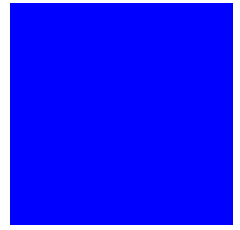


IBM



CIMS CICS Data Collector

User Guide

Version 12.2.1

Note • Before using this information and the product it supports, read the information in *Appendix B, Notices*.

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Preface

This guide provides a comprehensive set of procedures and references for using CIMS Data Collector for CICS.

Who Should Read This Guide

This guide is for system administrators responsible for the configuration and deployment the CIMS CICS Data Collector and its related components.

Readers should be familiar with the following:

- z/OS® operating system
- Interactive System Productivity Facility (ISPF)
- Job code language (JCL)
- Customer Information Control System (CICS®)

What This Guide Contains

The following table describes the chapters in this guide.

Ch. No.	Chapter Name	Content Description
1	<i>Introduction</i>	Introduces you to the functions and features of CIMS CICS Chargeback System.
2	<i>CICS Data Interface Program—CIMSCMF1/CIMSCMFP</i>	Introduces you to the program CIMSCMF1/CIMSCMFP, which processes CICS usage data created by the CMF facility.
3	<i>CIMS CICS Account Code Creation Program—CIMSCMF2</i>	Introduces you to the program CIMSCMF2, which reads the intermediate CIMS CICS transaction accounting data set created by Program CIMSCMF1.
4	<i>Transaction Creation and Reporting Program—CIMSCICS</i>	Introduces you to the program CIMSCICS.
A	<i>Record Descriptions</i>	Provides the CIMS CICS Record Descriptions.
B	<i>Notices</i>	Provides licensing, copyright, and trademark information.
	<i>Index</i>	

Related Publications

As you use this guide, you might find it helpful to have these additional guides available for reference:

- *CIMS Mainframe Data Collector and Chargeback System User Guide*
- *CIMS Mainframe Data Collector and Chargeback System Installation and Upgrade Guide*

Contacting Customer Support

Before contacting IBM Tivoli Software Support with a problem, refer to the IBM Tivoli Software Support site by clicking the **Tivoli** link at the following Web site:

<http://www.ibm.com/software/support/>

If you need additional help, contact software support by using the methods described in the *IBM Software Support Guide* at the following Web site:

<http://techsupport.services.ibm.com/guides/handbook.html>

The *IBM Software Support Guide* provides the following information:

- Registration and eligibility requirements for receiving support.
- Telephone numbers, depending on the country in which you are located.
- A list of information you should gather before contacting technical support.

Conventions Used in This Guide

Some or all of the following conventions are used in this guide:

Symbol or Type Style	Represents	Example
Bold	a new term	...called a source object .
<i>Alternate color</i>	(online only) hotlinked cross-references to other sections in this guide; if you are viewing this guide online in PDF format, you can click the cross-reference to jump directly to its location	...see <i>Chapter 3, CIMS CICS Account Code Creation Program—CIMSCMF2</i> .
<i>Italic</i>	words that are emphasized	...the entry <i>after</i> the current entry...
	the titles of other documents	<i>CIMS Mainframe Data Collector and Chargeback System User Guide</i>
	syntax variables	COPY <i>filename</i>
Monospace	directories, file names, command names, computer code	&HIGHLVL.SRCLIB
	computer screen text, system responses, command line commands	Copy file? Y/N
Monospace bold	what a user types	...enter RUN APP.EXE in the Application field
< >	the name of a key on the keyboard	Press <Enter>.
▶	choosing a command from a cascading menu	File ▶ Import ▶ Object
Highlighted Screen Text	used to callout screen text on character-based screen captures. (When viewed online, the screen text will be blue.)	Data set.... Product.... Parmlib...

Introduction

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CIMS CICS Transaction Accounting

CIMS provides the ability to charge back and allocate the costs of CICS networks to the users who consume the resources. Each CICS user can be charged for any combination of the following:

- Transaction Time (Elapsed)
- Transaction Time (CPU)
- Number of Transactions
- Input Messages
- Output Messages
- File Access Counts
- Other User-Defined Resource Values

In addition to the preceding resources, any resource contained in the CICS performance monitoring record can be used by CIMS for chargeback.

CIMS uses a flexible account code table to translate items such as User ID, Transaction ID and Terminal ID into an account code. CIMS CICS account code creation provides the following flexibility:

- Account Code Editing
- Include/Exclude Record Selection
- Wildcard Support
- Exception File Processing for unmatched records.

CIMS provides user exit routines for specialized requirements.

Input

CIMS uses the data set created by any of the following systems:

- IBM SMF Record Type 110 (z/OS® only) that is produced by the CICS Monitoring Facility (CMF). IBM publications describe the macros used by CMF. Specifically, the DFHMCT macro defines a Monitor Control Table (MCT) that specifies the types of data records to be included in the SMF Record type 110.
- You can implement CICS Transaction Accounting using Monitor Performance Records. Performance Records contain utilization data that includes Transaction Elapsed time, Transaction CPU time, INPUT/OUTPUT messages, and file activity. A description of the CIMS CICS data record is shown in [Appendix A, Record Descriptions](#).
- Data that is compatible with either SMF Record Type 110 or CMF Performance Records. This includes data generated by CICS Monitoring Products such as Landmark TMON, CA EXPLORE/CICS, and IBM Tivoli OMEGAMON®.
- Proprietary Data Formats created by various CICS monitors.

Output

CIMS CICS Transaction Accounting Interface generates the following types of output:

- CIMS 791 accounting records for processing by CIMSEXTR. CIMSEXTR produces CSR+ records, which are processed by CIMSMONY and/or Tivoli® Usage and Accounting Manager.
- CIMS 999 accounting records for processing by CIMSBILL.
- CICS usage records for processing by other 4GL systems.
- Printed reports showing CICS resource usage and charges.

System Components

The CIMS CICS Transaction Accounting product consists of three *primary* program modules as follows:

CIMSCMF1/CIMSCMFP

CIMSCMF1/CIMSCMFP are Assembler Language programs that interface with the CICS usage data. These programs read the CICS Monitoring Facility (CMF) data, select performance records, reformat the records, and write a data set containing CIMS CICS Intermediate Transaction Accounting Records. These records are defined as intermediate, because account codes have not been added to the file.

CIMSCMF2

CIMSCMF2 reads the intermediate data set created by CIMSCMF1/CIMSCMFP and/or a history data set previously created from CIMSCMF2 and writes a data set containing CIMS CICS Transaction Accounting Records. This data set is similar to the intermediate data set created by CIMSCMF1/CIMSCMFP except that account codes are added to the data record and the data record is reformatted.

CIMSCMF2 is driven by control statements that specify data selection conditions. In addition to the selection control statements, another data set is read that contains a table of Account Codes, Transaction IDs, User IDs and/or Terminal IDs. The installation has complete control over the generation of Account Codes. The Account Codes can be based on multiple identification codes including, but not limited to: Transaction ID, Terminal ID, Operator ID, User ID or any combination of these identifiers.

CIMSCMF2 generates a data set containing CIMS 791 accounting records. These 791 records require additional processing by CIMSEXTR to generate CSR+ files that can be processed by CIMSMONY and/or Tivoli Usage and Accounting Manager.

CIMSCICS

CIMSCICS processes the CIMS CICS Transaction Accounting Records created by CIMSCMF2 and generates billing reports and transactions. The CICS billing transactions are processed by the CIMSBILL chargeback program.

CIMSCICS is not applicable if you are using the CIMSMONY chargeback program. CIMSCMF2 creates the 791 records required by CIMSMONY.

Program Record Descriptions

For descriptions of the records produced by CIMSCMF1/CIMSCMFP, CIMSSMF2, and CIMSCICS see [Appendix A, Record Descriptions](#).

Additional System Components

The programs CIMSUNIV (z/OS only), CIMSMONY, CIMSBILL, and CIMSACCT (z/OS)/CIMSVSE (VSE) provide additional CICS billing features. Refer to the appropriate chapter in the *CIMS Mainframe Data Collector and Chargeback System User Guide* for more information.

Tivoli Usage and Accounting Manager

The CIMS mainframe CICS information can be sent to Tivoli Usage and Accounting Manager for comprehensive resource accounting and chargeback processing. Browser-based viewing and point-and-click environments replace the typical CIMS z/OS installation that uses batch JCL and mainframe reports. Tivoli Usage and Accounting Manager, rather than mainframe programs, can be used to provide invoicing and reporting. When using Tivoli Usage and Accounting Manager, invoices and reports are produced in the distributed environment.

CICS Data Interface Program— CIMSCMF1/CIMSCMFP

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About CIMSCMF1/CIMSCMFP

Programs CIMSCMF1/CIMSCMFP process CICS usage data created by the CICS Monitoring Facility (CMF). This usage data is identified in z/OS as System Management Facilities (SMF) Record 110. IBM CICS releases 1.5 through 2.1 create ACCOUNTING CLASS and PERFORMANCE CLASS usage records. CICS release 3.1.1 and later CICS releases produce PERFORMANCE CLASS usage records. These usage records are reformatted and written to various data sets for further processing.

Program CIMSCMF1 supports CICS releases 1.5 through 5.1. CIMSCMF1 supports only the standard CICS dictionary. Program CIMSCMFP supports CICS releases 3.1 and later. CIMSCMFP supports both standard and custom CICS dictionaries. If you have a CICS release less than 3.1 running on a custom dictionary, see [CIMS CICS Requirements](#) on page 2-6 for information on how to process the data using CIMSCMF1. CIMSCMFP should be used for all CICS data that is release 3.1 or later. CIMSCMF1 should be used only for CICS data that is earlier than 3.1.

Program CIMSCMFP will read the SMF 110 records and process both the data records and the dictionary records. When it encounters a dictionary record, it will do the following:

- Checks to see if Table Default processing is on (this is the default). This means that the SMF 110 records are the full 110 records—no user modifications have been made.
- If Table Default processing is on, CIMSCMFP searches its dictionary identification tables for the correct CICS release. The program will then check to see if the dictionary record matches the identification table entry. If the record matches, processing continues. If the record does not match, the user has modified the dictionary and program execution stops with a return code of 16. The user receives a notification to turn off Table Default processing.
- If Table Default processing is off, CIMSCMFP checks to see if the dictionary is already identified within its dictionary identification tables. If the dictionary is identified, then CIMSCMFP checks to make sure that the field offsets attached to its identification table match those in the 110 dictionary record. If the offsets do not match, a new offset table is built automatically.

If there is no identification table for the dictionary record, one is built. The offset tables are then searched to find a matching offset table. If one is found, the identification record is updated with the offset table ID. If none is found, then a new offset table is built. The default CIMSCMFP CICS dictionary identification and offset tables (which match the standard IBM CICS dictionaries) are located in member CMFPTABD in CIMS.DATFILE.

CIMSCMF1/CIMSCMFP Input

- CICS Usage Data - DDNAME CMFIN

The input is a data set containing CICS usage data. This data set is created by CICS via the DFHMCT macro. CIMS also accepts data from monitor products such as Landmark TMON, CA EXPLORE/CICS, and IBM Tivoli OMEGAMON. Non-IBM monitor data must first be converted to IBM's format by the monitor product's conversion utility.

- CICS Dictionary Identification and Offset Tables - DDNAME CICSTABS (CIMSCMFP only)

This data set points to the CICS dictionary identification and offset tables.

Note • You can use an exit in CIMSCMF1/CIMSCMFP to customize CIMSCMF1/CIMSCMFP for IBM Tivoli OMEGAMON (the exit is CIMSUR01).

CIMSCMF1/CIMSCMFP Output

This program produces multiple data sets used for chargeback and/or resource utilization reporting. In addition, one of the data sets contains SAP CICS transactions. You can also use these SAP transactions for chargeback and resource utilization reporting. The output data sets are described in the following DDNAME sections.

- CICS Intermediate Transaction Accounting records - DDNAME CIMSCMF

The output written to this data set contains CIMS CICS Intermediate Transaction Accounting Records. These records are defined as intermediate because account codes have not been added to the file. The file is a fixed block data set containing logical records of 200 characters. The blocksize is a function of your direct access devices. We recommend 1/2 track blocking.

Data records containing Low Values (X'00') for transaction ID, Terminal ID, Operator ID, Transaction Type, and Program Name have the X'00' data value transformed to asterisks or a character of choice.

RECORD CICSRC01

The Performance Record CICSRC01 is the primary CIMSCMF1/CIMSCMFP record. The record is processed by program CIMSCMF2 to add account codes. The main function of program CIMSCMF2 is to add account codes based on a table lookup.

■ **Detail CICS Transactions - DDNAME CICSRECS**

Output written to this data set contains detail CICS transactions. These transactions can be used for chargeback and/or resource utilization reporting. The file is variable length. The length of each record depends on the release of CICS processed at your facility.

Pacific Systems Spectrum Writer can be used to process records written to DDNAME CICSRECS. CIMS.REPTLIB contains record descriptions for use with Spectrum Writer. Refer to the following table for the appropriate record description for the version of CICS that you are using.

CIMS.REPTLIB Member	CICS Release	Transaction Server
CICSRC15	V6.2	V2.2
CICSRC16	V6.3	V2.3
CICSRC17	V6.4	V3.1

Exception Data Set - DDNAME CIMSEXOT (CIMSCMFP only)

The output written to this data set contains the SMF 110 records that did not have a dictionary identification or offset table in CICSTAB. This data set allows for a "catch all" of all data records that did not have identifying dictionary records. This data set can be rerun through CIMSCMFP. This data set is very useful the first time a CICS region's data is processed through CIMSCMFP.

Consider the following scenario. CIMSCMFP reads a 110 data record and searches for its corresponding table entries, which do not exist, so the record is written to the exception file (CIMSEXOT). A couple of records later, after a dictionary record for the region is read, CIMSCMFP processes the exception file and adds the information to its identification and offset tables. At the end of the run, the exception file contains only the data records that were processed before their corresponding dictionary entries. All that must be done is to rerun CIMSCMFP with the exception file as input and concatenate the first run's output with the second run's output.

■ **CICS Detail Data Set - DDNAME CIMSUNSP (CIMSCMFP only)**

The output written to this data set contains the SMF110 records from CICS Releases prior to 3.1. CIMSCMFP only supports CICS Releases 3.1 and later. This data set can be used as input to CIMSCMF1 to process the pre- 3.1 records.

■ **Printed Output - DDNAME CIMSPRNT**

The printed output lists the input parameters, shows the number of performance records read and written, and lists all records not matched in the Account Code Table.

CIMSCMF1/CIMSCMFP Reports

Program CIMSCMF1/CIMSCMFP is a data set interface program. The output report shows the number of each record type read and written.

Processing Requirements

The installation must decide on the level of CICS detail transaction reporting required. CICS produces a record for each transaction executed. CIMS writes condensed transactions to DDNAME CIMSCMF and complete detail transactions to DDNAME CICSRECS. The data written to both data sets can be used for Chargeback and/or Resource Utilization. Obviously, the data written to DDNAME CIMSCMF requires less storage since these records are 200 characters each. The CICSRECS records are as large as the CICS CMF 110 records.

IBM recommends daily processing of the CIMSCMF1/CIMSCMFP programs. The volume of CICS transactions created on a daily basis is significant. An installation should process transactions on a daily basis. *Do not* wait until the end of the month to process.

