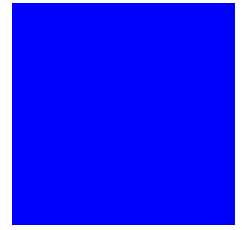


CIMS Lab, Inc.



CIMS VM/CMS Data Collector

User Guide

Version 12.2

CIMS Lab Publication Number: VM-UG-122-01

Published 02/06/06

Information in this guide is subject to change without notice and does not constitute a commitment on the part of CIMS Lab, Inc. It is supplied on an "as is" basis without any warranty of any kind, either explicit or implied. Information may be changed or updated in this guide at any time.

Copyright Information

CIMS is ©copyright 1974–2006 by CIMS Lab, Inc. and its subsidiaries. This guide is ©copyright 1974–2006 by CIMS Lab, Inc. and its subsidiaries and may not be reproduced in whole or in part, by any means, without the written permission of CIMS Lab, Inc. and its subsidiaries.

Trademarks

The following are trademarks of International Business Machines Corporation in the United States, other countries, or both:

IBM	VM/CMS
OS/390	VSE

Other company, product, or service names may be trademarks or service marks of others.

Mailing Address

CIMS Lab, Inc.
3013 Douglas Blvd., Suite 120
Roseville, CA 95661-3842

Table of Contents



Preface

Philosophy	v
Contacting the CIMS Lab	vi
About This Guide	vi
Conventions	vii
Related Publications	viii

1 • Introduction

Overview	1-2
Features	1-2
VM/CMS Standard Billable Items	1-3
Other Billable Items	1-3
Installation	1-4
VM/CMS Chargeback in an OS/390 Environment	1-5
VM/CMS Chargeback in a VSE Environment	1-5
CIMS VM/CMS Flow Chart	1-6

2 • CIMSCMS

CIMSCMS: VM/CMS Accounting Program	2-2
Program Operation	2-2
Billable Values	2-3
File Definitions	2-3
Control Statement Table	2-4
Heading Control Statements	2-5
Processing Control Statements	2-6
Rate Control Statements	2-8
Other Control Statements	2-10
Rate Codes	2-11
Prime Shift Rates	2-12
Non-Prime Shift, Weekend & Holiday Rates	2-12
CIMSCMS Exec	2-13
CIMSCMS1 DATA	2-14
CIMSCMS2 DATA	2-15
OS/390 Exec	2-16
Sample Job Control OS/390	2-16
VM Accounting Records	2-18
External Transaction Record—(TRANS)	2-20

CIMSCMS Flow Chart2-21
VM/CMS Job Accounting Sample Report2-22

3 • Minidisk Chargeback System

Introduction 3-2
Program Operation 3-2
File Definitions 3-2
 Control Statement Table 3-3
CIMSMINI EXEC 3-4
 Control Data File—Sample Data 3-6
 Exempt Data File—Sample Data 3-6
VM/CMS Installation Instructions 3-6
OS/390 Installation 3-7

Index



Preface

As companies continue to integrate computer technology into their business operations, it becomes increasingly important to properly administer the IT function, particularly with respect to performance and cost. And the best way to control costs is to plan for them.

CIMS Chargeback is a comprehensive, flexible software solution that consolidates a wide variety of accounting data for multiple operating systems into a single file that may be accessed from either the mainframe or a workstation. Simply put, CIMS Chargeback is an essential component of an effective financial management system.

Philosophy

Originally developed in 1974, CIMS has focused on meeting the financial and resource reporting requirements of Information Services Departments. CIMS has evolved with corporate IT management requirements. Focused commitment to client service and support sets CIMS apart from competing products. Our goal is to provide the best chargeback and resource reporting software in the world at the lowest possible cost to our customers.

The CIMS Lab strongly believes in and executes the concept of continuous product improvement. Customers have access to CIMS product development personnel to ensure that customer feedback and other critical issues are incorporated into the next release of the product.

Contacting the CIMS Lab

You can contact us with any questions or problems you have. Please use one of the methods below to contact us.

For product assistance or information, contact:

USA & Canada, toll free (800) 283-4267
International (916) 783-8525
FAX (916) 783-2090
World Wide Web www.cimslab.com

Our Mailing Address is:

CIMS Lab, Inc.
3013 Douglas Blvd., Suite 120
Roseville, CA 95661-3842

About this Guide

This guide explains the CIMS chargeback and reporting interface for IBM® VM/CMS operating system.

Ch. No.	Chapter Name	Content Description
1	<i>Introduction</i>	Introduces you to the functions and features of CIMS VM/CMS.
2	<i>CIMSCMS</i>	Introduces you to the functions and features of the program CIMSCMS, which processes VM/CMS accounting records.
3	<i>Minidisk Chargeback System</i>	Introduces you to the functions and features of the Minidisk Chargeback System, which supports charging of minidisk space.
	<i>Index</i>	

Conventions

Some or all of the following conventions appear in this guide:

Symbol or Type Style	Represents	Example
Bold	a new term	...called a source object .
<i>Alternate color</i>	(online only) hotlinked cross-references to other sections in this guide; if you are viewing this guide online in PDF format, you can click the cross-reference to jump directly to its location	...see <i>Chapter 3, Data Migration</i> .
<i>Italic</i>	words that are emphasized	...the entry <i>after</i> the current entry...
	the titles of other documents	<i>CIMS Chargeback OS/390 Installation and Upgrade Guide</i>
	syntax variables	COPY <i>filename</i>
Monospace	directories, file names, command names, computer code	&HIGHLVL.SRCLIB
	computer screen text, system responses, command line commands	Copy file? Y/N
Monospace bold	what a user types	...enter RUN APP.EXE in the Application field
< >	the name of a key on the keyboard	Press <Enter>.
▶	choosing a command from a cascading menu	File ▶ Import ▶ Object
Highlighted Screen Text	used to callout screen text on character-based screen captures. (When viewed online, the screen text will be blue.)	Dataset.... Product.... Parmlib....

Related Publications

As you use this guide, you might find it helpful to have these additional books available for reference, depending on your specific installation:

- *CIMS Mainframe Data Collector and Chargeback System User Guide*
- *CIMS Mainframe Data Collector and Chargeback System Installation and Upgrade Guide*
- *CIMS CICS Data Collector User Guide*
- *CIMS VSE Data Collector and Chargeback System User Guide*
- *CIMS Chargeback Report Writer User Guide*
- *CIMS Chargeback Report Writer Sample Reports*

Introduction

Overview	1-2
Features	1-2
VM/CMS Standard Billable Items	1-3
Other Billable Items	1-3
Installation	1-4
VM/CMS Chargeback in an OS/390 Environment	1-5
VM/CMS Chargeback in a VSE Environment	1-5
CIMS VM/CMS Flow Chart	1-6

Overview

CIMS provides a chargeback and reporting interface for IBM's VM/CMS operating system.

CIMS interfaces with records created by the standard Disk Account feature of VM. In addition, CIMS provides chargeback and reporting for minidisk usage.

This VM interface requires either the CIMS-OS/390 or CIMS-VSE base products.

Features

CIMS accepts data created by the accounting feature of VM and generates transaction records that are compatible with the CIMS chargeback system. Specifically, CIMS supports:

- VM/CMS Session Accounting (Program CIMSCMS)
- VM/CMS Minidisk Accounting (Program CIMSMINI)
- VM/CMS Account Records (Program SPECTWTR)

VM accounting records provide computer-generated resource utilization data by Account Code and User ID.

Account code and User ID values are under complete control of management. Management should make sure that VM Account Codes and User IDs are meaningful and that they can be mapped to an organizational standard account code structure. If account codes and User IDs are not meaningful, they should be changed.

CIMS VM/CMS data is compatible with programs CIMSACCT (OS/390®) and CIMS VSE (VSE). These programs provide account code conversion and table-lookup features.

Users control billing rates and billable items through rate codes.

Multiple billing rates are supported via multiple rate codes for specified resource items.

