3270 SUPEROPTIMIZER®/CICS User Guide

3270 SUPEROPTIMIZER/CICS
3270 SUPEROPTIMIZER/CICS for VSE

Version 3.0

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Customer Support

You can obtain technical support by using the Support page on the BMC Software Web site or by contacting Customer Support by telephone or e-mail. To expedite your inquiry, please see “Before Contacting BMC Software.”

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You can obtain technical support from BMC Software 24 hours a day, 7 days a week at **http://www.bmc.com/support.html**. From this Web site, you can

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Before Contacting BMC Software

Before you contact BMC Software, have the following information available so that Customer Support can begin working on your problem immediately:

- product information
  - product name
  - product version (release number)
  - license number and password (trial or permanent)
- operating system and environment information
  - machine type
  - operating system type, version, and service pack or other maintenance level such as PUT or PTF
  - system hardware configuration
  - serial numbers
  - related software (database, application, and communication) including type, version, and service pack or maintenance level
- sequence of events leading to the problem
- commands and options that you used
- messages received (and the time and date that you received them)
  - product error messages
  - messages from the operating system, such as `file system full`
  - messages from related software

Contents

Figures

Tables

About This Book

The 3270 SUPEROPTIMIZER®/CICS (SUPEROPT) product is a network performance product from BMC Software, Inc. This optimization product reduces response times to terminals and printers, and increases user productivity.

This book contains detailed information about using SUPEROPT and is intended for system programmers, administrators, and Customer Information Control System (CICS) technical support staff.

To use this book, you should be familiar with the following items:

- your database management system (DBMS)
- Multiple Virtual Storage (MVS) systems, job control language (JCL), and the Interactive System Productivity Facility (ISPF)
- your client and host operating systems

For example, you should know how to respond to ISPF panels and how to perform common actions in a window environment (such as choosing menu items and resizing windows).

The information in this book applies to MVS and VSE/ESA installations, unless otherwise noted.

How This Book Is Organized

This book is organized as follows:

Chapter	Description
Chapter 1, “Introduction”	describes the two components of SUPEROPT and their features and functions
Chapter 2, “Accessing and Controlling SUPEROPT”	describes how to initiate a Monitor session and initialize the Optimizer
Chapter 3, “Using the Monitor”	describes how to use the Monitor to define options
Chapter 4, “Controlling Optimization of Your Data Streams”	describes the options that are available on the Optimization Control Menu
Chapter 5, “Working with User Installation Tables”	describes how to use the User Installation Tables option
Chapter 6, “Displaying Information about Your Data Streams”	describes how to access the panels for the Data Stream Statistics Menu options and how to display statistical information
Chapter 7, “Analyzing Errors in Your Data Streams”	describes how to access the Data Stream Analysis Menu, how to analyze data stream errors, and how to perform data stream traces
Chapter 8, “Checking Optimizer and Monitor Status”	describes how to access the Status Menu to obtain status information
Chapter 9, “Printing and Resetting Optimization Statistics”	describes how to print or reset statistics when you select Print or Reset Statistics
Chapter 10, “Resolving Problems”	provides some of the most common questions SUPEROPT users have asked and the recommended solutions

In addition, a glossary of terms and an index appear at the end of the book.

Related Documentation

BMC Software products are supported by several types of documentation:

- online and printed books
- online Help
- release notes and other notices

In addition to this book and the online Help, you can find useful information in the following publications:

Category	Document	Description
installation documents	*OS/390 and z/OS Installer Guide*	provides information about the OS/390 and z/OS Installer
	3270 SUPEROPTIMIZER/CICS for VSE Installation Guide	provides instructions for using product authorization and instructions for installing SUPEROPT in VSE/ESA environments
	3270 SUPEROPTIMIZER/CICS Customization Guide	provides instructions for customizing SUPEROPT
core documents	*3270 SUPEROPTIMIZER/CICS General Information*	provides an overview of how SUPEROPT can enhance network performance
	3270 SUPEROPTIMIZER/CICS Messages Manual	contains the product messages and explanations
supplemental documents	release notes, technical bulletins, flashes	provide current information about SUPEROPT

Online and Printed Books

The books that accompany BMC Software products are available in online format and printed format. If you are a Windows or Unix user, you can view online books with Acrobat Reader from Adobe Systems. The reader is provided at no cost, as explained in "To Access Online Books." You can also obtain additional printed books from BMC Software, as explained in "To Request Additional Printed Books."

To Access Online Books

Online books are formatted as Portable Document Format (PDF) files. You can view them, print them, or copy them to your computer by using Acrobat Reader 3.0 or later. You can access online books from the documentation compact disc (CD) that accompanies your product or from the World Wide Web.