The output data set from DDNAME CIMSCMF is processed through programs CIMSCMF2 and CIMSCICS (if you are using CIMSBILL). These programs add accounting codes to create billing transactions. These programs are discussed in sections within this manual.

CIMS CICS Requirements

Programs CIMCMF1/CIMSCMFP process CICS monitoring data and/or compatible SMF 110 record data created by Landmark TMON, CA EXPLORE/CICS, IBM Tivoli OMEGAMON, and others.

CIMSCMF1 - CICS releases 1.5 through 2.2

CIMSCMF1 requires that all monitoring data be compatible with IBM's default (standard) dictionary for the specified CICS release level. If a non-standard (customized) dictionary is used, then the data written to CIMSCMF is invalid. The data written to DDNAME CICSREC is valid; however, you must update the CIMS record descriptions.

The installation can add dictionary entries at the end of each record, but must not delete dictionary entries. Check with your CICS support personnel to determine whether any changes have been made to the CICS monitoring facility.

There is absolutely no problem if your installation has changed the default dictionary.

For CICS 110 SMF records cut by IBM Tivoli OMEGAMON for releases earlier than 3.1, you must implement the CIMS User Exit CIMSUR02. The source for this edit can be found in CIMS.DATAFILE (CIMSUR01). Review this source and make the appropriate changes. Then assemble the exit and re-link the load module CIMSCMF1 with the new exit using the sample JCL found in CIMS.DATAFILE (CICSASML).

CIMSCMFP - CICS releases 3.1 and later

CIMSCMFP supports monitoring data that is in the default (standard) dictionary for the specified CICS release level and data that is in a non-standard (customized) format. To let CIMSCMFP know that it may be processing non-standard dictionary data, you must use the control statement TABLE FILE DEFAULTS OFF. No other modifications are necessary. The data written to CIMSCMF will be valid and can be processed by CIMSCMF2.

CIMS Monitor Requirements

Monitor products such as TMON, EXPLORE, and IBM Tivoli OMEGAMON create CICS monitor data. These monitor data sets can be used directly within CIMS by creating CIMSUNIV or TRANS records.

CIMS supports these records. Monitor products create the records in either undefined or variable formats. The default for program CIMSCMF1/CIMSCMFP is to process monitor files as *variable length data sets*. See the control statements section to modify defaults.

Control Statement Table

Following is a summary of the control statements available for CIMSCMF1 and CIMSCMFP

CONTROL STATEMENT	PAGE #	DESCRIPTION
CICS TRANSACTIONS	[2-9]	Specifies CICS transactions are written to DDNAME CICSRECS.
HDx	[2-9]	Headline information prints on each new page.
INPUT DATASET IS UNDEFINED	[2-9]	Specifies input data is recorded in undefined format.
INPUT DATASET IS VARIABLE	[2-9]	Specifies input data is recorded in variable format.
RETAIN ACCOUNTING CLASS RECORDS	[2-9]	Specifies to retain the CICS Accounting Class Records in the CIMS file.
TABLE FILE DEFAULTS OFF	[2-9]	Turns off the CICS standard (default) dictionary processing.
TABLE FILE DELETE	[2-10]	Deletes all dictionary tables from the CICSTABS data set that have not been referenced with this data format.
TABLE FILE LOAD	[2-10]	Causes CIMSCMFP to look only for the dictionary record and building the corresponding ID and offset tables.
TABLE FILE PRINT	[2-10]	Causes CIMSCMFP to print all of the CIMSPRNT.

Control Statement Reference

Programs CIMSCMF1/CIMSCMFP support the following control statements. Control statements are keywords.

The statements are placed in the data set defined by DDNAME CIMSCNTL.

Control statements start in Column 1. If Column 1 contains an asterisk or space, the control statement is considered a comment.

CICS TRANSACTIONS

Specifies that detail CICS transactions are to be written to DDNAME CICSRECS. The default is *not* to write detail CICS transactions. This is detail data. All CICS performance records are written to this data set.

HDx

You can define up to three headline statements as follows to replace the default headlines specified in the program:

- HD1 Your Headline Text Line 1
- HD2 Your Headline Text Line 2
- HD3 Your Headline Text Line 3

INPUT DATASET IS UNDEFINED

- This statement specifies that the input data is recorded in an undefined format.
- Some monitor products such as TMON write CICS data as undefined.
- This means the Record Descriptor Word (RDW) is missing.

INPUT DATASET IS VARIABLE (Default)

This statement specifies that the input data is recorded in variable format. This is the standard.

RETAIN ACCOUNTING CLASS RECORDS

This control statement retains the CICS Accounting Class Records in the CIMS file. Accounting Class records are available only for CICS release 1.7 through 2.2.

The CIMS default is to drop accounting class records.

TABLE FILE DEFAULTS OFF (CIMSCMFP Only)

This control statement turns off the CICS standard (default) dictionary processing. This statement must be supplied if you are using non-standard CICS dictionaries. The default is to process using standard CICS dictionaries.

TABLE FILE DELETE YYYYMMDD (CIMSCMFP Only)

This control statement deletes all dictionary tables from the CICSTABS data set that have not been referenced since YYYYMMDD.

TABLE FILE LOAD (CIMSCMFP Only)

This control statement causes the program CIMSCMFP to look only for the dictionary record and build the corresponding identification and offset tables. No data records are processed, no output is written to CIMSCMF.

TABLE FILE PRINT (CIMSCMFP Only)

This control statement causes CIMSCMFP to print all of the dictionary identification and offset tables to CIMSPRNT. No CICS data is processed and no output is written to CIMSCMF.

CIMSCMF1 Sample Job Control

```

//CIMSCMF1 EXEC PGM=CIMSCMF1,REGION=OK
//STEPLIB DD DSN=CIMS.LOAD.MODULES,DISP=SHR
//CIMSPRNT DD SYSOUT=*
//*
//CMFIN1 DD DSN=CIMS.CICS.CMFDATA,DISP=SHR
//* DD DSN=CIMS.CIMSCMFP.UNSP,DISP=SHR
//*
//CIMSCMF2 DD DSN=CIMS.CICS.DATA,DISP=(,CATLG),
// SPACE=(CYL,(50,50),RLSE),UNIT=SYSDA,
// DCB=(RECFM=FB,LRECL=200,BLKSIZE=27800)
//*
//CICSRECS DD DSN=CIMS.CICS.DETAIL.TRANS,
// DISP=(NEW,CATLG,DELETE),UNIT=SYSDA,
// SPACE=(CYL,(50,50),RLSE),
// DCB=(RECFM=VB,BLKSIZE=27998)
//*
//CIMSSAP DD DSN=CIMS.CICS.SAP.DETAIL.TRANS,
// DISP=(NEW,CATLG,DELETE),UNIT=SYSDA,
// SPACE=(CYL,(50,50),RLSE),
// DCB=(RECFM=VB,BLKSIZE=27998)
//*
//CIMSPASS DD DSN=CIMS.DATAFILE(CIMSNUMS),DISP=SHR
//*
//CIMSCNTL DD *,DCB=BLKSIZE=80
CICS TRANSACTIONS
/*

```

¹INPUT: CICS monitor DATA/SMF 110 records

²OUTPUT: CIMS formatted CICS data

CIMSCMFP Sample Job Control

```
//CIMSCMFP EXEC PGM=CIMSCMFP,REGION=OK
//STEPLIB DD DSN=CIMS.LOAD.MODULES,DISP=SHR
//CIMSPRNT DD SYSOUT=*
//*
//CMFIN1 DD DSN=CIM.CIMS.CICS51.DATA,DISP=SHR
//* DD DSN=CIMS.CIMSCMFP.EXOT,DISP=SHR
//*
//CIMSCMF2 DD DSN=CIMS.CICS.DATA,DISP=(,CATLG),
// SPACE=(CYL,(50,50),RLSE),UNIT=SYSDA,
// DCB=(RECFM=FB,LRECL=200,BLKSIZE=27800)
//*
//CICSRECS DD DSN=CIMS.CICS.DETAIL.TRANS,
// DISP=(NEW,CATLG,DELETE),UNIT=SYSDA,
// SPACE=(CYL,(50,50),RLSE),
// DCB=(RECFM=VB,BLKSIZE=27998),
//*
//CICSTABS3DD DSN=CIMS.DATAFILE(CMFPTABD),DISP=SHR
//*
//CIMSEXOT4DD DSN=CIMS.CIMSCMFP.EXOT,
// DISP=(NEW,CATLG,DELETE),UNIT=SYSDA,
// SPACE=(CYL,(50,50),RLSE),
// DCB=(RECFM=VB,LRECL=32756,BLKSIZE=32760),
//*
//CIMSUNSP5 DD DSN=CIMS.CIMSCMFP.UNSP,
// DISP=(NEW,CATLG,DELETE),UNIT=SYSDA,
// SPACE=(CYL,(50,50),RLSE),
// DCB=(RECFM=VB,LRECL=32756,BLKSIZE=32760)
//CIMSPASS DD DSN=CIM.DATAFILE(CIMSNUMS),DISP=SHR
//*
//CIMSCNTL DD *,DCB=BLKSIZE=80
CICS TRANSACTIONS
/*
```

¹INPUT: CICS monitor DATA/SMF 110 records

²OUTPUT: CIMS formatted CICS data

³INPUT: CICS dictionary identification and offset tables

⁴OUTPUT: CIMS transactions that did not have a matching identification or offset table

⁵OUTPUT: CICS records prior to release 3.1

CIMSCMF1 Flow Chart

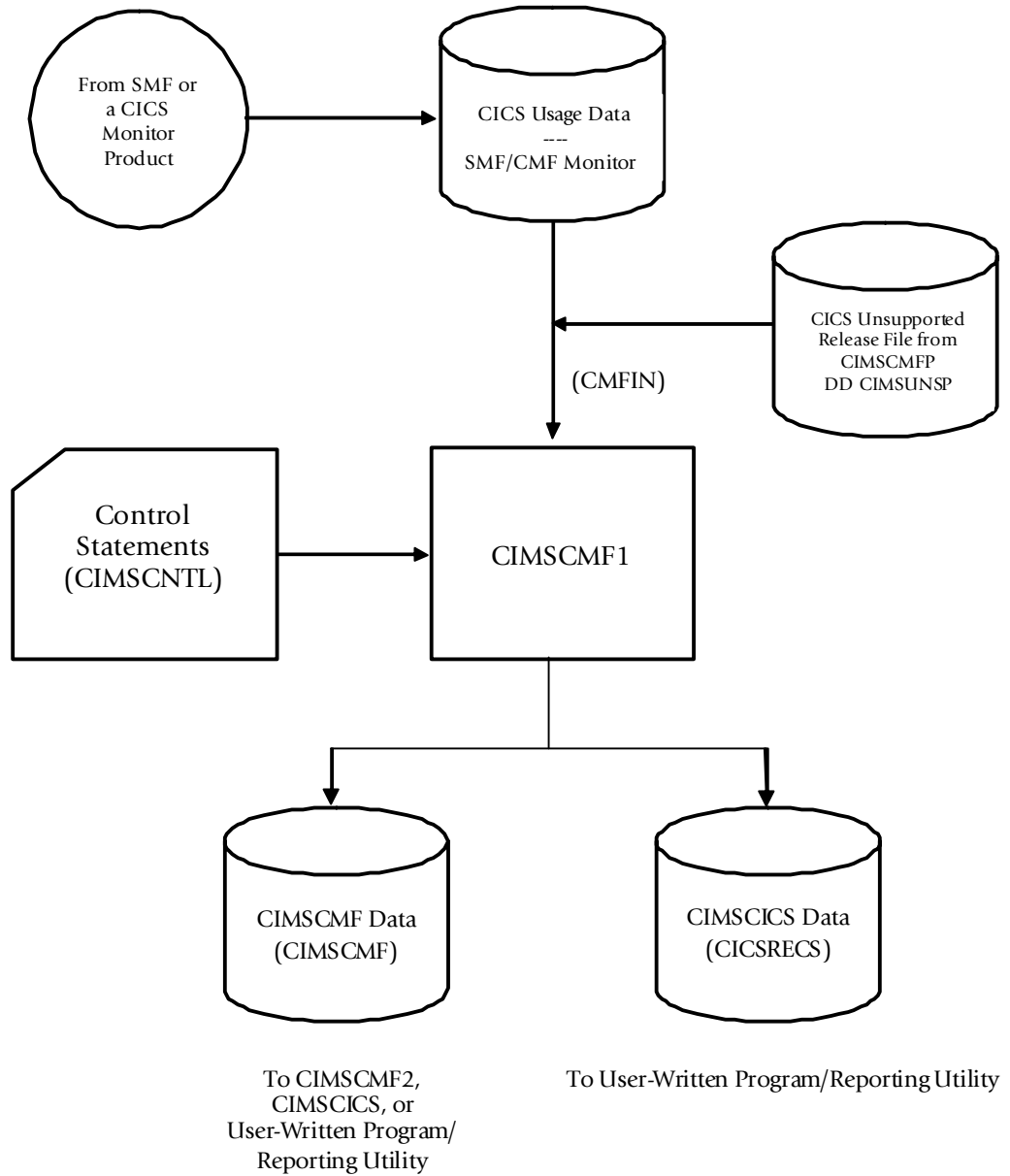


Figure 2-1 • CIMSCMF1 Flow Chart

Note • Values in parentheses represent DDNAMES.