VM/CMS Standard Billable Items

The following VM resources are available for chargeback:

- | | |
|--------------------------------|------------------|
| ■ VM/CMS Connect Time | Program CIMSCMS |
| ■ VM/CMS CPU Time | Program CIMSCMS |
| ■ VM/CMS Virtual SIO's | Program CIMSCMS |
| ■ VM/CMS Virtual Cards Read | Program CIMSCMS |
| ■ VM/CMS Virtual Lines Printed | Program CIMSCMS |
| ■ VM/CMS Virtual Cards Punched | Program CIMSCMS |
| ■ VM/CMS Temporary Disk Space | Program CIMSCMS |
| ■ VM/CMS User ID's | Program CIMSMINI |
| ■ VM/CMS Minidisk Space | Program CIMSMINI |

Program CIMSCMS produces a resource utilization report and billing transaction records that are compatible with CIMS batch accounting system. Program CIMSBILL (OS/390 & VSE) generates invoices and cost reports.

The powerful CIMS Report Writer supports all VM Disk Account records, and you can use it to create a wide range of reports.

Other Billable Items

You can use the CIMS Report Writer to process any VM usage log record.

You can create CIMS External Transaction (TRANS) records for any VM resource. Examples of creating TRANS records are provided in the report writer library.

Installation

The CIMS VM/CMS computer center chargeback system is distributed to users in module format. The programs are written in COBOL and ASSEMBLER and are executable under VM/CMS or under OS/390.

The CIMS VM/CMS product consists of the following program modules:

- **CIMSCMS** This module accepts computer utilization data generated by the VM accounting facility. Program CIMSCMS generates a billing report based on PRIME & NON-PRIME shift resource usage and creates BILLING TRANSACTIONS for processing by the CIMS OS/390 or VSE CHARGEBACK system.
CIMSCMS processes under VM/CMS or OS/390.

- **CIMSMINI** This program module reads the direct access volumes assigned to VM/CMS and generates BILLING TRANSACTIONS showing the ACCOUNT CODE/USER ID for MINI DISK usage.

These BILLING TRANSACTIONS are further processed by the CIMS chargeback system for MINIDISK resource usage.
CIMSMINI processes under VM/CMS only.

- **CIMSACCT** CIMSACCT processes BILLING TRANSACTIONS and creates the CIMS ACCOUNTING file. This file is then passed to the CIMS CHARGEBACK system for INVOICE generation.
CIMSACCT processes under OS/390.

- **CIMSVSE** CIMSVSE processes BILLING TRANSACTIONS and creates the CIMS ACCOUNTING file. This file is then passed to the CIMS CHARGEBACK system for INVOICE generation.
CIMSVSE processes under VSE.

- **CIMSBILL** CIMSBILL generates client invoices and cost reports. In addition, the program creates a summary data file that can be input to other processing systems.
CIMSBILL processes under OS/390 or VSE.

- **REPORT WRITER** CIMS provides a powerful report writer that supports all VM Disk Account Records for user reports.
The Report Writer processes under OS/390 or VSE.

VM/CMS Chargeback in an OS/390 Environment

- Programs CIMSCMS, CIMSACCT, and CIMSBILL should be processed under OS/390.
- Programs CIMSCMS, CIMSACCT, and CIMSBILL are distributed in PDS CIMS.LOAD.MODULES. JCL members CIMSCMS, CIMSJOB2, and CIMSJOB3 are distributed in PDS CIMS.DATAFILE.
- Program CIMSCMS is documented in this manual.
- Programs CIMSACCT and CIMSBILL are documented in the *CIMS Mainframe Data Collector and Chargeback System User Guide*.
- Program CIMSMINI must be processed under VM/CMS. Program CIMSCMS can also be processed under VM/CMS.
- CIMSMINI, CIMSCMS, and associated files are distributed in VMFPLC2 dump tape format. See [Chapter 2, CIMSCMS](#) for installation instructions and additional information.

VM/CMS Chargeback in a VSE Environment

- Programs CIMSCMS and CIMSMINI are processed under VM/CMS.
- Programs CIMSUSE and CIMSBILL are processed under VSE.
- Refer to [Chapter 2, CIMSCMS](#) and [Chapter 3, Minidisk Chargeback System](#) in this manual and the *CIMS VSE Data Collector and Chargeback System User Guide*.

CIMS VM/CMS Flow Chart

For Installations With VSE and/or OS/390

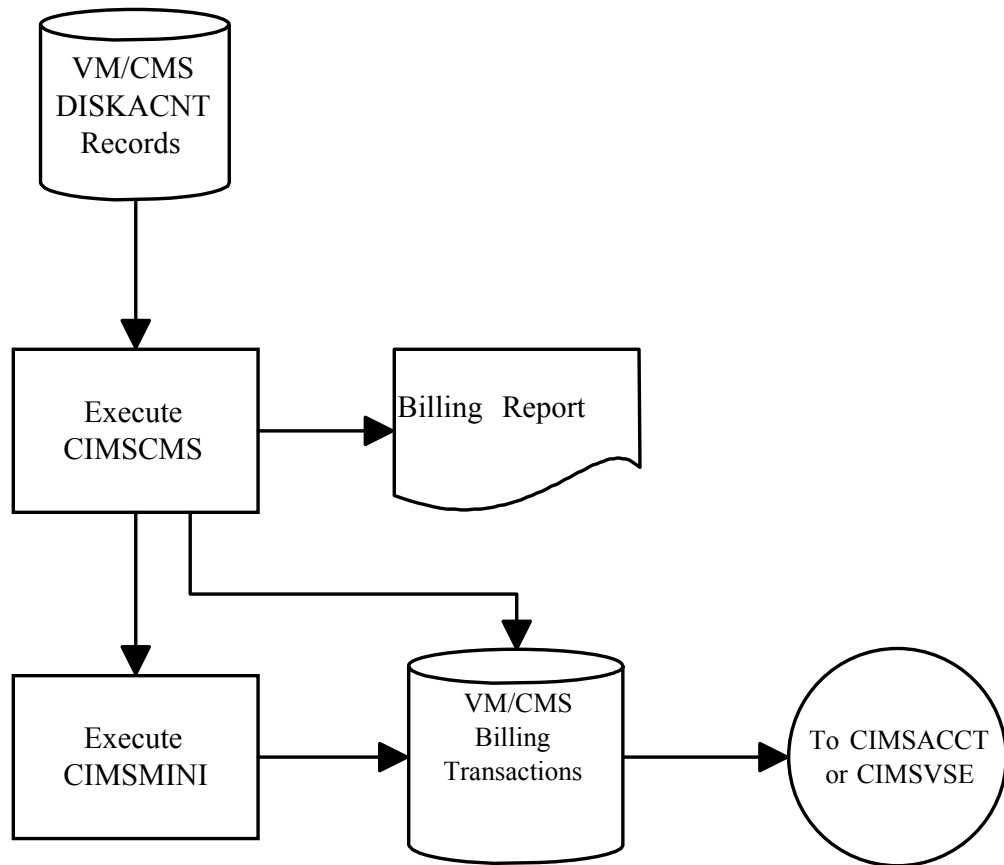


Figure 1-1 • VM/CMS - SESSION Accounting & Chargeback

CIMSCMS

CIMSCMS: VM/CMS Accounting Program	2-2
Program Operation	2-2
Billable Values	2-3
File Definitions	2-3
Control Statement Table	2-4
Heading Control Statements	2-5
Processing Control Statements	2-6
Rate Control Statements	2-8
Other Control Statements	2-10
Rate Codes	2-11
Prime Shift Rates	2-12
Non-Prime Shift, Weekend & Holiday Rates	2-12
CIMSCMS Exec	2-13
CIMSCMS1 DATA	2-14
CIMSCMS2 DATA	2-15
OS/390 Exec	2-16
Sample Job Control OS/390	2-16
VM Accounting Records	2-18
External Transaction Record-(TRANS)	2-20
CIMSCMS Flow Chart	2-21
VM/CMS Job Accounting Sample Report	2-22

CIMSCMS: VM/CMS Accounting Program

VM generates accounting data records, which are supported by the CIMS VM Chargeback System. Specifically, accounting records for Virtual Machine Resource Usage and Temporary Disk Space Usage are supported by program CIMSCMS. Any data record can be supported by the CIMS Report Writer.

