EBTTME	04 - B	BTS Timer Event Requests
49C (1180)	T6ECFDTC	02 - B	CFDT Wait Count
498 (1176)	T6ECFDWT	04 - K	Coupling Facility Data Tables (CFDT) Wait Time
652 (1618)	T6ECGTCT	04 - B	TCB Change Modes Count
A8 (168)	T6ECHARI	04 - B	Number of Bytes in Messages from the Terminal to CICS
AC (172)	T6ECHARO	04 - B	Number of Bytes in Messages from a Program to the Terminal
3B4 (948)	T6ECHRI2	04 - B	TCCHRIN2 Field from CICS Performance Record
3B8 (952)	T6ECHRO2	04 - B	TCCHROU2 Field from CICS Performance Record
25C (604)	T6ECIREL	04 - C	CICS Release Level
2E0 (736)	T6ECMP41	08 - X	Record Compress Field Bit Map
3F0 (1008)	T6ECMP52	04 - X	Record Compress Field Bit Map
486 (1158)	T6ECMP53	12 - X	Record Compress Field Bit Map
696 (1686)	T6ECMP62	12 - X	Compression Bits
248 (584)	T6ECMPB2	08 - X	Record Compress Field Bit Map
30 (48)	T6ECMPBM	12 - X	Record Compress Field Bit Map
4B0 (1200)	T6ECONTT	04 - K	DB2 Wait for Subtask Time
4B4 (1204)	T6ECONWC	02 - B	DB2 Wait for Subtask Count
173 (371)	T6ECORR	08 - C	DB2 Correlation ID
2F (47)	T6ECPRID	01 - C	Compression ID
298 (664)	T6ECPROR	01 - C	Original Compression ID
EA (234)	T6ECPUR	04 - X	CPU Real time
2A4 (676)	T6ECVTTZ	04 - X	Time Zone Offset
280 (640)	T6EDB2AL	08 - C	DB2 Alias Name

Table 12. Type 6D or 6E Transaction Detail Record Fields by Field Name (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
60A (1546)	T6EDB2CT	04 - B	DB2 (EXEC SQL and IFI) Requests
1E9 (489)	T6EDB2P	08 - C	DB2 Plan Name
27C (636)	T6EDB2SS	04 - C	DB2 Subsystem ID
219 (537)	T6EDB2T	01 - C	DB2 Thread Type Used: P = POOL G = GROUP
21A (538)	T6EDB2W	01 - C	DB2 Thread Wait Indicator: 1 = YES 0 = NO
4BA (1210)	T6EDB2WC	02 - B	DB2 SQL/IFI Wait Count
4B6 (1206)	T6EDB2WT	04 - K	DB2 SQL/IFI Wait Time
1F1 (497)	T6EDBCCP	04 - B	DBCTL Task CPU Time
606 (1542)	T6EDBCCT	04 - B	IMS (DBCTL) Requests
D0 (208)	T6EDBRQC	02 - B	Non-DL/I Database Request Count
CC (204)	T6EDBRQT	04 - B	Non-DL/I Database Request Time
1FD (509)	T6EDCLOS	04 - B	DB2 CLOSE Count (Total for Task)
211 (529)	T6EDCOMT	04 - B	DB2 COMMIT Count (Total for Task)
205 (517)	T6EDDEL	04 - B	DB2 DELETE Count (Total for Task)
20D (525)	T6EDFTCH	04 - B	DB2 FETCH Count (Total for Task)
60E (1550)	T6EDHCCT	04 - B	Document Header Create Requests
612 (1554)	T6EDHICT	04 - B	Document Header Insert Requests
61A (1562)	T6EDHRCT	04 - B	Document Header Retrieve Requests
616 (1558)	T6EDHSCT	04 - B	Document Header Set Requests
61E (1566)	T6EDHTCT	04 - B	Document Header Total Requests
622 (1570)	T6EDHTLN	04 - B	Total Length of Documents
201 (513)	T6EDINS	04 - B	DB2 INSERT Count (Total for Task)
4A (74)	T6EDIOTC	02 - B	DL/I I/O Time Count
46 (70)	T6EDIOTT	04 - K	DL/I I/O Time
44 (68)	T6EDISTC	02 - B	Dispatch (CPU) Clock Time Count
40 (64)	T6EDISTT	04 - K	Dispatch (CPU) Clock Time
7F4 (2036)	T6EDL	04 - B	File DELETE Count

Table 12. Type 6D or 6E Transaction Detail Record Fields by Field Name (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
8C (140)	T6EDLIC	04 - B	DL/I Call Count
2A0 (672)	T6EDLIFC	04 - B	DLI IO Count
1F9 (505)	T6EDOPEN	04 - B	DB2 OPEN Count (Total for Task)
215 (533)	T6EDOTHR	04 - B	DB2 OTHER SQL Count (Total for Task)
626 (1574)	T6EDPLCT	04 - B	DPL Requests
225 (549)	T6EDQWC	02 - B	Dispatch Queue Wait Count
221 (545)	T6EDQWWT	04 - K	Dispatch Queue Wait Time
1F5 (501)	T6EDSLCT	04 - B	DB2 SELECT Count (Total for Task)
39C (924)	T6EDSPDC	02 - B	Dispatch Delay Count
398 (920)	T6EDSPDT	04 - K	Dispatch Delay Time
B8 (184)	T6EDSPQ	04 - B	First Dispatch Queue Time Only
1F1 (497)	T6EDSQL1	04 - B	DB2 First SQL Elapsed Time
209 (521)	T6EDUPD	04 - B	DB2 UPDATE Count (Total for Task)
808 (2056)	T6EEB	04 - B	File END BROWSE Count
6E (110)	T6EECWTC	02 - B	User ECB Wait Count
6A (106)	T6EECWWT	04 - K	User ECB Wait Time
3C4 (964)	T6EEUSTO	08 - B	SCUCRSTG Field from CICS Performance Record
244 (580)	T6EEXPID	04 - C	Area Identifier
828 (2088)	T6EF1	04 - B	File READ NEXT UPDATE (Into) count
82C (2092)	T6EF2	04 - B	File READ PREVIOUS UPDATE (Into) count
830 (2096)	T6EF3	04 - B	File REWRITE DELETE count
834 (2100)	T6EF4	04 - B	File READ (Set) count
838 (2104)	T6EF5	04 - B	File READ UPDATE (Set) count
83C (2108)	T6EF6	04 - B	File READ NEXT (Set) count
840 (2112)	T6EF7	04 - B	File READ PREVIOUS (Set) count
844 (2116)	T6EF8	04 - B	File READ NEXT UPDATE (Set) count
848 (2120)	T6EF9	04 - B	File READ PREVIOUS UPDATE (Set) count
7E2 (2018)	T6EFC	02 - B	Number of File I/O Waits or Calls
FA (250)	T6EFCAC	04 - B	File ADD Count (Total for Task)
3A2 (930)	T6EFCAM	04 - B	File Control Access Count

Table 12. Type 6D or 6E Transaction Detail Record Fields by Field Name (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
F6 (246)	T6EFCBC	04 - B	File BROWSE Count (Total for Task)
88 (136)	T6EFCCAL	04 - B	File Control Call Count
FE (254)	T6EFCDC	04 - B	File DELETE Count (Total for Task)
EE (238)	T6EFCGC	04 - B	File GET Count (Total for Task)
243 (579)	T6EFCNT	01 - B	Count of Files that Follow If CMRSOPT parameter FILEXPND=NO, the maximum number of files is 255. If FILEXPND=YES, the maximum is 40.
102 (258)	T6EFCOC	04 - B	Other File Call Count (Total for Task)
F2 (242)	T6EFCPC	04 - B	File PUT Count (Total for Task)
426 (1062)	T6EFCTY	04 - C	Facility Name
29C (668)	T6EFCWFC	04 - B	File IO Count
50 (80)	T6EFCWTC	02 - B	File Control I/O Time Count
4C (76)	T6EFCWTT	04 - K	File Control I/O Time
30E (782)	T6EFDDLC	02 - B	First Dispatch Delay Count
30A (778)	T6EFDDLT	04 - K	First Dispatch Delay Time
316 (790)	T6EFDMWT	04 - K	Dispatch Delay for Max Tasks Wait Time
31A (794)	T6EFDMXC	02 - B	Dispatch Delay for Max Tasks Wait Count
314 (788)	T6EFDTCC	02 - B	Dispatch Delay for Transaction Class Wait Count
310 (784)	T6EFDTCT	04 - K	Dispatch Delay for Transaction Class Wait Time
29A (666)	T6EFENLN	02 - B	File Entry Length
7D4 (2004)	T6EFI	01 - C	File Type Represented by T6EFN: A = Adabas C = CICS D = Datacom K = System 2000 User value P = Pseudo file S = Supra Z = SAP 1 = DL/I 2 = DB2 Q = MQ Series
2D8 (728)	T6EFLXCT	04 - B	Count of Expanded Files in Summary
7D5 (2005)	T6EFN	08 - C	File or Database Name
7DE (2014)	T6EFT	04 - K	Elapsed File Time for Waits
2BC (700)	T6EFXSP1	14 - B	Expansion Space
2CA (714)	T6EFXSP2	02 - B	Expansion Space

Table 12. Type 6D or 6E Transaction Detail Record Fields by Field Name (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
3E4 (996)	T6EGMCD	04 - B	SCCGETCT (117) Field from CICS Performance Record
3E8 (1000)	T6EGMECD	04 - B	SCCGETCT (120) Field from CICS Performance Record
496 (1174)	T6EGQDLC	02 - B	Global Enqueue Count
492 (1170)	T6EGQDLT	04 - K	Global Enqueue Time
470 (1136)	T6EGVPWC	02 - B	Give Up Control Wait Count
46C (1132)	T6EGVPWT	04 - K	Give Up Control Wait Time
6E8 (1768)	T6EHTDLC	02 - B	MAPHPTCBS Wait Count
6E4 (1764)	T6EHTDLT	04 - K	MAPHPTCBS Wait Time
132 (306)	T6EICC	04 - B	Interval Control PUT/INITIATE Count
46A (1130)	T6EICDLC	02 - B	Interval Control Wait Count
466 (1126)	T6EICDLT	04 - K	Interval Control Wait Time
3F4 (1012)	T6EICTC	04 - B	Interval Control Requests
4A8 (1192)	T6EIMSWC	02 - B	IMS (DBCTL) Request Wait Count
4A4 (1188)	T6EIMSWT	04 - K	IMS (DBCTL) Request Wait Time
1E3 (483)	T6EIRWTC	02 - B	Interregion (IRC) Wait Count
1DF (479)	T6EIRWWT	04 - B	Interregion (IRC) Wait Time
50E (1294)	T6EJ8PTC	02 - B	J8 TCB Processor Count
50A (1290)	T6EJ8PTT	04 - K	J8 TCB Processor Time
12E (302)	T6EJCC	04 - B	Journal Control PUT/WRITE Count
68 (104)	T6EJCWTC	02 - B	Journal Control Count
64 (100)	T6EJCWTT	04 - K	Journal Control Time
6E2 (1762)	T6EJTDLC	02 - B	MAXTCBS Wait Count
6DE (1758)	T6EJTDLT	04 - K	MAXTCBS Wait Time
6D6 (1750)	T6EJVMIC	02 - B	JVM Init Count
6D2 (1746)	T6EJVMIT	04 - K	JVM Init Time
6DC (1756)	T6EJVMRC	02 - B	JVM Reset Count
6D8 (1752)	T6EJVMRT	04 - K	JVM Reset Time
4E4 (1252)	T6EJVMSC	02 - B	JAVA Virtual Machine Wait Count
4E0 (1248)	T6EJVMST	04 - K	JAVA Virtual Machine Wait Time
4EA (1258)	T6EJVMTC	02 - B	JAVA Virtual Machine Elapsed Count

Table 12. Type 6D or 6E Transaction Detail Record Fields by Field Name (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
4E6 (1254)	T6EJVMTT	04 - K	JAVA Virtual Machine Elapsed Time
6BE (1726)	T6EK8DTC	02 - B	Key8 Dispatch Count
6BA (1722)	T6EK8DTT	04 - K	Key8 Dispatch Time
6C4 (1732)	T6EK8PTC	02 - B	Key8 CPU Count
6C0 (1728)	T6EK8PTT	04 - K	Key8 CPU Time
508 (1288)	T6EL8PTC	02 - B	L8 TCB Processor Count
504 (1284)	T6EL8PTT	04 - K	L8 TCB Processor Time
43E (1086)	T6ELGWCT	04 - B	Log Stream Write Count
404 (1028)	T6ELMDLC	02 - B	Lock Manager Delay Count
400 (1024)	T6ELMDLT	04 - K	Lock Manager Delay Time
13A (314)	T6EMNTIS	33 - C	MANTIS Program Name
2B8 (696)	T6EMQRTC	04 - B	Total Count for all MQ Requests
2B4 (692)	T6EMQRTT	04 - K	Total Time for all MQ Requests
4FC (1276)	T6EMSDTC	02 - B	Other TCB Elapsed Count
4F8 (1272)	T6EMSDTT	04 - K	Other TCB Elapsed Time
A0 (160)	T6EMSGI	04 - B	Messages from the Terminal to CICS
3AC (940)	T6EMSGI2	04 - B	TCMSGIN2 Field from CICS Performance Record
A4 (164)	T6EMSGO	04 - B	Messages from a Program to the Terminal
3B0 (944)	T6EMSGO2	04 - B	TCMSGOU2 Field from CICS Performance Record
502 (1282)	T6EMSPTC	02 - B	Other TCB Processor Count
4FE (1278)	T6EMSPTT	04 - K	Other TCB Processor Time
258 (600)	T6EMVREL	04 - C	MAINVIEW for CICS Release Level
7B4 (1972)	T6ENETID	08 - C	NETID
C4 (196)	T6ENETNM	08 - C	Network ID of Terminal
320 (800)	T6ENQDLC	02 - B	Enqueue Delay Count
31C (796)	T6ENQDLT	04 - K	Enqueue Delay Time
254 (596)	T6EOFFFL	04 - B	Offset to File Data
250 (592)	T6EOFFXT	04 - B	Offset to Extensions
2C (44)	T6EOPID	03 - C	Operator ID
1AD (429)	T6EORIG	20 - C	Originating System

Table 12. Type 6D or 6E Transaction Detail Record Fields by Field Name (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
810 (2064)	T6EOT	04 - B	File OTHER Count
734 (1844)	T6EOTSID	128 - X	Object Transaction Service (OTS) ID
6A8 (1704)	T6EOTSTT	04 - K	OTS Indoubt Time
6AC (1708)	T6EOTSWC	02 - B	OTS Indoubt Count
23B (571)	T6EP24HW	04 - B	Below 16 MB Storage Used
90 (144)	T6EPAGCT	04 - B	Unused - Obsolete
34A (842)	T6EPC24C	04 - B	Program Storage High-Water Mark in CDSA
380 (896)	T6EPC24R	04 - B	Program Storage High-Water Mark in RDSA
378 (888)	T6EPC24S	04 - B	Program Storage High-Water Mark in SDSA
346 (838)	T6EPC31C	04 - B	Program Storage High-Water Mark in ECDSA
342 (834)	T6EPC31H	04 - B	Program Storage High-Water Mark above the 16 MB Line
306 (774)	T6EPC31R	04 - B	Program Storage High-Water Mark in ERDSA
37C (892)	T6EPC31S	04 - B	Program Storage High-Water Mark in ESDSA
122 (290)	T6EPCLIC	04 - B	Program Control Link Count
12A (298)	T6EPCLOC	04 - B	Program Control Load Count
3F8 (1016)	T6EPCLUC	04 - B	Program Link URM Requests
7A (122)	T6EPCWTC	02 - B	DFHRPL Wait Count
76 (118)	T6EPCWWT	04 - K	DFHRPL Wait Time
126 (294)	T6EPCXC	04 - B	Program Control Transfer Control Count
5E6 (1510)	T6EPDCCT	04 - B	BTS Process Data Container Requests
20 (32)	T6EPGNM	08 - C	Program Name (see T6EPTYPE)
6F8 (1784)	T6EPORTN	04 - B	TCP/IP Port Number
542 (1346)	T6EPRCSD	52 - C	BTS Root Activity ID
516 (1302)	T6EPRCSN	36 - C	BTS Process Name
53A (1338)	T6EPRCST	08 - C	BTS Process Type
1CF (463)	T6EPSBN	08 - C	Partition Specification Block, if used
1CB (459)	T6EPSHWM	04 - B	Program Storage High-Water Mark Total

Table 12. Type 6D or 6E Transaction Detail Record Fields by Field Name (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
E4 (228)	T6EPTYPE	01 - C	Program Name Type A = SAP C = CSP D = DMS G = GENER/OL I = IDEAL L = Millennium M = Mantis N = Natural S = PCS U = UFO blank = CICS program name
4D8 (1240)	T6EQRDLC	02 - B	Redispatch on Quasi-Reentrant TCB Wait Count
4D4 (1236)	T6EQRDLT	04 - K	Redispatch on Quasi-Reentrant TCB Wait Time
4F0 (1264)	T6EQRDTC	02 - B	Quasi-Reentrant TCB Elapsed Count
4EC (1260)	T6EQRDTT	04 - K	Quasi-Reentrant TCB Elapsed Time
4F6 (1270)	T6EQRPTC	02 - B	Quasi-Reentrant TCB Processor Count
4F2 (1266)	T6EQRPTT	04 - K	Quasi-Reentrant TCB Processor Time
242 (578)	T6EQUAL	01 - B	Record Extension Flags: X’01’ = CICS Version 4.1 Data X’02’ = CICS Version 5.1/5.2 (CTS Version 1.1/1.2) Data X’04’ = CICS Version 5.3 (CTS Version 1.3) Data X’08’ = CICS Version 6.1/6.2 (CTS Version 2.1/2.2) Data X’80’ = Expanded File Data A value greater than X’80’ indicates expanded file data and data for a particular version of CICS is included in the record.
80C (2060)	T6ERB	04 - B	File RESET BROWSE Count
7E4 (2020)	T6ERD	04 - B	File READ (Into) Count
4AE (1198)	T6ERDQWC	02 - B	DB2 Thread Wait Count
4AA (1194)	T6ERDQWT	04 - K	DB2 Thread Wait Time
47E (1150)	T6ERECCT	04 - B	Number of CICS Performance Records
3C (60)	T6ERESP	04 - K	Response Time Total
452 (1106)	T6ERLSCC	02 - B	RLS SRB CPU Count
44E (1102)	T6ERLSCT	04 - K	RLS SRB CPU Time
44C (1100)	T6ERLSWC	02 - B	RLS Wait Count
448 (1096)	T6ERLSWT	04 - K	Record-Level Sharing (RLS) Wait Time
7BC (1980)	T6ERLUNM	08 - C	Real Network Name
396 (918)	T6ERMISC	02 - B	RMI Suspend Count
392 (914)	T6ERMIST	04 - K	RMI Suspend Time

Table 12. Type 6D or 6E Transaction Detail Record Fields by Field Name (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
390 (912)	T6ERMITC	02 - B	RMI Elapsed Count
38C (908)	T6ERMITT	04 - K	Resource Manager Interface (RMI) Elapsed Time
406 (1030)	T6ERMUOW	08 - X	Unit of Recovery ID
800 (2048)	T6ERN	04 - B	File READ NEXT (Into) Count
6CA (1738)	T6ERODTC	02 - B	RO TCB Dispatch Count
6C6 (1734)	T6ERODTT	04 - K	RO TCB Dispatch Time
6D0 (1744)	T6EROPTC	02 - B	RO TCB CPU Count
6CC (1740)	T6EROPTT	04 - K	RO TCB CPU Time
804 (2052)	T6ERP	04 - B	File READ PREVIOUS (Into) Count
432 (1074)	T6ERPTCL	08 - C	MVS WLM Report Class Name
6B4 (1716)	T6ERQPTT	04 - K	CIRP Reply Time
6B8 (1720)	T6ERQPWC	02 - B	CIRP Reply Count
6AE (1710)	T6ERQRTT	04 - K	CIRR Reply Time
6B2 (1714)	T6ERQRWC	02 - B	CIRR Reply Count
4C0 (1216)	T6ERRSWC	02 - B	In-doubt RRS for EXCI Wait Count
4BC (1212)	T6ERRSWT	04 - K	In-doubt RRS for EXCI Wait Time
322 (802)	T6ERSYS	04 - C	Remote CICS SYSID
4C6 (1222)	T6ERTRWC	02 - B	BTS Wait Count
4C2 (1218)	T6ERTRWT	04 - K	Business Transaction Service (BTS) Wait Time
3AA (938)	T6ERTYPE	02 - C	CICS Performance Record Type: C = Terminal Converse S = Sync Point D = User EMP Deliver T = Task Termination F = Long Running Transaction
7E8 (2024)	T6ERU	04 - B	File READ FOR UPDATE (Into) Count
7F0 (2032)	T6ERW	04 - B	File REWRITE Count
514 (1300)	T6ES8PTC	02 - B	S8 TCB Processor Count
510 (1296)	T6ES8PTT	04 - K	S8 TCB Processor Time
141 (321)	T6ESAPAC	12 - C	SAP Account Code
13A (314)	T6ESAPLT	04 - C	SAP Transaction ID
13F (319)	T6ESAPMN	02 - C	SAP Authorization Code