CIMSCMFP Flow Chart

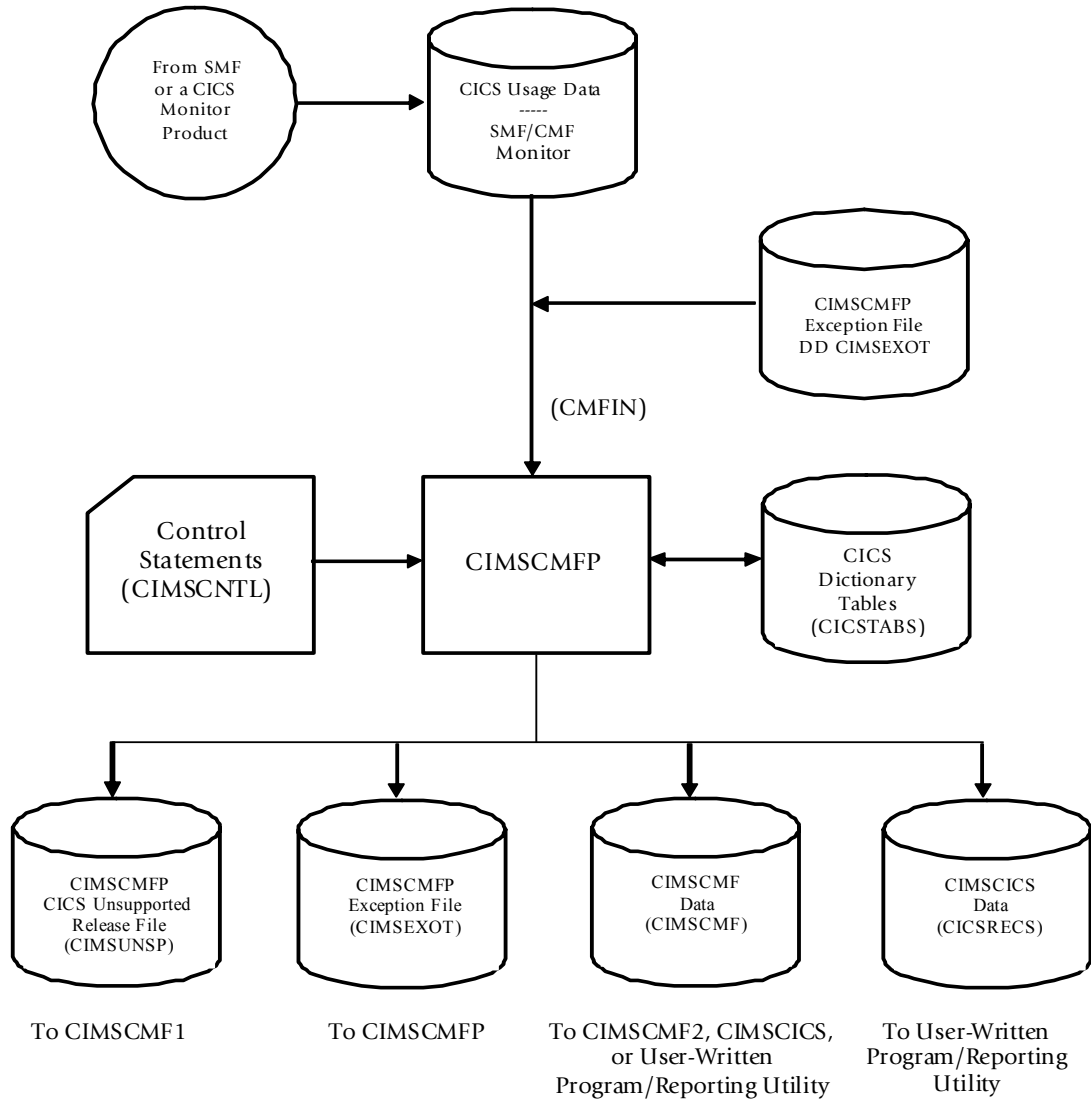


Figure 2-2 • CIMSCMFP Flow Chart

Note • Values in parentheses represent DDNAMES.

CIMS CICS Account Code Creation Program—CIMSCMF2

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About CIMSCMF2

The program CIMSCMF2 reads the intermediate CIMS CICS Transaction Accounting data set created by the program CIMSCMF1/CIMSCMFP and/or the output data set previously created from CIMSCMF2. The program CIMSCMF2 also writes an output data set.

CIMSCMF2 generates a data set containing CIMS 791 accounting records. These 791 records require additional processing by CIMSEXTR to generate CSR+ files that can be processed by CIMSMONY and/or Tivoli Usage and Accounting Manager.

Using CIMSCICS After CIMSCMF2

If you are using the CIMSBILL chargeback program, the CICS transaction data must be processed through the programs CIMSCMF1/CIMSCMFP and CIMSCMF2 before processing through the program CIMSCICS.

If you are using the chargeback program CIMSMONY, CIMSCICS is not required. CIMSSMF2 generates the CIMS 791 accounting records required by CIMSMONY.

Reprocessing 791 CICS Records

The program CIMSCMF2 can re-process the CIMS 791 accounting records. CIMSCMF2 reads the 791 input from the CIMSIN DD.

Processing 804 and 791 Records

It is possible to process both the CIMS 804 (the output data set previously created from CIMSCMF2) and the CIMS 791 accounting records in the same run of CIMSCMF2, but in most cases it is not necessary. For example, if you produce invoices on both the mainframe and Tivoli Usage and Accounting Manager and you need to pass the data multiple times for account code conversion, you do not need to process both types of records. You can continue to process the 804 record only (by using the `WRITE 791 OFF` control statement) and then on the last iteration of CIMSCMF2, change the `WRITE` statement to `WRITE 804 OFF`.

CIMSCMF2 Input

- Input Data Set - DDNAME CMFIN

This is the data set created by program CIMSCMF1/CIMSCMFP or the data set created by this program.

This data set contains the 703/803 and/or the 704/804 type records.

- Input Data Set - DDNAME CIMSIN

This is the data set created by the program CIMSCMF2 containing 791 type CICS records.

- Control Statements - DDNAME CIMSCNTL

Control parameters are used to establish record selection.

- CIMS Dictionary - DDNAME CIMSDTVS

This data set contains the CIMS Dictionary definitions. The CIMS Dictionary must be available when generating CIMS 791 accounting records.

- Account Code Table Input - DDNAME CIMSTABL

The Account Code table translates multiple combinations of identification codes into the organization's account code structure. Identification codes include:

FIELD NAME	TABLE STARTING POSITION	CICSRC01 STARTING POSITION	CICSRC02 STARTING POSITION	LENGTH	EXAMPLE OR DESCRIPTION VALUE
APPLICATION ID	1	13	57	8	CICSREG1
USER ID	9	21	65	8	USER001
TERMINAL ID	17	49	49	4	TRM1
TRANSACTION ID	21	45	45	4	TRN1
OPERATOR ID	25	53	53	3	OP1
ACCOUNT CODE	28	13	13	32	ACCOUNT CODE
TRANSACTION CLASS NAME	60	121	121	8	TCLSNAME
VTAM LOGICAL UNIT NAME	68	129	129	8	LUNAME
VTAM NETNAME	76	137	137	20	NETNAME
UNIT OF WORK ID	96	101	101	8	UOWID
REMOTE SYSTEM ID	104	109	109	4	REMOTE SYSTEM ID
z/OS SYSTEM ID	108	157	173	8	z/OS SYSTEM ID

Note • OPERATOR ID is valid for CICS releases earlier than 4.1. IBM dropped this field starting with 4.1.

Note • Use the Table Starting Position in DEFINE FIELD and DEFINE MOVEFLD statements. Use the CICSRC01 or CICSRC02 starting position for sorting.

This table can contain an unlimited number of entries for sorted tables. The maximum number of entries for non-sorted tables is dependent upon the amount of storage available to the program. Each CIMS CICS Transaction Accounting Record is processed against this table.

CIMSCMF2 Output

CIMSCMF2 generates the following output:

- Output Data Set - DDNAME CIMSACT2

This output contains CIMS 791 accounting records. These records are processed by CIMSEXTR. The output CSR+ files from CIMSEXTR are then processed by CIMSMONY and/or Tivoli Usage and Accounting Manager.

- Output Data Set - DDNAME CMFOUT

This output contains CIMS 804 accounting records. Program CIMSCICS uses the accounting records in the data set to create accounting transaction records.

- Output Data Set - DDNAME CIMSEXOT

This is the CICS exception file that contains 804 records that were unmatched to any entry during account code conversion.

- Output Data Set - DDNAME CIMSEXT1

This is the CICS exception file that contains 791 records that were unmatched to any entry during account code conversion.

- Printed Output - DDNAME CIMSPRNT, CIMSMG

Printed output lists the input parameters, shows the number of performance records read and written, and lists all records not matched in the Account Code Table.

Processing Requirements

The program CIMSCMF2 accepts either the data set created by program CIMSCMF1/ CIMSCMFP or the data set created by this program (such as CICSRC01 or CICSRC02). The data set created by this program contains Account Codes for transactions matched with entries in the Account Code table. Transactions not matched retain their original value.

A sort of the input data file should precede the execution of CIMSCMF2. The sort places the input file in sequence by the control codes used to match data in the Account Code Table. The sort fields control statement is discussed under Account Code Table Preparation.

The program CIMSCMF2 provides extensive record selection capability. Record selection conditions control the amount of data written by CIMSCMF2. The time required to process the CIMSCMF2 system is directly related to the number of input records and the complexity of the Account Code table.

The CIMSCMF2 account code feature is very flexible and powerful. This feature provides multiple options to improve speed.

Do *not* process significant volumes of CICS records through program CIMSCMF2 without sorting the records into the same order as the Account Code table. If you do not sort the records, performance is degraded. The time to process random records is excessive. Multiple sorts, using the exception file, process hundreds of times faster using minimal resources.

Control Statement Table

Following is a summary of the control statements available for CIMSCMF2.

CONTROL STATEMENT	PAGE #	DESCRIPTION
ACCOUNT CODE = keyword	[3-8]	Specifies the account code table lookup is bypassed and the account code should be based on the "keyword".
ACCOUNT CODE CONVERSION	[3-9]	Specifies to use the account code table.
CHANGE * TO X	[3-9]	Specifies to replace all asterisks with x in certain fields when the field contains all HEX ZEROES.
CHANGE ACC ? WILDCARD TO	[3-10]	Changes the account code conversion wildcard character from ? to any displayable character.
CHANGE ACC * WILDCARD TO	[3-10]	Changes the account code conversion wildcard character from * to any displayable character.
DATE SELECTION	[3-11]	Selects data within the specified date range.
DEFAULT ACCOUNT CODE CONVERSION OFF	[3-11]	Disables defaults.
DEFAULT ALWAYS/YES/EXCEPTION	[3-12]	Controls the matching process for the CIMS Dictionary.
DEFINE FIELD	[3-12]	Defines fields for account code table processing.
DEFINE MOVEFLD	[3-14]	Defines fields to be moved into the account code fields.
EXCEPTION FILE PROCESSING OFF	[3-15]	Turns off the writing of the unmatched account codes (during account code conversion) to the no match data set.
EXCEPTION FILE PROCESSING * OFF	[3-15]	Same as EXCEPTION FILE PROCESSING OFF except asterisks are not required in the account code field.
EXCLUDE	[3-15]	Allows the exclusion of certain record from processing.
EXIT	[3-17]	Specifies the calling of the User Exit CIMSACU3.
INPUT EXIT	[3-18]	Specifies the calling of the User Exit CIMSUE36.

CONTROL STATEMENT	PAGE #	DESCRIPTION
LIMIT DCTN004W MSG TO	[3-18]	Limits the number of DCTN004W messages issued.
NON-PRIME DAY	[3-19]	Non-prime processing day.
NON-PRIME SHIFT CODE = n	[3-19]	Sets the non-prime shift code.
ON EMPTY INPUT FILE SET RC TO	[3-19]	Sets the return code when no valid input records are processed.
OUTPUT EXIT	[3-20]	Specifies the calling of the User Exit CIMSUE38.
RESET	[3-20]	Always start Alternate Account Code search from the top of the table.
SHIFT	[3-21]	Allows specifying up to 9 shifts.
TURN OFF ACC WILDCARDS	[3-22]	Turns off wildcard processing during account code conversion.
VERSION	[3-23]	Overrides the Version number in the CIMS Dictionary key.
WRITE {804 791} OFF	[3-23]	Suppresses the generation of 804 or 791 records.

Control Statement Reference

Program CIMSCMF2 supports input control statements that specify processing options. These control statements are *optional*.

ACCOUNT CODE = keyword

This control statement specifies that the Account Code table lookup is to be bypassed, and that the ACCOUNT CODE field should be filled based on the control statement parameter following the '=' sign.

The following control statement word values are supported:

```
APPLID USERID TRANID
USERID
USERID APPLID
USERID TRANID
```

Note • If you need other values placed in the account code field, use the MOVEFLD feature. See *DEFINE MOVEFLD_{x,y,z}*, on page 3-14.

These values specify the placement of the CICS USERID, a USERID TRANID, or USERID APPLID into the Account Code field of the CIMSCMF2 output records.

Note • APPLID is an 8-character field.
TRANID is a 4-character field.
USERID is an 8-character field.

CICS transactions with asterisks (*) in the USERID field are written to the Exception file when Exception File processing is specified. Remember, program CIMSCMF1/ CIMSCMFP converted low values x'00' to asterisks for USERID, TRANID, TERMID, OPERID and Program Name.

Examples

To specify the placement of USERID into the account code field, supply the following control statement:

```
ACCOUNT CODE = USERID
```

To specify the placement of USERID TRAN ID into the account code field, supply the following control statement:

```
ACCOUNT CODE = USERID TRANID
```

Note • The account code field starts at offset 13.

Use BROWSE (ISPF) to view the contents of converted CIMS CICS records.

ACCOUNT CODE CONVERSION

This control statement specifies processing of the CIMS Account Code Conversion module. If this control statement is not present, then *no* account code conversion is performed. CIMSCMF2 assumes the Account Code table is *random*. This is acceptable as long as the table is small (fewer than 100 records).

Example

```
ACCOUNT CODE CONVERSION
```

Or

```
ACCOUNT CODE CONVERSION INPUT IS RANDOM
```

The account table search always starts from the beginning. This technique is *required* if you want to use a CATCH-ALL entry at the end of the table to catch all unmatched identification codes. Otherwise, the unmatched account code records are written to the exception file.

```
ACCOUNT CODE CONVERSION INPUT IS SORTED
```

CIMS searches the table sequentially. On each record read from the sorted resource file, the account code table is searched starting from the location of the previous match. This is the most efficient technique for a table search. This is the recommended processing option.

- The table is searched only once.
- Unmatched account codes are written to the exception file.
- CIMS automatically changes the default search technique when wildcard characters are found in the account code table. If wildcards are present, the table is assumed to be random and therefore the search always starts from the beginning of the table.
- This control statement overrides the CIMS default search technique, which is to always start searching from the beginning of the table.

CHANGE * TO X

Program CIMSCMF1/CIMSCMFP placed all asterisks in the following fields when the field contains all HEX ZERO (X'00') values.

- The CICS Monitor Facility places X'00' in fields that are not filled.
- The fields User ID, Transaction ID, Terminal ID, Operator ID, and Program Name are interrogated by program CIMSCMF1/CIMSCMFP for HEX ZEROS (X'00'). If the field is X'00', CIMS replaces the field with asterisks (X'5C').
- You can change the value asterisk to a value of your choice.

Example

```
CHANGE * TO #
```

The above control statement changes the value asterisk (X'5C') to pound sign (x'7B') in the fields User ID, Transaction ID, Terminal ID, Operator ID and Program Name.

CHANGE ACC ? WILDCARD TO x

Where x = any displayable character.

When this control statement is present, the default wildcard character ? in the account code conversion table is processed as an explicit character and the specified displayable character is processed as a wildcard character.

Example

CHANGE ACC ? WILDCARD TO +

The + character rather than the ? character is processed as a wildcard in the account code conversion table.

CHANGE ACC * WILDCARD TO x

Where x = any displayable character.

When this control statement is present, the default wildcard character * in the account code conversion table is processed as an explicit character and the specified displayable character is processed as a wildcard character.

Example

CHANGE ACC * WILDCARD TO +

The + character rather than the * character is processed as a wildcard in the account code conversion table.

DATE SELECTION x y

Records that fall within the specified date range are selected for processing.

x = Low Date in YYYYMMDD

y = High Date in YYYYMMDD

You can use a CIMS control statement date selection value in place of the X and Y values above. Control statement date selection statements calculate the following dates automatically:

Keyword	Description
**CURDAY	Sets date range based on run date and run date less one day.
**CURWEK	Sets date range based on run week (Sun—Sat).
**CURMON	Sets date range based on run month.
**PREDAY	Sets date range based on run date, less one day.
**PREWEK	Sets date range based on previous week (Sun—Sat).
**PREMON	Sets date range based on previous month.
CURRENT	Sets date range based on current period from CIMS calendar file.
PREVIOUS	Sets date range based on previous period from CIMS calendar file.