Each account record generated by VM contains User Identification and Account Number in two eight-character fields. The data contained in these fields are the account control fields used by CIMS. Control totals are generated when *either* of these data values change and at the termination of the run.

Data records compatible with the CIMS Billing System are generated for each change in account number. These data records are then passed to program CIMSACCT (OS/390) and/or CIMSUSE (VSE) for further processing.

Programs CIMSACCT (OS/390) and CIMSUSE (VSE) provide account code conversion routines for account code manipulation.

Program Operation

Program CIMSCMS processes VM/CMS accounting records from File CIMSIN.

Control statements containing headlines, billing rates, date selection, and account selection parameters are read from CIMSCTL.

Printed output is written to File CIMSOUT, and billing transactions are written to File CIMSOUT.

In addition to these input/output files, an intermediate file, SORTFILE, is used for sorting input and output.

The data written on file CIMSOUT is input to programs CIMSACCT (OS/390) or CIMSUSE (VSE).

The VM/CMS account records read by this program are identified as executing on either the prime or non-prime processing shift (via input control parameters). They are then written to a temporary data file for sorting. The data records are sorted (major to minor) by account code, shift code, user ID, date, start time, and record type. After sorting, the data is processed and reports are generated.

Billing transaction records written to file CIMSOUT contain resource utilization values and monetary charges for each user account. Billing Rate Codes are used to identify each resource value and monetary charge. These rate codes are then used by the invoice generation program, CIMSIBILL, for chargeback purposes.

Billable Values

The CIMS VM/CMS chargeback system supports the following resource usage charges:

- Virtual connect time
- Total VM CPU usage
- Virtual CPU usage
- Virtual non-spoiled SIOs
- Virtual records read
- Virtual lines printed
- Virtual lines punched
- Temporary disk usage

Each installation establishes rates for each billable item. These rates should reflect the costs in hardware resources, software support, and peripheral devices required for VM.

File Definitions

CMSIN	This file contains the VM accounting records. The logical record length is 80 bytes. The blocksize can be any multiple of 80.
CIMSOUT	This file contains External Transaction records. These records are input to program CIMSACCT (OS/390) and/or CIMSUSE (VSE). The logical record length is 80. The blocksize is any multiple of 80.
CIMSPASS	File contains Passwords. Logical record length is 80.
CIMSPRNT	File contains printed output. Logical record length is 133.
CIMSMMSG	File contains printed output. Logical record length is 133.
CIMSCNTL	File contains control information. Logical record length is 80.
SORTFILE	File contains VM/CMS account records. Logical record length is 80.

Control Statement Table

CONTROL STATEMENT	PAGE #	DESCRIPTION
ASSIGN ALL RECORDS PRIME	[2-6]	Specifies that all jobs are set to the prime shift.
CARDS PUNCHED RATE	[2-8]	This value is multiplied by the total number of virtual cards punched.
CARDS READ RATE	[2-8]	This value is multiplied by the total number of virtual cards read.
CONNECT TIME RATE	[2-8]	This value is multiplied by the connect time (in hours).
DAILY TRANSACTIONS	[2-6]	Summary billing transactions are generated for each change in date.
DATE SELECTION YYYYMMDD YYYYMMDD	[2-6]	Specifies date range for VM/CMS session accounting records.
EXCLUDE ACCOUNT EXCLUDE USERID	[2-10]	Used to exclude Account and User IDs from processing.
HD1, HD2, HD3	[2-5]	Headline Information prints on each new page.
LINES PER PAGE	[2-8]	Specifies the number of lines per page.
LINES PRINTED RATE	[2-8]	This value is multiplied by the total number of virtual lines printed.
NON-PRIME DAY YYYYDDD	[2-7]	Specifies Julian date is to use non-prime billing rates.
NON-PRIME DAY YYYYMMDD	[2-7]	Specifies gregorian date is to use non-prime billing rates.
PRIME SHIFT START TIME PRIME SHIFT STOP TIME	[2-10]	Specifies the start and end time for the prime shift.
REPORT FORMAT IS <i>type</i>	[2-10]	Specifies the type of report to generate (Detail or Summary).
SELECT ACCOUNT SELECT USERID	[2-10]	Selects Account and User IDs for processing.
TEMPORARY CKD DISK SPACE RATE	[2-8]	This value is multiplied by the average usage per hour of temporary CKD disk space.
TEMPORARY FBA DISK SPACE RATE	[2-8]	This value is multiplied by the average usage per hour of temporary FBA disk space.

CONTROL STATEMENT	PAGE #	DESCRIPTION
TOTAL CPU TIME RATE VIRTUAL CPU TIME RATE	[2-9]	This value is multiplied by either the total <i>or</i> the virtual CPU time at each control break.
TRANSACTION DATE YYYYMMDD YYYYMMDD	[2-7]	Specifies date range for billing summary records.
TRANSACTIONS OVER 24 HOURS ARE PRIME	[2-8]	Specifies that jobs that run longer than 24 hours are set to the prime shift.
VIRTUAL SIO RATE	[2-9]	This value is multiplied by the total number of virtual SIOs at each control break.
WEEKENDS ARE NON-PRIME	[2-8]	When present, weekends are considered non-prime processing days.

Heading Control Statements

HD1, HD2, HD3—Optional Input

Program CIMSCMS prints three lines of Headline information each time a new page of printed output is started. These three lines of heading information can be replaced by supplying a control statement in the input stream with HD1, HD2, and/or HD3 in columns 1-3. The information contained in positions 4-72 of each record replaces line 1, line 2, and/or line 3 on the printed output. These records should be the first three control statements in the input stream.

POSITION	VALUE	DESCRIPTION
1-3	HD1, HD2, HD3	Control Statement Identifier
4-72	X(69)	Text

Example

```

HD1          CIMS, The Enterprise Chargeback System
HD2          Session Accounting for VM/CMS
HD3          .....
```

Processing Control Statements

The following control statements specify processing options. These options control execution of program CIMS CMS. Each control statement starts in column 1 and control statements are separated by a space. Statements that start with a space or asterisk are comments.

ASSIGN ALL RECORDS PRIME

This control statement assigns all jobs to the prime shift. No slicing of the execution times over the prime and non-prime shifts will be performed.

DAILY TRANSACTIONS

The control statement `DAILY TRANSACTIONS` specifies that summary billing transactions are to be generated for each change in `DATE`.

When this statement is not present, billing transactions are created when either the Account ID or User ID change.

DATE SELECTION YYYYMMDD YYYYMMDD

The control statement specifies the `LOW` (from) and `HIGH` (to) selection date for VM/CMS session accounting records. Each session accounting record is compared with the specified dates. Records that are equal to or greater than the `LOW` value and equal to or less than the `HIGH` value are selected for processing.

Example

```
DATE SELECTION 20030101 20030115
```

This statement specifies the selection of records from January 1, 2003 through January 15, 2003.

A CIMS key word can be placed into `FIELD 1`.

Control statement key words automatically calculate specific dates.

The following key words are supported:

- (1) `CURRENT`: Sets date range based on current period from CIMS calendar file.
- (2) `PREVIOUS`: Sets date range based on previous period from CIMS calendar file.
- (3) `**CURDAY`: Sets date range based on run date and run date less one day.
- (4) `**CURWEK`: Sets date range based on run week (Sun - Sat).
- (5) `**CURMON`: Sets date range based on run month.
- (6) `**PREDAY`: Sets date range based on run date, less one day.
- (7) `**PREWEK`: Sets date range based on previous week (Sun - Sat).
- (8) `**PREMON`: Sets date range based on previous month.

Note • Run date is used to determine current and previous date values.

NON-PRIME DAY YYYYDDD NON-PRIME DAY YYYYMMDD

The control statement NON-PRIME DAY specifies that a specific date is to use the non prime billing rates. If this statement is not present, then program CIMSCMS uses the billing rates as defined on the PRIME Shift statements and the WEEKENDS ARE NON-PRIME statement.

The day can be specified in either Julian (YYYYDDD) or Gregorian (YYYYMMDDD) format. This allows flexibility in specifying holidays whose Julian dates might move from year to year.