Table 12. Type 6D or 6E Transaction Detail Record Fields by Field Name (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
156 (342)	T6ESAPTM	4 - C	SAP Terminal ID
13E (318)	T6ESAPTY	01 - C	SAP Task Type
14D (333)	T6ESAPWA	8 - C	SAP Work Area
155 (341)	T6ESAPWT	1 - C	SAP Weight Indicator
7FC (2044)	T6ESB	04 - B	File START BROWSE or DB2 FETCH Count
62E (1582)	T6ESBDCT	04 - B	Socket Bytes Decrypted
62A (1578)	T6ESBECT	04 - B	Socket Bytes Encrypted
416 (1046)	T6ESC24F	04 - B	Number of Bytes FREEMAINed in CDSA/SDSA
412 (1042)	T6ESC24G	04 - B	Number of Bytes GETMAINed in CDSA/SDSA
40E (1038)	T6ESC24S	04 - B	GETMAIN Requests in CDSA/SDSA
422 (1058)	T6ESC31F	04 - B	Number of Bytes FREEMAINed in ECDSA/ESDSA
41E (1054)	T6ESC31G	04 - B	Number of Bytes GETMAINed in ECDSA/ESDSA
41A (1050)	T6ESC31S	04 - B	GETMAIN Requests in ECDSA/ESDSA
11E (286)	T6ESCUC	04 - B	Storage Control User GET Count
237 (567)	T6ESCUCE	04 - B	Extended Storage GETMAIN Count
94 (148)	T6ESHWM	04 - B	Storage High-Water Mark
22F (559)	T6ESHWME	04 - B	Extended Storage High-Water Mark
4D2 (1234)	T6ESIOWC	02 - B	Socket I/O Wait Count
4CE (1230)	T6ESIOWT	04 - K	Socket I/O Wait Time
632 (1586)	T6ESIPAD	16 - C	Client IP Address
260 (608)	T6ESMFID	04 - C	MVS SMF ID
714 (1812)	T6ESOCIN	04 - B	Bytes Received on Outbound Sockets
700 (1792)	T6ESOCNS	04 - B	Non-persistent Outbound Socket Request Count
71C (1820)	T6ESOCOT	04 - B	Receive Requests Issued for Outbound Sockets
704 (1796)	T6ESOCPS	04 - B	Persistent Outbound Socket Request Count
6FC (1788)	T6ESOERC	04 - B	Count of Extract TCP/IP and Certificate
728 (1832)	T6ESOI1C	04 - B	Number of Characters Received by Inbound Receive Requests
724 (1828)	T6ESOIMC	04 - B	Inbound Socket Receive Request Count
708 (1800)	T6ESONHW	04 - B	Peak Number of Non-persistent Outbound Sockets Owned by Task

Table 12. Type 6D or 6E Transaction Detail Record Fields by Field Name (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
730 (1840)	T6ESOO1C	04 - B	Number of Characters Sent by Inbound Send Requests
72C (1836)	T6ESOOMC	04 - B	Inbound Socket Send Request Count
6A2 (1698)	T6ESOOTT	04 - K	Outbound Socket Time
6A6 (1702)	T6ESOOWC	02 - B	Outbound Socket Count
70C (1804)	T6ESOPHW	04 - B	Peak Number of Persistent Outbound Sockets Owned by Task
710 (1808)	T6ESORCT	04 - B	Receive Requests Issued for Outbound Sockets
718 (1816)	T6ESOSCT	04 - B	Send Requests Issued for Outbound Sockets
720 (1824)	T6ESOTC	04 - B	Socket Requests Count
183 (387)	T6ESPAR	02 - B	Traced Statements
136 (310)	T6ESPPC	04 - B	Sync Point Count
8AC (2220)	T6ESR	04 - B	Summarization Record Count
42A (1066)	T6ESRVCL	08 - C	MVS WLM Service Class Name
290 (656)	T6ESSNMS	08 - C	Reserved
233 (563)	T6ESTGOE	04 - B	Extended Storage Occupancy
1E5 (485)	T6ESTIME	04 - P	Transaction Start Time
2EC (748)	T6ESUSPC	02 - B	Suspend Count - Other
2E8 (744)	T6ESUSPT	04 - K	Suspend Time - Other
56 (86)	T6ESUSTC	02 - B	Suspend Count
52 (82)	T6ESUSTT	04 - K	Suspend Time
4CC (1228)	T6ESYDLC	02 - B	BTS Parent Transaction Wait Count
4C8 (1224)	T6ESYDLT	04 - K	BTS Parent Transaction Wait Time
446 (1094)	T6ESYNCC	02 - B	Sync Point Elapsed Count
442 (1090)	T6ESYNTT	04 - K	Sync Point Elapsed Time
49E (1182)	T6ESYWT	04 - K	CFDT Sync/Resync Time
4A2 (1186)	T6ESYWTC	02 - B	CFDT Sync/Resync Count
34E (846)	T6ESZACT	04 - B	Front-End Programming Interface (FEPI) Conversations Allocated
36C (876)	T6ESZATO	04 - B	FEPI Timeouts for Allocate
362 (866)	T6ESZCIN	04 - B	FEPI Characters Received
35E (862)	T6ESZCOT	04 - B	FEPI Characters Sent

Table 12. Type 6D or 6E Transaction Detail Record Fields by Field Name (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
352 (850)	T6ESZRCT	04 - B	FEPI Receive/Converse Count
370 (880)	T6ESZRTO	04 - B	FEPI Timeouts for Receive
356 (854)	T6ESZSCT	04 - B	FEPI Send/Converse Count
35A (858)	T6ESZTCT	04 - B	FEPI Start Count
374 (884)	T6ESZTOT	04 - B	FEPI Total Requests
36A (874)	T6ESZWTC	02 - B	FEPI Wait Count
366 (870)	T6ESZWWT	04 - B	FEPI Wait Time
87C (2172)	T6ET1	04 - K	File READ NEXT UPDATE (Into) Time
880 (2176)	T6ET2	04 - K	File READ PREVIOUS UPDATE (Into) Time
884 (2180)	T6ET3	04 - K	File REWRITE DELETE Time
888 (2184)	T6ET4	04 - K	File READ (Set) Time
88C (2188)	T6ET5	04 - K	File READ UPDATE (Set) Time
890 (2192)	T6ET6	04 - K	File READ NEXT (Set) Time
894 (2196)	T6ET7	04 - K	File READ PREVIOUS (Set) Time
898 (2200)	T6ET8	04 - K	File READ NEXT UPDATE (Set) Time
89C (2204)	T6ET9	04 - K	File READ PREVIOUS UPDATE (Set) Time
84C (2124)	T6ETA	04 - K	File READ (Into) Time
4DE (1246)	T6ETADLC	02 - B	CICS Open TCB Wait Count
4DA (1242)	T6ETADLT	04 - K	CICS Open TCB Wait Time
E6 (230)	T6ETASK	04 - B	Count of Tasks in Summary
3A6 (934)	T6ETASKF	04 - X	Task Error Flags
850 (2128)	T6ETB	04 - K	File READ UPDATE (Into) Time
656 (1622)	T6ETCBCT	04 - B	TCBs Attached Count
22B (555)	T6ETCLAS	02 - B	Transaction Class at Task Start
384 (900)	T6ETCLNM	08 - C	Transaction Class Name
6F0 (1776)	T6ETCPSV	08 - C	TCP/IP Service Name
2B0 (688)	T6ETCSUS	04 - X	Suspend Time Count
39E (926)	T6ETCTAL	04 - B	TCTTE Allocate Requests
5C (92)	T6ETCWTC	02 - B	Terminal Control Count
58 (88)	T6ETCWTT	04 - K	Terminal Control Time

Table 12. Type 6D or 6E Transaction Detail Record Fields by Field Name (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
854 (2132)	T6ETD	04 - K	File WRITE Time
106 (262)	T6ETDGC	04 - B	Transient Data GET Count
10A (266)	T6ETDPC	04 - B	Transient Data PUT Count
10E (270)	T6ETDRC	04 - B	Transient Data PURGE Count
2FE (766)	T6ETDTC	04 - B	Transient Data Requests
74 (116)	T6ETDWTC	02 - B	Transient Data Wait Count
70 (112)	T6ETDWWT	04 - K	Transient Data Wait Time
858 (2136)	T6ETE	04 - K	File REWRITE Time
43A (1082)	T6ETECNM	04 - C	Terminal Session Connection Name
85C (2140)	T6ETG	04 - K	File DELETE Time
676 (1654)	T6ETGPID	28 - C	Transaction Group ID
860 (2144)	T6ETH	04 - K	File UNLOCK Time
864 (2148)	T6ETJ	04 - K	File START BROWSE Time
868 (2152)	T6ETK	04 - K	File READ NEXT (Into) Time
26C (620)	T6ETKSTO	08 - X	Task Stop Time (Store Clock Format)
264 (612)	T6ETKSTR	08 - X	Task Start Time (Store Clock Format)
86C (2156)	T6ETL	04 - K	File READ PREVIOUS (Into) Time
5EE (1518)	T6ETLCCT	04 - B	BTS Total Data Container Requests
870 (2160)	T6ETM	04 - K	File END BROWSE Time
28 (40)	T6ETMID	04 - C	Terminal ID
47A (1146)	T6ETMINF	04 - X	Terminal Information
874 (2164)	T6ETO	04 - K	File RESET BROWSE Time
878 (2168)	T6ETP	04 - K	File OTHER Time
22D (557)	T6ETPRI	02 - B	Transaction Priority at Task Start
8A0 (2208)	T6ETQ	04 - B	Total File Requests
8A4 (2212)	T6ETR	04 - K	Total File Request Time
1C (28)	T6ETRID	04 - C	Transaction ID
472 (1138)	T6ETRNFG	08 - X	Transaction Flags

Table 12. Type 6D or 6E Transaction Detail Record Fields by Field Name (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
E5 (229)	T6ETRTY	01 - C	Transaction Subtype: A ATI-attached C Conversational task D Transient data trigger-attached F FEPI S System-internal task T Terminal-attached Z Pseudo-conversational X MAINVIEW for CICS summary record
241 (577)	T6ETRTY2	01 - C	Extension for Transaction Type
8A8 (2216)	T6ETS	04 - B	Number of File I/O Waits
112 (274)	T6ETSGC	04 - B	Temporary Storage GET Count
1C9 (457)	T6ETSKFG	02 - X	Unused - Obsolete
116 (278)	T6ETSPAC	04 - B	Auxiliary Temporary Storage PUT Count
11A (282)	T6ETSPMC	04 - B	Temporary Storage PUT Main Count
458 (1112)	T6ETSSWC	02 - B	Temporary Storage Shared Wait Count
454 (1108)	T6ETSSWT	04 - K	Temporary Storage Shared Wait Time
302 (770)	T6ETSTC	04 - B	Temporary Storage Requests
80 (128)	T6ETSWC	02 - B	Temporary Storage String Wait Count
7C (124)	T6ETSWK	04 - K	Temporary Storage String Wait Time
62 (98)	T6ETSWTC	02 - B	Temporary Storage Count
5E (94)	T6ETSWTT	04 - K	Temporary Storage Time
2AC (684)	T6ETTSUS	04 - X	Suspend Time
15F (351)	T6EUCLC1	02 - B	DL/I PSB Schedule Count
165 (357)	T6EUCLC2	02 - B	DL/I PSB Active Count
16B (363)	T6EUCLC3	02 - B	DL/I Database Call Count
171 (369)	T6EUCLC4	02 - B	DL/I I/O Wait Count
15B (347)	T6EUCLT1	04 - K	DL/I PSB Schedule Time
161 (353)	T6EUCLT2	04 - K	DL/I PSB Active Time
167 (359)	T6EUCLT3	04 - K	DL/I Database Call Time
16D (365)	T6EUCLT4	04 - K	DL/I I/O Wait Time
185 (389)	T6EUCNT1	04 - B	DL/I GU Requests

Table 12. Type 6D or 6E Transaction Detail Record Fields by Field Name (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
189 (393)	T6EUCNT2	04 - B	DL/I GN Requests
18D (397)	T6EUCNT3	04 - B	DL/I GNP Requests
191 (401)	T6EUCNT4	04 - B	DL/I GHU Requests
195 (405)	T6EUCNT5	04 - B	DL/I GHN Requests
199 (409)	T6EUCNT6	04 - B	DL/I GHNP Requests
19D (413)	T6EUCNT7	04 - B	DL/I ISRT Requests
1A1 (417)	T6EUCNT8	04 - B	DL/I DLET Requests
1A5 (421)	T6EUCNT9	04 - B	DL/I REPL Requests
1A9 (425)	T6EUCNTA	04 - B	DL/I TOTAL Requests
288 (648)	T6EUCPUT	08 - X	Total CPU Time (USRCPUT)
D2 (210)	T6EUDATA	18 - C	User data
7F8 (2040)	T6EUL	04 - B	File UNLOCK Count
1C1 (449)	T6EUOW	08 - X	Unit of Work ID
642 (1602)	T6EURID	16 - C	Resource Recovery Management Services MVS Unit of Recovery ID
98 (152)	T6EUSER	08 - C	CICS User ID
BC (188)	T6EUSTG1	02 - B	Unused - Filler
C2 (194)	T6EUSTG2	02 - B	Unused - Filler
BC (188)	T6EUSTGO	08 - X	Storage Occupancy (8 byte, IBM default)
BE (190)	T6EUSTGS	04 - B	Storage Occupancy (4 byte, preferred)
3BC (956)	T6EUSTO	08 - B	SCUSRSTG Field from CICS Performance Record
814 (2068)	T6EV1	06 - C	First Volume Serial Number
81A (2074)	T6EV2	06 - C	Second Volume Serial Number
820 (2080)	T6EV3	06 - C	Third Volume Serial Number
86 (134)	T6EVSTWC	02 - B	File Control String Wait Count
82 (130)	T6EVSTWT	04 - K	File Control String Wait Time
7D0 (2000)	T6EWBBRC	04 - B	Browse Requests for HTTP Header/Form Field
65E (1630)	T6EWBCHI	04 - B	Total Web Characters Received
666 (1638)	T6EWBCHO	04 - B	Total Web Characters Sent
7CC (1996)	T6EWBERC	04 - B	Extract Requests

Table 12. Type 6D or 6E Transaction Detail Record Fields by Field Name (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
65A (1626)	T6EWBRCT	04 - B	Web Receive Requests
7C4 (1988)	T6EWBRRC	04 - B	Read Requests for HTTP Header/Form Field
66E (1646)	T6EWBRRD	04 - B	Web Repository Reads
672 (1650)	T6EWBRWR	04 - B	Web Repository Writes
662 (1634)	T6EWBSCT	04 - B	Web Send Requests
66A (1642)	T6EWBTCT	04 - B	Total Web Requests
7C8 (1992)	T6EWBWRC	04 - B	Write Requests for HTTP Header
464 (1124)	T6EWCEWC	02 - B	CICS Wait Count
460 (1120)	T6EWCEWT	04 - K	CICS Wait Time
7EC (2028)	T6EWR	04 - B	File WRITE Count
45E (1118)	T6EWTXWC	02 - B	External Wait Count
45A (1114)	T6EWTXWT	04 - K	External Wait Time
826 (2086)	T6EX1	02 - B	Reserved for future use
21F (543)	T6EXCWC	02 - B	Exception Wait Count
21B (539)	T6EXCWWT	04 - K	Exception Wait Time
240 (576)	T6EXFBUF	01 - C	File Control Buffer Wait
23F (575)	T6EXFSTR	01 - C	File Control String Wait
227 (551)	T6EXSTOR	01 - C	Storage Exception Indicator
229 (553)	T6EXTBUF	01 - C	Temporary Storage Buffer Exception
228 (552)	T6EXTEMP	01 - C	Temporary Storage Exception Indicator
22A (554)	T6EXTSTR	01 - C	Temporary Storage String Exception

Appendix C. CMRSTATS: Operational Statistics Records

PERFORMANCE REPORTER constructs reports from the CICS operational statistics that MAINVIEW for CICS collects from CICS regions. Operational statistics are stored as records in the CMRSTATS data set. PERFORMANCE REPORTER uses BBPLIB member CMRSTATS as the data dictionary to reformat these records for PRL reports.

This appendix describes the format of CMRSTATS records in the following tables:

Field Prefix	Record Name and Type	Page
DSA	Storage Manager DSA - Type 02	237
DSP	Storage Manager Domain Subpool - Type 05	239
DST	Storage Manager Task Subpool - Type 06	240
TRG	Transaction Manager Global - Type 0A	241
TRN	Transaction Manager Transaction - Type 0B	242
TCL	Transaction Manager Transaction Class - Type 0C	243
FPP	FEPI Pool - Type 10	244
FPC	FEPI Connection - Type 11	245
FPT	FEPI Target - Type 12	246
VTM	VTAM Statistics - Type 15	247
PAI	Program Autoinstall - Type 17	247
TAI	Terminal Autoinstall - Type 18	248
LDR	Loader Resource - Type 19	249
DBC	DBCTL Unsolicited Statistics - Type 1C	250
LDG	Loader Global - Type 1E	251
DTB	Dynamic Transaction Backup - Type 21	252
TCT	Terminal Control - Type 22	253
LSR	LSR Pool - Type 27	254
LSF	LSR Pool File - Type 28	256
TDQ	Transient Data Queue Resource - Type 2A	257
TDG	Transient Data Queue Global - Type 2D	259
TMP	Temporary Storage Queue - Type 30	260
JRN	Journal Control - Type 31	262
ISC	ISC/IRC System Entry - Type 34	263
ISS	ISC Connection System Security - Type 36	265

Field Prefix	Record Name and Type	Page
DIS, DI4	Dispatcher - Types 37 and 3A	266
USG	User Domain - Type 3D	269
TBL	Table Manager - Type 3F	269
STA	Statistics - Type 42	269
FIL	File Control - Type 43	270
DLG	DL/I Global - Type 48	272
DL1	DL/I Resource - Type 49	273
IRB	IRC Batch - Type 4B	273
IRC	ISC/IRC Mode Entry - Type 4C	274
MN4	Monitoring Statistics - Type 50	275
MNG	Monitoring Statistics Global - Type 51	279
MNS	Monitoring Statistics Resource - Type 52	279
TDS	Transaction Dump Resource - Type 55	288
TDG	Transaction Dump Global - Type 57	288
SDS	System Dump Resource - Type 58	288
SDG	System Dump Global - Type 5A	289
LGR	Logger - Type 5D	289
LGS	Log Stream - Type 5E	290
EQG	Enqueue Manager - Type 61	291
RCV	Recovery Manager - Type 63	292
D2G	DB2 Connection - Type 66	293
D2S	DB2 Entry - Type 67	295
TCG	TCP/IP Services Global - Type 6B	296
TCP	TCP/IP Services Resource - Type 6C	297
RQM	Request Model - Type 6F	298
CRB	CORBA Server - Type 72	298
JVM	JVM Pool - Type 75	299
STI	System Initialization Table - Type C8	300
RCT	DB2 Plan Activity - Type C9	301
LTI, LTX	Service Level Response -Type CA	302

Field Prefix	Record Name and Type	Page
DSN	VSAM DSN - Type CB	304
T6F	Global Performance - Type CC	306
DLZ	DL/I - Type CD	308

Data Storage Layout

Table 13 describes the storage of CICS operational statistics by PERFORMANCE REPORTER for PRL, COBOL, and SAS reports. The type keys in the table represent

- Type of data stored on the CMRSTATS data set

  The tables in this appendix identify the type of data stored in a record field by these keys.

- Data type key specified in the CMRSTATS member of the BBPLIB data dictionary

  PERFORMANCE REPORTER uses this key to identify the user-selected (using PRL) fields from the collected records.

Table 13. CMRSTATS Data Storage Layout

Type	Recorded Data Format	Description	Type	Data Dictionary Format
B		Binary	B	
B		Clock (recorded in binary, converted to decimal, then divided by 62,500 for *ss.sss*)	K	*ss.sss*
C		Character	C	
M	*mmmm*	Store Clock Time (in milliseconds)	M	*m.mmm*
P		Packed	P	
S	*mmddyy hhmmss*	Store Clock Date and Time	S	*mm*/*dd*/*yyyy* *hh*:*mm*:*ss*
X		Hexadecimal	X	

where the following variables represent numeric values:

m.mmm = milliseconds
mm = month
dd = day
yy = year
hh = hours
mm = minutes
ss = seconds

Record Header Information

Each CMRSTATS record has a header area that identifies the data source, the type of record, and when it was collected. Table 14 shows the layout of this header area. The header fields can be referenced by their names.

Table 14. CMRSTATS Record Header Fields

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
00 (00)	CMR$SYS	08 - C	CICS System ID
08 (08)	CMRDATE	04 - X	Date of data creation. The date is recorded in the form YYYYMMDD.
0C (12)	CMRTIME	04 - P	Time of data creation. Time is recorded as HHMMSS using a 24-hour clock.
10 (16)	CMRCLOCK	08 - X	Time of data creation in hexadecimal format.
18 (24)	CMRRECID	03 - P	Three-byte packed record ID assigned by MAINVIEW for CICS.
1B (27)	TYPE	01 - X	Record Identifier

Record Formats

MAINVIEW for CICS maintains CICS operational statistics in the SMF data sets. Global Performance records are written at 5-minute intervals. Other statistical records are written according to the parameters specified in the CMRSOPT table. The CMRSTATS conversion routine reads the SMF files and builds equivalent records in the CMRSTATS file.