The default value is 19880101 (low), 20991231 (high). Normal operation is to use the default values.

DEFAULT ACCOUNT CODE CONVERSION OFF

This control statement will turn off the default account code conversion that is done by CIMSCMF2. When no account code conversion is defined, CIMSCMF2 will use ACCOUNT CODE = APPLID USERID TRANID. Including this control statement will prevent the default account code conversion from being executed.

This control statement should be used when executing CIMSCMF2 to build 791 records.

DEFAULT ALWAYS/YES/EXCEPTION

This control statement controls how the CIMS Dictionary file is read. If the default CIMS Dictionary is implemented, then all subsystem input should use default definitions and you should specify `DEFAULT ALWAYS`. This sets all input to use the default definitions.

`DEFAULT YES` is the default value. It sets the processing to look for a matching dictionary entry using the Box ID field (refer to the CIMS Dictionary—CIMSDTVS chapter of the *CIMS Mainframe Data Collector and Chargeback System User Guide*). If no match is found, then the default is used. This setting is helpful in situations where the dictionary contains some custom definitions. `DEFAULT YES` allows you to define only those subsystems that require customization. All other subsystems use the default definition.

`DEFAULT EXCEPTION` indicates that processing should always access the dictionary using the Box ID. However, if a match is not found, processing will stop. You can update the dictionary to correct a "no match" condition. Thereafter, you can reprocess the data with the proper dictionary definitions.

DEFINE FIELDx,y,z,

The `DEFINE` record specifies the CICS Identification Codes to be used for account code conversion. The available fields are:

FIELD NAME	TABLE STARTING POSITION	CICSRC01 STARTING POSITION	CICSRC02 STARTING POSITION	LENGTH	EXAMPLE OR DESCRIPTION VALUE
APPLICATION ID	1	13	57	8	CICSREG1
USER ID	9	21	65	8	USER001
TERMINAL ID	17	49	49	4	TRM1
TRANSACTION ID	21	45	45	4	TRN1
OPERATOR ID	25	53	53	3	OP1
ACCOUNT CODE	28	13	13	32	ACCOUNT CODE
TRANSACTION CLASS NAME	60	121	121	8	TCLSNAME
VTAM LOGICAL UNIT NAME	68	129	129	8	LUNAME
VTAM NETNAME	76	137	137	20	NETNAME
UNIT OF WORK ID	96	101	101	8	UOWID
REMOTE SYSTEM ID	104	109	109	4	REMOTE SYSTEM ID
z/OS SYSTEM ID	108	157	173	8	z/OS SYSTEM ID
PROGRAM NAME	116	73	73	8	PROGRAM NAME

Use the Table Starting Position in DEFINE FIELD and DEFINE MOVEFLD statements. Use the CICSRC01 or CICSRC02 starting position for sorting.

Ten define statements are supported. The data fields specified by the define statements are placed into four eight-character fields. These eight-character fields are then compared to the LOW and HIGH account code table values.

Each field is separated by a comma.

FIELD	DESCRIPTION
DEFINE FIELDX,Y,Z	Control Statement Identification
(X)	A value from 1 to 10
(Y)	Field Location (1-115)
(Z)	Field Length (1-115)

Note: The total length of all DEFINE FIELDS cannot exceed 128 bytes.

Defined fields that are less than eight characters are padded with spaces.

Example

DEFINE FIELD1,68,8,

This statement specifies that field one should contain the value of the VTAM Logical Unit Name.

DEFINE MOVEFLD x,y,z ,

This control statement is used to define the input location and length of a field to be moved or copied into the CIMS Account Code field.

Ten DEFINE MOVEFLD statements are supported. The data fields specified by DEFINE MOVEFLD statements are moved into specified targets in the Account Code Conversion Table.

Targets are specified with @1, @2, @3, @4, @5, @6, @7, @8, @9, and @10.

Each value is separated by a comma.

The CIMS program will evaluate an @10 specified in an account code table entry as a MOVEFLD10 if one has been defined. If a MOVEFLD10 has not been defined, then CIMS will evaluate this as a MOVEFLD1 followed by a literal 0.

VALUE	DESCRIPTION
DEFINE MOVEFLDX,Y,Z	Control Record Identification
(X)	A value from 1 to 10
(Y)	Field Location (1-115)
(Z)	Field Length (1-115)

Note: The total length of all DEFINE MOVEFLDS cannot exceed 128 bytes.

Move Field values replace @1 - @10 in the CIMS Account Code Table.

Example

```
DEFINE MOVEFLD1,21,4,
```

The Transaction ID contained in the CIMS CICS record is placed into the account code field based on the specification contained in the account code conversion table.

MOVE FIELD LITERALS

Literals can be defined with the MOVEFLD statement as follows:

```
DEFINE MOVEFLD4,,,'LITERAL'
```

(LITERAL is a 1 - 40 character value enclosed in single quotes)

The word LITERAL would be placed into the CIMS Account Code Field whenever an @4 was encountered in the Account Code Table.

Example

```
DEFINE MOVEFLD2,,,'CICSPRD1'
```

The literal CICSPRD1 would be placed into the Account Code field based on the specifications contained in the account code conversion table.

EXCEPTION FILE PROCESSING OFF

The CIMS default is to write records to the Exception File when a match is *not* found in the Account Code Table and the account code field contains asterisks (*).

This control statement specifies that CICS transactions that fail to find a table match in the Account Code Table are not written to an Exception File. The transactions are written to the CMFOUT or CIMSACT2 DD with their original account codes.

If this control statement is not present, the information written to the Exception File contains an asterisk (*) in the Account Code field (positions 13 through 28). The records in the Exception File can be reprocessed through CIMSCMF2 in a subsequent run.

DDNAME CIMSEXOT defines the Exception File. The data records written to DDNAME CIMSEXOT are compatible with the data records written to DDNAME CMFOUT.

EXCEPTION FILE PROCESSING * OFF

This control statement is the same as EXCEPTION FILE PROCESSING OFF except that it removes the requirement that the account code field must contain asterisks to be written to the exception file. This statement is useful when 791 records are written to DDNAME CIMSEXT1.

EXCLUDE identifier x y

The EXCLUDE statement allows you to exclude certain records or ranges of records from CIMSCMF2 processing, where:

```

identifier =      APPLID
                  OPERID
                  PROGRAM
                  TERMID
                  TRANID
                  TRANTYPE
                  USERID

```

and

```
x =              low value
```

```
y =              high value
```

Therefore, for each statement specified, all records greater than or equal to x and records less than or equal to y are excluded from processing. If the y (high value) is not present, the low value is assumed.

A maximum of 100 EXCLUDE statements *per identifier* can be specified.

The values for x and y vary according to the identifier used. The following chart shows the possible values.

IDENTIFIER	X,Y LENGTH	DESCRIPTION
APPLID	8 characters	Application ID
OPERID	3 characters	Operator ID (Valid on CICS releases earlier than 4.1)
PROGRAM	8 characters	Program Name
TERMID	4 characters	Terminal ID
TRANID	4 characters	Transaction ID
TRANTYPE	1 character	Transaction Type
USERID	8 characters	User ID

The following examples show the use of the EXCLUDE statement.

Examples

```
EXCLUDE APPLID CICS MVS1 CICS MVS9
```

This statement specifies that records with APPLIDs greater than or equal to CICS MVS1 and less than or equal to CICS MVS9 should be excluded from processing.

```
EXCLUDE TRANID PAY0 PAY5
```

This statement specifies that records with Transaction IDs greater than or equal to PAY0 and less than or equal to PAY5 should be excluded from processing.

```
EXCLUDE USERID SWANSONB
EXCLUDE USERID JONES001
```

These statements specify that records with a USERID of SWANSONB or JONES001 should be excluded from processing.

EXIT

This control statement specifies the calling of a user-supplied exit routine. This feature lets you include program logic in the generation of Account Codes and to bypass the CIMS Account Code Table search routine.

If EXIT is present, program CIMSCMF2 executes the Cobol statement:

```
CALL 'CIMSACU3' USING CMF-REC1, WORK-AREA
```

CMF-REC contains the address of the first character of the input data record. (See [Appendix A, Record Descriptions](#) for a description of CIMSCICS record CICSRC01 or CICSRC02).

WORK-AREA is defined as follows:

```
RETURN-FLAG    PIC X
APPLID         PIC X(08)
USERID        PIC X(08)
```

The value of the RETURN-FLAG is SPACES on entry unless at end of job. At end of job, the value is set to HIGH values.

On exit, you can place the following values in the RETURN-FLAG:

- SPACES specifies to continue processing.
- 1 specifies that the input record is to be written on the output data set as is. No account code processing should be done. Processing is to continue with a new input record.
- Any other value specifies that the input record is to be dropped. Processing is to continue with a new input record. IBM does not recommend dropping records.

CIMS distribution material includes Cobol source statements for the exit routine. See member CIMSUSER of data set CIMS.DATASET. Look for entry CIMSACU3.

Note • This EXIT should be used only to interrogate identification codes and change the account code field.

- ¹CMF-REC is the output of program CIMSCMF1/CIMSCMFP or the output of program CIMSCMF2. Be sure to review both record descriptions.
- A X'03' in position 2 of a record indicates INPUT record is in CICSRC01 format.
- A X'04' in position 2 of a record indicates INPUT record is in CICSRC02 format.

INPUT EXIT

This control statement specifies the calling of a user-supplied exit routine. This feature lets you interrogate data records, and this exit can change any field within the record. It is called before any other EXIT.

If INPUT EXIT is present, program CIMSCMF2 executes the Cobol statement:

```
CALL 'CIMSUE36' USING ICMF-REC1, RETURN-FLAG
```

ICMF-REC contains the address of the first character of the input data record. (See [Appendix A, Record Descriptions](#) for description of CIMSCICS record CICSRC01 or CICSRC02.)

RETURN-FLAG is defined as follows:

```
RETURN-FLAG    PIC X
```

The value of the RETURN-FLAG is SPACES on entry unless at end of job. At end of job, the value is set to HIGH values.

On exit, you can place the following values in the RETURN-FLAG:

- SPACES specify to continue processing.
- High values specify that the input record is to be dropped. Processing is to continue with a new input record. IBM does not recommend the dropping of records.

CIMS distribution material includes Cobol source statements for the exit routine. See member CIMSUSER of data set CIMS.DATFILE. Look for entry CIMSUE36.

¹ICMF-REC is the output of program CIMSCMF1/CISMCMFP or the output of program CIMSCMF2. Be sure to review both record descriptions.

- A X'03' in position 2 of a record indicates INPUT record is in CICSRC01 format.
- A X'04' in position 2 of a record indicates INPUT record is in CICSRC02 format.

LIMIT DCTN004W MSG TO n

Limits the number of DCTN004W messages issued. This message occurs when a request to build a Define User Field or Box ID cannot be honored. The default is 100.

NON-PRIME DAY yyyyddd/yyyymdd

The Julian or Gregorian Date specified by this control statement is considered a non-prime processing day.

If the NON-PRIME SHIFT CODE control statement is not present, all work processed on this day is assigned to the default shift code 2.

Twenty NON-PRIME DAY records are supported.

Examples
 NON-PRIME DAY 2007001
 NON-PRIME DAY 20070704
 NON-PRIME DAY 2007359

Specifies New Year's Day 2007, Independence Day 2007, and Christmas Day 2007 as non-prime days.

NON-PRIME SHIFT CODE = n

Where n = a numeric value 1–9.

This statement specifies the shift code for a non-prime shift. This control statement is used with the NON-PRIME DAY control statement to specify a shift code other the default code 2. If this control statement is not present, the default shift code 2 is used for the NON-PRIME DAY control statement.

Example

```
NON-PRIME SHIFT CODE = 8
NON-PRIME DAY 2007001
NON-PRIME DAY 20070704
NON-PRIME DAY 2007359
```

ON EMPTY INPUT FILE SET RC TO nnnn

Where nnnn = numeric value from 0 to 9999.

When this control statement is present, CIMSCMF2 will end with a return code value of nnnn when no valid input records are processed. The default return code is 16 when no valid input records are processed.

Example

```
ON EMPTY INPUT FILE SET RC TO 0
```

If no valid input records are processed by CIMSCMF2, the program will end with a return code of 0.

OUTPUT EXIT

This control statement specifies the calling of a user-supplied exit routine. This feature lets you include program logic to interrogate the output record, immediately before the record is to be written.

If OUTPUT EXIT is present, program CIMSCMF2 executes the Cobol statement:

```
CALL 'CIMSUE38' USING OCMF-REC1, RETURN-FLAG
```

OCMF-REC contains the address of the first character of the input data record. (See [Appendix A, Record Descriptions](#) for a description of CIMSCICS record CICSRC02).

RETURN-FLAG is defined as follows:

```
RETURN-FLAGPIC X
```

The value of the RETURN-FLAG is SPACES on entry unless at end of job. At end of job, the value is set to HIGH values.

On exit, you can place the following values in the RETURN-FLAG.

- SPACES specify to continue processing.
- High values specify that the input record is to be dropped. Processing is to continue with a new input record. IBM does not recommend the dropping of records.

CIMS distribution material includes Cobol source statements for the exit routine. See member CIMSUSER of data set CIMS.DATASET.

¹OCMF-REC is defined by CICSRC02.

RESET

Note • Applies to CIMSCMF2 Alternate Table only.

If present, this statement specifies that the table search for Account Codes should start at the first table entry. The CIMS default is to start the table search at the location of the previous match.

SHIFT [SHIFT DAY] [CODE] [END TIME] [CODE] [END TIME] [CODE] [END TIME]

Shift records define work shifts. Up to nine shifts per day can be specified on a shift record. Nine entries make up a shift record:

- Day of Week
- Shift Code
- Shift End Time
- Shift Code
- Shift End Time
- Shift Code
- Shift End Time...

Seven shift records are supported, one for each day of the week. Shift times are input in hours and minutes using the 24-hour clock. Hours and minutes are put together.

Example

8:30 am is input ==> 0830
 1:00 pm is input ==> 1300
 8:30 pm is input ==> 2030

The following rules apply to shift records.

-
- Rule 1** Day is defined by the first three letters of the day of the week.
 - Rule 2** Each succeeding shift end time must be greater than the previous end time.
 - Rule 3** The shift code must be supplied for each time.
-

SHIFT CODE Examples

No shift spans midnight.