Example

NON-PRIME DAY 2003001	New Year's Day, 2003
NON-PRIME DAY 2003020	Martin Luther King Jr.'s Birthday, 2003
NON-PRIME DAY 20030704	Independence Day, 2003
NON-PRIME DAY 20031225	Christmas Day, 2003

A maximum of 100 NON-PRIME statements are supported.

TRANSACTION DATE YYYYMMDD YYYYMMDD

The control statement TRANSACTION DATE YYYYMMDD YYYYMMDD specifies the LOW and HIGH date values to place into billing summary records. These date values are used by the CIMS billing program CIMS BILL for record selection. If this record is not present, then the LOW and HIGH date values are calculated from the LOW and HIGH date values encountered in VM/CMS session accounting records.

A CIMS key word can be placed into FIELD 1.

Control statement key words automatically calculate specific dates.

Note • When both a TRANSACTION DATE statement, and a DAILY TRANSACTIONS statement are encountered, the DAILY TRANSACTIONS statement prevails.

Example

TRANSACTION DATE 20030101 20030131

TRANSACTIONS OVER 24 HOURS ARE PRIME

This control statement assigns jobs that run longer than 24 hours to the prime shift. By default, CIMS assigns any job that runs over 24 hours to the non-prime shift.

WEEKENDS ARE NON-PRIME

When this control statement is present, Saturday and Sunday are considered non-prime processing days. Otherwise, Saturday and Sunday are treated like any other day.

Rate Control Statements

The following rate control statements must be preceded by either PRIME or NON-PRIME to indicate for which period the rate is. If a control statement for a particular rate is not used, it defaults to zero.

CARDS PUNCHED RATE 99.9999*

This value is multiplied by the total number of virtual cards punched at each control break. The value is per card.

CARDS READ RATE 99.9999*

This value is multiplied by the total number of virtual cards read at each control break. The value is per card.

CONNECT TIME RATE 999.999*

This value is multiplied by the connect time (in hours) at each control break. The value is per hour.

LINES PER PAGE 999

This value specifies the number of lines per page for the report.

LINES PRINTED RATE 99.9999*

This value is multiplied by the total number of virtual lines printed at each control break. The value is per line.

* Value can be in the following format: 99999999.9999999

TEMPORARY CKD DISK SPACE RATE 99.9999*

This value is multiplied by the average usage per hour of temporary CKD disk space. The value is space per hour.

TEMPORARY FBA DISK SPACE RATE 99.9999*

This value is multiplied by the average usage per hour of temporary FBA disk space. The value is space per hour.

TOTAL CPU TIME RATE 9999.9999* or VIRTUAL CPU TIME RATE 9999.9999*

This value is multiplied by either the total *or* the virtual CPU time at each control break. You can not charge for both control statements. The value is per hour.

VIRTUAL SIO RATE 999.9999*

This value is multiplied by the total number of virtual SIOs at each control break. The value is per thousand.

* Value can be in the following format: 99999999.9999999

Execute Control Statement—Required Input

POSITION	VALUE	DESCRIPTION
1-7	EXECUTE	Control Statement Identifier
8	b	
9-19	CIMsbVM/ CMS	REQUIRED VALUE
20	b	
21-22	XX	The value 01 specifies that raw VM/CMS accounting data is being input and that the data is to be validated and written on the file SORTFILE. The value 02 specifies that sorted VM/CMS accounting data is being input and that the data is to be read from the file SORTFILE. The EXE control statement is required.

b = Blank

Other Control Statements

EXCLUDE ACCOUNT low high **EXCLUDE USERID low high**

These control statements are used to exclude Account and User IDs from processing. Values inside the range are not processed. A maximum of 200 of each type of EXCLUDE control statements is supported.

Examples

```
EXCLUDE ACCOUNT AABBBB AABBBB
```

```
EXCLUDE USERID ABCD
```

PRIME SHIFT START TIME HH:MM:SS **PRIME SHIFT STOP TIME HH:MM:SS**

These statements specify the start and end time for the prime shift. All other times are considered non-prime.

Input in hours-minutes-seconds using the twenty-four hour clock.

Example

```
PRIME SHIFT START TIME 08:00:00
```

```
PRIME SHIFT STOP TIME 17:00:00
```

The above statement defines the PRIME SHIFT as 8:00 AM to 5:00 PM.

REPORT FORMAT IS *type*

This control statement specifies the type of report to generate. The type parameter can be either `DETAIL` or `SUMMARY`. A detail report shows detailed information for each Account or User ID, while the summary report has totals at each control break. By default, control breaks are at the account level. To have control breaks at the User ID level, add the control statement `USERID` after the `DETAIL` or `SUMMARY` specification.

If this control statement is not specified, the default is `REPORT FORMAT IS DETAIL USERID`.

Examples

```
REPORT FORMAT IS DETAIL
```

```
REPORT FORMAT IS SUMMARY USERID
```

SELECT ACCOUNT low high **SELECT USERID low high**

These control statements are used to select Account and User IDs for processing. Values outside the range are not processed. A maximum of 200 of each type of SELECT control statement is supported.

Examples

```
SELECT ACCOUNT AABBBB AABBBB
```

```
SELECT USERID ABCD
```


Rate Codes

The following rate codes are placed in Transaction records to identify resource values. These Transaction records are processed by programs CIMSACCT (OS/390) or CIMSUSE (VSE). The rate codes placed in transaction records are matched with rate codes placed in Billing Rate records. They are then extended by program CIMSBILL.

PRIME CODES	NON-PRIME CODES	DESCRIPTION
ZCMS	ZCMX	MONEY
ZCM1	ZCV1	CONNECT TIME (SECONDS)
ZCM2	ZCV2	CPU TIME (SECONDS)
ZCM3	ZCV3	VIRTUAL SIO'S
ZCM4	ZCV4	VIRTUAL CARDS READ
ZCM5	ZCV5	VIRTUAL LINES PRINTED
ZCM6	ZCV6	VIRTUAL CARDS PUNCHED
ZCM7	ZCV7	TEMPORARY DISK SPACE

ZCMS and ZCMX codes are money charges. The other codes are for Resource values. You can extend these Resource values on the Invoice reports using rates different from those used in program CIMSCMS. You can also use them with the CIMS Report Writer.

Non-Prime records are generated only when non-prime records are supplied.

Note • Do not supply rate records to program CIMSBILL for both money charges (ZCMS and ZCMX) and resource charges.

If you do, you double the charges for VM/CMS sessions.

Changing Rate Codes

To redefine the CIMS standard rate codes, supply the following information in the input control statement dataset:

ZCS1 = X₁ ZCX1 = X₈

X₁—X₁₄ describe a new rate code. Make sure the characters you choose are unique from other rate codes. Eight-character rate codes are supported.

Prime Shift Rates

PRIME SHIFT START TIME	08:00:00	
PRIME SHIFT STOP TIME	18:00:00	
PRIME CONNECT TIME RATE	7.50	PER HOUR
PRIME TOTAL CPU TIME RATE	900	PER HOUR
PRIME VIRTUAL CPU RATE TIME	1000	PER HOUR
PRIME VIRTUAL SIO RATE	.5500	PER 1000 SIO
PRIME CARDS READ RATE	0.015	EACH CARD
PRIME LINES PRINTED RATE	0.01	EACH LINE
PRIME CARDS PUNCHED RATE	0.03	EACH CARD
PRIME TEMPORARY FBA DISK SPACE RATE	0.003	PER FBA BLK HOUR
PRIME TEMPORARY CKD DISK SPACE RATE	3.00	PER CYLINDER HOUR
LINES PER PAGE	60	

Non-Prime Shift, Weekend & Holiday Rates

NON-PRIME CONNECT TIME RATE	5.00	PER HOUR
NON-PRIME TOTAL CPU TIME RATE	750	PER HOUR
NON-PRIME VIRTUAL CPU TIME RATE	850	PER HOUR
NON-PRIME VIRTUAL SIO RATE	.5000	PER 1000 SIO
NON-PRIME CARD READ RATE	.015	EACH CARD
NON-PRIME LINES PRINTED RATE	.01	EACH LINE
NON-PRIME CARDS PUNCHED RATE	0.03	EACH CARD
NON-PRIME TEMPORARY FBA DISK SPACE RATE	.003	PER FBA BLK HOUR
NON-PRIME TEMPORARY CKD DISK SPACE RATE	3.00	PER CYLINDER HOUR

CIMSCMS Exec

```

/* REXX */
'vmfclear'
'desbuf'
/*

```

CIMSCMS EXECUTION CONTROL STATEMENTS

THIS EXEC READS THE VM DISK ACCOUNT DATASET & CREATES USER REPORTS
BASED ON VM ACCOUNT CODES AND USER ID. THE EXEC ALSO CREATES
BILLING TRANSACTIONS FOR INPUT TO CIMSACCT AND CIMSUSE.