MAINVIEW for CICS uses the CICS SVC to write standard SMF 110 statistic records with a subtype of 0002. In addition, MAINVIEW for CICS writes SMF 110 records with a 0B02 subtype for statistic IDs of 200-205. The statistic ID values and their corresponding record types in the CMRSTATS file after running CMRSTATS are as follows:

Statistic ID	Record
200	Type C8 - System Initialization Table
201	Type C9 - DB2 Plan Activity
202	Type CA - Service Level Response
203	Type CB - VSAM
204	Type CC - Global Performance (formerly Type 6F)
205	Type CD - DL/I

Storage Manager DSA Record (DSA - Type 02)

For field names that end with *nnn* (such as DSADN*nnn*), data is available for a specific dynamic storage area, as follows:

001	CDSA
002	UDSA
003	SDSA
004	RDSA
005	ECDSA
006	EUDSA
007	ESDSA
008	ERDSA

Table 15. Storage Manager DSA Records: Type 02

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	DSANPAGP	02 - B	Number of Page Pools
1E (30)	DSASTGPR	01 - X	State of STGPROT
1F (31)	DSARENTP	01 - X	State of RENTPGM
20 (32)	DSATRANI	01 - X	State of TRANISO
24 (36)	DSAUSSCR	04 - B	Current Number of Unique Subspace Users
28 (40)	DSAUSSCM	04 - B	Cumulative Number of Unique Subspace Users
2C (44)	DSAUSSHW	04 - B	HWM of Unique Subspace Users
30 (48)	DSACSSCR	04 - B	Current Number of Common Subspace Users
34 (52)	DSACSSCM	04 - B	Cumulative Number of Common Subspace Users
38 (56)	DSACSSHW	04 - B	HWM of Common Subspace Users
3C (60)	DSADSALI	04 - B	Current DSA Limit
40 (64)	DSAEDSAL	04 - B	Current EDSA Limit
44 (68)	DSADSATO	04 - B	Current DSA Total
48 (72)	DSAEDSAT	04 - B	Current EDSA Total
4C (76)	DSAHWMDS	04 - B	HWM DSA Total
50 (80)	DSAHWMED	04 - B	HWM EDSA Total
54 (84)		24	Reserved for Future Use
6C (108)	DSADN*nnn*	08 - C	DSA Name
74 (116)	DSALC*nnn*	01 - X	Location - Below/Above
75 (117)	DSAAC*nnn*	01 - X	Access
76 (118)	DSAIN*nnn*	01 - X	DSA Index

Table 15. Storage Manager DSA Records: Type 02 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
77 (119)		01	Reserved for Future Use
78 (120)	DSASZ*nnn*	04 - B	Current Size of DSA
7C (124)	DSAHZ*nnn*	04 - B	HWM Size of DSA
80 (128)	DSACZ*nnn*	04 - B	Current Cushion Size
84 (132)	DSAGM*nnn*	04 - B	Number of GETMAIN Requests
88 (136)	DSAFM*nnn*	04 - B	Number of FREEMAIN Requests
8C (140)	DSAAS*nnn*	04 - B	Number of Add Subpool Requests
90 (144)	DSADS*nnn*	04 - B	Number of Delete Subpool Requests
94 (148)	DSACR*nnn*	04 - B	Conditional Requests Returning Insufficient Storage
98 (152)	DSAUC*nnn*	04 - B	Unconditional Requests Suspended
9C (156)	DSACS*nnn*	04 - B	Current Requests Suspended for Storage
A0 (160)	DSAHS*nnn*	04 - B	HWM Requests Suspended for Storage
A4 (164)	DSAPW*nnn*	04 - B	Number of Tasks Purged, Waiting
A8 (168)	DSACH*nnn*	04 - B	Number of Cushion Releases
AC (172)	DSASS*nnn*	04 - B	Times SOS Occurred
B4 (180)	DSATS*nnn*	08 - X	Total Time SOS
BC (188)	DSACP*nnn*	04 - B	Current Number of Subpools
C0 (192)	DSAFS*nnn*	04 - B	Free Storage (including cushion)
C4 (196)	DSAHF*nnn*	04 - B	HWM Free Storage (including cushion)
C8 (200)	DSALF*nnn*	04 - B	LWM Free Storage (including cushion)
CC (204)	DSALA*nnn*	04 - B	Largest Free Area in DSA
D0 (208)	DSASV*nnn*	04 - B	Number of Storage Violations
D4 (212)	DSACX*nnn*	04 - B	Current Number of Extents
D8 (216)	DSAAX*nnn*	04 - B	Number of Extents Added
DC (220)	DSARX*nnn*	04 - B	Number of Extents Released
E0 (224)			End of Record

Storage Manager Domain Subpool Record (DSP - Type 05)

Table 16. Storage Manager Domain Subpool Records: Type 05

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	DSPDSPN	08 - C	Subpool Name
24 (36)	DSPDSAN	08 - C	DSA Name
2C (44)	DSPETYPE	01 - X	Element Type - Fixed/Variable
2D (45)		03	Reserved for Future Use
30 (48)	DSPFLEN	04 - B	Length (if fixed)
34 (52)		04	Reserved for Future Use
38 (56)	DSPDBDRY	04 - B	Boundary
3C (60)	DSPLOCN	01 - X	Above/Below 16 MB line
3D (61)	DSPACCES	01 - X	Access
3E (62)	DSPDSAIN	01 - X	DSA Index
3F (63)		01	Reserved for Future Use
40 (64)	DSPIFREE	04 - B	Initial Free Value
44 (68)	DSPGMREQ	04 - B	Number of GETMAIN Requests
48 (72)	DSPFMREQ	04 - B	Number of FREEMAIN Requests
4C (76)	DSPCES	04 - B	Sum of all Element Lengths
50 (80)	DSPCPS	04 - B	Current Page Storage
54 (84)	DSPCELEM	04 - B	Current Number of Elements
58 (88)	DSPHWMPS	04 - B	High Water Mark Page Storage
5C (92)			End of Record

Storage Manager Task Subpool Record (DST - Type 06)

Table 17. Storage Manager Task Subpool Records: Type 06

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	DSTDSAN	08 - C	DSA Name
24 (36)	DSTLOCN	01 - X	Above/Below 16 MB line
25 (37)	DSTACCES	01 - X	Access
26 (38)	DSTDSAIN	01 - X	DSA Index
27 (39)		01	Reserved for Future Use
28 (40)	DSTGMREQ	04 - B	Number of GETMAIN Requests
2C (44)	DSTFMREQ	04 - B	Number of FREEMAIN Requests
30 (48)	DSTCES	04 - B	Sum of all Element Lengths
34 (52)	DSTCPS	04 - B	Current Page Storage
38 (56)	DSTCNE	04 - B	Current Number of Elements
3C (60)	DSTHWMPS	04 - B	High Water Mark Page Storage
40 (64)			End of Record

Transaction Manager Global Record (TRG - Type 0A)

Table 18. Transaction Manager Global Records: Type 0A

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	TRGNUM	04 - B	Number of Transactions (User and System)
20 (32)	TRGMXT	04 - B	Current MAXTASK Value
24 (36)	TRGCAT	04 - B	Current Active User Transactions
28 (40)	TRGCQT	04 - B	Current Queued User Transactions
2C (44)	TRGTAMXT	04 - B	Times at MAXTASK
30 (48)	TRGPAT	04 - B	Peak Active User Transactions
34 (52)	TRGPQT	04 - B	Peak Queued User Transactions
38 (56)	TRGTAT	04 - B	Total Active User Transactions
3C (60)	TRGTDT	04 - B	Total Delayed User Transactions
40 (64)	TRGTQTME	08 - M	Total Time Spent Waiting for MXT
48 (72)	TRGCQTME	08 - M	Total Time Spent Current MXT
54 (84)	TRGTNUM	08 - X	Total Number of Transactions
5C (92)			End of Record

Transaction Manager Transaction Record (TRN - Type 0B)

Table 19. Transaction Manager Transaction Records: Type 0B

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	TRNTI	04 - C	Transaction ID
20 (32)	TRNPN	08 - C	Program Name
28 (40)	TRNTCL	08 - C	TCLASS name
30 (48)	TRNRNAM	08 - C	Remote Transaction ID
38 (56)	TRNRSYS	04 - C	Remote System ID
3C (60)	TRNPRTY	02 - B	Transaction Priority
3E (62)	TRNDYN	01 - C	Dynamic Indicator
3F (63)		01	Reserved for Future Use
40 (64)	TRNAC	04 - B	Attach Count
44 (68)	TRNRC	04 - B	Restart Count
48 (72)	TRNDLC	04 - B	Dynamic Local Count
4C (76)	TRNDRC	04 - B	Dynamic Remote Count
50 (80)	TRNRSC	04 - B	Remote Start Count
54 (84)	TRNSVC	04 - B	Storage Violation Count
58 (88)	TRNITOV	04 - B	Indoubt Timeout Value (minutes)
5C (92)	TRNIWTOP	01 - C	Indoubt Wait Option
5D (93)	TRNIACTN	01 - C	Indoubt Action - Commit/Backout
5E (94)		02	Reserved for Future Use
60 (96)	TRNIWAIT	04 - B	Number of Indoubt Waits
64 (100)	TRNFATXN	04 - B	Forced Action Due to Trandef
68 (104)	TRNFAIT	04 - B	Forced Action Due to Indoubt Timeout
6C (108)	TRNFANW	04 - B	Forced Action Due to No Wait Ability
70 (112)	TRNFAOP	04 - B	Forced Action Due to Operator
74 (116)	TRNFAOT	04 - B	Forced Action Due to Other
78 (120)	TRNAMISM	04 - B	Number of Action Mismatches
7C (124)			End of Record

Transaction Manager Transaction Class Record (TCL - Type 0C)

Table 20. Transaction Manager Transaction Class Records: Type 0C

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	TCLTCL	08 - C	TCLASS Name
24 (36)	TCLTAT	04 - B	Total Attach Requests for Transactions
28 (40)	TCLPI	04 - B	Transactions Purged Immediately
2C (44)	TCLTQ	04 - B	Transactions that had to Queue but are No Longer Queued
30 (48)	TCLAI	04 - B	Transactions Accepted Immediately
34 (52)	TCLAAQ	04 - B	Transactions Accepted After Queuing
38 (56)	TCLPWQ	04 - B	Transactions Purged While Queuing
3C (60)	TCLMXT	04 - B	Maximum Number of Transactions Allowed
40 (64)	TCLTH	04 - B	Purge Threshold
44 (68)	TCLITD	04 - B	Installed Transaction Definitions in this TCLASS
48 (72)	TCLPAT	04 - B	Peak Active User Transactions
4C (76)	TCLPQT	04 - B	Peak Queued User Transactions
50 (80)	TCLTAMA	04 - B	Times at Max Active
54 (84)	TCLTAPT	04 - B	Times at Purge Threshold
58 (88)	TCLCAT	04 - B	Current Active User Transactions
5C (92)	TCLCQT	04 - B	Current Queued User Transactions
60 (96)	TCLTQTME	08 - M	Total Queuing Time of those Transactions that are No Longer Queuing
68 (104)	TCLCQTME	08 - M	Total Queuing Time of those Transactions that are Still Queuing
70 (112)			End of Record

FEPI Pool Record (FPP - Type 10)

Table 21. FEPI Pool Records: Type 10

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	FPPPOOL	08 - C	Pool Name
24 (36)	FPPTRGCT	04 - B	Number of Targets
28 (40)	FPPNDCT	04 - B	Number of Nodes
2C (44)	FPPCONCT	04 - B	Number of Connections
30 (48)	FPPCONPK	04 - B	Peak Number of Connections
34 (52)	FPPALLOC	04 - B	Number of Conversation Allocates
38 (56)	FPPPKALL	04 - B	Peak Number of Concurrent Allocates
3C (60)	FPPWAIT	04 - B	Current Number of Allocates Waiting
40 (64)	FPPTOTWT	04 - B	Total Number of Allocates Forced to Wait
44 (68)	FPPPKWT	04 - B	Peak Number of Allocates Waiting
48 (72)	FPPTIOUT	04 - B	Number of Allocates that Timed Out
4C (76)			End of Record

FEPI Connection Record (FPC - Type 11)

Table 22. FEPI Connection Records: Type 11

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	FPCPOOL	08 - C	Key for Count Buckets
24 (36)	FPCTARG	08 - C	Target Name
2C (44)	FPCNODE	08 - C	Node Name
34 (52)	FPCACQ	04 - B	Number of Acquires for Connection
38 (56)	FPCCNV	04 - B	Number of Conversations
3C (60)	FPCUSI	04 - B	Number of Unsolicited Inputs Received
40 (64)	FPCCHOUT	04 - B	Number of Characters Sent on Connection
44 (68)	FPCCHIN	04 - B	Number of Characters Received on Connection
48 (72)	FPCRTOUT	04 - B	Number of Receive Timeouts
4C (76)	FPCERROR	04 - B	Number of Error Conditions
50 (80)			End of Record

FEPI Target Record (FPT - Type 12)

Table 23. FEPI Target Records: Type 12

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	FPTTARG	08 - C	Key for Count Buckets
24 (36)	FPTPOOL	08 - C	Pool Name
2C (44)	FPTAPPL	08 - C	Application ID (APPLID)
34 (52)	FPTNDCT	04 - B	Number of Nodes
38 (56)	FPTALLOC	04 - B	Number of Conversation Allocates
3C (60)	FPTTOTWT	04 - B	Total Number of Allocates Forced to Wait
40 (64)	FPTWAIT	04 - B	Current Number of Allocates Waiting
44 (68)	FPTPKWT	04 - B	Peak Number of Allocates Waiting
48 (72)	FPTTIOUT	04 - B	Number of Allocates that Timed Out
4C (76)			End of Record

VTAM Statistics Record (VTM - Type 15)

Table 24. VTAM Statistics Records: Type 15

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	VTMRPLXT	04 - B	Times at RPL Max
20 (32)	VTMRPLX	02 - B	Max RPLs Posted
22 (34)	VTMVTSOS	02 - B	VTAM Short on Storage (SOS)
24 (36)	VTMDOC	02 - B	Dynamic Open Count
26 (38)		02	Reserved for Future Use
28 (40)	VTMLUNUM	04 - B	Current LUs in Session
2C (44)	VTMLUHWM	04 - B	HWM LUs in Session
30 (48)	VTMPSIC	04 - B	PRSS Inquire Count
34 (52)	VTMPSNC	04 - B	PRSS NIB Count
38 (56)	VTMPSOC	04 - B	PRSS OPNDST Count
3C (60)	VTMPSUC	04 - B	PRSS Unbind Count
40 (64)	VTMPSEC	04 - B	PRSS Error Count
44 (68)			End of Record

Program Autoinstall Record (PAI - Type 17)

Table 25. Program Autoinstall Records: Type 17

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	PAIATT	04 - B	Number of Attempts
20 (32)	PAIREJ	04 - B	Number of Rejects
24 (36)	PAIFAIL	04 - B	Number of Failures
28 (40)			End of Record

Terminal Autoinstall Record (TAI - Type 18)

Table 26. Terminal Autoinstall Records: Type 18

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	TAIVADAT	02 - B	Total Attempts
1E (30)	TAIVADSH	02 - B	Times Set Logon Hold Issued
20 (32)	TAIVADRJ	04 - B	Total Rejected
24 (36)	TAIVADLO	04 - B	Total Deleted
28 (40)	TAIVADPK	02 - B	Peak Concurrent Attempts
2A (42)	TAIVADPX	02 - B	Times Peak Reached
2C (44)	TAIVADQT	04 - B	Number of Queued Logons
30 (48)	TAIVADQK	02 - B	Peak Number of Queued Logons
32 (50)	TAIVADQX	02 - B	Number of Times Peak is Reached
34 (52)	TAIRDINT	04 - T	Shipped Delete Interval
38 (56)	TAIRDIDL	04 - T	Shipped Delete Idle Time
3C (60)	TAISKBLT	04 - B	Remote Terminals Built
40 (64)	TAISKINS	04 - B	Remote Terminals Installed
44 (68)	TAISKDEL	04 - B	Remote Terminals Deleted
48 (72)	TAITIEXP	04 - B	Times Interval Expired
4C (76)	TAIRDREC	04 - B	Number of Remdels Received
50 (80)	TAIRDISS	04 - B	Number of Remdels Issued
54 (84)	TAIRDDEL	04 - B	Number of Remdels Deletes
58 (88)	TAICIDCT	04 - B	Current Idle Count
5C (92)	TAICIDLE	08 - M	Current Idle Time
64 (100)	TAICMAXI	08 - M	Current Maximum Idle Time
6C (108)	TAITIDCT	04 - B	Total Idle Count
70 (112)	TAITIDLE	08 - M	Total Idle Time
78 (120)	TAITMAXI	08 - M	Maximum Idle Time
80 (128)			End of Record

Loader Resource Record (LDR - Type 19)

Table 27. Loader Resource Records: Type 19

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	LDRPGMNM	08 - C	Program Name
24 (36)	LDRTU	04 - B	Times Used Since Last Reset
28 (40)	LDRFC	04 - B	Fetch Count
2C (44)	LDRFT	04 - B	Total Time Taken for All Fetches
30 (48)	LDRRPLO	04 - B	Offset into RPL DD of Owning PDS
34 (52)	LDRTN	04 - B	Number of Times NEWCOPY Performed
38 (56)	LDRPSIZE	04 - B	Program Size
3C (60)	LDRRPC	04 - B	Times Removed by Program Compression
40 (64)	LDRLOCN	01 - X	Location of Current Copy
41 (65)			End of Record

DBCTL Unsolicited Statistics Record (DBC - Type 1C)

Table 28. DBCTL Unsolicited Statistics Records: Type 1C

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	DBCTSENO	04 - B	CICS-DBCTL Session Number
20 (32)	DBCTDBID	04 - C	DBCTL ID
24 (36)	DBCRSEN	08 - C	RSE Name
2C (44)	DBCCTIME	08 - S	Connect Time (GMT STCK)
34 (52)	DBCDTIME	08 - S	Disconnect time (GMT STCK)
3C (60)	DBCMITHD	02 - B	Minimum Number of Threads
3E (62)	DBCMATHD	02 - B	Maximum Number of Threads
40 (64)	DBCNOMIT	04 - B	Number of Times Minimum Threads Reached
44 (68)	DBCNOMAT	04 - B	Number of Times Maximum Threads Reached
48 (72)	DBCELMAX	08 - M	Elapsed Time at Maximum Threads
50 (80)	DBCHIWAT	04 - B	HWM of Number of Threads
54 (84)	DBCPSBSU	04 - B	Total Number of Successful PSB Schedules
58 (88)	DBCLCTIM	08 - S	Connect Time (Local STCK)
60 (96)	DBCLDTIM	08 - S	Disconnect Time (Local STCK)
68 (104)			End of Record

Loader Global Record (LDG - Type 1E)

For field names that end with *nnn* (such as LDGST*nnn*), data is available for a specific dynamic storage area, as follows:

001	CDSA
002	ECDSA
003	SDSA
004	ESDSA
005	RDSA
006	ERDSA

Table 29. Loader Global Records: Type 1E

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	LDGLLR	04 - B	Number of Library Load Requests
20 (32)	LDGLLT	04 - T	Total Time for All Loads
24 (36)	LDGPUSES	04 - B	Number of Program Uses
28 (40)	LDGWLR	04 - B	Number of Loader Requests Waiting
2C (44)	LDGWLRHW	04 - B	HWM of Waiting Loader Requests
30 (48)	LDGHWMT	04 - B	Times at HWM
34 (52)	LDGTTW	04 - T	Total Time Waiting
38 (56)	LDGDREBS	04 - B	Number of Library DEB Rebuilds
3C (60)	LDGWTDLR	04 - B	Number of Loader Requests that Waited
40 (64)		24	Reserved for Future Use
58 (88)	LDGST*nnn*	04 - B	Amount of Storage Occupied by NIU
5C (92)	LDGPR*nnn*	04 - B	Number of Programs on NIU Queue
60 (96)	LDGRE*nnn*	04 - B	Number of Programs Reclaimed from NIU Queue
64 (100)	LDGRC*nnn*	04 - B	Number of Programs Removed by DPS
68 (104)	LDGDP*nnn*	08 - M	Total Time on NIU Queue
70 (112)	LDGDX*nnn*	01 - B	DSA Index
71 (113)			End of Record

Dynamic Transaction Backup Record (DTB - Type 21)

This record is available only for CICS systems running CICS/ESA version 4.1.

