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

First Edition (December 2006)

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<th>Page</th>
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</thead>
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</tr>
<tr>
<td>CIMSCICS Flow Chart</td>
<td>4-15</td>
</tr>
</tbody>
</table>

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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.

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

## 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:

<table>
<thead>
<tr>
<th>Symbol or Type Style</th>
<th>Represents</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bold</strong></td>
<td>a new term</td>
<td>...called a <strong>source object</strong>.</td>
</tr>
<tr>
<td><em>Alternate color</em></td>
<td>(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</td>
<td>...see Chapter 3, <strong>CIMS CICS Account Code Creation Program—CIMSCMF2</strong>.</td>
</tr>
<tr>
<td><em>Italic</em></td>
<td>words that are emphasized</td>
<td>...the entry <em>after</em> the current entry...</td>
</tr>
<tr>
<td>Monospace</td>
<td>directories, file names, command names, computer code</td>
<td>&amp;HIGHLVL.SRCLIB</td>
</tr>
<tr>
<td>Monospace bold</td>
<td>what a user types</td>
<td>...enter <strong>RUN APP.EXE</strong> in the Application field</td>
</tr>
<tr>
<td>&lt;&gt;</td>
<td>the name of a key on the keyboard</td>
<td>Press &lt;Enter&gt;.</td>
</tr>
<tr>
<td>▶</td>
<td>choosing a command from a cascading menu</td>
<td>File ▶ Import ▶ Object</td>
</tr>
<tr>
<td><strong>Highlighted Screen Text</strong></td>
<td>used to callout screen text on character-based screen captures. (When viewed online, the screen text will be blue.)</td>
<td>Data set.... Product.... Parmlib...</td>
</tr>
</tbody>
</table>
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.DATAFILE.
CIMS CICS Data Interface Program—CIMSCMF1/CIMSCMFP

About CIMSCMF1/CIMSCMFP

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.

<table>
<thead>
<tr>
<th>CIMS.REPTLIB Member</th>
<th>CICS Release</th>
<th>Transaction Server</th>
</tr>
</thead>
<tbody>
<tr>
<td>CICSRC15</td>
<td>V6.2</td>
<td>V2.2</td>
</tr>
<tr>
<td>CICSRC16</td>
<td>V6.3</td>
<td>V2.3</td>
</tr>
<tr>
<td>CICSRC17</td>
<td>V6.4</td>
<td>V3.1</td>
</tr>
</tbody>
</table>

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

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

```plaintext
//CIMSCMFP EXEC PGM=CIMSCMFP,REGION=0K
//STEPLIB DD DSN=CIMS.LOAD.MODULES,DISP=SHR
//CIMSPRNT DD SYSOUT=*  
//CMFIN1 DD DSN=CIM.CIMS.CICS51.DATA,DISP=SHR  
//CMFIN2 DD DSN=CIM.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),  
//CICTABS3 DD DSN=CIMS.CIMSCMFP.EXOT,  
//         DISP=(NEW,CATLG,DELETE),UNIT=SYSDA,  
//         SPACE=(CYL,(50,50),RLSE),  
//         DCB=(RECFM=VB,BLKSIZE=27998),  
//CIMSEXOT4 DD DSN=CIMS.CIMSCMFP.EXOT,  
//         DISP=(NEW,CATLG,DELETE),UNIT=SYSDA,  
//         SPACE=(CYL,(50,50),RLSE),  
//         DCB=(RECFM=VB,BLKSIZE=27998),  
//CIMSUNSP5 DD DSN=CIMS.CIMSCMFP.UNSP,  
//         DISP=(NEW,CATLG,DELETE),UNIT=SYSDA,  
//         SPACE=(CYL,(50,50),RLSE),  
//         DCB=(RECFM=VB,BLKSIZE=27998),  
//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: CIMS records prior to release 3.1
```
CIMSCMF1 Flow Chart

Note • Values in parentheses represent DDNAMES.
CIMSCMFP Flow Chart

From SMF or a CICS Monitor Product → CICS Usage Data → SMF/CMF Monitor

Control Statements (CIMSCNTL) → CIMSCMFP

CICS Dictionary Tables (CICSTABS) → CIMSCMFP

CIMSCMFP Exception File (DD CIMSEXOT)

CIMSCMFP Exception File

CIMSCMFP Data (CIMSCMF)

CIMS CICS Data

To User-Written Program/Reporting Utility

To CIMSUNSP

To CIMSCMFP

To CIMSCMF2, CIMSCICS, or User-Written Program/Reporting Utility

CIMSCMFP CICS Unsupported Release File (CIMSUNSP)

CIMSCMFP CICS Unsupported Release File (CIMSUNSP)