FOR MORE INFORMATION, SEE SECTION CIMSCMS OF THE VM/CMS CIMS MANUAL.

LOAD CIMSCMS (NOAUTO NOMAP

DISKACNT DATA MUST BE REPLACED BY INSTALLATION DISK ACCOUNTING DATA.

```

*/
'FILEDEF CMSIN    DISK DISKACNT DATA    A1 (LRECL 80 RECFM F'
'FILEDEF CIMSCLDR DISK CALENDAR DATA    A1 (LRECL 80 RECFM F'
'FILEDEF CIMSPRNT DISK CIMSCMSA LISTING A1 (RECFM FB LRECL 133 BLOCK 133'
'FILEDEF CIMSPASS DISK CIMSNUMS DATA    A1 (RECFM F  LRECL 80  BLOCK 80'
'FILEDEF CIMSOUT  DISK EXTERNAL DATA    A1 (RECFM FB LRECL 80  BLOCK 80'
'FILEDEF CIMSCNTL DISK CIMSCMS1 DATA    A1 (RECFM F  LRECL 80'
/*
    CIMSCMS1 DATA A1 IS THE CONTROL RECORD FILE.
*/
'FILEDEF SORTFILE DISK SORTOUT  DATA    A1 (RECFM FB LRECL 80  BLOCK 80'
'CC'

if rc ^= 0 then do
    src = rc
    if src = 20 then say 'CIMSCMS processing terminated - no records selected'
    else do
        say 'CIMSCMS first pass terminated with error. Do you wish to see the listing (y/n)?'
        pull yn
        upper yn
        if left(yn,1) = 'Y' then 'xedit cimscmsa listing'
    end
    exit src
end
queue '9 16 78 78 1 8 80 80 17 28'
if rc ^= 0 then exit rc
'SORT SORTOUT DATA A1 SORTED DATA A1'
if rc ^= 0 then do
    src = rc
    'desbuf'
    exit src
end
'FILEDEF CMSIN    DISK DISKACNT DATA    A1 (RECFM F  LRECL 80'
'FILEDEF CIMSCLDR DISK CALENDAR DATA    A1 (LRECL 80 RECFM F'
'FILEDEF CIMSPRNT DISK CIMSCMSB LISTING A1 (RECFM F  LRECL 133 BLOCK 133'
'FILEDEF CIMSPASS DISK CIMSNUMS DATA    A1 (RECFM F  LRECL 80  BLOCK 80'
'FILEDEF CIMSOUT  DISK EXTERNAL DATA    A1 (RECFM F  LRECL 80  BLOCK 80'
'FILEDEF CIMSCNTL DISK CIMSCMS2 DATA    A1 (RECFM F  LRECL 80'
/*

```

```

CIMSCMS2 DATA A1 IS THE CONTROL RECORD FILE.
                                                                    */
'FILEDEF SORTFILE DISK SORTED   DATA   A1 (RECFM FB LRECL 80  BLOCK 80'
'CC'
'ERASE SORTED   DATA  A1'
'ERASE SORTOUT DATA  A1'
say 'Do you wish to view the report file from the first run (y/n)?'
parse pull yn
upper yn
if left(yn,1) = 'Y' then 'XEDIT CIMSCMSA LISTING A1'
say 'Do you wish to view the report file from the second run (y/n)?'
parse pull yn
upper yn
if left(yn,1) = 'Y' then 'XEDIT CIMSCMSB LISTING A1'
say 'Do you wish to view the created transactions (y/n)?'
parse pull yn
upper yn
if left(yn,1) = 'Y' then 'XEDIT EXTERNAL DATA A1'
/*
FILE EXTERNAL DATA IS INPUT TO PROGRAM CIMSACCT(MVS) OR CIMSUSE(VSE). */

```

CIMSCMS1 DATA

```

EXECUTE CIMS VM/CMS 01      DO NOT CHANGE THIS RECORD

HD1                          CIMS, THE CHARGEBACK SYSTEM
HD2                          CMS SESSION ACCOUNTING
HD3                          .....

DATE SELECTION **PREWEK
REPORT FORMAT IS DETAIL USERID
NON-PRIME DAY 1997001
NON-PRIME DAY 19970704
NON-PRIME DAY 19970119

PRIME SHIFT START TIME 06:00:00
PRIME SHIFT STOP TIME 18:00:00
PRIME CONNECT TIME RATE 7.50
PRIME TOTAL CPU TIME RATE 900.00
PRIME VIRTUAL SIO RATE .55
PRIME VIRTUAL CARDS READ RATE .015
PRIME VIRTUAL LINES PRINTED RATE .01
PRIME VIRTUAL CARDS PUNCHED RATE .02
PRIME TEMPORARY FBA DISK SPACE RATE .003
PRIME TEMPORARY CKD DISK SPACE RATE .1
LINES PER PAGE 60

NON-PRIME CONNECT TIME RATE 5
NON-PRIME TOTAL CPU TIME RATE 750
NON-PRIME VIRTUAL SIO RATE .5
NON-PRIME VIRTUAL CARDS READ RATE .015
NON-PRIME VIRTUAL LINES PRINTED RATE .01
NON-PRIME VIRTUAL CARDS PUNCHED RATE .02
NON-PRIME TEMPORARY FBA DISK SPACE RATE .003
NON-PRIME TEMPORARY CKD DISK SPACE RATE 1
ZCMX = WTFOXYZ

```

CIMSCMS2 DATA

```
EXECUTE CIMS VM/CMS 02    DO NOT CHANGE THIS RECORD

HD1                      CIMS, THE CHARGEBACK SYSTEM
HD2                      CMS SESSION ACCOUNTING
HD3                      .....

DATE SELECTION **PREWEK
REPORT FORMAT IS DETAIL USERID
NON-PRIME DAY 1997001
NON-PRIME DAY 19970704
NON-PRIME DAY 19970119

PRIME SHIFT START TIME 06:00:00
PRIME SHIFT STOP TIME 18:00:00
PRIME CONNECT TIME RATE 7.50
PRIME TOTAL CPU TIME RATE 900.00
PRIME VIRTUAL SIO RATE .55
PRIME VIRTUAL CARDS READ RATE .015
PRIME VIRTUAL LINES PRINTED RATE .01
PRIME VIRTUAL CARDS PUNCHED RATE .02
PRIME TEMPORARY FBA DISK SPACE RATE .003
PRIME TEMPORARY CKD DISK SPACE RATE .1
LINES PER PAGE 60

NON-PRIME CONNECT TIME RATE 5
NON-PRIME TOTAL CPU TIME RATE 750
NON-PRIME VIRTUAL SIO RATE .5
NON-PRIME VIRTUAL CARDS READ RATE .015
NON-PRIME VIRTUAL LINES PRINTED RATE .01
NON-PRIME VIRTUAL CARDS PUNCHED RATE .02
NON-PRIME TEMPORARY FBA DISK SPACE RATE .003
NON-PRIME TEMPORARY CKD DISK SPACE RATE 1
ZCMX = WTFXYZ
```