Table 30. Dynamic Transaction Backup Records: Type 21

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	DTBDBLA	04 - B	Number of Records Logged by DTB
20 (32)	DTBDBSA	04 - B	Number of Records Spilled by DTB
24 (36)			End of Record

Terminal Control Record (TCT - Type 22)

Table 31. Terminal Control Records: Type 22

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	TCTTETI	04 - C	Terminal ID
20 (32)	TCTTETT	01 - X	Terminal Type (TCTTTET)
21 (33)	TCTEAMIB	01 - X	Access Method (TCTEAMIB)
22 (34)		02	Reserved for Future Use
24 (36)	TCTLENP	04 - B	Number of Polls
28 (40)	TCTTENI	04 - B	Input Messages
2C (44)	TCTTENO	04 - B	Output Messages
30 (48)	TCTTEOT	04 - B	Number of Transactions
34 (52)	TCTCSVC	04 - B	Storage Violations
38 (56)	TCTTETE	04 - B	Transmission Errors
3C (60)	TCTTEOE	04 - B	Transaction Errors
40 (64)	TCTTCNT	04 - B	Pipeline Messages - Total
44 (68)	TCTSCNT	04 - B	Pipeline Messages - Groups
48 (72)	TCTMCNT	02 - B	Pipeline Messages - Max Consecutive
4A (74)		02	Reserved for Future Use
4C (76)	TCTLUNAM	08 - C	LU Name
54 (84)	TCTPRTY	01- C	Terminal Priority
55 (85)		03	Reserved for Future Use
58 (88)	TCTSTG	04 - B	TIOA Storage
5C (92)	TCTSYSID	04 - C	Owning SYSID of Terminal/Session
60 (96)	TCTONTM	08 - S	Autoinstall Logon Time (Local STCK)
68 (104)	TCTOFFTM	08 - S	Autoinstall Logoff Time (Local STCK)
70 (112)	TCTGONTM	08 - S	Autoinstall Logon Time (GMT STCK)
78 (120)	TCTGOFTM	08 - S	Autoinstall Logoff Time (GMT STCK)
80 (128)			End of Record

LSR Pool Record (LSR - Type 27)

For field names that end with *nnn* (such as LSRBZ*nnn*), data is available as follows:

001 - 011 when index and data buffers are shared
001 - 022 when separate index and data buffers are used

Table 32. LSR Pool Records: Type 27

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	LSRSRPID	01 - B	LSR Pool Number
1D (29)	LSRFLAGS	01 - X	Flags
1E (30)		02	Reserved for Future Use
20 (32)	LSRLBKCD	08 - S	Time Pool Created (Local STCK)
28 (40)	LSRLBKDD	08 - S	Time Pool Deleted (Local STCK)
30 (48)	LSRGBKCD	08 - S	Time Pool Created (GMT STCK)
38 (56)	LSRGBKDD	08 - S	Time Pool Deleted (GMT STCK)
40 (64)	LSRBKKYL	02 - B	Maximum Key Length
42 (66)	LSRBKSTN	02 - B	Number of Strings
44 (68)	LSRBKHSW	02 - B	Peak Requests Waiting on String
46 (70)		02	Reserved for Future Use
48 (72)	LSRBKTSW	04 - B	Total Number of Requests Waiting on String
4C (76)	LSRBKHAS	02 - B	Peak Number of Concurrently Active FC Strings
4E (78)		02	Reserved for Future Use
50 (80)	LSRTDBFN	04 - B	Total Number of Data Buffers
54 (84)	LSRTDHBN	04 - B	Total Number of Data Hiperspace Buffers
58 (88)	LSRTDBFF	04 - B	Total Number of Successful Lookasides - Data
5C (92)	LSRTDFRD	04 - B	Total Number of Buffer Reads - Data
60 (96)	LSRTDUIW	04 - B	Total Number of User Initiated Writes - Data
64 (100)	LSRTDNUW	04 - B	Total Number of Non-User Initiated Writes - Data
68 (104)	LSRTDCRS	04 - B	Total Number of Successful CREADs - Data
6C (108)	LSRTDCWS	04 - B	Total Number of Successful CWRITEs - Data
70 (112)	LSRTDCRF	04 - B	Total Number of Failing CREADs - Data
74 (116)	LSRTDCWF	04 - B	Total Number of Failing CWRITEs - Data
78 (120)	LSRTIBFN	04 - B	Total Number of Index Buffers
7C (124)	LSRTIHBN	04 - B	Total Number of Index Hiperspace Buffers

Table 32. LSR Pool Records: Type 27 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
80 (128)	LSRTIBFF	04 - B	Total Number of Successful Lookasides - Index
84 (132)	LSRTIFRD	04 - B	Total Number of Buffer Reads - Index
88 (136)	LSRTIUIW	04 - B	Total Number of User Initiated Writes - Index
8C (140)	LSRTINUW	04 - B	Total Number of Non-User Initiated Writes - Index
90 (144)	LSRTICRS	04 - B	Total Number of Successful CREADs - Index
94 (148)	LSRTICWS	04 - B	Total Number of Successful CWRITEs - Index
98 (152)	LSRTICRF	04 - B	Total Number of Failing CREADs - Index
9C (156)	LSRTICWF	04 - B	Total Number of Failing CWRITEs - Index
A0 (160)	LSRBZ*nnn*	02 - B	Buffer Size
A2 (162)	LSRBN*nnn*	02 - B	Number of Buffers
A4 (164)	LSRHB*nnn*	04 - B	Number of Hiperspace Buffers
A8 (168)	LSRLA*nnn*	04 - B	Number of Successful Lookasides
AC (172)	LSRBR*nnn*	04 - B	Number of Buffer Reads
B0 (176)	LSRUW*nnn*	04 - B	Number of User Initiated Writes
B4 (180)	LSRNW*nnn*	04 - B	Number of Non-User Initiated Writes
B8 (184)	LSRCR*nnn*	04 - B	Number of Successful CREADs
BC (188)	LSRCW*nnn*	04 - B	Number of Successful CWRITEs
C0 (192)	LSRFC*nnn*	04 - B	Number of Failing CREADs
C4 (196)	LSRFW*nnn*	04 - B	Number of Failing CWRITEs
C8 (200)			End of Record

LSR Pool File Record (LSF - Type 28)

Table 33. LSR Pool File Records: Type 28

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	LSFSRPID	02 - B	LSR Pool Number
1E (30)	LSFDSID	08 - C	File Name
26 (38)	LSFDBN	02 - B	Data Buffer Size
28 (40)	LSFIBN	02 - B	Index Buffer Size
2C (44)	LSFTBW	04 - B	Total Buffer Waits
30 (48)	LSFHBW	02 - B	Highest Buffer Waits
32 (50)			End of Record

Transient Data Queue Resource Record (TDQ - Type 2A)

The transient data queue (TDQ) resource record varies according to which version of CICS produces it. Table 34 shows the TDQ resource record that is available for CICS systems running CICS Transaction Server (CTS) version 1.1 or higher. Table 35 on page 258 shows the record that is available for CICS systems running CICS/ESA version 4.1.

Table 34. Transient Data Queue Resource Records: Type 2A (CTS 1.1 or higher)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	TDQQID	04 - C	Transient Data Queue (TDQ) ID
20 (32)	TDQQTYPE	01 - X	TDQ Destination Type
21 (33)		03	Reserved for Future Use
24 (36)	TDQWRITE	04 - B	Total Writes to Queue
28 (40)	TDQREAD	04 - B	Total Reads from Queue
2C (44)	TDQDELET	04 - B	Total Deletes of Queue
30 (48)	TDQTRIGL	02 - B	ATI Transaction ID Trigger Level
32 (50)	TDQRTYPE	01 - X	Recovery Type
33 (51)	TDQFTYPE	01 - X	ATI Facility Type
34 (52)	TDQFNAME	04 - C	ATI Facility Name
38 (56)	TDQWAIT	01 - X	Indoubt Waiting Supported
39 (57)	TDQWAITA	01 - X	Indoubt Action - Reject/Queue
3A (58)		02	Reserved for Future Use
3C (60)	TDQATRAN	04 - C	ATI Transaction ID
40 (64)	TDQTRIGN	04 - B	Number of Trigger Level Triggers
44 (68)	TDQCCIUS	04 - B	Current CIs in Use by this Queue
48 (72)	TDQPCIUS	04 - B	Peak CIs in Use by this Queue
4C (76)	TDQCNITM	04 - B	Current Number of Items in Queue
50 (80)	TDQRSYS	04 - C	Remote SYSID
54 (84)	TDQRQID	04 - C	Remote Queue ID
58 (88)	TDQIQID	04 - C	Indirect Queue ID
5C (92)	TDQIOTYP	01 - X	I/O Type - Input/Output/Readback
5D (93)		03	Reserved for Future Use
60 (96)	TDQDDNM	08 - C	DD Name of Extrapartition TDQ
68 (104)	TDQDSNNM	44 - C	Data Set Name of Extrapartition TDQ

Table 34. Transient Data Queue Resource Records: Type 2A (CTS 1.1 or higher) (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
94 (148)	TDQPDSMN	08 - C	PDS Member Name
9C (156)			End of Record

Table 35. Transient Data Queue Resource Records: Type 2A (CICS/ESA 4.1)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	TD4DEST	04 - C	Destination ID
20 (32)	TD4EO	04 - B	Number of Extrapartition Outputs
24 (36)	TD4IO	04 - B	Number of Intrapartition Outputs
28 (40)	TD4IR	04 - B	Number of Indirect Requests
2C (44)	TD4RR	04 - B	Number of Remote Requests
30 (48)	TD4TYPE	01 - C	Destination Type of Queue
31 (49)		03	Reserved for Future Use
34 (52)	TD4RQID	04 - C	Remote Queue ID
38 (56)	TD4RSID	04 - C	Remote System ID
3C (60)	TD4IDQN	04 - C	Indirect Destination Queue Name
40 (64)			End of Record

Transient Data Queue Global Record (TDG - Type 2D)

Table 36. Transient Data Queue Global Records: Type 2D

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	TDGANBFA	04 - B	Number of Buffers
20 (32)	TDGAMXIU	04 - B	Peak Containing Valid Data
24 (36)	TDGATNAL	04 - B	Times Buffer Accessed
28 (40)	TDGAMXAL	04 - B	Peak Concurrent Access
2C (44)	TDGATNWT	04 - B	Times Buffer Wait Occured
30 (48)	TDGAMXWT	04 - B	Peak Buffer Waits
34 (52)	TDGACISZ	04 - B	Control Interval Size
38 (56)	TDGANCIS	04 - B	Number of Control Intervals
3C (60)	TDGAMXCI	04 - B	Peak Number of Control Intervals Used
40 (64)	TDGANOSP	04 - B	Times NOSPACE Occurred
44 (68)	TDGACTPT	04 - B	Number of Writes to Data Set
48 (72)	TDGACTGT	04 - B	Number of Reads from Data Set
4C (76)	TDGACTFT	04 - B	Number of Formatting Writes
50 (80)	TDGACTIO	04 - B	Number of I/O Errors
54 (84)	TDGSNSTA	04 - B	Number of Strings
58 (88)	TDGSTNAL	04 - B	Times String Accessed
5C (92)	TDGSMXAL	04 - B	Peak Concurrent Accesses
60 (96)	TDGSTNWT	04 - B	Times String Wait Occurred
64 (100)	TDGSMXWT	04 - B	Peak String Waits
68 (104)	TDGACNAL	4 - B	Current Concurrent Buffer Access
6C (108)	TDGACNWT	04 - B	Current Buffer Waits
70 (112)	TDGACNIU	04 - B	Current Buffers Containing Valid Data
74 (116)	TDGSCNAL	04 - B	Current Concurrent String Access
78 (120)	TDGSCNWT	04 - B	Current String Waits
7C (124)	TDGACTCI	04 - B	Number of Control Intervals in Use
80 (128)			End of Record

Temporary Storage Queue Record (TMP - Type 30)

Table 37. Temporary Storage Queue Records: Type 30

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	TMPSTA5F	04 - B	PUT/PUTQ Main Storage Requests
20 (32)	TMPNMG	04 - B	GET/GETQ Main Storage Requests
24 (36)	TMPSTA6F	04 - B	Peak Storage for Temporary Storage
28 (40)	TMPSTA7F	04 - B	PUT/PUTQ Auxiliary Storage Requests
2C (44)	TMPNAG	04 - B	GET/GETQ Auxiliary Storage Requests
30 (48)	TMPQNUMH	04 - B	Peak Temporary Storage Names in Use
34 (52)	TMPQINH	04 - B	Entries in Longest Queue
38 (56)		04	Reserved for Future Use
3C (60)	TMPSTA3F	04 - B	Times Queue Created
40 (64)		04	Reserved for Future Use
44 (68)	TMPCSZ	04 - B	Control Interval Size
48 (72)	TMPSTABF	04 - B	Writes More than Control Interval
4C (76)	TMPNCI	04 - B	Control Intervals in Temporary Storage Data Set
50 (80)	TMPNCIAH	04 - B	Peak Control Intervals used
54 (84)	TMPSTA8F	04 - B	Times Auxiliary Storage Exhausted
58 (88)	TMPNBCA	02 - B	Number of Temporary Storage Buffers
5A (90)		02	Reserved for Future Use
5C (92)	TMPBWTN	04 - B	Number of Buffer Waits
60 (96)	TMPBUWTH	04 - B	Peak Users Waiting on Buffer
64 (100)	TMPTWTN	04 - B	Buffer Writes
68 (104)	TMPTWTNR	04 - B	Writes Force for Recovery
6C (108)	TMPTRDN	04 - B	Buffer Reads
70 (112)	TMPTWTNF	04 - B	Format Writes
74 (116)	TMPNVCA	02 - B	Number of Temporary Storage strings
76 (118)		02	Reserved for Future Use
78 (120)	TMPNVCAH	04 - B	Peak Strings in Use
7C (124)	TMPVWTN	04 - B	Times String Wait Occurred

Table 37. Temporary Storage Queue Records: Type 30 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
80 (128)	TMPVUWTH	04 - B	Peak Users Waiting on String
84 (132)	TMPSTAAF	04 - B	I/O Errors on Temporary Storage Data Set
88 (136)	TMPSTA6A	04 - B	Current Storage for Temporary Storage
8C (140)	TMPSTA9F	04 - B	Number of Temporary Storage Compressions
90 (144)	TMPNCIA	04 - B	Current Control Intervals in Use
94 (148)	TMPVUWT	04 - B	Users Waiting on String
98 (152)	TMPBUWT	04 - B	Users Waiting on Buffer
9C (156)	TMPQNUM	04 - B	Temporary Storage Names in Use
A0 (160)	TMPLAR	04 - B	Longest Auxiliary Record Length
A4 (164)	TMPNAVB	04 - B	Number of Available Bytes per Control Interval
A8 (168)	TMPSPCI	04 - B	Segments per Control Interval
AC (172)	TMPBPSEG	04 - B	Bytes per Segment
B0 (176)	TMPSHPDF	04 - B	Shared Pools Defined
B4 (180)	TMPSHPCN	04 - B	Shared Pools Connected To
B8 (184)	TMPSHRDS	04 - B	Shared Read Requests
BC (188)	TMPSHWTS	04 - B	Shared Write Requests
C0 (192)			End of Record

Journal Control Record (JRN - Type 31)

This record is available only for CICS systems running CICS/ESA version 4.1.

Table 38. Journal Control Records: Type 31

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	JRNNAME	08 - C	Journal Name (DFHJ*xxxx*)
24 (36)	JRNJFID	01 - B	Journal ID
25 (37)	JRNLRC	04 - B	Number of Records Written
29 (41)	JRNPBC	04 - B	Number of Blocks Written
2D (45)	JRNBFC	04 - B	Times Buffer Full
31 (49)		01	Reserved for Future Use
32 (50)	JRNABS	04 - B	Average O/P Block Size
34 (52)	JRNLVW	06 - C	Last VOLSER Written
3A (58)	JRNVOOC	02 - B	Number of Tapes Opened
3C (60)	JRNSTL	02 - B	Number of Scratch Tapes Left
3E (62)	JRNASUB	02 - B	Number of Archives Submitted
40 (64)	JRNJDO	02 - B	Number of Journal Data Sets Opened
42 (66)	JRNWAC	02 - B	Number of Waits for Archive Completion
44 (68)	JRNTYPE	05 - C	Journal Type
4A (74)			End of Record

ISC/IRC System Entry Record (ISC - Type 34)

Table 39. ISC/IRC System Entry Records: Type 34

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	ISCCNTN	04 - C	Connection Name
20 (32)	ISCEALL	02 - B	AIDs in Chain
22 (34)	ISCESALL	02 - B	Generic AIDs in Chain
24 (36)	ISCEBID	02 - B	Current Bids
26 (38)	ISCESTAM	02 - B	Maximum Outstanding Allocates
28 (40)	ISCE2HWM	02 - B	Maximum Secondaries
2A (42)	ISCEBHWM	02 - B	Maximum Bids
2C (44)	ISCES1	04 - B	ATIs Satisfied by Primaries
30 (48)	ISCES2	04 - B	ATIs Satisfied by Secondaries
34 (52)	ISCESBID	04 - B	Bids Sent
38 (56)	ISCESTAS	04 - B	Total Allocates
3C (60)	ISCESTAQ	04 - B	Queued Allocates
40 (64)	ISCESTAF	04 - B	Failed - Link Allocates
44 (68)	ISCESTAO	04 - B	Failed - Other Reasons
48 (72)	ISCESTFC	04 - B	File Control Function Shipping Requests
4C (76)	ISCESTIC	04 - B	Interval Control Function Shipping Requests
50 (80)	ISCESTTD	04 - B	Transient Data Function Shipping Requests
54 (84)	ISCESTTS	04 - B	Temporary Storage Function Shipping Requests
58 (88)	ISCESTDL	04 - B	DL/I Function Shipping Requests
5C (92)	ISCESTTC	04 - B	Terminal Sharing Requests
60 (96)	ISCE1HWM	02 - B	Maximum Primaries
62 (98)	ISCEQPCT	02 - B	MAXQTIME Purge Count
64 (100)	ISCEALRJ	04 - B	Allocates Rejected (QLIMIT)
68 (104)	ISCEMXQT	02 - B	Maximum Queue Time
6A (106)	ISCEALIM	02 - B	Allocate Queue Limit
6C (108)	ISCEZQRJ	04 - B	XZIQUE Rejects
70 (112)	ISCEZQPU	02 - B	XZIQUE Purge Count

Table 39. ISC/IRC System Entry Records: Type 34 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
72 (114)	ISCEZQPC	02 - B	XZIQUE Allocates Purged
74 (116)	ISCEMQPC	02 - B	MAXQTIME Allocates Purged
76 (118)		06	Reserved for Future Use
7C (124)	ISCGACT	08 - S	AI GMT Connect Create Time
84 (132)	ISCAICT	08 - S	AI Connect Create Time
8C (140)	ISCGADT	08 - S	AI GMT Connect Delete Time
94 (148)	ISCAIDT	08 - S	AI Connect Delete Time
9C (156)		04	Reserved for Future Use
A0 (160)	ISCESID	08 - C	Connection Netname
A8 (168)	ISCACCM	01 - X	Access method
A9 (169)	ISCEFLGS	01 - X	Protocol
AA (170)	ISCESECN	02 - B	Send Session Count
AC (172)	ISCEPRMN	02 - B	Receive Session Count
AE (174)	ISCE1RY	02 - B	Primaries Currently Used
B0 (176)	ISCE2RY	02 - B	Secondaries Currently Used
B2 (178)		02	Reserved for Future Use
B4 (180)	ISCESTPC	04 - B	Program Control Function Shipping Requests
B8 (184)			End of Record

ISC Connection System Security Record (ISS - Type 36)

Table 40. ISC Connection System Security Records: Type 36

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1E (30)	ISSDTIME	02 - B	Delay Time for LUIT Table
20 (32)		14	Reserved for Future Use
2C (44)	ISSTREUS	04 - B	Total Number of Entries reused in LUIT Table
30 (48)	ISSTTIME	04 - B	Total Number of Entries Timed Out in LUIT Table
34 (52)	ISSAREUS	04 - B	Average Reuse Time Between Entries in LUIT Table
38 (56)			End of Record

Dispatcher Record (Types 37 and 3A)

The dispatcher record varies according to which version of CICS produces it. Table 41 shows the dispatcher record that is available for CICS systems running CICS Transaction Server (CTS) version 1.3 or higher. Table 42 on page 268 shows the record that is available for CICS systems running CTS version 1.2 or below.

In Table 41, for field names that end with *nnn* (such as DISTN*nnn*), data is available as follows:

001 - 012 Up to 12 different TCB statistics areas; the actual number in use is provided in the DISASIZE field.