To CIMSCMF1

To CIMSCMFP

CIMSCMFP Exception File (CIMSEXOT)

CIMSCMFP Data (CIMSCMF)

Figure 2-2 • CIMSCMFP Flow Chart

Note • Values in parentheses represent DDNAMES.
CIMS CICS Account Code Creation Program—CIMSCMF2
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:

<table>
<thead>
<tr>
<th>FIELD NAME</th>
<th>TABLE STARTING POSITION</th>
<th>CICSRC01 STARTING POSITION</th>
<th>CICSRC02 STARTING POSITION</th>
<th>LENGTH</th>
<th>EXAMPLE OR DESCRIPTION VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPLICATION ID</td>
<td>1</td>
<td>13</td>
<td>57</td>
<td>8</td>
<td>CICSREG1</td>
</tr>
<tr>
<td>USER ID</td>
<td>9</td>
<td>21</td>
<td>65</td>
<td>8</td>
<td>USER001</td>
</tr>
<tr>
<td>TERMINAL ID</td>
<td>17</td>
<td>49</td>
<td>49</td>
<td>4</td>
<td>TRM1</td>
</tr>
<tr>
<td>TRANSACTION ID</td>
<td>21</td>
<td>45</td>
<td>45</td>
<td>4</td>
<td>TRN1</td>
</tr>
<tr>
<td>OPERATOR ID</td>
<td>25</td>
<td>53</td>
<td>53</td>
<td>3</td>
<td>OP1</td>
</tr>
<tr>
<td>ACCOUNT CODE</td>
<td>28</td>
<td>13</td>
<td>13</td>
<td>32</td>
<td>ACCOUNT CODE</td>
</tr>
<tr>
<td>TRANSACTION CLASS NAME</td>
<td>60</td>
<td>121</td>
<td>121</td>
<td>8</td>
<td>TCLSNAME</td>
</tr>
<tr>
<td>VTAM LOGICAL UNIT NAME</td>
<td>68</td>
<td>129</td>
<td>129</td>
<td>8</td>
<td>LUNAME</td>
</tr>
<tr>
<td>VTAM NETNAME</td>
<td>76</td>
<td>137</td>
<td>137</td>
<td>20</td>
<td>NETNAME</td>
</tr>
<tr>
<td>UNIT OF WORK ID</td>
<td>96</td>
<td>101</td>
<td>101</td>
<td>8</td>
<td>UOWID</td>
</tr>
<tr>
<td>REMOTE SYSTEM ID</td>
<td>104</td>
<td>109</td>
<td>109</td>
<td>4</td>
<td>REMOTE SYSTEM ID</td>
</tr>
<tr>
<td>z/OS SYSTEM ID</td>
<td>108</td>
<td>157</td>
<td>173</td>
<td>8</td>
<td>z/OS SYSTEM ID</td>
</tr>
</tbody>
</table>
CIMS CICS Account Code Creation Program—CIMSCMF2

About CIMSCMF2

**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 CIMSPPRT, CIMSMSG**
  
  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/CIMSCMF2 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.