Monday through Friday -

-
- Shift 1** 5:00 am to 8:00 am *and* 3:30 pm to 5:00 pm
 - Shift 2** 8:00 am to 11:30 am *and* 1:30 pm to 3:30 pm
 - Shift 3** 5:00 pm to 8:00 pm
 - Shift 4** 9:30 pm to 24:00 pm *and* 00:00 am to 5:00 am
 - Shift 5** 11:30 am to 1:30 pm *and* 8:00 pm to 9:30 pm
-

Saturday through Sunday -

Shift 1	8:00 am to 5:00 pm
Shift 2	5:00 pm to 24:00 pm <i>and</i> 00:00 am to 8:00 am

```
SHIFT SUN 2 0800 1 1700 2 2400
SHIFT MON 4 0500 1 0800 2 1130 5 1330 2 1530 1 1700 3 2000 5 2130 4 2400
SHIFT TUE 4 0500 1 0800 2 1130 5 1330 2 1530 1 1700 3 2000 5 2130 4 2400
SHIFT WED 4 0500 1 0800 2 1130 5 1330 2 1530 1 1700 3 2000 5 2130 4 2400
SHIFT THU 4 0500 1 0800 2 1130 5 1330 2 1530 1 1700 3 2000 5 2130 4 2400
SHIFT FRI 4 0500 1 0800 2 1130 5 1330 2 1530 1 1700 3 2000 5 2130 4 2400
SHIFT SAT 2 0800 1 1700 2 2400
```

CIMS DEFAULT SHIFTS

If SHIFT statements are not present, CIMS uses the following shift assignments:

Sunday through Saturday

Shift 1	08:00 am to 04:30 pm
Shift 2	04:30 pm to 24:00 pm
Shift 3	00:00 am to 08:00 am

If these defaults were entered using SHIFT statements, the shift records would appear as:

```
SHIFT SUN 3 0800 1 1630 2 2400
SHIFT MON 3 0800 1 1630 2 2400
SHIFT TUE 3 0800 1 1630 2 2400
SHIFT WED 3 0800 1 1630 2 2400
SHIFT THU 3 0800 1 1630 2 2400
SHIFT FRI 3 0800 1 1630 2 2400
SHIFT SAT 3 0800 1 1630 2 2400
```

TURN OFF ACC WILDCARDS

When this control statement is present, the default wildcard characters ? and * in the account code conversion table are processed as explicit characters. No wildcard matching occurs.

Example

```
TURN OFF ACC WILDCARDS
```

The characters ? and * in the account code conversion table are processed as explicit values, not as wildcards.

VERSION

The VERSION control statement directs processing to use a non-default version of the CIMS Dictionary definitions. By default, a value of 01 is used. The VERSION control statement will override the default value and access to the CIMS Dictionary will use the alternate version number when building the record key.

x - Identifies the version number. Must be a value between 00 and 99.

WRITE {804 | 791} OFF

By default, CIMSCMF2 writes the recommended CIMS 791 accounting records to DD CIMSACT2 and also writes the CIMS 804 accounting records to DD CMFOUT. The 791 records are supported by CIMSEXTR, CIMSMONY, and Tivoli Usage and Accounting Manager. The 804 records are supported by CIMSCICS and CIMSBILL.

The statement `WRITE 804 OFF` suppresses the generation of the 804 records. The DD CMFOUT is not needed.

The statement `WRITE 791 OFF` suppresses the generation of the 791 records. The DD CIMSACT2 is not needed.

Example

```
WRITE 804 OFF
```

The CIMS 804 accounting records are not written to the DD CMFOUT.

CIMSCMF2 Primary Account Code Table

Each installation has different account code requirements. The CIMS product provides a flexible method of assigning account codes. Account codes are assigned by matching entries of the input identification fields to values in the account code table.

- The account codes defined within the table are prepared to correspond to the account code structure used for batch jobs.
- The account code table can contain an unlimited number of entries for sorted tables. For unsorted tables, the account code table can contain as many entries as can fit into storage. If you need more entries than can fit into storage, use multiple passes or call technical support for suggestions.
- These entries contain LOW and HIGH values for record matching. This allows a table entry to define an account code to a range of identification codes.

Bypassing the Account Code Table

You can bypass the account code table look-up. Possible reasons to bypass the account code table are:

- An account code table is called from program CIMSACCT.
- An Input Identification Code is the Account Code.

To bypass the Account Code table look-up, let the account table be null and supply the Account Code Conversion control statement.

The DEFINE statement is supported when the account code table is null.

The values specified in the DEFINE statements become the account code.

CIMSCMF2 Alternate Account Code Table

CIMSCMF2 provides two account code conversion tables. The alternate table is compatible with previous releases of CIMS and can meet the needs of some users better than the primary table. See *CIMSCMF2 Alternate Account Code Table* on page 3-31.

Account Code Table (Record Definitions)

The account code table is defined as follows:

- Data records cannot exceed 450 characters.
- The format of each record is free form with entries separated by commas.
- The first entry is the LOW Identification Code value (maximum 128 characters in 10 nodes).
- The second entry is the HIGH Identification Code value (maximum 128 characters in 10 nodes).
- When the second entry is null, the first field is placed into the second field and padded with high values (x'FF').
- The third entry is the Account Code value that replaces identification codes that are greater than or equal to the LOW value and less than or equal to the HIGH value.
- Entries within the low and high compare fields can be separated into 10 fields by using a delimiter colon (:) within the field.

Account Code Table Processing Information

- The maximum number of Account Code table entries is unlimited for sorted tables. For non-sorted tables, the maximum number of entries is dependent upon the storage available to the program. If you require more than can be allocated, use a smaller table for the first run and then process the no-match file with a second execution using the rest of the table.
- The compare tests are equal to or greater than the LOW and equal to or less than the HIGH.
- The input table can be in any order. However, the program executes significantly faster if the account table is in the same sequence as the input data set (that is, High Level Qualifier) and if ACCOUNT CODE CONVERSION INPUT IS SORTED is specified.
- When ACCOUNT CODE CONVERSION INPUT IS SORTED is specified, the account code table is searched starting at the first value until a match is found. When a match is found, the location of the match is saved and the search for the next transaction identification code starts at that location.
- If a match is not found, the record is written to the Exception data set and a message is printed showing the identification code for the unmatched transaction. A maximum of 100 messages prints.
- Data defined by this table is read from DDNAME CIMSTABL.
- Each data value can contain up to 128 characters (excluding colons).
- A comma (,) delimits a data value.
- A colon (:) separates qualifier nodes.
- The asterisk (*) and question mark (?) characters can be used as wildcard characters in both the low and high table entries.
- Account codes specified by the account code table should be compatible with the account codes specified for Batch, TSO, and so forth.
- When a wildcard character is used, the account code conversion file is searched from *top to bottom* looking for a match. This is time consuming for large Account Code tables.
- When processing a new account code table entry, if the characters @10 are encountered, CIMS will evaluate this as a MOVEFLD10 statement if a MOVEFLD10 was present in the control cards. Otherwise, CIMS will evaluate this as a MOVEFLD1 followed by a literal 0.

Account Code Table (Matching Information)

- Each low node field and each high node field is compared to the corresponding identification code. If the compares are true, the account code is assigned.
- The low value fields are padded with X'00' and the high value fields are padded with X'FF'.
- The high value field is set equal to the low value field + (high padding) when the high value field is null.
- When a match is not found, the identification code is printed. No data is written to the CIMS Account file unless the EXCEPTION FILE PROCESSING OFF control statement was specified.
- The unmatched record is written to the no-match data set for future processing by default. To write out the unmatched records to the CIMSACCT OUTPUT DD with their original Account Code values, specify EXCEPTION FILE PROCESSING OFF.
- The no-match data set is defined as DDNAME CIMSEXIN for input and CIMSEXOT for output.

CICS Account Code Table Examples

Following are several examples that translate various CICS identification codes into Account Codes:

For the purpose of these examples, assume that the CICS Identification data is as follows:

Example 1

Translate CICS User IDs to an Account Code.

Table 3-1 • SAMPLE CICS IDENTIFICATION CODES

FIELD NAME	TABLE STARTING POSITION	CICSRC01 STARTING POSITION	CICSRC02 STARTING POSITION	LENGTH	EXAMPLE OR DESCRIPTION VALUE
APPLICATION ID	1	13	57	8	CICSREG1
USER ID	9	21	65	8	USER001
TERMINAL ID	17	49	49	4	TRM1
TRANSACTION ID	21	45	45	4	TRN1
OPERATOR ID	25	53	53	3	OP1
ACCOUNT CODE	28	13	13	32	ACCOUNT CODE
TRANSACTION CLASS NAME	60	121	121	8	TCLSNAME
VTAM LOGICAL UNIT NAME	68	129	129	8	LUNAME
VTAM NETNAME	76	137	137	20	NETNAME
UNIT OF WORK ID	96	101	101	8	UOWID
REMOTE SYSTEM ID	104	109	109	4	REMOTE SYSTEM ID
z/OS SYSTEM ID	108	157	173	8	z/OS SYSTEM ID
PROGRAM NAME	116	73	73	8	PROGRAM NAME

Use the Table Starting Position in DEFINE FIELD and DEFINE MOVEFLD statements. Use the CICSRC01 or CICSRC02 starting position for sorting.

DEFINE FIELDS

```
DEFINE FIELD1,9,7,
```

Note • Position 9 is the first character of USERID.

TABLE ENTRY

```
USER001, ,AABBB
```

Explanation

CICS USERID (USER001) is translated into account code AABBB.

Example 2

Charge CICS USERID (USER001) when using Transaction ID TRN1 to Account AABBB.
 Charge CICS USERID (USER001) when using Transaction ID TRN2 to Account AACCC.

Table 3-2 • SAMPLE CICS IDENTIFICATION CODES

FIELD NAME	TABLE STARTING POSITION	CICSRC01 STARTING POSITION	CICSRC02 STARTING POSITION	LENGTH	EXAMPLE OR DESCRIPTION VALUE
APPLICATION ID	1	13	57	8	CICSREG1
USER ID	9	21	65	8	USER001
TERMINAL ID	17	49	49	4	TRM1
TRANSACTION ID	21	45	45	4	TRN1
OPERATOR ID	25	53	53	3	OP1
ACCOUNT CODE	28	13	13	32	ACCOUNT CODE
TRANSACTION CLASS NAME	60	121	121	8	TCLSNAME
VTAM LOGICAL UNIT NAME	68	129	129	8	LUNAME
VTAM NETNAME	76	137	137	20	NETNAME
UNIT OF WORK ID	96	101	101	8	UOWID
REMOTE SYSTEM ID	104	109	109	4	REMOTE SYSTEM ID
z/OS SYSTEM ID	108	157	173	8	z/OS SYSTEM ID
PROGRAM NAME	116	73	73	8	PROGRAM NAME

Use the Table Starting Position in DEFINE FIELD and DEFINE MOVEFLD statements.
 Use the CICSRC01 or CICSRC02 starting position for sorting.

DEFINE FIELDS

DEFINE FIELD1,9,7, First 7 Positions of USER-ID

DEFINE FIELD2,21,4, 4 Positions of TRAN-ID

TABLE ENTRY

USER001:TRN1,,AABBB
 USER001:TRN2,,AACCC

Explanation

CICS usage for USERID (USER001) is charged to account code AABBB when TRN1 is used and to account AACCC when TRN2 is used.

Example 3

Translate ranges of User IDs to account codes, but keep the original User ID and Transaction ID in the CIMS Account Code field for detail reporting.

Table 3-3 • SAMPLE CICS IDENTIFICATION CODES

FIELD NAME	TABLE STARTING POSITION	CICSRC01 STARTING POSITION	CICSRC02 STARTING POSITION	LENGTH	EXAMPLE OR DESCRIPTION VALUE
APPLICATION ID	1	13	57	8	CICSREG1
USER ID	9	21	65	8	USER001
TERMINAL ID	17	49	49	4	TRM1
TRANSACTION ID	21	45	45	4	TRN1
OPERATOR ID	25	53	53	3	OP1
ACCOUNT CODE	28	13	13	32	ACCOUNT CODE
TRANSACTION CLASS NAME	60	121	121	8	TCLSNAME
VTAM LOGICAL UNIT NAME	68	129	129	8	LUNAME
VTAM NETNAME	76	137	137	20	NETNAME
UNIT OF WORK ID	96	101	101	8	UOWID
REMOTE SYSTEM ID	104	109	109	4	REMOTE SYSTEM ID
z/OS SYSTEM ID	108	157	173	8	z/OS SYSTEM ID
PROGRAM NAME	116	73	73	8	PROGRAM NAME

Use the Table Starting Position in DEFINE FIELD and DEFINE MOVEFLD statements. Use the CICSRC01 or CICSRC02 starting position for sorting.

DEFINE FIELDS

```
DEFINE FIELD1,9,7,                               First 7 positions of USER-ID
DEFINE MOVEFLD1,9,7,                             =@1       First 7 positions of USER-ID
DEFINE MOVEFLD2,21,4,                             =@2       4 positions of TRAN-ID
```

TABLE ENTRY

```
USER001,USER009,AABBB@1@2
```

Explanation

CICS usage for User IDs USER001 through USER009 is charged to account code AABBB.

The original User ID and the Transaction ID are appended to the account code. @1 specifies the first MOVE field and @2 specifies the second MOVE field.

Example

ACCOUNT CODE FIELD = ABBBB USER001 TRN1 (Spaces added for readability)

Account Code and CICS Resource File SORT Options

CIMSCMF2 executes significantly faster if the Account Code Table and the CICS Resource File are in the same sort order.

Use the following information to determine the appropriate sort fields.

INPUT = CICSRC01 See *Record Layout = CICSRC01* on page A-2.

INPUT = CICSRC02 See *Record Layout = CICSRC02* on page A-3.

FIELD NAME	TABLE STARTING POSITION	CICSRC01 STARTING POSITION	CICSRC02 STARTING POSITION	LENGTH	EXAMPLE OR DESCRIPTION VALUE
APPLICATION ID	1	13	57	8	CICSREG1
USER ID	9	21	65	8	USER001
TERMINAL ID	17	49	49	4	TRM1
TRANSACTION ID	21	45	45	4	TRN1
OPERATOR ID	25	53	53	3	OP1
ACCOUNT CODE	28	13	13	32	ACCOUNT CODE
TRANSACTION CLASS NAME	60	121	121	8	TCLSNAME
VTAM LOGICAL UNIT NAME	68	129	129	8	LUNAME
VTAM NETNAME	76	137	137	20	NETNAME
UNIT OF WORK ID	96	101	101	8	UOWID
REMOTE SYSTEM ID	104	109	109	4	REMOTE SYSTEM ID
z/OS SYSTEM ID	108	157	173	8	z/OS SYSTEM ID
PROGRAM NAME	116	73	73	8	PROGRAM NAME

Use the Table Starting Position in DEFINE FIELD and DEFINE MOVEFLD statements. Use the CICSRC01 or CICSRC02 starting position for sorting.

CIMSCMF2 Alternate Account Code Table

Each installation has different account code requirements. CIMS provides a flexible alternate method of assigning account codes. This alternate method might be better for some organizations.

- The account codes are assigned by matching entries within an input file to either Transaction IDs, Terminal IDs, Operator IDs, or User ID.
- The account code table can contain up to 40,000 entries.
- The entries contain LOW and HIGH values for record matching. This allows a single table entry to define an account code for a range of transactions. This also allows new users to be added to the system without changing CIMS tables.