OS/390 Exec

Sample Job Control OS/390

```
//CIMSCMS1 EXEC PGM=CIMSCMS,REGION=OM
//*
//STEPLIB DD DSN=CIMS.LOAD.MODULES,DISP=SHR
//*
//SYSUDUMP DD SYSOUT=*
//SYSOUT DD SYSOUT=*
//CIMSMMSG DD SYSOUT=*
//*
//CIMSPASS DD DSN=CIMS.DATAFILE(CIMSNUMS),DISP=SHR
//CIMSCCLR DD DSN=CIMS.DATAFILE(CALENDAR),DISP=SHR
//*
//CIMSPRNT DD SYSOUT=*,DCB=BLKSIZE=133
//CMSIN DD DSN=CIMS.DATAFILE(CIMSVMDT),DISP=SHR
//*
//* ABOVE ARE DISK ACNT RECORDS.....
//* USE YOUR DISK ACNT RECORDS.....
//*
//SORTFILE DD DSN=&&TEMP,UNIT=SYSDA,DISP=(,PASS),
// SPACE=(CYL,(1,1)),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=27920)
//*
//CIMSOUT DD DUMMY,DCB=BLKSIZE=80
//*
//CIMSCNTL DD *
EXECUTE CIMS VM/CMS 01
/*
// DD DSN=CIMS.DATAFILE(CMSINPUT),DISP=SHR
//*
//SORT EXEC PGM=SORT,REGION=OM
//SORTLIB DD DSNAME=SYS1.SORTLIB,DISP=SHR
//*
//SYSOUT DD SYSOUT=*
//*
//SORTWK01 DD UNIT=SYSDA,SPACE=(CYL,(5),,CONTIG)
//SORTWK02 DD UNIT=SYSDA,SPACE=(CYL,(5),,CONTIG)
//SORTWK03 DD UNIT=SYSDA,SPACE=(CYL,(5),,CONTIG)
//*
//SORTIN DD DSN=&&TEMP,DISP=OLD,
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=27920)
//*
//SORTOUT DD DSN=&&TEMP2,DISP=(,PASS),UNIT=SYSDA,
// SPACE=(CYL,(1,1)),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=27920)
//*
//SYSIN DD *
SORT FIELDS=(9,8,CH,A,78,1,CH,A,1,8,CH,A,80,1,CH,A,17,12,CH,A)
/* DO NOT CHANGE SORT FIELDS
//*
//CIMSCMS2 EXEC PGM=CIMSCMS,REGION=OM
//*
//STEPLIB DD DSN=CIMS.LOAD.MODULES,DISP=SHR
//*
//SYSUDUMP DD SYSOUT=*
```

```

//SYSOUT DD SYSOUT=*
//CIMSMMSG DD SYSOUT=*
//CIMSPRNT DD SYSOUT=*,DCB=BLKSIZE=133
//*
//CIMSPASS DD DSN=CIMS.DATAFILE(CIMSNUMS),DISP=SHR
//CIMSCCLR DD DSN=CIMS.DATAFILE(CALENDAR),DISP=SHR
//*
//CMSIN DD DUMMY,DCB=BLKSIZE=80
//SORTFILE DD DSN=&&TEMP2,DISP=OLD
//CIMSOUT DD DSN=CIMS.VMCMS.EXTERNAL.DAILY,DISP=(NEW,CATLG,DELETE),
// UNIT=SYSDA,
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=27920),
// SPACE=(CYL,(1,1))
//*
//* ABOVE DATASET IS INPUT TO PROGRAM CIMSACCT
//*
//CIMSCNTL DD *
EXECUTE CIMS VM/CMS 02
//*
// DD DSN=CIMS.DATAFILE(CMSINPUT),DISP=SHR
//* ADD VM/CMS RECORDS TO MASTER FILE
//*
//CIMSACCT EXEC PGM=CIMSACCT,REGION=OM
//*
//STEPLIB DD DSN=CIMS.LOAD.MODULES,DISP=SHR
//*
//SYSUDUMP DD SYSOUT=*
//SYSOUT DD SYSOUT=*,DCB=BLKSIZE=133
//CIMSPRNT DD SYSOUT=*,DCB=BLKSIZE=133
//CIMSMMSG DD SYSOUT=*
//*
//CIMSPASS DD DSN=CIMS.DATAFILE(CIMSNUMS),DISP=SHR
//*
//CIMSEXTN DD DSN=CIMS.VMCMS.EXTERNAL,DISP=(OLD,DELETE,KEEP)
//*
//CIMSACCT DD DSN=CIMS.CIMSACCT.DAILY.VMCMS,DISP=(NEW,CATLG),
// UNIT=SYSDA,
// SPACE=(CYL,(1,1)),
// DCB=(RECFM=VB,LRECL=6508,BLKSIZE=27998)
//CIMSCNTL DD DSN=CIMS.DATAFILE(ACCTINP2),DISP=SHR

```

VM Accounting Records

Virtual Machine Resource Usage

RECORD POSITION	CONTENTS
1-8	USERID
9-16	ACCOUNT NUMBER
17-28	DATE AND TIME (MmddYYhhMMSS)
29-32	SECONDS OF CONNECT TIME
33-36	MILLISECONDS OF PROCESSING TIME*
37-40	MILLISECONDS OF VIRTUAL PROCESSOR TIME
41-44	NUMBER OF PAGE READS
45-48	NUMBER OF PAGE WRITES
49-52	NUMBER OF VIRTUAL MACHINE SIOs FOR NON-SPOOLED I/O
53-56	NUMBER OF CARDS SPOOLED TO PUNCH
57-60	NUMBER OF LINES SPOOLED TO PRINTER
61-64	NUMBER OF CARDS SPOOLED FROM READER
65-78	RESERVED
79-80	CARD IDENTIFICATION = 01

*This field includes the time for VM supervisor functions.

The data in record positions 1-28 and 79-80 is character, all other fields are hexadecimal.

Temporary Disk Space Usage

RECORD POSITION	CONTENTS
1-32	SAME AS RESOURCE USAGE RECORD
33	DEVICE CLASS
34	DEVICE TYPE
35	MODEL (IF ANY)
36	FEATURE (IF ANY)
37-38	NUMBER OF TEMPORARY DISK CYLINDERS*
37-40	NUMBER OF TEMPORARY DISK BLOCKS (FBA)*
39-78	UNUSED
79-80	CARD IDENTIFICATION = 03

*If DEVICE CLASS = FBA X'01', then 37-40 contains number of FBA blocks.

The data in record positions 1-28 and 79-80 is character, all other data is hexadecimal.

External Transaction Record–(TRANS)

Transaction records are comma delimited and defined as follows:

TRANS, COST CODE, LOW-DATE, HIGH-DATE, VALUE, ACCT CODE, AUDIT CODE
 YYYYMMDD YYYYMMDD

TRANS	For Identification Purposes (Required).
COST CODE	1-8 Character Cost Center Code. This Code is matched with the COST CENTER CODE on Rate Records as defined in the CIMSBILL chapter of the CIMS User Guide.
LOW-DATE	Low/From date in YYYYMMDD format. LOW-DATE = RUN-DATE if LOW-DATE is NULL.
HIGH-DATE	High/To date in YYYYMMDD format. HIGH-DATE = LOW-DATE if HIGH-DATE is NULL.
VALUE	1-14 Character Resource Value. A Value can be Money, Hours, Counts, etc. The value is extended against the Billing Rate contained on RATE Records. See Rate Records in this chapter. Maximum Resource Value is 9999999.9999. NEGATIVE Values are entered with a trailing minus sign (-) for example: Negative 123- Negative 123.45- Negative values are for CREDIT entries.
ACCT CODE	1-32 Character Account Code. This code should be in the same format as computer generated account codes.
AUDIT CODE	1-8 Character Audit Code such as Employee Code, Service Code, Etc.