<table>
<thead>
<tr>
<th>CONTROL STATEMENT</th>
<th>PAGE #</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCOUNT CODE = keyword</td>
<td>[3-8]</td>
<td>Specifies the account code table lookup is bypassed and the account code should be based on the &quot;keyword&quot;.</td>
</tr>
<tr>
<td>ACCOUNT CODE CONVERSION</td>
<td>[3-9]</td>
<td>Specifies to use the account code table.</td>
</tr>
<tr>
<td>CHANGE * TO X</td>
<td>[3-9]</td>
<td>Specifies to replace all asterisks with x in certain fields when the field contains all HEX ZEROES.</td>
</tr>
<tr>
<td>CHANGE ACC ? WILDCARD TO</td>
<td>[3-10]</td>
<td>Changes the account code conversion wildcard character from ? to any displayable character.</td>
</tr>
<tr>
<td>CHANGE ACC * WILDCARD TO</td>
<td>[3-10]</td>
<td>Changes the account code conversion wildcard character from * to any displayable character.</td>
</tr>
<tr>
<td>DATE SELECTION</td>
<td>[3-11]</td>
<td>Selects data within the specified date range.</td>
</tr>
<tr>
<td>DEFAULT ALWAYS/YES/EXCEPTION</td>
<td>[3-12]</td>
<td>Controls the matching process for the CIMS Dictionary.</td>
</tr>
<tr>
<td>DEFINE FIELD</td>
<td>[3-12]</td>
<td>Defines fields for account code table processing.</td>
</tr>
<tr>
<td>DEFINE MOVEFLD</td>
<td>[3-14]</td>
<td>Defines fields to be moved into the account code fields.</td>
</tr>
<tr>
<td>EXCEPTION FILE PROCESSING OFF</td>
<td>[3-15]</td>
<td>Turns off the writing of the unmatched account codes (during account code conversion) to the no match data set.</td>
</tr>
<tr>
<td>EXCEPTION FILE PROCESSING * OFF</td>
<td>[3-15]</td>
<td>Same as EXCEPTION FILE PROCESSING OFF except asterisks are not required in the account code field.</td>
</tr>
<tr>
<td>EXIT</td>
<td>[3-17]</td>
<td>Specifies the calling of the User Exit CIMSACU3.</td>
</tr>
<tr>
<td>INPUT EXIT</td>
<td>[3-18]</td>
<td>Specifies the calling of the User Exit CIMSUE36.</td>
</tr>
<tr>
<td>CONTROL STATEMENT</td>
<td>PAGE #</td>
<td>DESCRIPTION</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>--------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>LIMIT DCTN004W MSG TO</td>
<td>[3-18]</td>
<td>Limits the number of DCTN004W messages issued.</td>
</tr>
<tr>
<td>NON-PRIME DAY</td>
<td>[3-19]</td>
<td>Non-prime processing day.</td>
</tr>
<tr>
<td>NON-PRIME SHIFT CODE = n</td>
<td>[3-19]</td>
<td>Sets the non-prime shift code.</td>
</tr>
<tr>
<td>ON EMPTY INPUT FILE SET RC TO</td>
<td>[3-19]</td>
<td>Sets the return code when no valid input records are processed.</td>
</tr>
<tr>
<td>OUTPUT EXIT</td>
<td>[3-20]</td>
<td>Specifies the calling of the User Exit CIMSUE38.</td>
</tr>
<tr>
<td>RESET</td>
<td>[3-20]</td>
<td>Always start Alternate Account Code search from the top of the table.</td>
</tr>
<tr>
<td>SHIFT</td>
<td>[3-21]</td>
<td>Allows specifying up to 9 shifts.</td>
</tr>
<tr>
<td>TURN OFF ACC WILDCARDS</td>
<td>[3-22]</td>
<td>Turns off wildcard processing during account code conversion.</td>
</tr>
<tr>
<td>VERSION</td>
<td>[3-23]</td>
<td>Overrides the Version number in the CIMS Dictionary key.</td>
</tr>
<tr>
<td>WRITE {804</td>
<td>791} OFF</td>
<td>[3-23]</td>
</tr>
</tbody>
</table>
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 MOVEFLDx,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/CIMSCMF2 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:

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CURDAY</strong></td>
<td>Sets date range based on run date and run date less one day.</td>
</tr>
<tr>
<td><strong>CURWEK</strong></td>
<td>Sets date range based on run week (Sun—Sat).</td>
</tr>
<tr>
<td><strong>CURMON</strong></td>
<td>Sets date range based on run month.</td>
</tr>
<tr>
<td><strong>PREDAY</strong></td>
<td>Sets date range based on run date, less one day.</td>
</tr>
<tr>
<td><strong>PREWEK</strong></td>
<td>Sets date range based on previous week (Sun—Sat).</td>
</tr>
<tr>
<td><strong>PREMON</strong></td>
<td>Sets date range based on previous month.</td>
</tr>
<tr>
<td>CURRENT</td>
<td>Sets date range based on current period from CIMS calendar file.</td>
</tr>
<tr>
<td>PREVIOUS</td>
<td>Sets date range based on previous period from CIMS calendar file.</td>
</tr>
</tbody>
</table>

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:

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

<table>
<thead>
<tr>
<th>FIELD</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEFINE FIELDX,Y,Z</td>
<td>Control Statement Identification</td>
</tr>
<tr>
<td>(X)</td>
<td>A value from 1 to 10</td>
</tr>
<tr>
<td>(Y)</td>
<td>Field Location (1-115)</td>
</tr>
<tr>
<td>(Z)</td>
<td>Field Length (1-115)</td>
</tr>
</tbody>
</table>

**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 MOVEFLDx,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.

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

**Example**

```plaintext
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:

```plaintext
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**

```plaintext
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.

**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.
**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 CIMSEXOT.

**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
- 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.

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

The following examples show the use of the EXCLUDE statement.

**Examples**

**EXCLUDE APPLID CICSMVS1 CICSMVS9**

This statement specifies that records with APPLIDs greater than or equal to CICSMVS1 and less than or equal to CICSMVS9 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.DATAFILE. Look for entry CIMSACU3.

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

- CMF-REC is the output of program CIMSCMF1/CIMSCMF2 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-REC, 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.DATASET. Look for entry CIMSUE36.

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/yyyymmdd**

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
```


**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-REC, 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.DATAFILE.