Alternate Account Code Table–Record Format

POSITION	VALUE	DESCRIPTION
1	X	A value to identify the entries to be matched: 1 = TERMINAL ID & TRANSACTION ID 2 = TERMINAL ID & OPERATOR ID 3 = OPERATOR ID & TRANSACTION ID 4 = TERMINAL ID 5 = TRANSACTION ID 6 = OPERATOR ID 7 = USER ID Release 1.7 & above 8 = USER ID & TRANSACTION ID Release 1.7 & above <i>Input Format is Comma Delimited</i>
2	b	
3-10	XXXXXXXX	LOW select value When the code in column 1 is a 1, 2, or 3, the first four positions specify the first parameter, and the second four positions specify the second parameter. When the code in column 1 is a 4, 5, 6 or 7, the value is left adjusted and specifies the appropriate ID.
11-12	TO	For Readability
13-20	XXXXXXXX	HIGH select value When the code in column 1 is a 1, 2, or 3, the first four positions specify the first parameter, and the second four positions specify the second parameter. When the code in column 1 is a 4, 5, 6 or 7, the value is left adjusted and specifies the appropriate ID.
21	b	
22-53	X(32)	Transactions passing the above LOW-HIGH test have this Account Code.

Alternate Account Code Table Format–User ID and Transaction ID

The following input format is for item 8 (User ID and Transaction ID).

POSITION	VALUE	DESCRIPTION
1	8	CONTROL CODE
THE REST OF THE RECORD IS COMMA DELIMITED		
	,	Delimiter Low select value for User ID. 8 characters maximum.
	,	Delimiter Low select value for Transaction ID. 4 characters maximum.
	,	Delimiter High select value for User ID. 8 characters maximum. If field null, low select value is used.
	,	Delimiter High select value for Transaction ID. If field null, low select value is used.
	,	Delimiter Account code for above. 32 characters maximum.

Alternate Account Code Table Processing Information

- 1 The maximum number of table entries is 40,000.
- 2 The compare tests are equal to or greater than for LOW, and equal to or less than for HIGH.
- 3 The input table can be in any order. However, the program executes faster if the account table is in the same sequence as the input data set.
- 4 The account code table is searched starting at the first value until a match is found. When a match is found, the location of the match is saved and the search for the next transaction account code starts at that location. To override the search protocol, see *RESET* on page 3-20.
- 5 If a match is not found, and the account contained in the record is asterisks, a message is printed showing the Transaction ID, Terminal ID, Operator ID, and User ID of the unmatched transaction.

- 6 The output of this program can be re-input. This allows account codes to be specified for records containing asterisks in the Account Code field.
- 7 The data defined by this table is read from DDNAME ACTCODE.
- 8 If the ACTCODE DDNAME data set is null, transaction records are read and excluded from the output data set based on the conditions specified on record selection control statements.

CIMS Alternate Account Code Table Example

You sometimes use the USER-ID, sometimes the TRAN-ID, and sometimes the TERM-ID to arrive at the account code.

This example uses the CIMS Alternate Account Code Table.

DEFINE FIELDS

Not applicable with Alternate Account Code table.

- 1 = TERMINAL ID & TRANSACTION ID
- 2 = TERMINAL ID & OPERATOR ID
- 3 = OPERATOR ID & TRANSACTION ID
- 4 = TERMINAL ID
- 5 = TRANSACTION ID
- 6 = OPERATOR ID
- 7 = USER ID
- 8 = USER ID & TRANSACTION ID

TABLE ENTRIES

```
1 3      13      22
....|....|....|....|....|
```

```
7 USER001  USER009  AABBB
5 TRNA     TRNC       AABBB
4 TRM1     TRM9       AABBB
```

Explanation

- User IDs (USER001 through USER009) are charged to AABBB.
- Transaction IDs (TRNA through TRNC) are charged to AABBB.
- Terminal IDs (TRM1 through TRM9) are charged to AABBB.

CIMSCMF2 Sample Job Control

Refer to member CIMSCICS in CIMS.DATFILE.

CIMSCMF2 Flow Chart

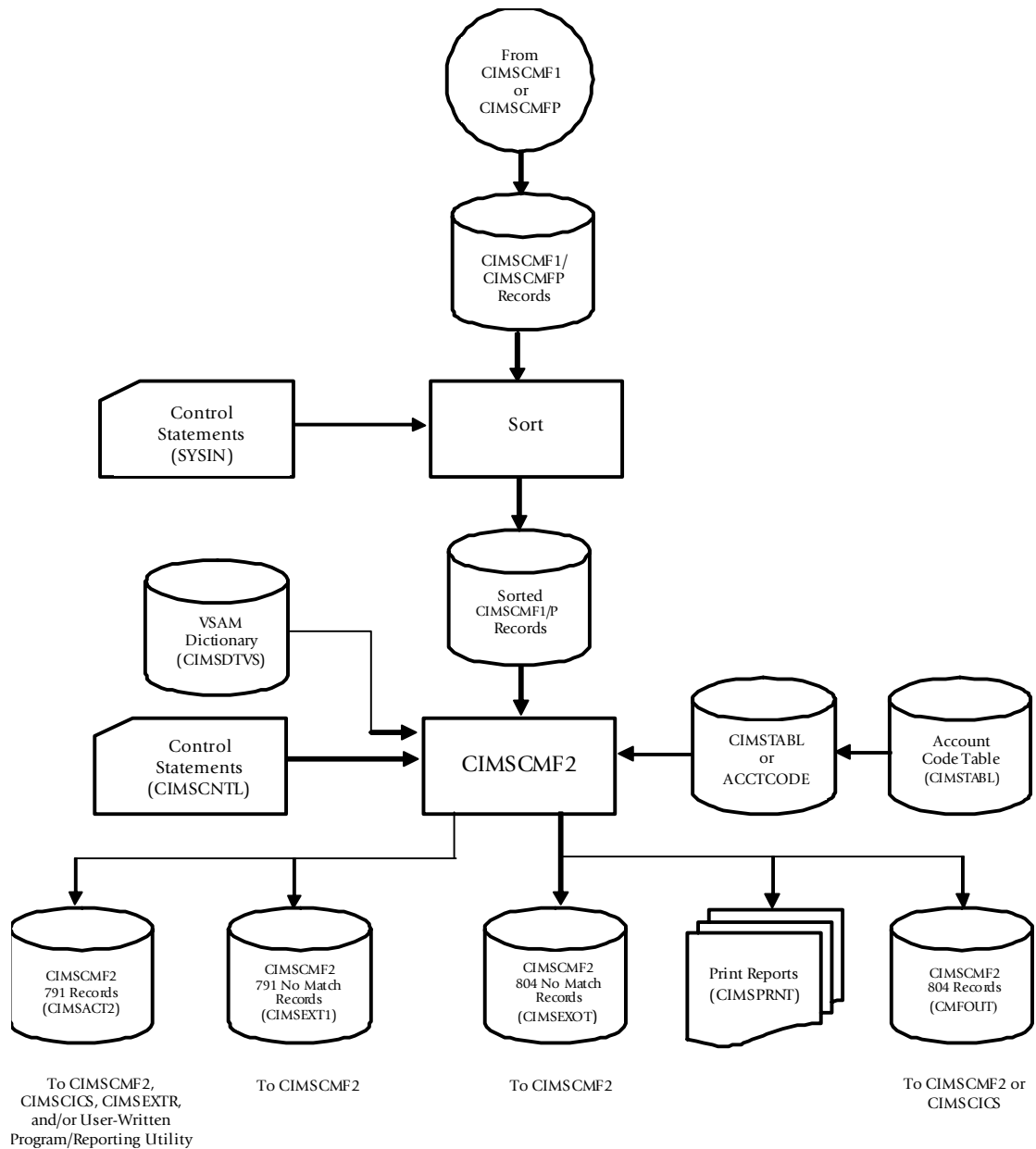


Figure 3-1 • CIMSCMF2 Flow Chart

Note • Values in parentheses represent DDNAMES.

Transaction Creation and Reporting Program—CIMSCICS

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Introduction

Note • CIMSCICS is not applicable if you are using the CIMSMONY chargeback program or Tivoli Usage and Accounting Manager.

CIMSCICS can process one of two data sets generated by CIMSCMF2:

- CMFOUT DD output. Contains the 804 record type, which has an LRECL of 200 bytes.
- CIMSACT2 DD output. Contains the CIMS record type 791, which has an LRECL of 6508.

Specifically, CIMSCICS provides the following:

- Transactions for integration into the CIMS Accounting File.
- Detail and Summary Reports for CICS usage.
- Prime and Non-Prime Shift definition capability.
- Record selection capability.

Creation of CICS Chargeback Records

The data set created by program CIMSCMF2 contains CIMS CICS Transaction Accounting Records with Account Codes. CIMSCICS generates transaction records (record type 999) that are compatible with other CIMS Accounting Data Sets. These records are added to the Accounting Data Set for subsequent processing by the CIMS Billing System and Chargeback program CIMSBILL.

See *CICS Transaction Account Record (z/OS Only)* on page A-4 for a definition of the transaction record type 999.

Program Operation

Control statements specify processing options such as headlines and record selection parameters. Reports are printed, and CICS Billing Transaction Records are written to the CIMS Accounting file for processing by program CIMSBILL.

Control Statement Table

Following is a summary of the control statements available for CIMSCICS.

CONTROL STATEMENT	PAGE #	DESCRIPTION
ACCOUNT RECORDS	[4-4]	Specifies to use Account Records, not Performance Records.
ADJUST CPU TIME TO HUNDREDTHS OF SECONDS ADJUST TRANSACTION TIME TO HUNDREDTHS OF SECONDS	[4-4]	Specifies to convert the CICS times (which are in 16 microseconds) the SMF default of hundredths of seconds.
DATE SELECTION	[4-5]	Selects data within the specified date range.
EXCLUDE	[4-5]	Allows the exclusion of certain record based on account codes from processing.
HD(x)	[4-5]	Defines Report Headlines.
INCLUDE	[4-6]	Specifies to include certain records only, based on account codes.
LINES PER REPORT PAGE	[4-6]	Specifies the number of lines per page on the reports.
NON-PRIME DAY yyyyddd	[4-6]	Specifies non-prime days (in Julian format).
NON-PRIME DAY yyyyymmdd	[4-6]	Specifies non-prime days (in Gregorian format).
NORMALIZE CPU TIME NORMALIZE TRANSACTION TIME	[4-7]	Specifies surcharge or discount based on resource utilization.
PRIME SHIFT	[4-8]	Specifies the prime shift.
PRINT EACH TRANSACTION	[4-8]	Specifies the report to show every transaction.
PRINT NO REPORTS	[4-8]	Specifies to print no reports.
PRINT SUMMARIZED TRANSACTIONS	[4-8]	Specifies to print transactions summarized by predefined criteria.
REPORT TOTALS WHEN	[4-9]	Specifies on what criteria to generate totals.
TRANSACTION DATE	[4-9]	Specifies to place the specified date as the transaction date in the CIMSACCT output record.
USE TOTAL FILE CONTROL	[4-10]	Specifies to use FCTOTCT for File Access Counts.
WEEKENDS ARE NON-PRIME	[4-10]	Specifies that weekends are considered non-prime.

Control Statement Reference

Program CIMSCICS provides keyword statements to control processing options. The following control statements are supported.

ACCOUNT RECORDS

This statement specifies that CIMSCICS is to use Account Records in place of Performance Records. Account records are normally not used. The CIMS default is to process Performance records. Account records do not exist after CICS Release 2.

ADJUST CPU TIME TO HUNDREDTHS OF SECONDS ADJUST TRANSACTION TIME TO HUNDREDTHS OF SECONDS

CICS Monitor Facility records CPU and Transaction times in 16 micro second units (.000016). SMF CPU time is recorded in hundredths of seconds (.01). The above control statements adjust the CICS CPU and Transaction times to hundredths of seconds to be compatible with the SMF times. CIMSCICS adjusts the times per the following computation:

$$\begin{aligned}\text{CPU TIME} &= (\text{CPU TIME} \div 62500) + .009 \\ \text{TRANSACTION TIME} &= (\text{TRANS TIME} \div 62500) + .009\end{aligned}$$

The result of the above computation is a value with two (2) decimal digits.

Note • The value 1 in CICS Monitor Facility time field is equal to .000016 seconds. Therefore $1 \div .000016 = 62500$.

DATE SELECTION x y

Records that fall within the specified date range are selected for processing.

x = Low Date in YYYYMMDD

y = High Date in YYYYMMDD

You can use a CIMS control statement date selection value in place of the X and Y values above. Date selection statements automatically calculate the following dates:

Keyword	Description
**CURDAY	Sets date range based on run date and run date less one day.
**CURWEK	Sets date range based on run week (Sun—Sat).
**CURMON	Sets date range based on run month.
**PREDAY	Sets date range based on run date, less one day.
**PREWEK	Sets date range based on previous week (Sun—Sat).
**PREMON	Sets date range based on previous month.
CURRENT	Sets date range based on current period from CIMS calendar file.
PREVIOUS	Sets date range based on previous period from CIMS calendar file.

Default date selection values are 19880101 (low) to 20991231 (high).

EXCLUDE a b

This statement excludes records with Account Codes in the defined range from further processing.

a = Low Value for Account Code

b = High Value for Account Code

If the high value is not present, the low value is assumed.

HD(x)

Up to three (3) Report Headlines can be defined as follows:

Example

```
HD1 YOUR HEADLINE TEXT NUMBER 1
HD2 YOUR HEADLINE TEXT NUMBER 2
HD3 YOUR HEADLINE TEXT NUMBER 3
```

INCLUDE a b

This statement includes records with Account Codes in the defined range for further processing.

a = Low Value for Account Code

b = High Value for Account Code

If the high value is not present, the low value is assumed.

When this statement is present, *only* the Account Codes specified are included in this report.

LINES PER REPORT PAGE n

This statement specifies the number of lines per printed report page.

Default is 55.

Example

LINES PER REPORT PAGE 50

Changes lines per page to 50.

NON-PRIME DAY yyyyddd

Julian date to describe up to 20 non-prime days.

Example

NON-PRIME DAY 20070101(New Years Day)

NON-PRIME DAY 20071225(Christmas Day)

This control statement specifies that transactions processed on 20070101 & 20071225 should use the non-prime rate codes.

NON-PRIME DAY yyyyymmdd

Gregorian date to describe up to 20 non-prime days.

NORMALIZE¹ CPU TIME [FOR (w,x,y,z)²] to A¹
NORMALIZE¹ TRANSACTION¹ TIME [FOR (w,x,y,z)²] to A¹

These control statements allow a discount or a surcharge based on resource usage for Account Code, APPLID, User ID and Shift.

The values for w, x, y, and z are as follows:

w is an ACCOUNT CODE:	Maximum Length	32
x is an APPLID:	Maximum Length	8
y is a USERID:	Maximum Length	8
z indicates shift:	1 = Prime 2 = Non-Prime	

- The value for A is a percentage; two decimal places are supported.
- To increase CPU or TRANSACTION time, make A a positive number.
- To decrease CPU or TRANSACTION time, make A a negative number.

For example:

To increase either time by 100%, fill in A with 100.

To increase either time by 90%, fill in A with 90.

To increase either time by 50.55%, fill in A with 50.55.

To decrease either time by 10%, fill in A with 10-.

To decrease either time by 25.25%, fill in A with 25.25-.

You can specify a maximum of 500 NORMALIZE CPU TIME and 500 NORMALIZE TRANSACTION TIME statements for each w, x, y, and z value at one time.

You can use the value asterisk '*' to represent a wildcard in the ACCOUNT CODE, APPLID and USERID fields.

The following examples show how these statements can be used.

¹ ABBREVIATIONS	FULL SPELLING
NORM	NORMALIZE
TRAN	TRANSACTION

² [FOR (w,x,y,z)] is an optional phrase.