CIMSCMS Flow Chart

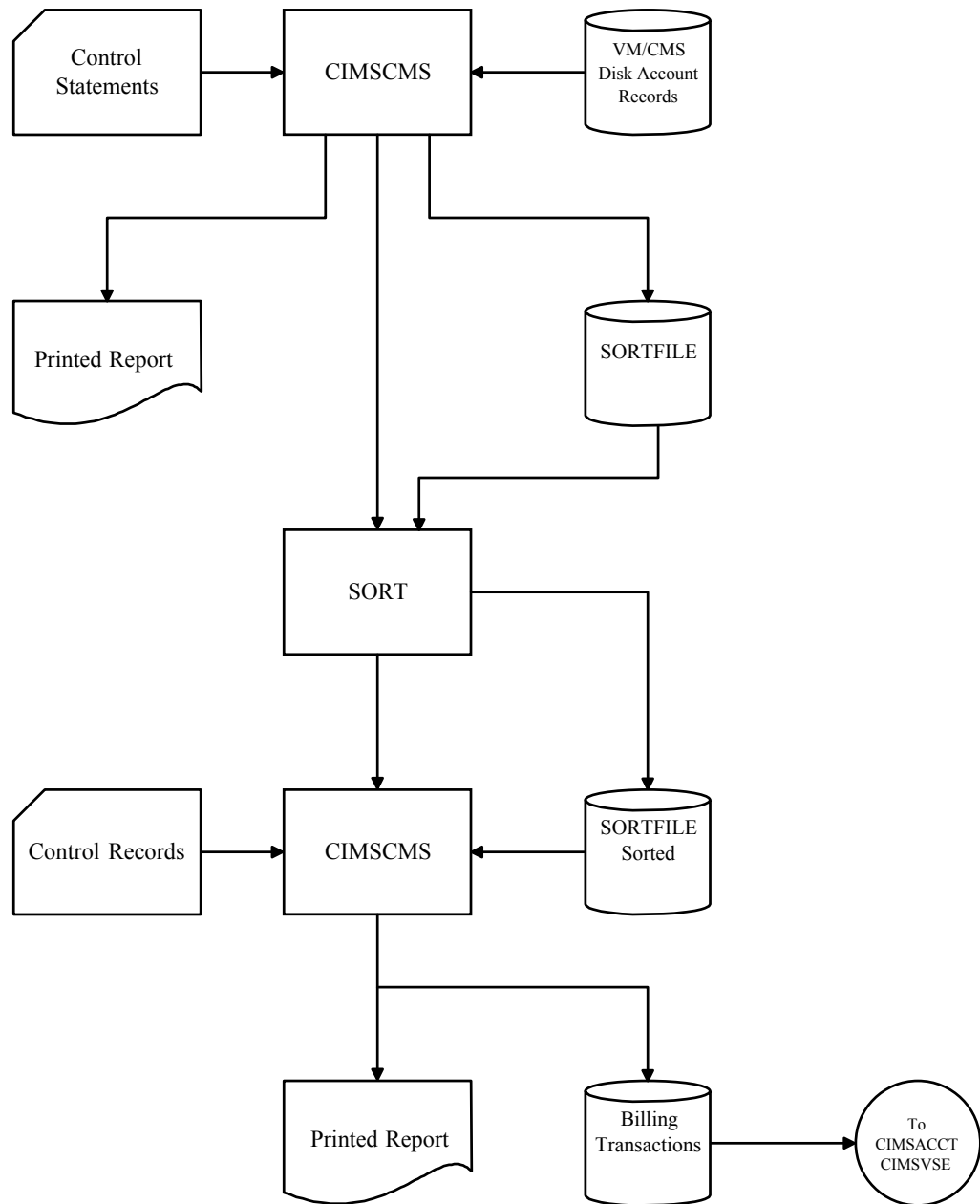


Figure 2-1 • Program CIMSCMS Processing

VM/CMS Job Accounting Sample Report

CIMS, THE CHARGEBACK SYSTEM

VM/CMS SESSION ACCOUNTING

DETAIL REPORT

USER ACCOUNT	USER ID	** C R E A T I O N **		CONNECT TIME HHH.MM.SS	TOTAL CPU HHH.MM.SS	VIRTUAL CPU HHH.MM.SS	PAGE READS	PAGE WRITES	DSK/TP SIO	PUNCH IO	PRINT IO	READ IO
		DATE YYYY/MM/DD	TIME HH.MM.SS									
ACS785AA	JJD20000	1997/05/02	02.51.20	0.13.03	0.00.21	0.00.04	1246	550	559	224	114	27
ACS785AA	JJD40000	1997/05/02	05.11.14	0.20.56	0.00.27	0.00.05	1313	579	719	396	182	43
ACS785AA	KALD2000	1997/05/03	00.40.13	0.22.25	0.00.26	0.00.06	1115	566	850	375	206	19
ACS785AA	LALD6000	1997/05/15	22.20.44	0.23.05	0.00.17	0.00.03	1291	569	506	133	93	18
ACS785AA	LALD6000	1997/05/17	14.38.56	0.50.25	0.00.39	0.00.07	3288	1365	1067	810	269	140
ACS785AA	MDCD3000	1997/05/21	21.37.47	0.16.55	0.00.12	0.00.03	652	282	370	112	67	111
ACS785AA	MDCD4000	1997/05/21	22.00.30	0.08.03	0.00.07	0.00.02	276	136	336	19	47	18
ACS785AA	STDD2000	1997/05/21	22.24.38	0.01.55	0.00.06	0.00.02	117	76	331	19	26	18
ACS785AA	STDD3000	1997/05/26	04.24.22	0.04.27	0.00.05	0.00.02	38	0	334	39	23	38
ACS785AA	STDD5000	1997/05/26	07.50.46	0.39.44	0.00.28	0.00.06	1467	681	828	549	232	84
ACS785AA	TCPD9000	1997/05/30	21.49.00	0.38.22	0.00.26	0.00.08	1015	376	802	922	59	1850

SUMMARY INFORMATION PRINTED FOR CHANGE IN USER ACCOUNT (ACS785AA)

	CONNECT TIME	C P U	DSK/TP IO	CARDS READ	LINES PRINTED	CARDS PUNCHED	PAGES READ	PAGES WRITTEN	TEMP DISK CONNECT TIME
TOTALS	3.59.20	0.03.33	6,702	2,366	1,318	3,598	11,818	5,180	0.00.00
PRM-RATES	7.50/HR	900.00/HR	.5500/M	.0150/CD	.0100/LN	.0200/CD			1.00/CYL/HR
CHARGES	29.92	53.48	3.69	35.49	13.18	71.96			.00
T O T A L A M O U N T =						207.72			

Minidisk Chargeback System

Introduction	3-2
Program Operation	3-2
File Definitions	3-2
Control Statement Table	3-3
CIMSMINI EXEC	3-4
Control Data File—Sample Data	3-6
Exempt Data File—Sample Data	3-6
VM/CMS Installation Instructions	3-6
OS/390 Installation	3-7

Introduction

The CIMS VM/CMS Session Accounting product provides support for the charging of mini-disk space in FBA blocks and/or CKD cylinders. Support is also provided for the charging of User ID's.

The installation has complete control over billing rates and billing rate codes for each type of charge.

CIMSMINI generates billing transactions.

These transactions are input to programs CIMSACCT (OS/390) or CIMSUSE (VSE) for further processing.

Program Operation

The billing of User IDs and mini-disk space is accomplished by an EXEC CIMSMINI. The CIMSMINI EXEC links to the DIRMAINTS MINI-DISK and then creates billing transactions.

File Definitions

DIRECT	This dataset contains VM/CMS directory information. The password for the dataset must be given in the EXEC.
CONTRL	This dataset contains control information that is used to specify date select values and cost center codes.
EXEMPT	This dataset contains User IDs exempt from charges. These would be SYSTEM functions and other USER IDs used to control the VM/CMS operation.
CIMSOUT	This dataset contains billing transactions. These transactions are processed by either program CIMSACCT (OS/390) or CIMSUSE (VSE).

Control Statement Table

CONTROL STATEMENT	PAGE #	DESCRIPTION
DATE RECORD	[page 3-3]	Specifies the LOW & HIGH dates to be placed into billing transaction.
DEVICE RECORDS	[page 3-4]	These records define physical direct access devices with corresponding rate codes.
EXEMPT USER ID	[page 3-4]	The data file EXEMPT contains a table of exempt User IDs.

The following control statements are used by the CIMSMINI system:

DATE RECORD

The DATE RECORD specifies the LOW & HIGH dates to be placed into billing transaction records for USER IDs and Mini space usage.