1 OCMF-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 -

<table>
<thead>
<tr>
<th>Shift 1</th>
<th>5:00 am to 8:00 am and 3:30 pm to 5:00 pm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shift 2</td>
<td>8:00 am to 11:30 am and 1:30 pm to 3:30 pm</td>
</tr>
<tr>
<td>Shift 3</td>
<td>5:00 pm to 8:00 pm</td>
</tr>
<tr>
<td>Shift 4</td>
<td>9:30 pm to 24:00 pm and 00:00 am to 5:00 am</td>
</tr>
<tr>
<td>Shift 5</td>
<td>11:30 am to 1:30 pm and 8:00 pm to 9:30 pm</td>
</tr>
</tbody>
</table>
Saturday through Sunday -

<table>
<thead>
<tr>
<th>Shift</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8:00 am to 5:00 pm</td>
</tr>
<tr>
<td>2</td>
<td>5:00 pm to 24:00 pm and 00:00 am to 8:00 am</td>
</tr>
</tbody>
</table>

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

Sunday through Saturday

<table>
<thead>
<tr>
<th>Shift</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>08:00 am to 04:30 pm</td>
</tr>
<tr>
<td>2</td>
<td>04:30 pm to 24:00 pm</td>
</tr>
<tr>
<td>3</td>
<td>00:00 am to 08:00 am</td>
</tr>
</tbody>
</table>

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.
CIMS 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

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

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

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

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

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 = AABBB 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.

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

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

<table>
<thead>
<tr>
<th>POSITION</th>
<th>VALUE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>X</td>
<td>A value to identify the entries to be matched:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 = TERMINAL ID &amp; TRANSACTION ID</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 = TERMINAL ID &amp; OPERATOR ID</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 = OPERATOR ID &amp; TRANSACTION ID</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 = TERMINAL ID</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 = TRANSACTION ID</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 = OPERATOR ID</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7 = USER ID Release 1.7 &amp; above</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8 = USER ID &amp; TRANSACTION ID Release 1.7 &amp; above</td>
</tr>
<tr>
<td>2</td>
<td>b</td>
<td>Input Format is Comma Delimited</td>
</tr>
<tr>
<td>3-10</td>
<td>XXXXXXXX</td>
<td>LOW select value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>When the code in column 1 is a 4, 5, 6 or 7, the value is left adjusted and specifies the appropriate ID.</td>
</tr>
<tr>
<td>11-12</td>
<td>TO</td>
<td>For Readability</td>
</tr>
<tr>
<td>13-20</td>
<td>XXXXXXXX</td>
<td>HIGH select value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>When the code in column 1 is a 4, 5, 6 or 7, the value is left adjusted and specifies the appropriate ID.</td>
</tr>
<tr>
<td>21</td>
<td>b</td>
<td></td>
</tr>
<tr>
<td>22-53</td>
<td>X(32)</td>
<td>Transactions passing the above LOW-HIGH test have this Account Code.</td>
</tr>
</tbody>
</table>
Alternate Account Code Table Format—User ID and Transaction ID

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

<table>
<thead>
<tr>
<th>POSITION</th>
<th>VALUE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8</td>
<td>CONTROL CODE</td>
</tr>
</tbody>
</table>

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 \textit{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.

CICS 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.DATAFILE.

CIMSCMF2 Flow Chart

Figure 3-1 • CIMSCMF2 Flow Chart

Note • Values in parentheses represent DDNAMES.
CIMS CICS Account Code Creation Program—CIMSCMF2

CIMSCMF2 Flow Chart
Transaction Creation and Reporting Program—CIMSCICS

Introduction .............................................................. 4-2
Creation of CICS Chargeback Records .................................. 4-2
Program Operation ......................................................... 4-2
Control Statement Table .................................................... 4-3
Control Statement Reference .............................................. 4-4
Billable Items ................................................................. 4-11
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Changing Rate Codes ........................................................ 4-12
CIMSCICS Input .............................................................. 4-12
CIMSCICS Output ............................................................ 4-12
CIMSCICS Input/Output ....................................................... 4-12
Sample Input Control Statements ............................................. 4-12
CIMSCICS Sample Job Control .............................................. 4-13
CIMSCICS Sample Report ..................................................... 4-14
CIMSCICS Flow Chart ........................................................ 4-15
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.