Table 41. Dispatcher Records: Type 37 (CTS 1.3 or higher)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	DISGLEN	02 - B	Global Statics Length
1E (30)	DISASIZE	02 - B	Number of DSGTCB DSECTs Supplied
20 (32)	DISICVT	04 - B	Dispatcher Global Statistics
24 (36)	DISICVSD	02 - B	Current ICVSD Time
26 (38)	DISCNT	02 - B	Current Number of Tasks
28 (40)	DISPNT	02 - B	Peak Number of Tasks
2A (42)		10	Reserved for Future Use
34 (52)	DISSTART	08 - S	GMT STCK Sub-Disp Start Time
3C (60)	DISLSTRT	08 - S	Local STCK Sub-Disp Start Time
44 (68)	DISEJST	08 - M	Elapsed Job Step Timing
4C (76)	DISSRBT	08 - M	Accumulated SRB Time
54 (84)	DISTOTWL	08 - M	Total Wait Time at TCB Limit
5C (92)	DISCURWT	08 - M	Current Waiting Time
64 (100)	DISTOTNW	04 - B	Total Number of Waits
68 (104)	DISCURNW	04 - B	Current Number of Tasks Waiting for a TCB
6C (108)	DISPEANW	04 - B	Peak Number of Tasks Waiting for a TCB
70 (112)	DISMAXOP	04 - B	Maximum Number of Open TCBs
74 (116)	DISCNUAT	04 - B	Current OM TCBs Attached
78 (120)	DISPNUAT	04 - B	Peak OM TCBs Attached
7C (124)	DISCNUUS	04 - B	Current OM TCBs in Use
80 (128)	DISPNUUS	04 - B	Peak OM TCBs Used
84 (132)	DISNTCBL	04 - B	Number of Times at TCB Limit

Table 41. Dispatcher Records: Type 37 (CTS 1.3 or higher) (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
88 (136)	DISICVRT	04 - B	Current ICVR Time
8C (140)	DISPRIAG	02 - B	Priority Aging
8E (142)		02	Reserved for Future Use
90 (144)	DISXSCNS	04 - B	Number of Excess TCB Scans
94 (148)	DISXSCNN	04 - B	Number of Scans - No TCB Detached
98 (152)	DISXTCBD	04 - B	Total Number of Excess TCBs Detached
9C (156)		24	Reserved for Future Use
B4 (180)	DISTN*nnn*	02 - C	TCB Mode Name
B6 (182)	DISMD*nnn*	01 - X	TCB Mode
B8 (184)	DISNA*nnn*	04 - B	Number of TCBs Currently Attached
BC (188)	DISPA*nnn*	04 - B	Peak Number of TCBs Attached
C0 (192)	DISPX*nnn*	04 - B	Number of Partition Exits
C4 (196)	DISTA*nnn*	04 - B	Number of TCB Attaches
C8 (200)	DISDU*nnn*	04 - B	Number of TCB Detaches - Unclean
CC (204)	DISDS*nnn*	04 - B	Number of TCB Detaches - Stolen
D0 (208)	DISDO*nnn*	04 - B	Number of TCB Detaches - Other
D4 (212)	DISTS*nnn*	04 - B	Number of TCB Steals
D8 (216)	DISCT*nnn*	04 - B	Current TCBs Used by Mode
DC (220)	DISPU*nnn*	04 - B	Peak TCBs Used by Mode
E0 (224)	DISTE*nnn*	04 - B	Number of TCB Detaches - Excess
E4 (228)		08	Reserved for Future Use
EC (236)	DISOW*nnn*	08 - M	Cumulative Real Time CICS in OS Wait
F4 (244)	DISDM*nnn*	08 - M	Cumulative Real Time TCB Dispatch by MVS
FC (252)	DISCD*nnn*	08 - M	Cumulative CPU Time for DS Task
104 (260)	DISTT*nnn*	08 - M	Cumulative CPU Time for TCB
10C (268)			End of Record

In Table 42, for field names that end with *nnn* (such as DI4TN*nnn*), data is available as follows:

001 - 005 Up to 5 different TCB statistics areas; the actual number in use is provided in the DI4ASIZE field.

Table 42. Dispatcher Records: Type 3A (CTS 1.2 or below)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	DI4ICVT	04 - B	Current ICV Time
20 (32)	DI4ICVSD	02 - B	Current ICVSD Time
22 (34)		02	Reserved for Future Use
24 (36)	DI4CNT	02 - B	Current Number of Tasks
26 (38)	DI4PNT	02 - B	Peak Number of Tasks
28 (40)		22	Reserved for Future Use
3E (62)	DI4ASIZE	02 - B	Number of DISP4_TCB DSECTs Supplied
40 (64)	DI4F1*nnn*	01 - X	Flag Byte 1
41 (65)	DI4F2*nnn*	01 - X	Flag Byte 2 - Reserved
42 (66)	DI4F3*nnn*	01 - X	Flag Byte 3 - Reserved
43 (67)	DI4F4*nnn*	01 - X	Flag Byte 4 - Reserved
44 (68)	DI4TN*nnn*	08 - C	TCB Name
4C (76)	DI4PX*nnn*	04 - B	Number of Partition Exits
50 (80)	DI4PR*nnn*	04 - B	CPU Percent Usage
54 (84)	DI4OW*nnn*	08 - M	Cumulative Real Time CICS in OS Wait
5C (92)	DI4DM*nnn*	08 - M	Cumulative Real Time TCB Dispatch by MVS
64 (100)	DI4CD*nnn*	08 - M	Cumulative CPU Time for DS Task
6C (108)	DI4TT*nnn*	08 - M	Cumulative CPU Time for TCB
74 (116)	DI4GS*nnn*	08 - S	GMT STCK Sub-Disp Start Time
7C (124)	DI4LS*nnn*	08 - S	Local STCK Sub-Disp Start Time
84 (132)			End of Record

User Domain Record (USG - Type 3D)

Table 43. User Domain Records: Type 3D

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	USGTOMRT	04 - B	Timeout Mean Reuse Time
20 (32)	USGTORC	04 - B	Timeout Reuse Count
24 (36)	USGTOEC	04 - B	Timeout Expiry Count
28 (40)	USGDRRC	04 - B	Directory Reuse Count
2C (44)	USGDRNFC	04 - B	Directory not found count
30 (48)			End of Record

Table Manager Record (TBL - Type 3F)

In Table 44, the field names end with *nnn*, where *nnn* can be

001 - 017 For the 17 different table statistics entries.

Table 44. Table Manager Records: Type 3F

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	TBLTN*nnn*	04 - C	Stats for Each Table
20 (32)	TBLTS*nnn*	04 - B	Table Size
24 (36)			End of Record

Statistics Record (STA - Type 42)

Table 45. Statistics Records: Type 42

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	STANC	04 - B	Number of Collections
20 (32)	STASMFW	04 - B	Number of SMF Writes
24 (36)	STALDW	04 - B	Length of Data Written
28 (40)			End of Record

File Control Record (FIL - Type 43)

Table 46. File Control Records: Type 43

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	FILFNAM	08 - C	File Name
24 (36)	FILFLOC	01 - C	A value of R, if remote
25 (37)	FILDT	01 - C	A value of R, S , T, L, K or X
26 (38)	FILDSRLS	01 - C	RLS/Non-RLS Indicator
27 (39)		13	Reserved for Future Use
34 (52)	FILDSNAM	44 - C	Data Set Name
60 (96)	FILDSRD	04 - B	GET Requests
64 (100)	FILDSGU	04 - B	GET Update Requests
68 (104)	FILDSBR	04 - B	BROWSE Requests
6C (108)	FILDSWRA	04 - B	ADD Requests
70 (112)	FILDSWRU	04 - B	UPDATE Requests
74 (116)	FILDSDEL	04 - B	DELETE Requests
78 (120)	FILRMDEL	04 - B	Remote Deletes
7C (124)	FILDSXCP	04 - B	VSAM EXCP Requests - Data
80 (128)	FILDSIXP	04 - B	VSAM EXCP Requests - Index
84 (132)	FILDSTSW	04 - B	Wait on String Total
88 (136)	FILDSHSW	02 - B	Wait on String Highest
8A (138)		02	Reserved for Future Use
8C (140)	FILDTTYP	01 - C	A value of C, S, U, X, L or K
8D (141)		03	Reserved for Future Use
90 (144)	FILDTRDS	04 - B	Read/Browse Requests
94 (148)	FILDTRNF	04 - B	Source Reads Issued
98 (152)	FILDTAVR	04 - B	ADDs Resulting from READs
9C (156)	FILDTADS	04 - B	ADD Requests
A0 (160)	FILDTARJ	04 - B	ADDs Rejected by Exit
A4 (164)	FILDTATF	04 - B	ADDs when Table Full
A8 (168)	FILDTRWS	04 - B	REWRITE Requests

Table 46. File Control Records: Type 43 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
AC (172)	FILDTDLS	04 - B	DELETE Requests
B0 (176)	FILDTSHI	04 - B	Highest Table Record Count
B4 (180)	FILDTSIZ	04 - B	Current Table Record Count
B8 (184)	FILDTALT	04 - B	Storage Allocated - Total (in KB)
BC (188)	FILDTUST	04 - B	Storage In Use - Total (in KB)
C0 (192)	FILDTALE	04 - B	Storage Allocated - Entries (in KB)
C4 (196)	FILDTUSE	04 - B	Storage In Use - Entries (in KB)
C8 (200)	FILDTALI	04 - B	Storage Allocated - Index (in KB)
CC (204)	FILDTUSI	04 - B	Storage In Use - Index (in KB)
D0 (208)	FILDTALD	04 - B	Storage Allocated - Data (in KB)
D4 (212)	FILDTUSD	04 - B	Storage In Use - Data (in KB)
D8 (216)	FILDTRRS	04 - B	Read Retries for an SDT
DC (220)	FILDSDNB	02 - B	Number of Buffers - Data
DE (222)	FILDSINB	02 - B	Number of Buffers - Index
E0 (224)	FILPOOL	01 - X	LSRPOOL ID
E2 (226)	FILSTRNO	02 - B	Number of Strings
E4 (228)	FILRNAME	08 - C	Remote Name
EC (236)	FILRSYS	04 - C	Remote System ID
F0 (240)	FILDSTYP	01 - C	Data Set Type
F1 (241)		03	Reserved for Future Use
F4 (244)	FILBDSNM	44 - C	Base Data Set Name
120 (288)	FILDSASC	02 - B	Number of Active Strings
122 (290)	FILDSASW	02 - B	Number of String Waits
124 (292)	FILLOPNT	08 - S	File Open Time (Local STCK)
12C (300)	FILLCLST	08 - S	File Close Time (Local STCK)
134 (308)	FILGOPNT	08 - S	File Open Time (GMT STCK)
13C (316)	FILGCLST	08 - S	File Close Time (GMT STCK)
144 (324)	FILDSBRU	04 - B	Browse for Update Count
148 (328)	FILRLSWT	04 - B	RLS Request Wait Timeouts
14C (332)	FILDTCON	04 - B	Number of CHANGED Responses

Table 46. File Control Records: Type 43 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
150 (336)	FILDTCFP	08 - C	Coupling Facility Data Table
158 (344)	FILDTLDS	04 - B	Number of LOADING Responses
15C (348)			End of Record

DL/I Global Record (DLG - Type 48)

This record is available only for CICS systems running CICS/ESA version 4.1.

Table 47. DL/I Global Records: Type 48

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	DLGDMBMU	04 - B	DMB Pool Usage HWM
20 (32)	DLGDMBMS	04 - B	Maximum size of DMB Pool
24 (36)	DLGPSBMU	04 - B	PSB Pool Usage HWM
28 (40)	DLGPSBMS	04 - B	Maximum size of PSB Pool
2C (44)	DLGENQMU	04 - B	ENQ Pool Usage HWM
30 (48)	DLGENQMS	04 - B	Maximum size of ENQ Pool
34 (52)	DLGDMBEX	04 - B	Number of Waits for DMB Pool Space
38 (56)	DLGPSBEX	04 - B	Number of Waits for PSB Pool Space
3C (60)	DLGTHRDW	04 - B	Number of Waits for DL/I Threads
40 (64)	DLGTHRDM	02 - B	Peak Concurrent DL/I Threads
42 (66)	DLGTHRDS	02 - B	Maximum Number of Threads In Allowed
44 (68)	DLGTHRDA	02 - B	Active DL/I Threads
48 (70)			End of Record

DL/I Resource Record (DL1 - Type 49)

This record is available only for CICS systems running CICS/ESA version 4.1.

Table 48. DL/I Resource Records: Type 49

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	DL1FNAM	08 - C	DBD Name
24 (36)	DL1EGU	04 - B	GU Count
28 (40)	DL1EGN	04 - B	GN Count
2C (44)	DL1EGNP	04 - B	GNP Count
30 (48)	DL1EGHU	04 - B	GHU Count
34 (52)	DL1EGHN	04 - B	GHN Count
38 (56)	DL1EGHNP	04 - B	GHNP Count
3C (60)	DL1EISR	04 - B	ISRT Count
40 (64)	DL1EDLT	04 - B	DLET Count
44 (68)	DL1EREP	04 - B	REPL Count
48 (72)	DL1LTOT	04 - B	Line Totals
4C (76)	DL1IOTL	04 - B	Total Local EEQEs
50 (80)	DL1IORL	04 - B	Total Read EEQEs
54 (84)	DL1IOTG	04 - B	Total Global EEQEs
58 (88)	DL1IODR	04 - C	DBRC Register
5C (92)	DL1IMSVR	01 - X	IMS Version Flag
5E (94)			End of Record

IRC Batch Record (IRB - Type 4B)

This record is available only for CICS systems running CICS/ESA version 4.1.

Table 49. IRC Batch Records: Type 4B

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	IRBEMCTH	04 - B	Maximum Concurrent Batch Jobs Sharing Databases
20 (32)	IRBETOTH	02 - B	Total Batch Jobs Sharing Databases
22 (34)			End of Record

ISC/IRC Mode Entry Record (IRC - Type 4C)

Table 50. ISC/IRC Mode Entry Records: Type 4C

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	IRCSYSN	04 - C	System Name
20 (32)	IRCMODE	08 - C	Mode Name
28 (40)	IRCESTAM	02 - B	Maximum Outstanding Allocates
2A (42)	IRCE2HWM	02 - B	Maximum Secondaries
2C (44)	IRCEBHWM	02 - B	Maximum Bids
2E (46)	IRCE1HWM	02 - B	Peak Contention Losers
30 (48)	IRCES1	04 - B	ATIs Satisfied by Primaries
34 (52)	IRCES2	04 - B	ATIs Satisfied by Secondaries
38 (56)	IRCESBID	04 - B	Bids Sent
3C (60)	IRCESTAS	04 - B	Total Allocates
40 (64)	IRCESTAQ	04 - B	Queued Allocates
44 (68)	IRCESTAF	04 - B	Failed Link Allocates
48 (72)	IRCESTAO	04 - B	Failed - Other Reasons
4C (76)	IRCESTAG	04 - B	Generic Allocates
50 (80)	IRCESTAP	04 - B	Specific Allocates
54 (84)	IRCEBID	02 - B	Current Bids
56 (86)	IRCEQPCT	02 - B	XZIQUE Purge Count
58 (88)	IRCEZQPC	02 - B	XZIQUE Allocates Purged
5A (90)	IRCELMAX	02 - B	Maximum Session Count
5C (92)	IRCEMCON	02 - B	Maximum Contention Winners Acceptable
5E (94)	IRCEMAXS	02 - B	Current Maximum Session Count
60 (96)	IRCECONW	02 - B	Current CNOS Contention Winners
62 (98)	IRCECONL	02 - B	Current CNOS Contention Losers
64 (100)	IRCE1RY	02 - B	Primaries Currently Used
66 (102)	IRCE2RY	02 - B	Secondaries Currently Used
68 (104)			End of Record

Monitoring Statistics Record (MN4 - Type 50)

This record is available only for CICS systems running CICS/ESA version 4.1.

Table 51. Monitoring Statistics Records: Type 50

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	MN4TRID	04 - C	TRAN - Transaction ID
20 (32)	MN4TEID	04 - C	TERM - Terminal ID
24 (36)	MN4USID	08 - C	USERID - User ID
2C (44)	MN4TRTY	04 - C	TTYPE - Transaction Type
30 (48)	MN4ATTT	08 - S	START - Task Start Time
38 (56)	MN4DETT	08 - S	STOP - Task Stop Time
40 (64)	MN4TRSN	04 - C	TRANNUM - Transaction Sequence Number
44 (68)	MN4TPRI	04 - B	TRANPRI - Transaction Priority
48 (72)	MN4TCLSN	08 - C	TCLSNAME - Transaction Class Name
50 (80)	MN4LUNM	08 - C	LUNAME - VTAM Logical Unit Name
58 (88)	MN4PGNM	08 - C	PGMNAME - First Program Name
60 (96)	MN4NETNM	20 - C	NETNAME - Originating System Name
74 (116)	MN4UOWID	08 - C	UOWID - Unit-of-Work Name
7C (124)	MN4RSYS	04 - C	RSYSID - Remote SYSID Routed To
80 (128)	MN4ERROR	04 - X	TASKFLAG - Transaction Error Flags
84 (132)	MN4ABCDO	04 - C	ABCODEO - Original Transaction Abend Codes
88 (136)	MN4ABCDC	04 - C	ABCODEC - Current Transaction Abend Code
8C (140)	MN4TYPE	04 - C	RTYPE - Record Type
90 (144)	MN4PINMC	04 - B	TCMSGIN1 - Primary TC Messages In
94 (148)	MN4TCI1C	04 - B	TCCHRIN1 - Primary TC Characters In
98 (152)	MN4POUMC	04 - B	TCMSGOU1 - Primary TC Messages Out
9C (156)	MN4TCO1C	04 - B	TCCHROU1 - Primary TC Characters Out
A0 (160)	MN4SINMC	04 - B	TCMSGIN2 - Secondary TC Messages In
A4 (164)	MN4TCI2C	04 - B	TCCHRIN2 - Secondary TC Characters In
A8 (168)	MN4SOUMC	04 - B	TCMSGOU2 - Secondary TC Messages Out
AC (172)	MN4TCO2C	04 - B	TCCHROU2 - Secondary TC Characters Out
B0 (176)	MN462IMC	04 - B	TCM62IN2 - Secondary TC Messages for LU6.2. In

Table 51. Monitoring Statistics Records: Type 50 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
B4 (180)	MN462ICH	04 - B	TCC62IN2 - Secondary TC Characters for LU6.2. In
B8 (184)	MN462OMC	04 - B	TCM62OU2 - Secondary TC Messages for LU6.2. Out
BC (188)	MN462OCH	04 - B	TCC62OU2 - Secondary TC Characters for LU6.2. Out
C0 (192)	MN4TAC	04 - B	TCALLOCT - Number of TCTTE Allocate Requests
C4 (196)	MN4SCUGB	04 - B	SCUGETCT - Number of User Storage GETMAINs Below Line
C8 (200)	MN4SCUGA	04 - B	Number of User Storage GETMAINs Above Line
CC (204)	MN4SCCGB	04 - B	SCCGETCT - Number of CDSA Storage GETMAINs Below Line
D0 (208)	MN4SCCGA	04 - B	Number of ECDSA Storage GETMAINs Above Line
D4 (212)	MN4USHWB	04 - B	SCUSRHWM - User Task Storage HWM Below Line
D8 (216)	MN4USHWA	04 - B	User Task Storage HWM Above Line
DC (220)	MN4CHWMB	04 - B	SC24CHWM - CDSA Storage HWM Below Line
E0 (224)	MN4CHWMA	04 - B	SC31CHWM - ECDSA Storage HWM Above Line
E4 (228)	MN4UTSOB	08 - X	SCUSRSTG - User Task Storage Occupancy Below Line
EC (236)	MN4UTSOA	08 - X	User Task Storage Occupancy Above Line
F4 (244)	MN4COCCB	08 - X	SC24COCC - CDSA Storage Occupancy Below Line
FC (252)	MN4COCCA	08 - X	SC31COCC - ECDSA Storage Occupancy Above Line
104 (260)	MN4PCUSE	04 - B	PCSTGHWM - Program Storage HWM
108 (264)	MN4PC31A	04 - B	PC31AHWM - Program Storage HWM Above Line
10C (268)	MN4PCUSB	04 - B	PC24BHWM - Program Storage HWM Below Line
110 (272)	MN4PCCAH	04 - B	PC31CHWM - ECDSA Program Storage HWM Above Line
114 (276)	MN4PCCBH	04 - B	PC24CHWM - CDSA Program Storage HWM Below Line
118 (280)	MN4PCRAH	04 - B	PC31RHWM - R/O Program Storage HWM Above Line
11C (284)	MN4PCRBH	04 - B	PC24RHWM - R/O Program Storage HWM Below Line
120 (288)	MN4PCSAH	04 - B	PC31SHWM - Shared Program Storage HWM Above Line
124 (292)	MN4PCSBH	04 - B	PC24SHWM - Shared Program Storage HWM Below Line
128 (296)	MN4FCGC	04 - B	FCGETCT - Number of File GETs
12C (300)	MN4FCPC	04 - B	FCPUTCT - Number of File PUTs
130 (304)	MN4FCBC	04 - B	FCBRWCT - Number of File Browses
134 (308)	MN4FCAC	04 - B	FCADDCT - Number of File Adds
138 (312)	MN4FCDC	04 - B	FCDELCT - Number of File Deletes

Table 51. Monitoring Statistics Records: Type 50 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
13C (316)	MN4FCTC	04 - B	FCTOTCT - Total File Control Requests
140 (320)	MN4FCAMC	04 - B	FCAMCT - Number of Access Method Requests
144 (324)	MN4TDGC	04 - B	TDGETCT - Number of Transient Data GETs
148 (328)	MN4TDPC	04 - B	TDPUTCT - Number of Transient Data PUTs
14C (332)	MN4TDRC	04 - B	TDPURCT - Number of Transient Data Purges
150 (336)	MN4TDTC	04 - B	TDTOTCT - Total Transient Data Requests
154 (340)	MN4TSGC	04 - B	TSGETCT - Number of Temporary Storage GETs
158 (344)	MN4TSPAC	04 - B	TSPUTACT - Number of Temporary Storage Aux PUTs
15C (348)	MN4TSPMC	04 - B	TSPUTMCT - Number of Temporary Storage Main PUTs
160 (352)	MN4TSTC	04 - B	TSTOTCT - Total Temporary Storage Requests
164 (356)	MN4BMMC	04 - B	BMSMAPCT - Number of BMS Map Requests
168 (360)	MN4BMIC	04 - B	BMSINCT - Number of BMS In Requests
16C (364)	MN4BMOC	04 - B	BMSOUTCT - Number of BMS Out Requests
170 (368)	MN4BMTC	04 - B	BMSTOTCT - Total BMS Requests
174 (372)	MN4PCLIC	04 - B	PCLINKCT - Number of Program Links
178 (376)	MN4PCXC	04 - B	PCXCTLCT - Number of Program XCTLs
17C (380)	MN4PCLOC	04 - B	PCLOADCT - Number of Program Loads
180 (384)	MN4JCC	04 - B	JCPUWRCT - Number of Journal Output Requests
184 (388)	MN4ICC	04 - B	ICPUINCT - Number of Interval Control Starts
188 (392)	MN4SPPC	04 - B	SPSYNCCT - Number of Syncpoint Requests
18C (396)	MN4SZACT	04 - B	SZALLOCT - Number of FEPI Allocates
190 (400)	MN4SZRCT	04 - B	SZRCVCT - Number of FEPI Receives
194 (404)	MN4SZSCT	04 - B	SZSENDCT - Number of FEPI Sends
198 (408)	MN4SZTCT	04 - B	SZSTRTCT - Number of FEPI Starts
19C (412)	MN4SZCOT	04 - B	SZCHROUT - Number of Characters Sent via FEPI
1A0 (416)	MN4SZCIN	04 - B	SZCHRIN - Number of Characters Received via FEPI
1A4 (420)	MN4SZATO	04 - B	SZALLCTO - Number of FEPI Allocate Timeouts
1A8 (424)	MN4SZRTO	04 - B	SZRCVTO - Number of FEPI Receive Timeouts
1AC (428)	MN4SZTOT	04 - B	SZTOTCT - Total Number of FEPI Requests
1B0 (432)	MN4DIST	08 - M	USRDISPT - User Task Dispatch Time