Examples

- 1** To increase CPU time by 90% for APPLID MVSCICS1 enter:
NORM CPU TIME FOR (,MVSCICS1) TO 90
- 2** To increase CPU time by 90% for USERID SAMPLEUSERID enter:
NORM CPU TIME FOR (,,SAMPLEUSERID) TO 90
- 3** To increase CPU time by 90% for PRIME SHIFT enter:
NORM CPU TIME FOR (,,,1) TO 90
- 4** To increase CPU time by 90% for all transactions enter:
NORM CPU TIME TO 90
- 5** To decrease CPU time by 50% for all transactions enter:
NORM CPU TIME TO 50-
- 6** To increase CPU time by 250% for ACCOUNT CODE ABBBBCCCC, APPLID z/OS, and USERID 12345678, enter:
NORM CPU TIME FOR (ABBBCCCC,MVSCICSA,12345678) TO 250

PRIME SHIFT hh.mm hh.mm

This statement defines the PRIME processing shift.

Example

```
PRIME SHIFT 08.00 17.00
```

Defines the prime processing shift as 8:00 am to 5:00 pm.

PRINT EACH TRANSACTION

If this statement is present, the CIMSCICS report lists each transaction.

PRINT NO REPORTS

This statement suppresses the standard CIMSCICS printed report.

PRINT SUMMARIZED TRANSACTIONS

If this statement is present, the CIMSCICS report lists summarized transactions. The summarized transaction report line is printed whenever one of the following changes: Account Code, APPLID, User ID, Tran ID, Term ID or Operator ID.

Note • If control statements PRINT EACH TRANSACTION and PRINT SUMMARIZED TRANSACTIONS are not present, a Summary Report is generated.

REPORT TOTALS WHEN x

CIMSCICS generates report totals when the value (x) changes. The value (x) is one of the following parameters:

- Account Code Changes
- APPLID or Account Code Changes
- Transaction or Account Code Changes
- USERID or Account Code Changes
- Terminal or Account Code Changes
- Operator or Account Code Changes
- Any value changes, that is, Account Code, APPL ID, TRAN ID, USER ID, Operator ID, Terminal ID)

The default report is 'WHEN ACCOUNT CODE CHANGES'.

TRANSACTION DATE x y

This statement places this date in CIMS CICS Transactions.

Default is to place the current date (RUN DATE) into each Transaction Record.

x = Low Date in YYYYMMDD

y = High Date in YYYYMMDD

You can use a CIMS control statement date value in place of the X and Y values above. control statement date records automatically calculate the following dates:

Keyword	Description
**CURDAY	Sets date range based on run date and run date less one day.
**CURWEK	Sets date range based on run week (Sun—Sat).
**CURMON	Sets date range based on run month.
**PREDAY	Sets date range based on run date, less one day.
**PREWEK	Sets date range based on previous week (Sun—Sat).
**PREMON	Sets date range based on previous month.
CURRENT	Sets date range based on current period from CIMS calendar file.
PREVIOUS	Sets date range based on previous period from CIMS calendar file.

USE TOTAL FILE CONTROL

CICS Monitory Facility provides two file access count fields. CIMS uses the field labeled FCAMCT. This field is defined as number of times the user task invoked file access-method interfaces. This number excludes requests for OPEN and CLOSE.

Some of the non-IBM monitoring products do not fill this field. Instead, the field FCTOTCT is filled. This field is defined as total number of file control requests issued by the user task. This number excludes any request to open, close, enable or disable a file.

To use field FCTOTCT for file access counts in program CIMSCICS, supply the following statement:

```
USE TOTAL FILE CONTROL
```

WEEKENDS ARE NON-PRIME

If this statement is present, then weekends are considered non-prime. The Prime Shift statement is ignored for Saturday and Sunday.

Billable Items

Program CIMSCICS supports the following resource usage charges:

- Transaction Time (Elapsed)
- Transaction Time (CPU)
- Number of Transactions
- Input Messages
- Output Messages
- File Access Counts
- Other User-Defined Resource Values

An installation can charge for any value contained in the CICS monitor file.

Billing Rates and Rate Codes

CIMSCICS obtains billing rates from CIMSBILL RATE records. RATE records from CIMSBILL are used to integrate CICS charges with batch, online, and external charges.

The following Cost Center/Rate Codes are placed in Transaction records to identify resource values. These Transaction records are written to the CIMS Job Accounting data set. The codes placed in transaction records are matched with RATE codes placed in RATE Records. They are then extended by program CIMSBILL.

For more information on Cost Center/Rate Codes, TRANS Records and Billing RATE Records, refer to the Computer Center Chargeback Program—CIMSBILL chapter in the *CIMS Mainframe Data Collector and Chargeback System User Guide*.

PRIME CODES	NON-PRIME CODES	DESCRIPTION
ZCS1	ZCX1	TRANSACTION TIME-ELAPSED (SECONDS)
ZCS2	ZCX2	TRANSACTION TIME-CPU (SECONDS)
ZCS3	ZCX3	TRANSACTIONS
ZCS4	ZCX4	INPUT MESSAGES
ZCS5	ZCX5	OUTPUT MESSAGES
ZCS6	ZCX6	MESSAGES
ZCS7	ZCX7	FILE ACCESS COUNT

These RATE Codes define Resource values. These Resource values are extended on the Invoice report by program CIMSBILL.

CIMSCICS Sample Job Control

```
//CIMSCICS EXEC PGM=CIMSCICS,REGION=OK
//STEPLIB DD DSN=CIMS.LOAD.MODULES,DISP=SHR
//SORTLIB DD DSN=SYS1.SORTLIB,DISP=SHR
//CIMSPRNT DD SYSOUT=A,DCB=BLKSIZE=133
//SYSOUT DD SYSOUT=A,DCB=BLKSIZE=133
//CICSIN DD DSN=CIMS.CICS.CIMSCMF2.DATA,DISP=SHR
//*
//CIMSACCT DD DSN=CIMS.CIMSACCT.DAILY.CICS,
// DISP=(NEW,CATLG,DELETE),
// UNIT=SYSDA,
// SPACE=(TRK,(5,5),RLSE),
// DCB=(RECFM=FB,BLKSIZE=27998)
//*
//CIMSRTVS DD DSN=CIMS.CIMSRATE.VSAM,DISP=SHR
//*
//CIMSCLVS DD DSN=CIMS.CLIENT.VSAM,DISP=SHR
//*
//SORTWK01 DD UNIT=SYSDA,SPACE=(CYL,50,,CONTIG)
//SORTWK02 DD UNIT=SYSDA,SPACE=(CYL,50,,CONTIG)
//SORTWK03 DD UNIT=SYSDA,SPACE=(CYL,50,,CONTIG)
//CIMSCNTL DD DSN=CIMS.DATAFILE(CICSINPT),DISP=SHR
/*
```

CIMSCICS Sample Report

CIMS, THE CHARGEBACK SYSTEM														
CICS Transaction Accounting Report														
PROGRAM CIMSCICS														
APPL ID	USER ID	TRAN ID	TERM ID	OPR ID	DATE YYYY/MM/DD	TRANS COUNT	MSG COUNT	TRANS TIME SECONDS	AVG TRANS TIME SECONDS	CPU TIME SECONDS	AVG CPU TIME SECONDS	TERM INPUT COUNT	TERM OUTPUT COUNT	FILE ACCESS COUNT
APL1	USR1	0211	RA02	***	2001/01/02	17	49	3.412	0.200	2.333	0.137	16	33	123
APL1	USR2	0211	RD01	***	2001/01/02	8	28	1.560	0.195	0.864	0.108	10	18	456
APL1	USR2	0211	RY01	***	2001/01/02	20	64	6.274	0.313	3.130	0.156	20	44	456
APL2	USR2	0211	R601	***	2001/01/02	4	11	0.841	0.210	0.604	0.151	3	8	1135
APL2	USR2	0211	R700	***	2001/01/02	1	2	0.298	0.298	0.071	0.071	1	1	567
APL2	USR2	0241	LC21	***	2001/01/02	34	68	10.377	0.305	8.621	0.253	34	34	555
APL2	USR2	0261	R700	***	2001/01/02	1	2	0.246	0.246	0.145	0.145	1	1	6
APL3	USR4	027B	LC32	***	2001/01/02	1	2	0.322	0.322	0.141	0.141	1	1	34
APL3	USR4	027D	LC32	***	2001/01/02	10	21	0.805	0.180	1.258	0.125	11	10	345
APL3	USR4	0271	LC32	***	2001/01/02	90	314	19.330	0.214	9.764	0.108	88	226	67
APL3	USR4	0279	LC32	***	2001/01/02	6	15	1.859	0.309	0.419	0.069	9	6	99
APL3	USR4	0341	R100	***	2001/01/02	9	18	2.235	0.248	1.822	0.202	9	9	234
APL3	USR4	0341	R200	***	2001/01/02	18	36	6.317	0.350	5.283	0.298	18	18	765
APL3	USR4	0341	R600	***	2001/01/02	12	24	3.477	0.289	2.888	0.240	12	12	890
APL4	USR4	0352	LC37	***	2001/01/02	2	4	0.712	0.356	0.308	0.154	2	2	263
APL4	USR4	0352	LC39	***	2001/01/02	3	6	1.222	0.407	0.490	0.163	3	3	456
....
....
....
....
APL4	USR4	0411	RA02	***	2001/01/02	20	45	3.020	0.151	2.512	0.125	25	20	5678
APL4	USR4	0411	RD01	***	2001/01/02	19	19	2.788	0.309	1.012	0.112	10	9	678
APL4	USR4	0411	R100	***	2001/01/02	41	86	7.521	0.183	5.148	0.125	45	41	54

SUMMARY INFORMATION PRINTED FOR CHANGE IN ACCOUNT CODE AABBB							
TIME	TRANSACTION TIME	CPU COUNT	TRANS MESSAGES	INPUT MESSAGES	OUTPUT COUNT	MESSAGE COUNT	FILE ACCESS
TOTALS	99.999	99.999	999,999	999,999	999,999	999,999	999,999
PRIME-RATES	.1800	30.0000	.5000000	.6000000	.7000000	.8000000	.0075000
CHARGES	9,999.99	9,999.99	9,999.99	9,999.99	9,999.99	9,999.99	999.99

TOTAL AMOUNT = \$99,999.99

CIMSCICS Flow Chart

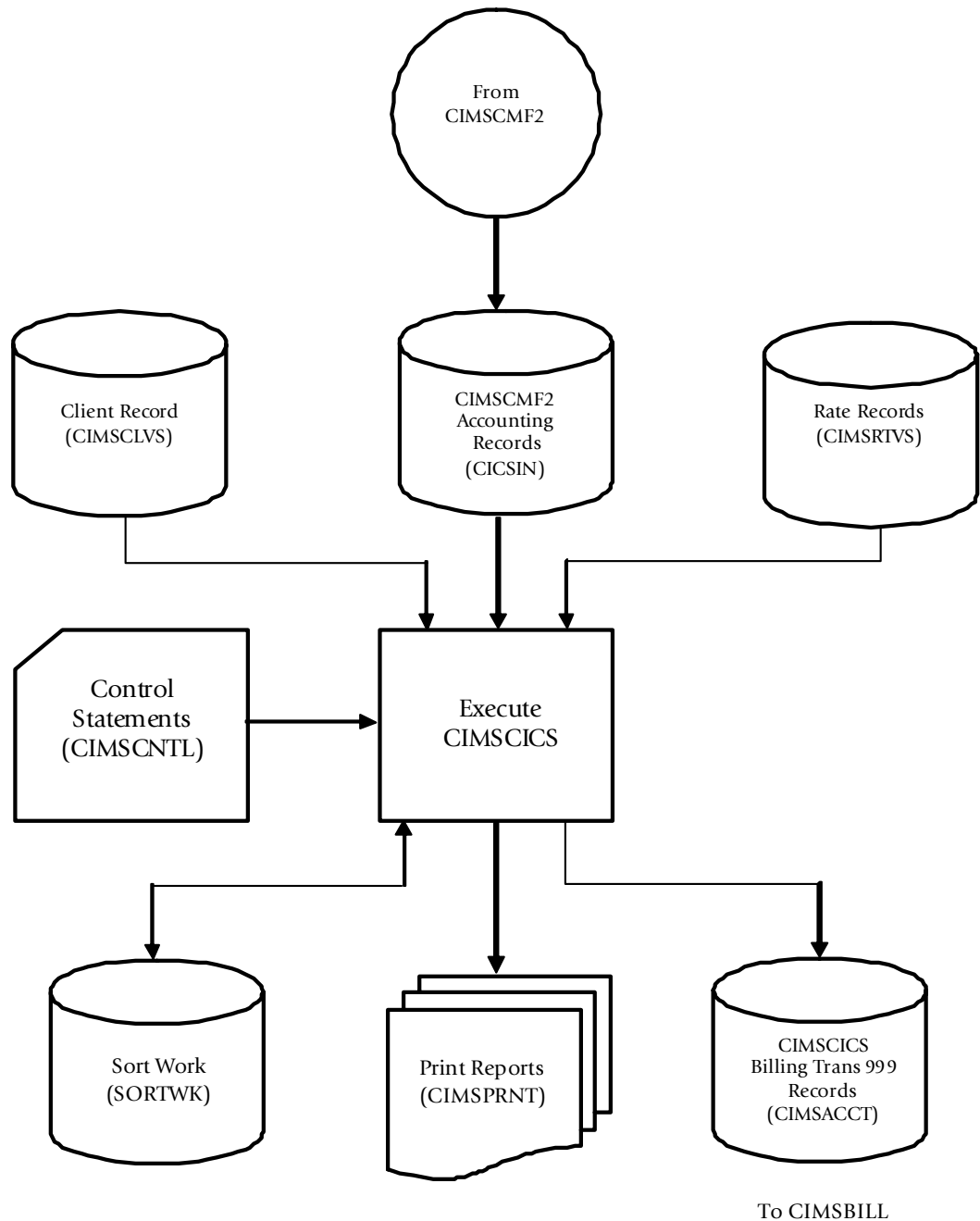


Figure 4-1 • CIMSCICS Flow Chart

Note • Values in parentheses represent DDNAMES.

Record Descriptions

CIMS CICS Transaction Records	A-2
Record Layout = CICSRC01	A-2
Record Layout = CICSRC02	A-3
CICS Transaction Account Record (z/OS Only)	A-4
CIMSCICS 791 Accounting Record	A-5

CIMS CICS Transaction Records

The following are descriptions of the CIMS CICS transaction records created by CIMSCMF1, CIMSCMFP, and CIMSCMF2.