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

\[
\text{CPU TIME} = \left( \text{CPU TIME} \div 62500 \right) + .009 \\
\text{TRANSACTION TIME} = \left( \text{TRANS TIME} \div 62500 \right) + .009
\]

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.

\[
x = \text{Low Date in YYYYMMDD} \\
y = \text{High Date in YYYYMMDD}
\]

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:

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CURDAY</strong></td>
<td>Sets date range based on run date and run date less one day.</td>
</tr>
<tr>
<td><strong>CURWEK</strong></td>
<td>Sets date range based on run week (Sun—Sat).</td>
</tr>
<tr>
<td><strong>CURMON</strong></td>
<td>Sets date range based on run month.</td>
</tr>
<tr>
<td><strong>PREDAY</strong></td>
<td>Sets date range based on run date, less one day.</td>
</tr>
<tr>
<td><strong>PREWEK</strong></td>
<td>Sets date range based on previous week (Sun—Sat).</td>
</tr>
<tr>
<td><strong>PREMON</strong></td>
<td>Sets date range based on previous month.</td>
</tr>
<tr>
<td>CURRENT</td>
<td>Sets date range based on current period from CIMS calendar file.</td>
</tr>
<tr>
<td>PREVIOUS</td>
<td>Sets date range based on previous period from CIMS calendar file.</td>
</tr>
</tbody>
</table>

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.

\[
a = \text{Low Value for Account Code} \\
b = \text{High Value for Account Code}
\]

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.
NORMALIZE\(^1\) CPU TIME [FOR (w,x,y,z)\(^2\)] to A\(^1\)
NORMALIZE\(^1\) TRANSACTION\(^1\) TIME [FOR (w,x,y,z)\(^2\)] to A\(^1\)

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 AABBBCCCC, APPLID z/OS, and USERID 12345678, enter:
   
   ```
   NORM CPU TIME FOR (AABBBCCCC,MVSCICSA,12345678) TO 250
   ```

**PRIME SHIFT hh.mm hh.mm**

This statement defines the PRIME processing shift.

**Example**

```plaintext
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.

\[ x = \text{Low Date in YYYYMMDD} \]
\[ y = \text{High Date in YYYYMMDD} \]

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:

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CURDAY</strong></td>
<td>Sets date range based on run date and run date less one day.</td>
</tr>
<tr>
<td><strong>CURWEK</strong></td>
<td>Sets date range based on run week (Sun—Sat).</td>
</tr>
<tr>
<td><strong>CURMON</strong></td>
<td>Sets date range based on run month.</td>
</tr>
<tr>
<td><strong>PREDAY</strong></td>
<td>Sets date range based on run date, less one day.</td>
</tr>
<tr>
<td><strong>PREWEK</strong></td>
<td>Sets date range based on previous week (Sun—Sat).</td>
</tr>
<tr>
<td><strong>PREMON</strong></td>
<td>Sets date range based on previous month.</td>
</tr>
<tr>
<td>CURRENT</td>
<td>Sets date range based on current period from CIMS calendar file.</td>
</tr>
<tr>
<td>PREVIOUS</td>
<td>Sets date range based on previous period from CIMS calendar file.</td>
</tr>
</tbody>
</table>
USE TOTAL FILE CONTROL

CICS Monitor Facility provides two file access count fields. CIMS uses the field labeled FCAMCT. This field is defined as the 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 the 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.

<table>
<thead>
<tr>
<th>PRIME CODES</th>
<th>NON-PRIME CODES</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZCS1</td>
<td>ZCX1</td>
<td>TRANSACTION TIME-ELAPSED (SECONDS)</td>
</tr>
<tr>
<td>ZCS2</td>
<td>ZCX2</td>
<td>TRANSACTION TIME-CPU (SECONDS)</td>
</tr>
<tr>
<td>ZCS3</td>
<td>ZCX3</td>
<td>TRANSACTIONS</td>
</tr>
<tr>
<td>ZCS4</td>
<td>ZCX4</td>
<td>INPUT MESSAGES</td>
</tr>
<tr>
<td>ZCS5</td>
<td>ZCX5</td>
<td>OUTPUT MESSAGES</td>
</tr>
<tr>
<td>ZCS6</td>
<td>ZCX6</td>
<td>MESSAGES</td>
</tr>
<tr>
<td>ZCS7</td>
<td>ZCX7</td>
<td>FILE ACCESS COUNT</td>
</tr>
</tbody>
</table>

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

To redefine the CIMS Standard Rate Codes, supply the following information in the input control statement data set:

$$ZCS1 = X_1 \quad ZCX1 = X_8$$

$$X_1 - X_{14}$$ describe a new rate code. Make sure the characters you choose are unique from other rate codes. Eight (8) character rate codes are supported.

CIMSCICS Input

- **CICS Accounting Records - DDNAME CICSIN**
  
  This data set contains CICS Accounting Records. The data set can contain either the 804 record type, which has a record format of FB and an LRECL of 200, or the CIMS 791 record type, which has a record format of VB and an LRECL of 6508.

- **CIMS Rate File - DDNAME CIMSRTVS**

- **CIMS Client File - DDNAME CIMSCLNT**

- **CIMS Control Statements - DDNAME CIMSCNTL**

CIMSCICS Output

- **CICS Billing Records - DDNAME CIMSACCT**

- **Printed Output - DDNAME CIMSPRNT**

- **Printed Output generated by SORT - DDNAME SYSOUT**

CIMSCICS Input/Output

- **Sort Work Space by SORT - SORTWKnn**

Sample Input Control Statements

<table>
<thead>
<tr>
<th>HD1</th>
<th>CIMS, THE CHARGEBACK SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>HD2</td>
<td>CICS TRANSACTION ACCOUNTING</td>
</tr>
<tr>
<td>HD3</td>
<td>CIMSCICS</td>
</tr>
<tr>
<td>TRANSACTION DATE <strong>CURDAY</strong></td>
<td></td>
</tr>
<tr>
<td>PRIME SHIFT 08.00 17.00</td>
<td></td>
</tr>
<tr>
<td>WEEKENDS ARE NON-PRIME</td>
<td></td>
</tr>
<tr>
<td>NON-PRIME DAY 2007001</td>
<td>NEW YEARS DAY</td>
</tr>
<tr>
<td>NON-PRIME DAY 20071225</td>
<td>CHRISTMAS DAY</td>
</tr>
</tbody>
</table>
Transaction Creation and Reporting Program—CIMSCICS

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
//CIMSPRINT DD SYSDUT=A,DCB=BLKSIZE=133
//SYSDUT DD SYSDUT=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
//*/
//CIMSCNTL DD DSN=CIMS.DATAFILE(CICSINPT),DISP=SHR
/*
```
## CIMS, THE CHARGEBACK SYSTEM