In some cases, installation of Acrobat Reader and downloading the online books is an optional part of the product-installation process. For information about downloading the free reader from the Web, go to the Adobe Systems site at **http://www.adobe.com**.

To view any online book that BMC Software offers, visit the support page of the BMC Software Web site at **http://www.bmc.com/support.html**. Log on and select a product to access the related documentation. (To log on, first-time users can request a user name and password by registering at the support page or by contacting a BMC Software sales representative.)

To Request Additional Printed Books

BMC Software provides printed books with your product order. To request additional books, go to **http://www.bmc.com/support.html**.

Online Help

SUPEROPT includes online Help. In the SUPEROPT ISPF interface, you can access Help by pressing **F1** from any ISPF panel.

Release Notes and Other Notices

Printed release notes accompany each BMC Software product. Release notes provide current information such as

- updates to the installation instructions
- last-minute product information

In addition, BMC Software sometimes provides updated product information between releases (in the form of a flash or a technical bulletin, for example). The latest versions of the release notes and other notices are available on the Web at **http://www.bmc.com/support.html**.

Conventions

This section provides examples of the conventions used in this book and explains how to read ISPF panel-flow diagrams.

General Conventions

This book uses the following general conventions:

Item	Example
information that you are instructed to type	Type **SEARCH DB** in the designated field.
specific (standard) keyboard key names	Press **Enter**.
field names, text on a panel	Type **the appropriate entry** in the **Command** field.
directories, file names, Web addresses	The BMC Software home page is at **www.bmc.com**.
nonspecific key names, option names	Use the HELP function key. KEEPDICTIONARY option
MVS calls, commands, control statements, keywords, parameters, reserved words	Use the SEARCH command to find a particular object. The product generates the SQL TABLE statement next.

code examples, syntax statements, system messages, screen text	`//STEPLIB DD`
	
	`The table` *`table_name`* `is not available.`

emphasized words, new terms, variables	The instructions that you give to the software are called *commands*. In this message, the variable *file_name* represents the file that caused the error.

This book uses the following types of special text:

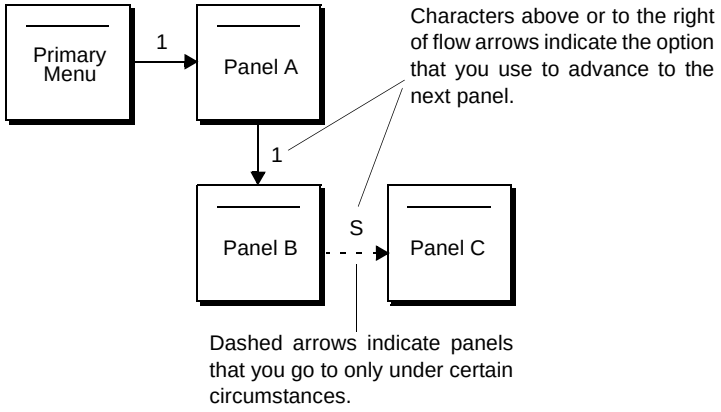
Note: Notes contain important information that you should consider.

Warning! Warnings alert you to situations that could cause problems, such as loss of data, if you do not follow instructions carefully.

Tip: Tips contain useful information that may improve product performance or that may make procedures easier to follow.

Panel-Flow Diagrams

Panel-flow diagrams summarize the ISPF panels that you see while completing specific tasks. The following example explains how to read a panel-flow diagram:



Chapter 1 Introduction

This chapter briefly describes the two components of SUPEROPT and their features and functions. This chapter presents the following topics:

Overview

BMC Software developed 3270 SUPEROPTIMIZER/CICS to reduce the length of your 3270 data streams in the Customer Information Control System (CICS) environment.

SUPEROPT *substantially* reduces the length of outbound and inbound data streams for 3270 terminals, and SNA Character String (SCS) and Data Stream Compatibility (DSC) printers.

- For outbound data streams, the amount of reduction can be as high as *90* percent (usually in the 50 to 90 percent range).

- For inbound data streams, the amount of reduction can be as high as *90* percent (usually in the 40 to 90 percent range).

SUPEROPT can also compress outbound Systems Network Architecture (SNA) data streams for 3600/4700 controllers and 3790 devices with decompression capability. The amount of compression can be as high as 45 percent, with an average of 20 to 40 percent. SUPEROPT can also expand inbound data streams that were compressed by application logical units (LUs).

SUPEROPT has two components: the Optimizer and the Monitor. When the Optimizer receives control of a data stream, it uses several methods to produce a much smaller data stream to accomplish the same function as the larger one. Most optimization techniques are controlled from the Monitor. A few options must be set by running the batch Set Options program, COPBSET.