Record Layout = CICSRC01

This is a Performance Record created by CIMSCMF1/CIMSCMFP. The COBOL copybook is available in CIMS.DATFILE (CICSRC01).

```

01 CICSRC01-RECORD          REDEFINES CIMS-CICS-RECORD.
   03 CICSRC01-TYPE          PIC S9(4)      COMP.
                               X'0703' OR X'0803'

   03 CICSRC01-TYPE-X        REDEFINES CICSRC01-TYPE.
       05 CICSRC01-TYPE-X1   PIC X.
       05 CICSRC01-TYPE-X2   PIC X.

   03 CICSRC01-SYSID         PIC X(02).

   03 CICSRC01-TIME          PIC S9(7)V99   COMP.
   03 CICSRC01-DATE          PIC S9(7)      COMP-3.

   03 CICSRC01-ACCT.
       05 CICSRC01-APPLID    PIC X(08).
       05 CICSRC01-USERID    PIC X(08).
       05 CICSRC01-ACCT-FIL3 PIC X(08).
       05 CICSRC01-ACCT-FIL4 PIC X(08).

   03 CICSRC01-TRAN-ID       PIC X(04).
   03 CICSRC01-TERM-ID       PIC X(04).
   03 CICSRC01-OPER-ID       PIC X(03).
   03 CICSRC01-TRANS-TYPE    PIC X(01).

   03 CICSRC01-START         PIC X(08).
   03 CICSRC01-STOP          PIC X(08).
                               ABOVE VALUES IN STCK FORMAT

02 CICSRC01-DATA-RECORD.
   03 CICSRC01-PROGRAM        PIC X(08).
   03 CICSRC01-FILLER1        PIC X(04).
   03 CICSRC01-DISPATCH-TIME PIC S9(9)      COMP.
   03 CICSRC01-CPU-TIME        PIC S9(9)      COMP.

   03 CICSRC01-TC-INPUT        PIC S9(9)      COMP.
   03 CICSRC01-TC-OUTPUT       PIC S9(9)      COMP.
   03 CICSRC01-UOWID           PIC X(08).
   03 CICSRC01-RSYSID          PIC X(04).
   03 CICSRC01-FC-TOTAL        PIC S9(9)      COMP.
   03 CICSRC01-FC-ACCESS       PIC S9(9)      COMP.
   03 CICSRC01-TCLSNAME        PIC X(08).
   03 CICSRC01-LUNAME          PIC X(08).
   03 CICSRC01-NET-NAME        PIC X(20).
   03 CICSRC01-MVS-SYSID       PIC X(08).
   03 CICSRC01-FILLER2        PIC X(36).

```

Record Layout = CICSRC02

This is a CICS Billing Transaction Record created by CIMSCMF2. The COBOL copybook is available in CIMS.DATFILE (CICSRC02).

```

01 CICSRC02-RECORD          REDEFINES CIMS-CICS-RECORD.
   03 CICSRC02-TYPE          PIC S9(4)      COMP.

                                CICSRC02-TYPE = X'0704' OR
                                X'0804'

   03 CICSRC02-TYPE-X        REDEFINES CICSRC02-TYPE.
       05 CICSRC02-TYPE-X1   PIC X.
       05 CICSRC02-TYPE-X2   PIC X.

   03 CICSRC02-SYSID         PIC X(02).

   03 CICSRC02-TIME          PIC S9(7)V99   COMP.
   03 CICSRC02-DATE          PIC S9(7)      COMP-3.

   03 CICSRC02-ACCT.
       05 CICSRC02-ACCT-1    PIC X(08).
       05 CICSRC02-ACCT-2    PIC X(08).
       05 CICSRC02-ACCT-3    PIC X(08).
       05 CICSRC02-ACCT-4    PIC X(08).

   03 CICSRC02-TRAN-ID       PIC X(04).
   03 CICSRC02-TERM-ID       PIC X(04).
   03 CICSRC02-OPER-ID       PIC X(03).
   03 CICSRC02-TRANS-TYPE    PIC X(01).
   03 CICSRC02-APPLID        PIC X(08).
   03 CICSRC02-USERID        PIC X(08).
02 CICSRC02-DATA-RECORD.
   03 CICSRC02-PROGRAM        PIC X(08).
   03 CICSRC02-RESPONSE-TIME PIC S9(9)      COMP.
   03 CICSRC02-DISPATCH-TIME PIC S9(9)      COMP.
   03 CICSRC02-CPU-TIME       PIC S9(9)      COMP.
   03 CICSRC02-TC-INPUT       PIC S9(9)      COMP.
   03 CICSRC02-TC-OUTPUT      PIC S9(9)      COMP.
   03 CICSRC02-UOWID          PIC X(08).
   03 CICSRC02-RSYSID         PIC X(04).
   03 CICSRC02-FC-TOTAL       PIC S9(9)      COMP.
   03 CICSRC02-FC-ACCESS     PIC S9(9)      COMP.
   03 CICSRC02-TCLSNAME       PIC X(08).
   03 CICSRC02-LUNAME         PIC X(08).
   03 CICSRC02-NETNAME        PIC X(20).
   03 CICSRC02-START-TOD      PIC X(08).
   03 CICSRC02-STOP-TOD       PIC X(08).
   03 CICSRC02-MVS-SYSID      PIC X(08).
   03 CICSRC02-TRAN-COUNT     PIC S9(9)      COMP.
   03 CICSRC02-FILLER1       PIC X(16).

```

CICS Transaction Account Record (z/OS Only)

This is a variable length record created by CIMSCICS. The COBOL copybook is available in CIMS.DATFILE (CIMREC12).

```

01 CIMS-TRANSACTION-RECORD.
   03 CIMS-TRANS-RECORD-TYPE      PIC S9(03)      COMP-3.
   03 CIMS-TRANS-SORT              PIC X.
   03 CIMS-TRANS-TYPE              PIC X.
   03 CIMS-TRANS-DELETE            PIC X.
   03 CIMS-TRANS-CONSTANT          PIC X.
   03 CIMS-TRANS-REC-NUM           PIC S9(05)      COMP-3.

   03 CIMS-TRANS-COSTCODE.
     05 CIMS-TRANS-FILLER          PIC X(04).
     05 CIMS-TRANS-FROM-DATE       PIC S9(07)      COMP-3.

*   FIELDS CIMS-TRAN-FILLER & CIMS-TRANS-FROM-DATE
*   HAVE BEEN REPLACED IN V11.2.

*   CIMS-TRANS-COSTCODE = CIMS-TRANS-RATE-CODE

   03 CIMS-TRANS-ACCOUNT           PIC X(32).
   03 CIMS-TRANS-AUDIT             PIC X(08).

   03 CIMS-TRANS-TO-DATE           PIC S9(07)      COMP-3.
*   ABOVE FIELD IS NOT FILLED IN VER 11.2

   03 CIMS-TRANS-RATE-CODE         PIC X(08).
   03 CIMS-TRANS-VALUE             PIC S9(07)V9(4) COMP-3.

   03 CIMS-TRANS-VERSION           PIC X(04).

*   FOLLOWING DATES ARE JULIAN FORMAT.
*   I.E. 2007001 = JANUARY 1, 2007

   03 CIMS-TRANS-LOW-DATE          PIC S9(07)      COMP-3.
   03 CIMS-TRANS-HIGH-DATE         PIC S9(07)      COMP-3.

*   FOLLOWING DATES ARE GREGORIAN FORMAT.
*   I.E. 20070101 = JANUARY 1, 2007

   03 CIMS-TRANS-GREG-LDATE        PIC S9(09)      COMP-3.
   03 CIMS-TRANS-GREG-HDATE        PIC S9(09)      COMP-3.

   03 CIMS-TRANS-SHIFT             PIC X(01).
   03 CIMS-TRANS-FILL1             PIC X(02).
   03 CIMS-TRANS-RESC              PIC S9(09)V9(06) COMP-3.
   03 CIMS-TRANS-COUNTER           PIC S9(09)      COMP.

*
*   FOLLOWING VALUES ARE IN SECONDS
   03 CIMS-TRANS-LOW-TIME           PIC S9(05)V9(02) COMP-3.
   03 CIMS-TRANS-HIGH-TIME         PIC S9(05)V9(02) COMP-3.
   03 FILLER                        PIC X(40).

```

CIMSCICS 791 Accounting Record

This is a variable length record created by program CIMSCMF2.

Table A-1 provides the following information for each of the fields in the CIMSCMF2 791 accounting record:

- Field name (each field name begins with CIMRC791, such as CIMSRC791-CIMSRDW)
- A constant value for the field (designated by quotation marks)

Or

The source that provides the value for the field (such as, CICS Performance SMF 110 record field shown here using the NICKNAME from the default CICS dictionary)

- The corresponding field name in the CIMS Dictionary.
- The type of data (T):
 - B=Binary
 - C=Clock
 - J=Julian date
 - P=Packed
 - T=Text
- Length (L), relative offset within the section (R O), and offset (O) within the entire record
- Rate code (where applicable)
- Description

Table A-1 • CIMSCMF2 791 Accounting Record Fields

CIMSRC791 Field Name	Value/ Source	Dict.. Field Name	T	L	R	O	O	Rate Code	Description
CIMSRDW	x'01D0000'	CIMSRDW	B	4	0		1		Variable record length Record Descriptor Word (RDW)
CIMSRCDT-REC-TYPE	"791"	CIMSTRYP	P	2	4		5		Record type
CIMSSRT-SORT-ID	"9"	CIMSSRT	T	1	6		7		Sort ID
CIMSSMF-SMF-ID		CIMSSMFI	T	1	7		8		SMF ID
CIMSDELDC-DELETE-CODE- CIMSDCDE		CIMSDCDE	T	1	8		9		Delete code if record contains invalid data
CIMSCNST-CONSTANT	"%"	CIMSCONTI	T	1	9		10		Constant
CIMSRCDN-RECORD-NUMBER- CIMSNUM		CIMSNUM	P	3	10		11		Sequential record #
CIMSJOBNAME-JOB-NAME	"CIMSCICS"	CIMSJOBNAME	T	8	13		14		Constant

Table A-1 • CIMSCMF2 791 Accounting Record Fields (continued)

CIMSRC791 Field Name	Value/Source	Dict.. Field Name	T	L	R	O	Rate Code	Description
CIMSACCT-ACCT-CODE	Account code conversion	CIMSACCT	T	128	21	22		Account code
CIMSSYS-SYSTEM-ID	SMFMNSID	CIMSSID	T	4	149	150		System ID (SID)
CIMSSUBS-SUB-SYSTEM-ID	SMFMNSSI	CIMSSUBS	T	4	153	154		WorkID/Subsystem ID
CIMSSHFT-SHIFT-CODE	Based on CIMSSDT	CIMSSHFT	T	1	157	158		Shift code
CIMSDAYW-DAY-OF-WEEK	Based on CIMSSDT	CIMSDOW	T	1	158	159		Day of the week (Sun=0, Mon=1, Tues=2, and so on.)
REC-ID-KEY	CIMSRID+ CIMSVER	CIMSRKEY	T	10	159	160		CIMS record key
CIMSRCD-RECORD-ID	"CIMSCICS"	CIMSRID	T	8	159	160		CIMS record ID
CIMSRCDV-RECORD-VERSION	"01"	CIMSVER	T	2	167	168		Version # of record
CIMSSDT-START-DATE	START	CIMSSDT	J	4	169	170		Start date (YYYYDDD)
CIMSSTM-START-TIME	START	CIMSSTM	C	4	173	174		Start time (.01 seconds)
CIMSEDT-STOP-DATE	STOP	CIMSEDT	J	4	177	178		Stop date (YYYYDDD)
CIMSETM-STOP-TIME	STOP	CIMSETM	C	4	181	182		Stop time (.01 seconds)
CIMSOFR-OFFSET-RSRC	"214"	CIMSOFSR	B	2	185	186		Offset to Resource section
CIMSOFI-OFFSET-IDNT	"304"	CIMSOFSI	B	2	187	188		Offset to Identifier section
CIMSOF-C-OFFSET-CMPL	"0"	CIMSOFSC	B	2	189	190		Not used
CIMSNBR-NUMBER-RCDS	"1"	CIMSNBR	B	4	210	211	Num_Rcds	# of records aggregated
Resource Section								
CICSTRNC-TRANS-CNT	1	CICSTRNC	B	4	0	215	ZCS3	# of transactions
CICSMMSGC-MSG-CNT	TCMSGIN1+TCMSGOU1	CICSMMSGC	B	4	4	219	ZCS6	# of messages
CICSMMSGI-MSG-IN	TCMSGIN1	CICSMMSGI	B	4	8	223	ZCS4	# of input messages
CICSMMSGO-MSG-OUT	TCMSGOU1	CICSMMSGO	B	4	12	227	ZCS5	# of output messages
CICSSIO-SIO	FCAMCT	CICSSIO	B	4	16	231	ZCS7	File access count
CICSTOTC-TOT-CNT	FCTOTCT	CICSFAC	B	4	20	235	ZCS8	File total count
CICSRESP-RESPONSE	STOP - START	CICSRESP	B	4	24	239	ZCS9	Response time
CICSTIME-CPU-TIME	USRCPUT	CICSTIME	P	9	48	263	ZCS2	CPU time (minutes)
CICSCONN-CONN-TIME	USRDISPT	CICSCONN	P	9	57	272	ZCS1	Connection time (minutes)

Table A-1 • CIMSCMF2 791 Accounting Record Fields (continued)

CIMSRC791 Field Name	Value/ Source	Dict.. Field Name	T	L	R	O	O	Rate Code	Description
Identifier Section									
CICSSTM-START-TIME	START	CICSSTM	C	4	0			305	Start time (.01 seconds)
CICSSDT-START-DATE	START	CICSSDT	J	4	4			309	Start date (YYYYDDD)
CICSATT-ATTACH-TIME	STOP	CICSATT	B	8	8			313	Attach time (STCKTIME)
CICSDETT-DETACH-TIME	STOP	CICSDETT	B	8	16			321	Detach time (STCKTIME)
CICSAPID-APPL-ID	SMFMNPRN	CICSAPID	T	8	24			329	Application ID
CICSUSER-USER-ID	USERID	CICSUSER	T	8	32			337	User ID
CICSTERM-TERM-ID	TERM	CICSTERM	T	4	40			345	Terminal ID
CICSTRNS-TRANS-ID	TRAN	CICSTRNS	T	4	44			349	Transaction ID
CICSOPER-OPER-ID	OPR	CICSOPER	T	3	48			353	Operation ID
CICSACCT-ACCOUNT-CODE	SMFMNPRN + USERID	CICSACCT	T	32	51			356	Account code – ApplID and UserID
CICSTCLN-TRANS-CLASS-NAME	TCLSNAM	CICSTCLN	T	8	83			388	Transaction class name
CICSLUN-LUNAME	LUNAME	CICSLUN	T	8	91			396	VTAM logical unit name
CICSNETN-NETWORK-NAME	NETUOWPX	CICSNETN	T	20	99			404	VTAM network name (NETNAME)
CICSUOWID	NETUOWSX	CICSUOWI	T	8	119			424	Unit of work ID
CICSREMT-REMOTE-SYS-ID	RTYPE	CICSREMT	T	4	127			432	Remote system ID
CICSMVS-MVS-SYS-ID	SMFMNSID + SMFMNSS	CICSMVS	T	8	131			436	MVS system ID
CICSPGMN-PROGRAM-NAME	PGMNAME	CICSPGMN	T	8	139			444	Program name
CICSTRNT-TRANS-TYPE	TTYPE	CICSTRNT	T	1	147			452	Transaction type
CICSUSFD-USER-FIELD		CICSUSFD		12	148			453	User-defined area. CIMS Dictionary provides the capability to include user- defined fields from the source records. For more information, refer to the CIMS Dictionary chapter in the <i>CIMS Mainframe Data Collector and Chargeback System User Guide</i> .



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