### CICS Transaction Accounting Report

#### PROGRAM CIMSCICS

<table>
<thead>
<tr>
<th>APPL ID</th>
<th>USER ID</th>
<th>TRAN ID</th>
<th>TERM ID</th>
<th>OPR ID</th>
<th>DATE YYYY/MM/DD</th>
<th>TRANS COUNT</th>
<th>MSG COUNT</th>
<th>CPU TIME SECONDS</th>
<th>TRANS TIME SECONDS</th>
<th>AVG CPU TIME SECONDS</th>
<th>AVG TERM COUNT</th>
<th>TERM FILE ACCESS</th>
</tr>
</thead>
</table>
| 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 USR1 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 0278 LC32 *** | 2001/01/02 | 1 | 2 | 0.322 | 0.322 | 0.141 | 0.141 | 1 | 1 | 34
| APL3 USR4 0270 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 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 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

<table>
<thead>
<tr>
<th>TRANSACTION</th>
<th>CPU</th>
<th>TRANS</th>
<th>INPUT</th>
<th>OUTPUT</th>
<th>MESSAGE</th>
<th>FILE ACCESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTALS</td>
<td>99.999</td>
<td>99.999</td>
<td>999,999</td>
<td>999,999</td>
<td>999,999</td>
<td>999,999</td>
</tr>
<tr>
<td>PRIME RATES</td>
<td>99.999</td>
<td>99.999</td>
<td>999,999</td>
<td>999,999</td>
<td>999,999</td>
<td>999,999</td>
</tr>
<tr>
<td>CHARGES</td>
<td>99.999</td>
<td>99.999</td>
<td>999,999</td>
<td>999,999</td>
<td>999,999</td>
<td>999,999</td>
</tr>
</tbody>
</table>

TOTAL AMOUNT = $99,999.99
CIMSCICS Flow Chart

Figure 4-1 • CIMSCICS Flow Chart

Note • Values in parentheses represent DDNAMES.
Transaction Creation and Reporting Program—CIMSCICS

CIMSCICS Flow Chart
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-TCLSNNAME 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 Descriptions

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-ACCT.            PIC S9(7) COMP-3.
    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-GENNAME       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.DATAFILE (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