Optimizer Component

The Optimizer component performs the following actions:

- reduces data stream lengths
- analyzes data streams for application and hardware errors
- traces 3270 CICS data streams according to user-specified criteria
- saves statistics on the percentage of optimization that has been obtained

The Optimizer uses standard CICS exits to intercept all data streams for BTAM, TCAM, and VTAM. No changes are required to any of your CICS applications. The operation of the SUPEROPT is completely transparent to your CICS applications.

Design Objectives

The Optimizer is a set of reentrant assembly language programs that intercept CICS data streams to reduce their length. The Optimizer component performs the following actions:

- adjusts to the CICS release that you are using
- dynamically adjusts to any changes to optimization options and features that the user makes from the Monitor component
- dynamically detects an MVS/ESA, OS/390, or z/OS environment and executes its code above the 16 MB line and acquires storage above the 16 MB line (less than 8 KB of storage is used below the line)
- captures data streams for customer analysis by using the wraparound trace facility

Design Features

Because CPU time is a critical resource, the Optimizer has been designed to use as little CPU time as possible and still achieve a high percentage of data stream reduction.

Other significant design features of the Optimizer are as follows:

- The Optimizer can process and optimize data streams that contain any combination of the following items:

  — extended attributes
  — program symbols
  — color
  — vector graphics
  — APL text keyboards
  — hardware partitions
  — 12-bit, 14-bit, and 16-bit addressing
  — double-byte character set (DBCS)
  — write-structured fields, including outbound data streams containing embedded 3270 data streams

- All PC file transfers are processed with no user interaction required.

- All 3270 inbound and outbound data streams are checked for hardware or application-generated errors.

- Several user exits are provided so that you can pre-process data streams, post-process data streams, or exclude/include a data stream for optimization that is based on special user criteria.

Optimization and Compression Techniques

When the Optimizer receives control of a data stream, it uses several methods to produce a much smaller data stream that accomplishes the same function as the larger one. The techniques that are controlled from the Monitor are as follows:

- Conventional optimization
- Imaging Stage One optimization
- Imaging Stage Two optimization
- Input Suppression optimization
- Erase Input Key Allowed optimization
- SCS Printer optimization
- SCS Horizontal Tabs optimization
- SNA Data Compression

Conventional Optimization

The Conventional optimization technique eliminates the following items:

- repeating strings of characters
- unnecessary or redundant user data
- unnecessary 3270 control characters

The Conventional optimization technique also sorts data streams. The Conventional optimization technique is used when the following conditions exist:

- SUPEROPT Imaging techniques cannot be used
- SUPEROPT is installed, but Imaging is turned off

Conventional and Imaging Optimization Features

SUPEROPT has several Conventional and Imaging optimization features:

- *Attribute Elimination* eliminates unnecessary attributes embedded in outbound data streams that are sent to printers.
- *Blank Elimination* removes blanks from protected fields in outbound data streams that are sent to CRTs and printers.
- *Field Merge* allows your installation to eliminate start field orders from consecutive protected fields, when the field attributes are the same.
- *Non-Display Fields* eliminates protected non-display fields from outbound data streams that are sent to CRTs and printers.

Imaging Stage One Optimization

This technique “remembers” what is displayed on each terminal screen. It transmits only the data that is required for appropriate changes to the screen. Imaging optimization also supports partitioned terminals (for example, 3179, 3180, 3193, 3290, and 3775).

Imaging Stage Two Optimization

The Imaging Stage Two optimization technique uses Imaging Stage One as a base and uses highly sophisticated algorithms to achieve better optimization.

Input Suppression Optimization

Depending on the hardware that your installation is using, inbound data streams are usually transmitted in pieces (or segments) of 256 or 512 bytes. When each piece is transmitted from the terminal to the host, the host must acknowledge that it has received the data before the next piece can be transmitted. The protocol that the hardware and software follow to accomplish this verification process is called *line turnaround*.

Using the Input Suppression optimization technique, the Optimizer reduces the length of inbound data streams. Input Suppression optimization performs the following functions:

- uses the Imaging optimization technique to remove all unnecessary data and control characters from the data stream that is transmitted from a terminal to your host application

  This function is accomplished with the optimization software in your host CPU. No hardware changes are needed.

- allows additional adjustments to *outbound* data streams to further reduce their lengths

- reduces the number of transmitted characters and the number of line turnarounds

If Input Suppression can reduce your inbound data streams from two pieces to only one piece, the number of line turnarounds is also reduced.

Erase Input Key Allowed Optimization

Erase Input Key Allowed optimization is a partial implementation of Input Suppression optimization. It is provided for sites where terminal operators use the **Erase Input** (**ErInp**) key.