VALUE	DESCRIPTION
DATES*	Control Statement Identifier
X(8)	The low date value placed into BILLING TRANSACTIONS. FORMAT = YYYYMMDD
X(8)	The high date value placed into BILLING TRANSACTIONS. FORMAT = YYYYMMDD

*If the DATE control record is not supplied, then the system date is used for the high and low transaction dates.

Control Statements start in column 1. Values are separated by spaces.

Example

```
DATES 20030101 20031231
```

DEVICE RECORDS

These records define physical direct access devices with corresponding rate codes. Statement starts in column 1 and values separated by space.

VALUE	DESCRIPTION
X(6)	Up to six character field that defines a physical device. The value is left justified. i.e. = 3390
X(8)	Up to eight character rate code . This code is placed in each BILLING TRANSACTION RECORD for Mini DISK space.

A maximum of 100 device records are supported.

The dates and device records are placed in file CONTRL.

EXEMPT USER ID

The data file EXEMPT contains a table of exempt User IDs. This table must be in SORT sequence.

VALUE	DESCRIPTION
X(8)	EXEMPT USER ID

CIMSMINI EXEC

CIMSMINI processes data files CONTRL, EXEMPT, and DIRECT.

- File CONTRL contains the dates and device records.
- File EXEMPT contains exempt USER IDs.
- File DIRECT is the VM directory containing user is account codes, mini-disk space, and physical device types. The user must provide a password in the CP LINK statement.
- Output of this EXEC is the data file CIMSOUT.

The CIMSOUT data file contains billing transactions that are input to either program CIMSACCT (OS/390) or CIMSVSE (VSE).

Rate code ZUID is used to identify active User IDs.

A billing rate record with rate code ZUID and rate information must be submitted to program CIMSBILL to charge for active User ID's.

CIMSMINI EXEC Statements

CIMSMINI EXEC

```
/*          CIMSMINI          */
'VMFCLEAR'
'DESBUF'
'GETFMADR'
pull ast fm adr
/* 'cp link maint 195 'adr' rr'
'ACC 'adr' 'fm */
'ERASE CIMSMINI SYSUT1 A'
queue 'input'
'FINDSTAK USER DIRECT A T1 MDISK OR T1 USER OR T1 ACCOUNT ALL'
queue
queue 'file'
'XEDIT CIMSMINI SYSUT1 A (NOMSG'
'FILEDEF DIRECT   DISK CIMSMINI SYSUT1  A'
'FILEDEF EXEMPT  DISK CIMSMINI MINITEMP A'
'FILEDEF CONTRL  DISK CIMSMINI MINITEMP A'
'FILEDEF CIMSOUT DISK CIMSMINI CARDS   A (LRECL   80 BLOCK 4000 RECFM FB)'
'CM'
'FILEDEF * CLEAR'
say 'CIMSMINI terminated. Do you wish to view the TRANS records (y/n)?'
parse pull answer
upper answer
if left(answer,1) = 'Y' then 'XEDIT CIMSMINI CARDS A'
```

Control Data File—Sample Data

```
DATES 20030101 20030131
3390 DSK1
3380 DSK2
3375 DSK3
FB-512 DSK4
```

Exempt Data File—Sample Data

```
$ALLOC$
$ALTTRK$
RSCS
MVS
VSEA
VSEB
```

VM/CMS Installation Instructions

The CIMS VM/CMS Session Accounting distribution tape file was created by the Tape Dump facility of CMS. The tape contains the following members:

CIMSCMS	TEXT	PROGRAM CIMSCMS --PROCESS DISK ACCOUNT RECORDS
CIMSMINI	TEXT	PROGRAM CIMSMINI --CREATES MINI DISK TRANSACTION RECORDS
CIMSCMS	EXEC	EXEC TO RUN PROGRAM CIMSCMS
DISKACNT	DATA	VM/CMS DISK ACCOUNT TEST DATA FOR PROGRAM CIMSCMS
CIMSCMS1	DATA	CONTROL RECORDS FOR PROGRAM CIMSCMS
CIMSCMS2	DATA	CONTROL RECORDS FOR PROGRAM CIMSCMS
CIMSNUMS	DATA	PASSWORD RECORDS
CIMSMINI	EXEMPT	CONTROL RECORDS FOR PROGRAM CIMSMINI
CIMSMINI	CNTRL	CONTROL RECORDS FOR PROGRAM CIMSMINI
CIMSMINI	DATA	CIMSMINI SAMPLE DIRECTORY DATA
CIMSMINI	EXEC	EXEC TO RUN PROGRAM CIMSMINI
CIMS	TXTLIB	COMMON ROUTINES

The Language Environment facility of VM is required for CIMSCMS and CIMSMINI. As shipped, the EXECs perform a load and start. You can create a module using GENMOD and modify the EXECs accordingly.

To install, execute the following statements:

```
ATTACH TAPE 181
VMFPLC2 LOAD
DETACH 181
```

OS/390 Installation

The distribution of CIMS OS/390 contains VM/CMS TEXT, EXEC, and DATA members. You must move these members to your VM system to process programs CIMSCMS and/or CIMSMINI under VM. These program modules have been compiled using COBOL LE. The VM system you process on *must have* the COBOL LE library.

Move the following members from CIMS.DATFILE to VM:

MEMBER NAME	DESCRIPTION
CIMSVMD1	Input control statements for CIMSCMS. FIRST EXECUTION
CIMSVMD2	Input control statements for CIMSCMS. SECOND EXECUTION
CIMSVMD3	CIMSCMS Password
CIMSVMD4	Sample Disk Account Data
CIMSVMD5	Sample Calendar Data
CIMSVMD6	CIMSMINI control file data
CIMSVMD7	CIMSMINI exempt file data
CIMSVME1	EXEC for program CIMSCMS
CIMSVME2	EXEC for program CIMSMINI
CIMSVME3	EXEC to create modules
CIMSVMT1	Program CIMSCMS text
CIMSVMT2	Program CIMSMINI Text
CIMSVMT3	TEXT Library



Index

A

accounting
 program 2-2
 records 2-18

B

billable items
 CIMSCMS 2-3
 VM/CMS 1-3

C

chargeback 1-5
CIMS Lab, contacting vi
CIMSCMS
 billable items 2-3
 control statement table 2-4 to 2-15
 file definitions 2-3
 flow chart 2-21
 program operation 2-2
CIMSCNTL file 2-3
CIMSMINI
 control statement table 3-3 to 3-4
 file definitions 3-2
 program operations 3-2
CIMSMMSG file 2-3
CIMSOUT dataset 3-2
CIMSOUT file 2-3
CIMSPASS file 2-3
CIMSPRNT file 2-3
CMSIN file 2-2, 2-3
contacting, CIMS Lab vi
CONTRL dataset 3-2
CONTROL STATEMENT TABLE
 CIMSCMS 2-4 to 2-15

CIMSMINI 3-3 to 3-4

D

DIRECT dataset 3-2
disk space usage, temporary 2-19

E

EXEMPT dataset 3-2
external transaction record 2-20

F

file definitions
 CIMSCMS 2-3
 CIMSMINI 3-2
flow charts
 CIMS VM/CMS 1-6
 CIMSCMS 2-21

H

help, contacting the CIMS Lab vi

I

installation 1-4
 OS/390 3-7
 VM/CMS 3-6

J

JCL, OS/390 2-16

O

OS/390
 installation 3-7
 job control 2-16

P

program operation
 CIMSCMS 2-2
 CIMSMINI 3-2

R

rates
 non-prime 2-12
 prime shift 2-12
 rate codes 2-11, 3-4
records, external transaction 2-20
reports, VM/CMS Job Accounting Report 2-22
resource usage, virtual machine 2-18

S

SORTFILE file 2-2, 2-3

T

technical support, contacting the CIMS Lab vi
temporary disk space usage 2-19

U

user IDs 3-4

V

virtual machine resource usage 2-18
VM/CMS
 billable items 1-3
 features 1-2
 flow chart 1-6
 installation 3-6
 Job Accounting Report 2-22

Z

ZUID rate code 3-4