<table>
<thead>
<tr>
<th>CIMSRC791 Field Name</th>
<th>Value/Source</th>
<th>Dict.. Field Name</th>
<th>T</th>
<th>L</th>
<th>R O</th>
<th>O</th>
<th>Rate Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIMSRDW</td>
<td>x'01D00000'</td>
<td>CIMSRDW</td>
<td>B</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td></td>
<td>Variable record length Record Descriptor Word (RDW)</td>
</tr>
<tr>
<td>CIMSRCDT-REC-TYPE</td>
<td>&quot;791&quot;</td>
<td>CIMSTRYP</td>
<td>P</td>
<td>2</td>
<td>4</td>
<td>5</td>
<td></td>
<td>Record type</td>
</tr>
<tr>
<td>CIMSSRT-SORT-ID</td>
<td>&quot;9&quot;</td>
<td>CIMSSRT</td>
<td>T</td>
<td>1</td>
<td>6</td>
<td>7</td>
<td></td>
<td>Sort ID</td>
</tr>
<tr>
<td>CIMSSMF-SMF-ID</td>
<td></td>
<td>CIMSSMFI</td>
<td>T</td>
<td>1</td>
<td>7</td>
<td>8</td>
<td></td>
<td>SMF ID</td>
</tr>
<tr>
<td>CIMSDELC-DELETE-CODE-CIMSDCDE</td>
<td></td>
<td>CIMSDCDE</td>
<td>T</td>
<td>1</td>
<td>8</td>
<td>9</td>
<td></td>
<td>Delete code if record contains invalid data</td>
</tr>
<tr>
<td>CIMSCNST-CONSTANT</td>
<td>&quot;%&quot;</td>
<td>CIMSCONTI</td>
<td>T</td>
<td>1</td>
<td>9</td>
<td>10</td>
<td></td>
<td>Constant</td>
</tr>
<tr>
<td>CIMSRCDN-RECORD-NUMBER-CIMSRNUM</td>
<td></td>
<td>CIMSRNUM</td>
<td>P</td>
<td>3</td>
<td>10</td>
<td>11</td>
<td></td>
<td>Sequential record #</td>
</tr>
<tr>
<td>CIMSIJOBN-JOB-NAME</td>
<td>&quot;CIMSCICS&quot;</td>
<td>CIMSJBNM</td>
<td>T</td>
<td>8</td>
<td>13</td>
<td>14</td>
<td></td>
<td>Constant</td>
</tr>
</tbody>
</table>
### Record Descriptions

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

<table>
<thead>
<tr>
<th><strong>CIMSRC791 Field Name</strong></th>
<th><strong>Value/Source</strong></th>
<th><strong>Dict. Field Name</strong></th>
<th><strong>T</strong></th>
<th><strong>L</strong></th>
<th><strong>R O</strong></th>
<th><strong>O</strong></th>
<th><strong>Rate Code</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>CIMSACCT-ACCT-CODE</td>
<td>Account code</td>
<td>CIMSACCT</td>
<td>T</td>
<td>128</td>
<td>21</td>
<td>22</td>
<td></td>
<td>Account code</td>
</tr>
<tr>
<td>CIMSSYS-SYSTEM-ID</td>
<td>SMFMNSID</td>
<td>CIMSSID</td>
<td>T</td>
<td>4</td>
<td>149</td>
<td>150</td>
<td></td>
<td>System ID (SID)</td>
</tr>
<tr>
<td>CIMSSUBS-SUB-SYSTEM-ID</td>
<td>SMFMNSSI</td>
<td>CIMSSUBS</td>
<td>T</td>
<td>4</td>
<td>153</td>
<td>154</td>
<td></td>
<td>WorkID/Subsystem ID</td>
</tr>
<tr>
<td>CIMSSSHIFT-SHIFT-CODE</td>
<td>Based on CIMSSDT</td>
<td>CIMSSHFT</td>
<td>T</td>
<td>1</td>
<td>157</td>
<td>158</td>
<td></td>
<td>Shift code</td>
</tr>
<tr>
<td>CIMSNDAYW-DAY-OF-WEEK</td>
<td>Based on CIMSSDT</td>
<td>CIMSDOW</td>
<td>T</td>
<td>1</td>
<td>158</td>
<td>159</td>
<td></td>
<td>Day of the week (Sun=0, Mon=1, Tues=2, and so on.)</td>
</tr>
<tr>
<td>REC-ID-KEY</td>
<td>CIMSRI+</td>
<td>CIMSRKEY</td>
<td>T</td>
<td>10</td>
<td>159</td>
<td>160</td>
<td></td>
<td>CIMS record key</td>
</tr>
<tr>
<td>CIMSRC791 RECORD-ID</td>
<td>&quot;CIMSCICS&quot;</td>
<td>CIMSRI</td>
<td>T</td>
<td>8</td>
<td>159</td>
<td>160</td>
<td></td>
<td>CIMS record ID</td>
</tr>
<tr>
<td>CIMSRC791 RECORD-VERSION</td>
<td>&quot;01&quot;</td>
<td>CIMSVER</td>
<td>T</td>
<td>2</td>
<td>167</td>
<td>168</td>
<td></td>
<td>Version # of record</td>
</tr>
<tr>
<td>CIMSSTDT-START-DATE</td>
<td>START</td>
<td>CIMSSDT</td>
<td>J</td>
<td>4</td>
<td>169</td>
<td>170</td>
<td></td>
<td>Start date (YYYYDDD)</td>
</tr>
<tr>
<td>CIMSSTM-START-TIME</td>
<td>START</td>
<td>CIMSSSTM</td>
<td>C</td>
<td>4</td>
<td>173</td>
<td>174</td>
<td></td>
<td>Start time (.01 seconds)</td>
</tr>
<tr>
<td>CIMSEDUT-STOP-DATE</td>
<td>STOP</td>
<td>CIMSEDUT</td>
<td>J</td>
<td>4</td>
<td>177</td>
<td>178</td>
<td></td>
<td>Stop date (YYYYDDD)</td>
</tr>
<tr>
<td>CIMSETM-STOP-TIME</td>
<td>STOP</td>
<td>CIMSETM</td>
<td>C</td>
<td>4</td>
<td>181</td>
<td>182</td>
<td></td>
<td>Stop time (.01 seconds)</td>
</tr>
<tr>
<td>CIMSOFR-OFFSET-RSRC</td>
<td>&quot;214&quot;</td>
<td>CIMSOFSR</td>
<td>B</td>
<td>2</td>
<td>185</td>
<td>186</td>
<td></td>
<td>Offset to Resource section</td>
</tr>
<tr>
<td>CIMSOFI-OFFSET-IDNT</td>
<td>&quot;304&quot;</td>
<td>CIMSOFSI</td>
<td>B</td>
<td>2</td>
<td>187</td>
<td>188</td>
<td></td>
<td>Offset to Identifier section</td>
</tr>
<tr>
<td>CIMSOFSC-OFFSET-CMPL</td>
<td>&quot;0&quot;</td>
<td>CIMSOFSC</td>
<td>B</td>
<td>2</td>
<td>189</td>
<td>190</td>
<td></td>
<td>Not used</td>
</tr>
<tr>
<td>CIMSABNBR-NUMBER-RCDS</td>
<td>&quot;1&quot;</td>
<td>CIMSABNBR</td>
<td>B</td>
<td>4</td>
<td>210</td>
<td>211</td>
<td></td>
<td># of records aggregated</td>
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#### Resource Section