Table 51. Monitoring Statistics Records: Type 50 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1B8 (440)	MN4CPUT	08 - M	USRCPUT - User Task CPU Time
1C0 (448)	MN4SUST	08 - M	SUSPTIME - Task Suspend Time
1C8 (456)	MN4DWT	08 - M	DISPWTT - Dispatch Wait Time
1D0 (464)	MN4EXWT	08 - M	EXWTTIME - Exception Wait Time
1D8 (472)	MN4TCWT	08 - M	TCIOWTT - Terminal Control I/O Wait Time
1E0 (480)	MN4FCWT	08 - M	FCIOWTT - File Control I/O Wait Time
1E8 (488)	MN4JCWT	08 - M	JCIOWTT - Journal Control I/O Wait Time
1F0 (496)	MN4TSWT	08 - M	TSIOWTT - Temorary Storage I/O Wait Time
1F8 (504)	MN4IRWT	08 - M	IRIOWTT - IR I/O Wait Time
200 (512)	MN4TDWT	08 - M	TDIOWTT - Transient Data I/O Wait Time
208 (520)	MN4PCLT	08 - M	PCLOADTM - Program Load Time
210 (528)	MN4FDDLY	08 - M	DSPDELAY - 1st Dispatch Delay (TCLASS, MXT,etc.)
218 (536)	MN4FDTCL	08 - M	TCLDELAY - 1st Dispatch Delay Due to TCLASS
220 (544)	MN4FDMXT	08 - M	MXTDELAY - 1st Dispatch Delay Due to MXT
228 (552)	MN4DENQ	08 - M	ENQDELAY - KC ENQ Delay Time
230 (560)	MN461WT	08 - M	LU61WTT - LU61 I/O Wait Time
238 (568)	MN462WT	08 - M	LU62WTT - LU62 I/O Wait Time
240 (576)	MN4SZWT	08 - M	SZWAIT - FEPI Suspend Time
248 (584)	MN4RMIT	08 - M	RMITIME - Total RMI Elapsed Time
250 (592)	MN4RMIS	08 - M	RMISUSP - Total RMI Suspend Time
258 (600)			End of Record

Monitoring Statistics Global Record (MNG - Type 51)

Table 52. Monitoring Statistics Global Records: Type 51

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	MNGER	04 - B	Number of Exception Records
20 (32)	MNGERS	04 - B	Number of Exception Records Supported by Exit
24 (36)	MNGPR	04 - B	Number of Performance Records
28 (40)	MNGPRS	04 - B	Number of Performance Records Supported by Exit
2C (44)	MNGSMFR	04 - B	Number of SMF Records
30 (48)	MNGSMFE	04 - B	Number of SMF Errors
34 (52)	MNGSYSER	04 - B	Number of Sysevent Records
38 (56)	MNGSYSEE	04 - B	Number of Sysevent Errors
3C (60)			End of Record

Monitoring Statistics Resource Record (MNS - Type 52)

This record is available only for CICS systems running CICS Transaction Server (CTS) version 1.1 or higher.

Table 53. Monitoring Statistics Resource Records: Type 52

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	MNSTRID	04 - C	TRAN - Transaction ID
20 (32)	MNSTEID	04 - C	TERM - Terminal ID
24 (36)	MNSUSID	08 - C	USERID - User ID
2C (44)	MNSTRTY	04 - C	TTYPE - Transaction Type
30 (48)	MNSATTT	08 - S	START - Task Start Time
38 (56)	MNSDETT	08 - S	STOP - Task Stop Time
40 (64)	MNSTRSN	04 - C	TRANNUM - Transaction Sequence Number
44 (68)	MNSTPRI	04 - B	TRANPRI - Transaction Priority
48 (72)	MNSTCLSN	08 - C	TCLSNAME - Transaction Class Name
50 (80)	MNSLUNM	08 - C	LUNAME - VTAM Logical Unit Name
58 (88)	MNSPGNM	08 - C	PGMNAME - First Program Name

Table 53. Monitoring Statistics Resource Records: Type 52 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
60 (96)	MNSNETNM	20 - C	NETUOWPX - Network Unit-of-Work Netname
74 (116)	MNSUOWID	08 - C	NETUOWSX - Network Unit-of-Work Instance/Sequence Number
7C (124)	MNSRSYS	04 - C	RSYSID - Remote SYSID Routed To
80 (128)	MNSPRCNT	04 - B	PERRECNT - Performance Record Count
84 (132)	MNSRMUOW	08 - X	RMUOWID - Recovery Manager Unit-of-Work ID
8C (140)	MNSSRVCL	08 - C	SRVCLSNM - Workload Manager Service Class Name
94 (148)	MNSRPTCL	08 - C	RPTCLSNM - Workload Manager Report Class Name
9C (156)	MNSFCTY	04 - C	FCTYNAME - Transaction Facility Name
A0 (160)	MNSTRFL1	01 - X	Transaction Flag 1
A1 (161)	MNSTRFL2	01 - X	Transaction Flag 2
A2 (162)	MNSTRFL3	01 - X	Transaction Flag 3
A3 (163)	MNSTRFL4	01 - X	Transaction Flag 4
A4 (164)	MNSTRFL5	01 - X	Transaction Flag 5
A5 (165)	MNSTRFL6	01 - X	Transaction Flag 6 - Reserved
A6 (166)	MNSTRFL7	01 - X	Transaction Flag 7 - Reserved
A7 (167)	MNSTRFL8	01 - X	Transaction Flag 8
A8 (168)	MNSNATUR	01 - X	Nature
A9 (169)	MNSSESST	01 - X	Session Type
AA (170)	MNSACMTH	01 - X	Access Method
AB (171)	MNSDVTCD	01 - X	Device Type Code
AC (172)	MNSTECNM	04 - C	TERMCONM - Terminal Connection Name
B0 (176)	MNSBTRID	04 - C	BRDGTRAN - Bridge Transaction ID
B4 (180)	MNSURID	16 - X	RRMSURID - RRMS/MVS Unit of Recovery ID
C4 (196)	MNSPNAME	36 - C	PRCSNAME - Process Name
E8 (232)	MNSPTYPE	08 - C	PRCSTYPE - Process Type
F0 (240)	MNSPRCID	52 - C	PRCSID - Process ID
124 (292)	MNSACTID	52 - C	ACTVTYID - Activity ID
158 (344)	MNSACTNM	16 - C	ACTVTYNM - Activity Name
168 (360)	MNSCIPAD	16 - C	CLIPADDR - Client IP Address

Table 53. Monitoring Statistics Resource Records: Type 52 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
178 (376)	MNSTGPID	28 - X	TRNGRPID - Transaction Group ID
194 (404)	MNSNETID	08 - C	NETID - Network ID
19C (412)	MNSRLUNM	08 - C	RLUNAME - Real LUNAME
1A4 (420)	MNSTCPSV	08 - C	TCPSRVCE - TCP/IP Service Name
1AC (428)	MNSPORTN	04 - B	PORTNUM - TCP/IP Service Port Number
1B0 (432)	MNSOTSID	128 - X	OTSTID - OTS Transaction ID
230 (560)	MNSERROR	04 - X	TASKFLAG - Transaction Error Flags
234 (564)	MNSABCDO	04 - C	ABCODEO - Original Transaction Abend Codes
238 (568)	MNSABCDC	04 - C	ABCODEC - Current Transaction Abend Code
23C (572)	MNSTYPE	04 - C	RTYPE - Record Type
240 (576)	MNSPINMC	04 - B	TCMSGIN1 - Primary TC Messages In
244 (580)	MNSTCI1C	04 - B	TCCHRIN1 - Primary TC Characters In
248 (584)	MNSPOUMC	04 - B	TCMSGOU1 - Primary TC Messages Out
24C (588)	MNSTCO1C	04 - B	TCCHROU1 - Primary TC Characters Out
250 (592)	MNSSINMC	04 - B	TCMSGIN2 - Secondary TC Messages In
254 (596)	MNSTCI2C	04 - B	TCCHRIN2 - Secondary TC Characters In
258 (600)	MNSSOUMC	04 - B	TCMSGOU2 - Secondary TC Messages Out
25C (604)	MNSTCO2C	04 - B	TCCHROU2 - Secondary TC Characters Out
260 (608)	MNS62IMC	04 - B	TCM62IN2 - Secondary TC Messages for LU6.2 In
264 (612)	MNS62ICH	04 - B	TCC62IN2 - Secondary TC Characters for LU6.2 In
268 (616)	MNS62OMC	04 - B	TCM62OU2 - Secondary TC Messages for LU6.2 Out
26C (620)	MNS62OCH	04 - B	TCC62OU2 - Secondary TC Characters for LU6.2 Out
270 (624)	MNSTAC	04 - B	TCALLOCT - Number of TCTTE Allocate Requests
274 (628)	MNSSCUGB	04 - B	SCUGETCT - Number of User Storage GETMAINs Below Line
278 (632)	MNSSCUGA	04 - B	Number of User Storage GETMAINs Above Line
27C (636)	MNSSCCGB	04 - B	SCCGETCT - Number of CDSA Storage GETMAINs Below Line
280 (640)	MNSSCCGA	04 - B	Number of ECDSA Storage GETMAINs Above Line
284 (644)	MNSUSHWB	04 - B	SCUSRHWM - User Task Storage HWM Below Line
288 (648)	MNSUSHWA	04 - B	User Task Storage HWM Above Line
28C (652)	MNSCHWMB	04 - B	SC24CHWM - CDSA Storage HWM Below Line

Table 53. Monitoring Statistics Resource Records: Type 52 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
290 (656)	MNSCHWMA	04 - B	SC31CHWM - ECDSA Storage HWM Above Line
294 (660)	MNSUTSOB	08 - X	SCUSRSTG - User Task Storage Occupancy Below Line
29C (668)	MNSUTSOA	08 - X	User Task Storage Occupancy Above Line
2A4 (676)	MNSCOCCB	08 - X	SC24COCC - CDSA Storage Occupancy Below Line
2AC (684)	MNSCOCCA	08 - X	SC31COCC - ECDSA Storage Occupancy Above Line
2B4 (692)	MNSSC24S	04 - B	SC24SGCT - Shared Storage GETMAIN Count Below 16MB
2B8 (696)	MNSSC24G	04 - B	SC24GSHR - Shared Storage Bytes GETMAINed
2BC (700)	MNSSC24F	04 - B	SC24FSHR - Shared Storage Bytes FREEMAINed
2C0 (704)	MNSSC31S	04 - B	SC31SGCT - Shared Storage GETMAIN Count Above 16MB
2C4 (708)	MNSSC31G	04 - B	SC31GSHR - Shared Storage Bytes GETMAINed
2C8 (712)	MNSSC31F	04 - B	SC31FSHR - Shared Storage Bytes FREEMAINed
2CC (716)	MNSPCUSE	04 - B	PCSTGHWM - Program Storage HWM
2D0 (720)	MNSPC31A	04 - B	PC31AHWM - Program Storage HWM Above Line
2D4 (724)	MNSPCUSB	04 - B	PC24BHWM - Program Storage HWM Below Line
2D8 (728)	MNSPCCAH	04 - B	PC31CHWM - ECDSA Program Storage HWM Above Line
2DC (732)	MNSPCCBH	04 - B	PC24CHWM - CDSA Program Storage HWM Below Line
2E0 (736)	MNSPCRAH	04 - B	PC31RHWM - R/O Program Storage HWM Above Line
2E4 (740)	MNSPCRBH	04 - B	PC24RHWM - R/O Program Storage HWM Below Line
2E8 (744)	MNSPCSAH	04 - B	PC31SHWM - Shared Program Storage HWM Above Line
2EC (748)	MNSPCSBH	04 - B	PC24SHWM - Shared Program Storage HWM Below Line
2F0 (752)	MNSFCGC	04 - B	FCGETCT - Number of File GETs
2F4 (756)	MNSFCPC	04 - B	FCPUTCT - Number of File PUTs
2F8 (760)	MNSFCBC	04 - B	FCBRWCT - Number of File Browses
2FC (764)	MNSFCAC	04 - B	FCADDCT - Number of File Adds
300 (768)	MNSFCDC	04 - B	FCDELCT - Number of File Deletes
304 (772)	MNSFCTC	04 - B	FCTOTCT - Total File Control Requests
308 (776)	MNSFCAMC	04 - B	FCAMCT - Number of Access Method Requests
30C (780)	MNSTDGC	04 - B	TDGETCT - Number of Transient Data GETs
310 (784)	MNSTDPC	04 - B	TDPUTCT - Number of Transient Data PUTs
314 (788)	MNSTDRC	4 - B	TDPURCT - Number of Transient Data Purges

Table 53. Monitoring Statistics Resource Records: Type 52 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
318 (792)	MNSTDTC	04 - B	TDTOTCT - Total Transient Data Requests
31C (796)	MNSTSGC	04 - B	TSGETCT - Number of Temporary Storage GETs
320 (800)	MNSTSPAC	04 - B	TSPUTACT - Number of Temporary Storage PUTs Auxiliary
324 (804)	MNSTSPMC	04 - B	TSPUTMCT - Number of Temporary Storage PUTs Main
328 (808)	MNSTSTC	04 - B	TSTOTCT - Total Temporary Storage Requests
32C (812)	MNSBMMC	04 - B	BMSMAPCT - Number of BMS Map Requests
330 (816)	MNSBMIC	04 - B	BMSINCT - Number of BMS In Requests
334 (820)	MNSBMOC	04 - B	BMSOUTCT - Number of BMS Out Requests
338 (824)	MNSBMTC	04 - B	BMSTOTCT - Total BMS Requests
33C (828)	MNSPCLIC	04 - B	PCLINKCT - Number of Program Links
340 (832)	MNSPCXC	04 - B	PCXCTLCT - Number of Program XCTLs
344 (836)	MNSPCLOC	04 - B	PCLOADCT - Number of Program Loads
348 (840)	MNSPCLUC	04 - B	PCLURMCT - Number of Program Links to URMs
34C (844)	MNSPCDPL	04 - B	PCDPLCT - Number of DPL Program Links
350 (848)	MNSJNLCT	04 - B	JNLWRTCT - Number of Journal Write Requests
354 (852)	MNSLGWCT	04 - B	LOGWRTCT - Number of CICS Logger Write Requests
358 (856)	MNSICC	04 - B	ICPUINCT - Number of Interval Control Starts
35C (860)	MNSICTC	04 - B	ICTOTCT - Total Interval Control Requests
360 (864)	MNSSPPC	04 - B	SPSYNCCT - Number of Syncpoint Requests
364 (868)	MNSCFACT	04 - B	CFCAPICT - Number of OO Class Library API Requests
368 (872)	MNSSZACT	04 - B	SZALLOCT - Number of FEPI Allocates
36C (876)	MNSSZRCT	04 - B	SZRCVCT - Number of FEPI Receives
370 (880)	MNSSZSCT	04 - B	SZSENDCT - Number of FEPI Sends
374 (884)	MNSSZTCT	04 - B	SZSTRTCT - Number of FEPI Starts
378 (888)	MNSSZCOT	04 - B	SZCHROUT - Number of Characters Sent via FEPI
37C (892)	MNSSZCIN	04 - B	SZCHRIN - Number of Characters Received via FEPI
380 (896)	MNSSZATO	04 - B	SZALLCTO - Number of FEPI Allocate Timeouts
384 (900)	MNSSZRTO	04 - B	SZRCVTO - Number of FEPI Receive Timeouts
388 (904)	MNSSZTOT	04 - B	SZTOTCT - Total Number of FEPI Requests
38C (908)	MNSBARSC	04 - B	BARSYNCT - Number of Run Process/Activity Synchronous

Table 53. Monitoring Statistics Resource Records: Type 52 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
390 (912)	MNSBARAC	04 - B	BARASYCT - Number of Run Process/Activity Asynchronous
394 (916)	MNSBALKC	04 - B	BALKPACT - Number of Link Process/Activity Requests
398 (920)	MNSBADPC	04 - B	BADPROCT - Number of Define Process Requests
39C (924)	MNSBADAC	04 - B	BADACTCT - Number of Define Activity Requests
3A0 (928)	MNSBTPAC	04 - B	BARSPACT - Number of Reset Process/Activity Requests
3A4 (932)	MNSBSPAC	04 - B	BASUPACT - Number of Suspend Process/Activity Requests
3A8 (936)	MNSBRPAC	04 - B	BARMPACT - Number of Resume Process/Activity Requests
3AC (940)	MNSBDCPC	04 - B	BADCPACT - Number of Delete Activity and Cancel
3B0 (944)	MNSBAAPC	04 - B	BAACQPCT - Number of Acquire Process Requests
3B4 (948)	MNSBATPC	04 - B	BATOTPCT - Total Number of Process/Activity Requests
3B8 (952)	MNSBAPDC	04 - B	BAPRDCCT - Number of Process Data Container Requests
3BC (956)	MNSBAADC	04 - B	BAACDCCT - Number of Activity Data Container Requests
3C0 (960)	MNSBATCC	04 - B	BATOTCCT - Total Number of Data Container Requests
3C4 (964)	MNSBAREC	04 - B	BARATECT - Number of Retrieve Reattach Event Requests
3C8 (968)	MNSBADIC	04 - B	BADFIECT - Number of Define Input Event Requests
3CC (972)	MNSBATAC	04 - B	BATIAECT - Number of Timer Associated Event Requests
3D0 (976)	MNSBATEC	04 - B	BATOTECT - Total Number of Event Requests
3D4 (980)	MNSWBRCT	04 - B	WBRCVCT - Number of WEB Receive Requests
3D8 (984)	MNSWBCIN	04 - B	WBCHRIN - Number of Characters Received via WEB Requests
3DC (988)	MNSWBSCT	04 - B	WBSENDCT - Number of WEB Send Requests
3E0 (992)	MNSWBCOT	04 - B	WBCHROUT - Number of Characters Sent via WEB Requests
3E4 (996)	MNSWBTC	04 - B	WBTOTCT - Total Number of WEB Requests
3E8 (1000)	MNSWBRPR	04 - B	WBREPRCT - Number of Repository Reads
3EC (1004)	MNSWBRPW	04 - B	WBREPWCT - Number of Repository Writes
3F0 (1008)	MNSWBERC	04 - B	WBEXTRCT - Number of WEB Extract Requests
3F4 (1012)	MNSWBBRC	04 - B	WBBRWCT - Number of WEB Browse Requests
3F8 (1016)	MNSWBRRC	04 - B	WBREADCT - Number of WEB Read Requests
3FC (1020)	MNSWBWRC	04 - B	WBWRITET - Number of WEB Write Requests
400 (1024)	MNSDHCRC	04 - B	DHCRECT - Number of Document Create Requests
404 (1028)	MNSDHINC	04 - B	DHINSCT - Number of Document Insert Requests

Table 53. Monitoring Statistics Resource Records: Type 52 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
408 (1032)	MNSDHSTC	04 - B	DHSETCT - Number of Document Set Requests
40C (1036)	MNSDHRTC	04 - B	DHRETCT - Number of Document Retrieve Requests
410 (1040)	MNSDHTC	04 - B	DHTOTCT - Total Number of Document Requests
414 (1044)	MNSDHTDL	04 - B	DHTOTDCL - Total Document Created Length
418 (1048)	MNSSOBEN	04 - B	SOBYENCT - Number of Bytes Encrypted
41C (1052)	MNSSOBDE	04 - B	SOBYDECT - Number of Bytes Decrypted
420 (1056)	MNSSOERC	04 - B	SOEXTRCT - Number of Extract TCP/IP and Extract
424 (1060)	MNSSOCNS	04 - B	SOCNPSCT - Number of Create Non-Persistent Socket Requests
428 (1064)	MNSSOCPS	04 - B	SOCPSCT - Number of Create Persistent Socket Requests
42C (1068)	MNSSONHW	04 - B	SONPSHWM - Non-Persistent Socket HWM
430 (1072)	MNSSOPHW	04 - B	SOPSHWM - Persistent Socket HWM
434 (1076)	MNSSORCT	04 - B	SORCVCT - Number of Socket Receive Requests
438 (1080)	MNSSOCIN	04 - B	SOCHRIN - Number of Characters Received
43C (1084)	MNSSOSCT	04 - B	SOSENDCT - Number of Socket Send Requests
440 (1088)	MNSSOCOT	04 - B	SOCHROUT - Number of Characters Sent
444 (1092)	MNSSOTC	04 - B	SOTOTCT - Total Number of Socket Requests
448 (1096)	MNSIMSRC	04 - B	IMSREQCT - Total Number of IMS Requests
44C (1100)	MNSDB2RC	04 - B	DB2REQCT - Total Number of DB2 Requests
450 (1104)	MNSCHMDC	04 - B	CHMODECT - Number of CICS Dispatcher Change Modes
454 (1108)	MNSTCBAC	04 - B	TCBATTCT - Number of CICS Dispatcher TCB Attaches
458 (1112)	MNSDIST	08 - M	USRDISPT - User Task Dispatch Time
460 (1120)	MNSCPUT	08 - M	USRCPUT - User Task CPU Time
468 (1128)	MNSSUST	08 - M	SUSPTIME - Task Suspend Time
470 (1136)	MNSDWT	08 - M	DISPWTT - Dispatch Wait Time
478 (1144)	MNSQRDSP	08 - M	QRDISPT - User Task QR Mode Dispatch Time
480 (1152)	MNSQRCPU	08 - M	QRCPUT - User Task QR Mode CPU Time
488 (1160)	MNSMSDSP	08 - M	MSDISPT - User Task Other Mode Dispatch Time
490 (1168)	MNSMSCPU	08 - M	MSCPUT - User Task Other Mode CPU Time
498 (1176)	MNSKY8DS	08 - M	KY8DISPT - User Task Key 8 Mode Dispatch Time
4A0 (1184)	MNSKY8CP	08 - M	KY8CPUT - User Task Key 8 Mode CPU Time

Table 53. Monitoring Statistics Resource Records: Type 52 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
4A8 (1192)	MNSL8CPU	08 - M	L8CPUT - User Task L8 Mode CPU Time
4B0 (1200)	MNSJ8CPU	08 - M	J8CPUT - User Task J8 Mode CPU Time
4B8 (1208)	MNSS8CPU	08 - M	S8CPUT - User Task S8 Mode CPU Time
4C0 (1216)	MNSQRDLY	08 - M	QRMODDLY - QR Mode Delay Time
4C8 (1224)	MNSOTDLY	08 - M	MAXOTDLY - Maximum Open TCB Delay Time
4D0 (1232)	MNSEXWT	08 - M	EXWTTIME - Exception Wait Time
4D8 (1240)	MNSTCWT	08 - M	TCIOWTT - Terminal Control I/O Wait Time
4E0 (1248)	MNSFCWT	08 - M	FCIOWTT - File Control I/O Wait Time
4E8 (1256)	MNSJCWT	08 - M	JCIOWTT - Journal Control I/O Wait Time
4F0 (1264)	MNSTSWT	08 - M	TSIOWTT - Temporary Storage I/O Wait Time
4F8 (1272)	MNSIRWT	08 - M	IRIOWTT - IR I/O Wait Time
500 (1280)	MNSTDWT	08 - M	TDIOWTT - Transient Data I/O Wait Time
508 (1288)	MNSPCLT	08 - M	PCLOADTM - Program Load Time
510 (1296)	MNSFDDLY	08 - M	DSPDELAY - 1st Dispatch Delay (TCLASS, MXT, etc.)
518 (1304)	MNSFDTCL	08 - M	TCLDELAY - 1st Dispatch Delay Due to TCLASS
520 (1312)	MNSFDMXT	08 - M	MXTDELAY - 1st Dispatch Delay Due to MXT
528 (1320)	MNSNQDLY	08 - M	ENQDELAY - Local ENQ Delay Time
530 (1328)	MNSGQDLY	08 - M	GNQDELAY - Global ENQ Delay Time
538 (1336)	MNS61WT	08 - M	LU61WTT - LU61 I/O Wait Time
540 (1344)	MNS62WT	08 - M	LU62WTT - LU62 I/O Wait Time
548 (1352)	MNSSZWT	08 - M	SZWAIT - FEPI Suspend Time
550 (1360)	MNSRMIT	08 - M	RMITIME - Total RMI Elapsed Time
558 (1368)	MNSRMIS	08 - M	RMISUSP - Total RMI Suspend Time
560 (1376)	MNSSYNCT	08 - M	SYNCTIME - Syncpoint Elapsed Time
568 (1384)	MNSRLSWT	08 - M	RLSWAIT - RLS Wait Time
570 (1392)	MNSRLSCP	08 - M	RLSCPUT - RLS SRB CPU Time
578 (1400)	MNSLMDLY	08 - M	LMDELAY - Lock Manager Delay Time
580 (1408)	MNSWTXWT	08 - M	WTEXWAIT - Wait External Wait Time
588 (1416)	MNSWCEWT	08 - M	WTCEWAIT - Wait CICS/Event Wait Time
590 (1424)	MNSICDLY	08 - M	ICDELAY - Interval Control Delay Time

Table 53. Monitoring Statistics Resource Records: Type 52 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
598 (1432)	MNSGVPWT	08 - M	GVUPWAIT - Give Up Control Wait Time
5A0 (1440)	MNSTSHWT	08 - M	TSSHWAIT - Shared Temporary Storage Wait Time
5A8 (1448)	MNSCDTWT	08 - M	CFDTWAIT - CF Data Table Wait Time
5B0 (1456)	MNSSYWTT	08 - M	SRVSYWTT - Server Syncpoint Wait Time
5B8 (1464)	MNSRRSWT	08 - M	RRMSWAIT - RRMS/MVS Wait Time
5C0 (1472)	MNSRTRWT	08 - M	RUNTRWTT - Run Transaction Wait Time
5C8 (1480)	MNSSYDLY	08 - M	SYNCDLY - Syncpoint Delay Time
5D0 (1488)	MNSSOWT	08 - M	SOIOWTT - Socket I/O Wait Time
5D8 (1496)	MNSIMSWT	08 - M	IMSWAIT - IMS Wait Time
5E0 (1504)	MNSRDQWT	08 - M	DB2RDYQW - DB2 READYQ Wait Time
5E8 (1512)	MNSCONWT	08 - M	DB2CONWT - DB2 Connection Wait Time
5F0 (1520)	MNSDB2WT	08 - M	DB2WAIT - DB2 Wait Time
5F8 (1528)	MNSJVMT	08 - M	JVMTIME - Total JVM Elapsed Time
600 (1536)	MNSJVMS	08 - M	JVMSUSP - Total JVM Suspend Time
608 (1544)	MNSSOOWT	08 - M	SOOIOWTT - Outbound Socket I/O Wait Time
610 (1552)	MNSRQRWT	08 - M	RQRWAIT - Request Receiver Wait Time
618 (1560)	MNSRQPWT	08 - M	RQPWAIT - Request Processor Wait Time
620 (1568)	MNSOIDWT	08 - M	OTSINDWT - OTS In Doubt Wait Time
628 (1576)	MNSJVMIT	08 - M	JVMITIME - JVM Elapsed Time Initialize
630 (1584)	MNSJVMRT	08 - M	JVMRTIME - JVM Elapsed Time Resetting
638 (1592)			End of Record

Transaction Dump Resource Record (TDS - Type 55)

Table 54. Transaction Dump Resource Records: Type 55

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	TDSCODE	04 - C	Dump Code
20 (32)	TDSSTKN	04 - B	Number of System Dumps Taken
24 (36)	TDSSSUPR	04 - B	Number of System Dumps Suppressed
28 (40)	TDSTTKN	04 - B	Number of Transaction Dumps Taken
2C (44)	TDSTSUPR	04 - B	Number of Transaction Dumps Suppressed
30 (48)			End of Record

Transaction Dump Global Record (TDG - Type 57)

Table 55. Transaction Dump Global Records: Type 57

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	TDGTAKEN	04 - B	Number of Transaction Dumps Taken
20 (32)	TDGSUPP	04 - B	Number of Transaction Dumps Suppressed
24 (36)			End of Record

System Dump Resource Record (SDS - Type 58)

Table 56. System Dump Resource Records: Type 58

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	SDSCODE	08 - C	Dump Code
24 (36)	SDSSTKN	04 - B	Number of System Dumps Taken
28 (40)	SDSSSUPR	04 - B	Number of System Dumps Suppressed
2C (44)	SDSTTKN	04 - B	Number of Transaction Dumps Taken
30 (48)	SDSTSUPR	04 - B	Number of Transaction Dumps Suppressed
34 (52)			End of Record

System Dump Global Record (SDG - Type 5A)

Table 57. System Dump Global Records: Type 5A

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	SDGTAKEN	04 - B	Number of System Dumps Taken
20 (32)	SDGSUPPR	04 - B	Number of System Dumps Suppressed
24 (36)			End of Record

Logger Record (LGR - Type 5D)

Table 58. Logger Records: Type 5D

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	LGRJNLNM	08 - C	Journal Name
24 (36)	LGRJTYPE	01 - X	Journal Type - MVS/SMF/Dummy
26 (38)	LGRSTRNM	26 - C	Log Stream Name
40 (64)	LGRWRITE	04 - B	Number of Journal Writes
44 (68)	LGRBYTES	08 - X	Total Number of Bytes Written
4C (76)	LGRBUFLS	04 - B	Number of Buffer Flush Requests
50 (80)			End of Record

Log Stream Record (LGS - Type 5E)

Table 59. Log Stream Records: Type 5E

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	LGSSTRNM	26 - C	Log Stream Name
38 (56)	LGSWRITE	04 - B	Number of Log Writes
3C (60)	LGSBYTES	08 - X	Total Number of Bytes Written
44 (68)	LGSCUFWT	04 - B	Current Number of Force Waits
48 (72)	LGSPKFWT	04 - B	Peak Number of Force Waits
4C (76)	LGSTFCWA	04 - B	Total Number of Force Waits
50 (80)	LGSBUFWA	04 - B	Number of Waits Due to Buffer Full
54 (84)	LGSBRWST	04 - B	Number of Log Browse Starts
58 (88)	LGSBRWRE	04 - B	Number of Log Browse Reads
5C (92)	LGSDELET	04 - B	Number of Log Deletes
60 (96)	LGSRTYER	04 - B	Number of Retryable Errors
64 (100)	LGSBUFAP	04 - B	Number of Buffer Append Requests
68 (104)	LGSSYSLG	01 - C	System Log Flag
69 (105)	LGSDONLY	01 - C	DASD Only Flag
6A (106)		02	Reserved for Future Use
6C (108)	LGSSTRUC	16 - C	CF Structure Name
7C (124)	LGSMAXBL	04 - B	Maximum Block Length
80 (128)	LGSRETPD	04 - B	Data Retention Period
84 (132)	LGSAUTOD	01 - C	Data Auto Delete Flag
86 (134)			End of Record

Enqueue Manager Record (EQG - Type 61)

Table 60. Enqueue Manager Records: Type 61

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	EQGNPOOL	04 - B	Number of Enqueue Pools Following
20 (32)	EQGPOOL	08 - C	Enqueue Pool ID
28 (40)	EQGTNQSI	04 - B	Total Enqueues Issued
2C (44)	EQGTNQSW	04 - B	Total Enqueues Waited
30 (48)	EQGTNQWT	08 - M	Time Enqueues Had Waited (STCK)
38 (56)	EQGCNQSW	04 - B	Current Enqueues Waiting
3C (60)	EQGCNQWT	08 - M	Current Enqueues Waiting Time (STCK)
44 (68)	EQGGNQSW	04 - B	Total Sysplex Enqueues Waited
48 (72)	EQGGNQWT	08 - M	Time Sysplex Enqueues Had Waited (STCK)
50 (80)	EQGSNQSW	04 - B	Current Sysplex Enqueues Waiting
54 (84)	EQGSNQWT	08 - M	Current Sysplex Enqueues Wait Time (STCK)
5C (92)	EQGTNQSR	04 - B	Total Enqueues Retained
60 (96)	EQGTNQRT	08 - M	Time Enqueues were Retained (STCK)
68 (104)	EQGCNQSR	04 - B	Current Enqueues Retained
6C (108)	EQGCNQRT	08 - M	Current Enqueues Retained Time (STCK)
74 (116)	EQGTIRJB	04 - B	Total Immediately Rejected ENQBUSY
78 (120)	EQGTIRJR	04 - B	Total Immediately Rejected ENQ Retained
7C (124)	EQGTWRJR	04 - B	Total Waiting Enqueues Rejected Retained
80 (128)	EQGTWPOP	04 - B	Total Waiting Enqueues Purged by Operator
84 (132)	EQGTWPTO	04 - B	Total Waiting Enqueues Purged by Timeout
88 (136)			End of Record

Recovery Manager Record (RCV - Type 63)

Table 61. Recovery Manager Records: Type 63

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	RCVSYFWD	04 - B	Total Syncpoints Forward
20 (32)	RCVSYBWD	04 - B	Total Syncpoints Backward
24 (36)	RCVRESYN	04 - B	Total Resynchronizations
28 (40)	RCVTSHIN	04 - B	Total Shunted UOWs for Indoubt
2C (44)	RCVTSHTI	08 - M	Total Time Shunted for Indoubt (STCK)
34 (52)	RCVCSHIN	04 - B	Current UOWs Shunted for Indoubt
38 (56)	RCVCSHTI	08 - M	Current Time Shunted Indoubt (STCK)
40 (64)	RCVTSHRO	04 - B	Total UOWs Shunted for RO Commit Fail
44 (68)	RCVTSHTR	08 - M	Total Time Shunted for RO Fail (STCK)
4C (76)	RCVCSHRO	04 - B	Current UOWs Shunt for RO Commit Fail
50 (80)	RCVCSHTR	08 - M	Current Time Shunted for RO Fail (STCK)
58 (88)	RCVIAFTR	04 - B	Total Forced Indoubt Actions - Trandef
5C (92)	RCVIAFTI	04 - B	Total Forced Indoubt Actions - Timeout
60 (96)	RCVIAFNW	04 - B	Total Forced Indoubt Actions - Nowait
64 (100)	RCVIAFOP	04 - B	Total Forced Indoubt Actions - Operator
68 (104)	RCVIAFOT	04 - B	Total Forced Indoubt Actions - Other
6C (108)	RCVIAMIS	04 - B	Total Indoubt Action Mismatches
70 (112)	RCVNWTD	04 - B	Total Forced for No Waiting in TD
74 (116)	RCVNW61	04 - B	Total Forced for No Waiting in LU61
78 (120)	RCVNWMRO	04 - B	Total Forced for No Waiting in MRO
7C (124)	RCVNWRMI	04 - B	Total Forced for No Waiting in RMI
80 (128)	RCVNWOTH	04 - B	Total Forced for No Waiting in Other
84 (132)			End of Record

DB2 Connection Record (D2G - Type 66)

Table 62. DB2 Connection Records: Type 66

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	D2GCONNM	08 - C	Name of the DB2CONN
24 (36)	D2GID	04 - C	DB2 Sysid
28 (40)	D2GRELEA	04 - C	Release of DB2
2C (44)	D2GCONGT	08 - M	Connect Time (GMT)
34 (52)	D2GCONLT	08 - M	Connect Time (Local)
3C (60)	D2GDISGT	08 - M	Disconnect Time (GMT)
44 (68)	D2GDISLT	08 - M	Disconnect Time (Local)
4C (76)	D2GTCBLI	04 - B	Maximum Number of TCBs
50 (80)	D2GTCBCU	04 - B	Current Number of TCBs
54 (84)	D2GTCBHW	04 - B	HWM of TCBs
58 (88)	D2GTCBFR	04 - B	Current Number of Free TCBs
5C (92)	D2GTCBRQ	04 - B	Number of Tasks on TCB Ready Queue
60 (96)	D2GTCBRH	04 - B	Peak Number of Tasks on TCB Ready Queue
64 (100)		40	Reserved for Future Use
8C (140)	D2GPLANN	08 - C	Pool Statistics
94 (148)	D2GPLANX	08 - C	PLANEXIT Name, if any
9C (156)	D2GAUTH	08 - C	Static Authorization ID, if any
A4 (164)	D2GAUTHT	01 - X	Pool Authorization Type, if any
A5 (165)	D2GACCOU	01 - X	ACCOUNTREC Setting
A6 (166)	D2GTHRDW	01 - X	THREADWAIT Setting
A7 (167)	D2GPRIOR	01 - X	Thread Priority
A8 (168)	D2GCALLS	04 - B	Number of Calls Using Pool
AC (172)	D2GSIGNO	04 - B	Number of Pool Signons
B0 (176)	D2GCOMMI	04 - B	Number of Commits
B4 (180)	D2GABORT	04 - B	Number of Aborts
B8 (184)	D2GSPHAS	04 - B	Number of Single Phase Commits
BC (188)	D2GTREUS	04 - B	Number of Thread Reuses

Table 62. DB2 Connection Records: Type 66 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
C0 (192)	D2GTTERM	04 - B	Number of Pool Thread Terminates
C4 (196)	D2GTWAIT	04 - B	Number of Pool Thread Waits
C8 (200)	D2GTLIMI	04 - B	Maximum Number of Pool Threads
CC (204)	D2GTCURR	04 - B	Current Number of Pool Threads
D0 (208)	D2GTHWM	04 - B	Peak Number of Pool Threads
D4 (212)	D2GTACUR	04 - B	Current Number of Tasks
D8 (216)	D2GTAHWM	04 - B	Peak Number of Tasks
DC (220)	D2GTATOT	04 - B	Total Number of Tasks
E0 (224)	D2GRCURR	04 - B	Number of Tasks on Ready Queue
E4 (228)	D2GRHWM	04 - B	Peak Number of Tasks on Ready Queue
E8 (232)		28	Reserved for Future Use
104 (260)	D2GCAUTH	08 - C	DSNC Command Statistics
10C (268)	D2GCAUTT	01 - X	Command Authorization Type, if any
10D (269)		03	Reserved for Future Use
110 (272)	D2GCCALL	04 - B	Number of DSNC Command Calls
114 (276)	D2GCSIGN	04 - B	Number of Command Signons
118 (280)	D2GCTTER	04 - B	Number of Command Thread Terminates
11C (284)	D2GCTOVE	04 - B	Number of Overflows to Pool
120 (288)	D2GCTLIM	04 - B	Maximum Number of Command Threads
124 (292)	D2GCTCUR	04 - B	Current Number of Command Threads
128 (296)	D2GCTHWM	04 - B	Peak Number of Command Threads
12C (300)			End of Record

DB2 Entry Record (D2S - Type 67)

Table 63. DB2 Entry Records: Type 67

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	D2SNAME	08 - C	Name of the DB2ENTRY
24 (36)	D2SPNAME	08 - C	Static Plan Name, if any
2C (44)	D2SPEXIT	08 - C	PLANEXIT Name, if any
34 (52)	D2SAUTHI	08 - C	Static Authorization ID, if any
3C (60)	D2SAUTHT	01 - X	Authorization Type, if any
3D (61)	D2SACCOU	01 - X	ACCOUNTREC Setting
3E (62)	D2STWAIT	01 - X	THREADWAIT Setting
3F (63)	D2SPRIOR	01 - X	Thread Priority
40 (64)	D2SCALLS	04 - B	Number of Calls Using DB2ENTRY
44 (68)	D2SSIGNO	04 - B	Number of Signons
48 (72)	D2SCOMMI	04 - B	Number of Commits
4C (76)	D2SABORT	04 - B	Number of Aborts
50 (80)	D2SSPHAS	04 - B	Number of Single Phase Commits
54 (84)	D2STREUS	04 - B	Number of Thread Reuses
58 (88)	D2STTERM	04 - B	Number of Thread Terminates
5C (92)	D2STOVER	04 - B	Number of Thread Waits or Overflows
60 (96)	D2STLIMI	04 - B	Maximum Number of Threads
64 (100)	D2STCURR	04 - B	Current Number of Threads
68 (104)	D2STHWM	04 - B	Peak Number of Threads
6C (108)	D2SPLIM	04 - B	Maximum Number of Protected Threads
70 (112)	D2SPTCUR	04 - B	Current Number of Protected Threads
74 (116)	D2SPTHWM	04 - B	Peak Number of Protected Threads
78 (120)	D2STACUR	04 - B	Current Number of Tasks
7C (124)	D2STAHWM	04 - B	Peak Number of Tasks
80 (128)	D2STATOT	04 - B	Total Number of Tasks
84 (132)	D2SRCURR	04 - B	Number of Tasks on Ready Queue

Table 63. DB2 Entry Records: Type 67 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
88 (136)	D2SRHWM	04 - B	Peak Number of Tasks on Ready Queue
8C (140)			End of Record

TCP/IP Services Global Record (TCG - Type 6B)

Table 64. TCP/IP Services Global Records: Type 6B

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	TCGMSLIM	04 - B	Maximum Sockets Limit
20 (32)	TCGCISOC	04 - B	Current Inbound Sockets
24 (36)	TCGPISOC	04 - B	Peak Inbound Sockets
28 (40)	TCGCOSOC	04 - B	Current Outbound Sockets
2C (44)	TCGPOSOC	04 - B	Peak Outbound Sockets
30 (48)	TCGCPSOC	04 - B	Current Persistent Outbound Sockets
34 (52)	TCGPPSOC	04 - B	Peak Persistent Outbound Sockets
38 (56)	TCGISOCR	04 - B	Number Inbound Sockets Created
3C (60)	TCGOSOCR	04 - B	Number Outbound Sockets Created
40 (64)	TCGOSOCC	04 - B	Number of Outbound Sockets Closed
44 (68)	TCGTMSOC	04 - B	Number of Times at Maximum Sockets
48 (72)	TCGDMSOC	04 - B	Total Number Delayed at Maximum Sockets
4C (76)	TCGQMSOC	08 - M	Total Delay Time at Maximum Sockets
54 (84)	TCGTOSOC	04 - B	Timeouts While at Maximum Sockets
58 (88)	TCGCDSOC	04 - B	Current Delayed at Maximum Sockets
5C (92)	TCGPDSOC	04 - B	Peak Delayed at Maximum Sockets
60 (96)	TCGCQSOC	08 - M	Current Delay Time at Maximum Sockets
68 (104)			End of Record