<table>
<thead>
<tr>
<th><strong>CICSTRNC-TRANS-CNT</strong></th>
<th>1</th>
<th>CICSTRNC</th>
<th>B</th>
<th>4</th>
<th>0</th>
<th>215</th>
<th>ZCS3</th>
<th># of transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>CICSMSGC-MSG-CNT</td>
<td>TCMSGIN1+TCMSGOU1</td>
<td>CICSMSGC</td>
<td>B</td>
<td>4</td>
<td>4</td>
<td>219</td>
<td>ZCS6</td>
<td># of messages</td>
</tr>
<tr>
<td>CICSMSGI-MSG-IN</td>
<td>TCMSGIN1</td>
<td>CICSMSGI</td>
<td>B</td>
<td>4</td>
<td>8</td>
<td>223</td>
<td>ZCS4</td>
<td># of input messages</td>
</tr>
<tr>
<td>CICSMSGO-MSG-OUT</td>
<td>TCMSGOU1</td>
<td>CICSMSGO</td>
<td>B</td>
<td>4</td>
<td>12</td>
<td>227</td>
<td>ZCS5</td>
<td># of output messages</td>
</tr>
<tr>
<td>CICSSIO-SIO</td>
<td>FCAMCT</td>
<td>CICSSIO</td>
<td>B</td>
<td>4</td>
<td>16</td>
<td>231</td>
<td>ZCS7</td>
<td>File access count</td>
</tr>
<tr>
<td>CICSTOTC-TOT-CNT</td>
<td>FCTOTCT</td>
<td>CICSFCT</td>
<td>B</td>
<td>4</td>
<td>20</td>
<td>235</td>
<td>ZCS8</td>
<td>File total count</td>
</tr>
<tr>
<td>CICSRESP-RESPONSE</td>
<td>STOP - START</td>
<td>CICSRESP</td>
<td>B</td>
<td>4</td>
<td>24</td>
<td>239</td>
<td>ZCS9</td>
<td>Response time</td>
</tr>
<tr>
<td>CICSTIME-CPU-TIME</td>
<td>USRCPUT</td>
<td>CICSTIME</td>
<td>P</td>
<td>9</td>
<td>48</td>
<td>263</td>
<td>ZCS2</td>
<td>CPU time (minutes)</td>
</tr>
<tr>
<td>CICSCONN-CONN-TIME</td>
<td>USRDISPT</td>
<td>CICSCONN</td>
<td>P</td>
<td>9</td>
<td>57</td>
<td>272</td>
<td>ZCS1</td>
<td>Connection time (minutes)</td>
</tr>
</tbody>
</table>
### Table A-1 • CIMS CMF2 791 Accounting Record Fields (continued)

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