TCP/IP Services Resource Record (TCP - Type 6C)

Table 65. TCP/IP Services Records: Type 6C

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	TCPNAME	08 - C	TCP/IP Service Name
24 (36)	TCPTRATT	04 - B	Number of Transactions Attached
28 (40)	TCPCCONN	04 - B	Current Number of Connections
2C (44)	TCPPCONN	04 - B	Peak Number of Connections
30 (48)	TCPOPENG	08 - M	Service Open Time (GMT)
38 (56)	TCPOPENL	08 - M	Service Open Time (Local)
40 (64)	TCPCLOSG	08 - M	Service Close Time (GMT)
48 (72)	TCPCLOSL	08 - M	Service Close Time (Local)
50 (80)	TCPPNUMB	02 - X	TCP/IP Service Port Number
52 (82)	TCPSSLSU	01 - X	TCP/IP Service SSL Support
54 (84)	TCPBACKL	04 - B	TCP/IP Service Backlog
58 (88)	TCPSENDS	04 - B	Number of Sends - All Sockets
5C (92)	TCPBSENT	08 - X	Number of Bytes Sent - All Sockets
64 (100)	TCPRECEI	04 - B	Number of Receives - All Sockets
68 (104)	TCPBRECE	08 - X	Number of Bytes Received - All Sockets
70 (112)	TCPIPADD	15 - C	TCP/IP Service IP Address
80 (128)	TCPWLMGR	18 - C	TCP/IP Service WLM DNS Group
94 (148)	TCPPROTO	08 - C	TCP/IP Service Protocol
9C (156)			End of Record

Request Model Record (RQM - Type 6F)

Table 66. Request Model Records: Type 6F

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	RQMNAME	08 - C	Request Model Name
24 (36)	RQMCNAME	04 - B	CORBA Server Name
28 (40)	RQMTRNID	04 - C	Transaction ID
2C (44)		04	Reserved for Future Use
30 (48)	RQMMODUL	255 - C	Request Model Module
12F (303)	RQMIFACE	255 - C	Request Model Interface
22E (558)	RQMOPER	255 - C	Request Model Operation
330 (816)	RQMBNME	240 - C	Request Model Bean Name
430 (1072)	RQMMTYEP	01 - B	Request Model Type
431 (1073)	RQMITYPE	01 - B	Interface Type
432 (1074)			End of Record

CORBA Server Record (CRB - Type 72)

Table 67. CORBA Server Records: Type 72

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	CRBNAME	04 - C	CORBA Server Name
20 (32)	CRBJNDI	255 - C	CORBA Server JNDI Prefix
11F (287)	CRBIPNAM	255 - C	CORBA Server TCP/IP Host Name
21E (542)	CRBSDIR	255 - C	CORBA Server Shelf Directory
320 (800)	CRBPORT	04 - B	CORBA Server Port Number
324 (804)	CRBSSLPR	04 - B	CORBA Server SSL Port Number
328 (808)	CRBSSLS	01 - B	CORBA Server SSL Support
329 (809)		03	Reserved for Future Use
32C (812)	CRBSTOUT	04 - B	CORBA Server Session Bean Timeout
330 (816)	CRBOACT	04 - B	Number of Object Activates

Table 67. CORBA Server Records: Type 72 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
334 (820)	CRBOSTOR	04 - B	Number of Object Stores
338 (824)	CRBFACT	04 - B	Number of Failed Activates
33C (828)			End of Record

JVM Pool Record (JVM - Type 75)

Table 68. JVM Pool Records: Type 75

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	JVMCJVMS	04 - B	Current JVMs
20 (32)	JVMPJVMS	04 - B	Peak JVMs
24 (36)	JVMTOTRQ	04 - B	Total JVM Program Requests
28 (40)	JVMREREQ	04 - B	JVM Requests - With JVM Reuse
2C (44)	JVMINREQ	04 - B	JVM Requests - JVM Initialized
30 (48)	JVMMMREQ	04 - B	JVM Requests - JVM Mismatch
34 (52)	JVMTRREQ	04 - B	JVM Requests - JVM Terminated
38 (56)			End of Record

System Initialization Table Record (STI - Type C8)

Table 69. System Initialization Table Records: Type C8

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	STIOPSYS	01 - C	Operating System
1D (29)	STIOPREL	01 - X	Operating System Release
1E (30)	STICICS	01 - C	CICS System
1F (31)	STICIREL	01 - X	CICS System Release
20 (32)	STIOSCOR	04	Unused - Obsolete
24 (36)	STISCSZ	04 - B	Storage Cushion Size
28 (40)	STIPGSIZ	02 - B	Page Size
2A (42)	STIMONCL	01 - X	SMP Monitor Class Specification
2B (43)	STIGAPLD	08 - C	VTAM Generic Applid
33 (51)	STISAPLD	08 - C	VTAM Specific Applid
3B (59)	STIPL1	01 - C	PL/1 Indicator
3C (60)	STIPLSH	01 - C	PL/1 Shared Library Indicator
3D (61)	STILPA	01 - C	LPA Option
3E (62)	STIVSPSF	02	Unused - Obsolete
40 (64)	STIRAPOL	02	Unused - Obsolete
42 (66)	STIRAMAX	02	Unused - Obsolete
44 (68)	STIPSBL	02 - B	PSB Pool Size Specification
46 (70)	STIDMBL	02 - B	DMB Pool Size Specification
48 (72)	STIENQMS	02 - B	ENQ Pool Size Specification
4A (74)	STITHRED	02 - B	Number of DL/I Threads
4C (76)	STIMXTSK	02 - B	Maximum Tasks
4E (78)	STIAMXT	02	Unused - Obsolete
50 (80)	STIMXT1	02	Unused - Obsolete
52 (82)	STIMXT2	02	Unused - Obsolete
54 (84)	STIMXT3	02	Unused - Obsolete
56 (86)	STIMXT4	02	Unused - Obsolete
58 (88)	STIMXT5	02	Unused - Obsolete
5A (90)	STIMXT6	02	Unused - Obsolete

Table 69. System Initialization Table Records: Type C8 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
5C (92)	STIMXT7	02	Unused - Obsolete
5E (94)	STIMXT8	02	Unused - Obsolete
60 (96)	STIMXT9	02	Unused - Obsolete
62 (98)	STIMXTA	02	Unused - Obsolete
64 (100)		08	Reserved for Future Use
6C (108)			End of Record

DB2 Plan Activity Record (RCT - Type C9)

Table 70. DB2 Plan Activity Records: Type C9

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	RCTPLID	08 - C	Plan Name
24 (36)	RCTTXID	04 - C	Transaction ID
28 (40)	RCTUSECT	04 - B	Plan/Transaction Use Count
2C (44)	RCTTHWTS	04 - B	Plan/Transaction Thread Waits
30 (48)	RCTAUTHS	04 - B	Plan/Transaction Authorizations
34 (52)	RCTTHRDM	02 - B	Maximum Number of Threads
36 (54)	RCTTHRDA	02 - B	Number of Active Threads
38 (56)	RCTTHRDS	02 - B	Number of Dedicated Threads
3A (58)	RCTTHWM	02 - B	Thread High-Water Mark
3C (60)	RCTSQ#RQ	04 - B	Total SQL Requests
40 (64)	RCTSQTIM	04 - K	Total SQL Elapsed Time
44 (68)	RCTSQ#SE	04 - B	Number of SELECT Requests
48 (72)	RCTSQTSE	04 - K	Elapsed Time for SELECT Requests
4C (76)	RCTSQ#OP	04 - B	Number of OPEN CURSOR Requests
50 (80)	RCTSQTOP	04 - K	Elapsed Time for OPEN CURSOR Requests
54 (84)	RCTSQ#CL	04 - B	Number of CLOSE CURSOR Requests
58 (88)	RCTSQTCL	04 - K	Elapsed Time for CLOSE CURSOR Requests
5C (92)	RCTSQ#IN	04 - B	Number of INSERT Requests

Table 70. DB2 Plan Activity Records: Type C9 (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
60 (96)	RCTSQTIN	04 - K	Elapsed Time for INSERT Requests
64 (100)	RCTSQ#DE	04 - B	Number of DELETE Requests
68 (104)	RCTSQTDE	04 - K	Elapsed Time for DELETE Requests
6C (108)	RCTSQ#UP	04 - B	Number of UPDATE Requests
70 (112)	RCTSQTUP	04 - K	Elapsed Time for UPDATE Requests
74 (116)	RCTSQ#FE	04 - B	Number of FETCH Requests
78 (120)	RCTSQTFE	04 - K	Elapsed Time for FETCH Requests
7C (124)	RCTSQ#CO	04 - B	Number of COMMIT Requests
80 (128)	RCTSQTCO	04 - K	Elapsed Time for COMMIT Requests
84 (132)	RCTSQ#OT	04 - B	Number of OTHER Requests
88 (136)	RCTSQTOT	04 - K	Elapsed Time for OTHER Requests
8C (140)		12	Reserved for Future Use
98 (152)			End of Record

Service Level Response Record (Type CA)

The time frames for Service Level Response records are set in the CMRSOPT module.

Table 71. Service Level Response Records: Type CA

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	LTXLITL	04 - C	Literal TIME
20 (32)	LTIM001	04 - K	Time Frame 001
24 (36)	LTIM002	04 - K	Time Frame 002
28 (40)	LTIM003	04 - K	Time Frame 003
2C (44)	LTIM004	04 - K	Time Frame 004
30 (48)	LTIM005	04 - K	Time Frame 005
34 (52)	LTIM006	04 - K	Time Frame 006
38 (56)	LTIM007	04 - K	Time Frame 007
3C (60)	LTIM008	04 - K	Time Frame 008
40 (64)	LTIM009	04 - K	Time Frame 009
44 (68)	LTIM010	04 - K	Time Frame 010

Table 71. Service Level Response Records: Type CA (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
48 (72)	LTIM011	04 - K	Time Frame 011
4C (76)	LTIM012	04 - K	Time Frame 012
50 (80)	LTIM013	04 - K	Time Frame 013
54 (84)	LTIM014	04 - K	Time Frame 014
58 (88)	LTIM015	04 - K	Time Frame 015
5C (92)	LTIM016	04 - K	Time Frame 016
60 (96)	LTIM017	04 - K	Time Frame 017
64 (100)	LTIM018	04 - K	Time Frame 018
68 (104)	LTXCNT	04 - B	Total Transaction Count
6C (108)	LTX001	04 - B	Count Frame 001
70 (112)	LTX002	04 - B	Count Frame 002
74 (116)	LTX003	04 - B	Count Frame 003
78 (120)	LTX004	04 - B	Count Frame 004
7C (124)	LTX005	04 - B	Count Frame 005
80 (128)	LTX006	04 - B	Count Frame 006
84 (132)	LTX007	04 - B	Count Frame 007
88 (136)	LTX008	04 - B	Count Frame 008
8C (140)	LTX009	04 - B	Count Frame 009
90 (144)	LTX010	04 - B	Count Frame 010
94 (148)	LTX011	04 - B	Count Frame 011
98 (152)	LTX012	04 - B	Count Frame 012
9C (156)	LTX013	04 - B	Count Frame 013
A0 (160)	LTX014	04 - B	Count Frame 014
A4 (164)	LTX015	04 - B	Count Frame 015
A8 (168)	LTX016	04 - B	Count Frame 016
AC (172)	LTX017	04 - B	Count Frame 017
B0 (176)	LTX018	04 - B	Count Frame 018
B4 (180)			End of Record

VSAM DSN Record (Type CB)

Table 72. VSAM DSN Records: Type CB

Type of Information	Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
General	1C (28)	DSNFCT	08 - C	File Control Name
VSAM ACB	24 (36)	DSNDEXCP	04 - B	Number of Physical I/Os
Data	28 (40)	DSNDCASP	04 - B	Number of CA Splits
	2C (44)	DSNDCISP	04 - B	Number of CI Splits
	30 (48)	DSNDDELT	04 - B	Number of VSAM Deletes
	34 (52)	DSNDUPDT	04 - B	Number of VSAM Updates
	38 (56)	DSNDINST	04 - B	Number of VSAM Inserts
	3C (60)	DSNDREAD	04 - B	Number of VSAM Reads
VSAM ACB	40 (64)	DSNIEXCP	04 - B	Number of Physical I/Os
Index	44 (68)	DSNICASP	04 - B	Number of CA Splits
	48 (72)	DSNICISP	04 - B	Number of CI Splits
	4C (76)	DSNIDELT	04 - B	Number of VSAM Deletes
	50 (80)	DSNIUPDT	04 - B	Number of VSAM Adds
	54 (84)	DSNIINST	04 - B	Number of VSAM Inserts
	58 (88)	DSNIREAD	04 - B	Number of VSAM Reads
General	5C (92)	DSNDCISZ	04 - B	Data Component CI Size
	60 (96)	DSNICISZ	04 - B	Index Component CI Size
	64 (100)	DSNLSRPL	01 - X	LSR Pool ID (0 = Non-LSR)
	65 (101)	DSNAME	44 - C	Data Set Name
	91 (145)	DSNUCB	03 - C	UCB Unit Name
	94 (148)	DSNVOL	06 - C	Volume Serial ID #1
	9A (154)	DSNVOL2	06 - C	Volume Serial ID #2
	A0 (160)	DSNVOL3	06 - C	Volume Serial ID #3
	A6 (166)	DSNVOL4	06 - C	Volume Serial ID #4
	AC (172)	DSNVOL5	06 - C	Volume Serial ID #5
	B2 (178)	DSNDSMS	02 - B	Number of Strings
	B4 (180)	DSNDSTS	04 - B	Number Waited on String
	B8 (184)	DSNDSHS	02 - B	HWM Waited on String

Table 72. VSAM DSN Records: Type CB (Continued)

Type of Information	Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
	BA (186)	DSNBUFD	02 - B	Number of Data Buffers
	BC (188)	DSNBUFI	02 - B	Number of Index Buffers
	BE (190)	DSNDSTB	04 - B	Number Waited on Buffer
	C2 (194)	DSNDSHB	02 - B	HWM Waited on Buffer
	C4 (196)	DSNPERCI	02 - B	Free Space % CI
	C6 (198)	DSNPERCA	02 - B	Free Space % CA
	C8 (200)	DSNTYPE	01 - C	Data Set Type
	C9 (201)	DSNIMBED	01 - C	Imbed Option
	CA (202)	DSNREPLI	01 - C	Replicate Option
	CB (203)	DSNRANGE	01 - C	Keys Range Option
	CC (204)	DSNUCBX	04 - C	Extended UCB Address
	DO (208)			End of Record

Global Performance Record (T6F - Type CC)

Note: The Global Performance record was formerly distributed as a Type 6F record.

Table 73. Global Performance Records: Type CC

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
1C (28)	T6FSUDT	04 - B	Total User Dispatched Time
20 (32)	T6FSUCP	04 - B	Total User Processor Time
24 (36)	T6FSUDC	04 - B	Total User Dispatch Count
28 (40)	T6FSTCDT	04	Unused - Obsolete
2C (44)	T6FSTCCP	04	Unused - Obsolete
30 (48)	T6FSTCDC	04	Unused - Obsolete
34 (52)	T6FSJCDT	04	Unused - Obsolete
38 (56)	T6FSJCCP	04	Unused - Obsolete
3C (60)	T6FSJCDC	04	Unused - Obsolete
40 (64)	T6FSKCDT	04	Unused - Obsolete
44 (68)	T6FSKCCP	04	Unused - Obsolete
48 (72)	T6FSKCDC	04	Unused - Obsolete
4C (76)	T6FSSRBT	04 - B	SRB Time (stored in units of 1.048576 seconds)
50 (80)	T6FSPGIN	04 - B	Count of Page-In Operations
54 (84)	T6FSPGOU	04 - B	Count of Page-Out Operations
58 (88)	T6FSSHWM	04 - B	DSA High-Water Mark in Pages Includes CDSA, SDSA, and UDSA.
5C (92)	T6FSSCNT	04 - B	Interval Accumulator Count
60 (96)	T6FSOSCP	04 - B	Total Processor Time Spent in CICS Address Space
64 (100)	T6FSOSWT	04 - B	Total of CICS TCB Wait Times
68 (104)	T6FSOSWC	04 - B	Total of All CICS TCB Wait Counts
6C (108)	T6FTIME	04 - B	Elapsed Wall-Clock Time
70 (112)	T6FTRMCT	04 - B	Terminal-Attached Task Count
74 (116)	T6FTRNCT	04 - B	Total Task Count
78 (120)	T6FSFLAG	01 - C	File Type 6F Monitor Flag Indicator: **'F'** = First **' '** = Running **'L'** = Last

Table 73. Global Performance Records: Type CC (Continued)

Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
79 (121)	T6FRSPTM	04 - B	Terminal-Attached Cumulative Response Time for Frame
7D (125)	T6FMAXTC	02 - B	Maximum Active Tasks
80 (128)	T6FQRCPU	04 - K	Quasi-Reentrant TCB CPU Time
84 (132)	T6FQRWTT	04 - K	Total Quasi-Reentrant TCB MVS Wait Time
88 (136)	T6FQRWTC	04 - K	Number of Quasi-Reentrant TCB MVS Waits Issued
8C (140)	T6FROCPU	04 - K	Resource-Owning TCB CPU Time
90 (144)	T6FROWTT	04 - K	Total Resource-Owning TCB MVS Wait Time
94 (148)	T6FROWTC	04 - K	Total Resource-Owning TCB MVS Waits Issued
98 (152)	T6FCOCPU	04 - K	Concurrent TCB CPU Time
9C (156)	T6FCOWTT	04 - K	Total Concurrent TCB MVS Wait Time
A0 (160)	T6FCOWTC	04 - K	Number of Concurrent TCB MVS Waits Issued
A4 (164)	T6FESHWM	04 - B	Extended DSA High-Water Mark in Pages Includes ECDSA, ESDSA, and EUDSA.
A8 (168)	T6FMAXT	04 - B	Maximum Tasks Value
AC (172)	T6FCURT	04 - B	Current Tasks
B0 (176)	T6FHWMT	04 - B	High-Water Mark Tasks
B4 (180)	T6TMTT	04 - B	Times at High-Water Mark
B8 (184)	T6FOSCR	04 - B	OSCOR (allocated region below the line)
BC (188)	T6FOSCRE	04 - B	OSCOR Extended (allocated region above the line)
C0 (192)			End of Record

DL/I Record (DLZ - Type CD)

The DL/I record is applicable only when local DL/I is installed. This record is not available with DBCTL. A CICS DBCTL statistical record is written if DBCTL terminates or if CICS terminates normally.

Table 74. DL/I Records: Type CD

Type of Information	Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
General	1C (28)	DLZPSBC	04 - B	Number of PSBs in System
	20 (32)	DLZPSTC	04 - B	Number of PSTs in System
	24 (36)	DLZDBDC	04 - B	Number of DBDs in System
	28 (40)	DLZMINTK	04 - B	Minimum Task Count
	2C (44)	DLZMAXC	04 - B	Maximum Task Count
	30 (48)	DLZACTC	04 - B	High-Water Mark Concurrent Threads in Use
	34 (52)	DLZSUSP	04 - B	Suspended Task Count
	38 (56)	DLZSCHCL	04 - B	Always Binary Zeroes (0)
	3C (60)	DLZDPPSB	04 - B	Always Binary Zeroes (0)
	40 (64)	DLZTAMAX	04 - B	Number of Waits for DL/I Thread
	44 (68)	DLZDEADL	04 - B	Always Binary Zeroes (0)
Buffer Mgmt	48 (72)	DLZRREQ	04 - B	Always Binary Zeroes (0)
	4C (76)	DLZRRSAT	04 - B	Number of Read Requests Satisfied within Buffer
	50 (80)	DLZREAD	04 - B	Number of Input Type EXCPs
	54 (84)	DLZBAREQ	04 - B	Number of Buffer Alter Requests
	58 (88)	DLZWRITE	04 - B	Number of Output EXCPs
	5C (92)	DLZGU	04 - B	Get Unique Count
	60 (96)	DLZGN	04 - B	Get Next Count
	64 (100)	DLZIOERR	04 - B	Number of I/O Errors
Definition	68 (104)	DLZDMBMU	04 - B	High-Water Mark Bytes Used in DMB Pool
	6C (108)	DLZPSBMU	04 - B	High-Water Mark Bytes Used in PSB Pool
	70 (112)	DLZENQMU	04 - B	High-Water Mark Bytes Used in ENQ Pool
	74 (116)	DLZTHRDM	02 - B	High-Water Mark Concurrent Threads in Use
	76 (118)	DLZDMBEX	04 - B	Number of Waits for DMB Pool Space
	7A (122)	DLZPSBEX	04 - B	Number of waits for PSB Pool Space
	7E (126)	DLZTHRDW	04 - B	Number of Waits for DL/I Thread

Table 74. DL/I Records: Type CD (Continued)

Type of Information	Offset HEX/DEC	Field Name	Length (DEC) - Type	Field Description
	82 (130)		08	Reserved for Future Use
	8A (138)			End of Record

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