The difference between Input Suppression and Erase Input Key Allowed is the percentage of reduction in the lengths of data streams. The reduction is greater with Input Suppression.

Erase Input and **Erase EOF** (**ErEOF**) are separate keys on the keyboard, with different functions. **Erase EOF** *can* be used with Input Suppression.

SCS Printer Optimization

SCS Printer optimization optimizes outbound data streams for SCS printers. The effect is to speed up your SCS printers by using SCS features to reduce the amount of data to be printed.

SCS Horizontal Tabs Optimization

SCS Horizontal Tabs optimization is another technique that reduces the length of SCS printer data streams. It uses the following horizontal formatting codes:

- Set Horizontal Format
- Horizontal Tab

If you have SCS printers that do not support these codes, this technique cannot be used.

SNA Data Compression

SNA Data Compression compresses outbound data streams for 3600/4700 controllers and 3790 user programs that run application programs that support SNA data decompression. This optimization technique expands compressed inbound data streams that were compressed by application LUs.

Monitor Component

The Monitor component is the online part of SUPEROPT and provides you with the following abilities:

- dynamically control optimization techniques and features
- control who can change options that are displayed by the Monitor
- display summary statistics
- display statistics by Transid (or TASKREQ)
- display statistics by Termid (or VTAM Netname)
- display statistics by TCAM QID
- print the Monitor panels and statistics immediately, at specified hourly intervals, and at Optimizer shutdown
- capture any inbound or outbound 3270 CICS data stream with an online trace facility
- display or print any captured data streams with an online trace facility
- access an online Help facility
- analyze errors of application and hardware data streams

SUPEROPT analyzes for errors in all inbound 3270 data streams and all outbound 3270 data streams that are not excluded from optimization. If an error is detected in a data stream, no optimization occurs. The Monitor displays the number of data streams that have been detected to have errors.

Monitor Functions

The Monitor lets you perform the following functions:

- start, stop, or shut down the Optimizer
- tune the Optimizer for maximum data stream optimization
- diagnose problems in CICS 3270 data streams
- trace any data stream in CICS, both inbound and outbound
- display and print statistics

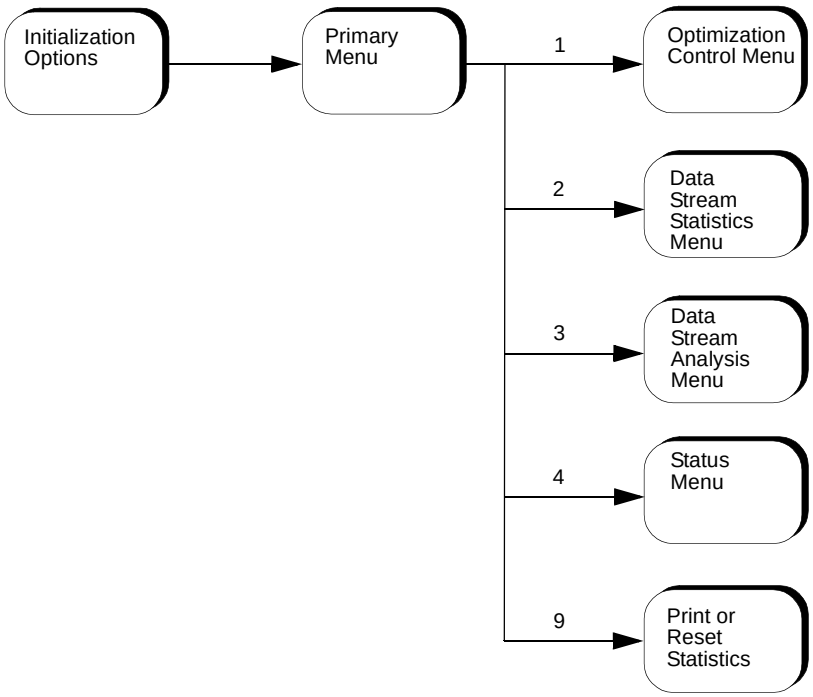
Monitor Menu Panels

Monitor panels are divided into the following functional areas:

- Initialization Options
- Primary Menu
- Optimization Control Menu
- Data Stream Statistics Menu
- Data Stream Analysis Menu
- Status Menu
- Print or Reset Statistics

Figure 1-1 shows the relationship of these different areas to each other. The Monitor also provides an online Help facility. For more information, see “Online Help” on page 1-18.

Figure 1-1 Monitor Panel Hierarchy



Initialization Options Panel

The Initialization Options panel is displayed when you enter the Monitor at the following times:

- initially and the Optimizer has not been started
- after the Optimizer was shut down from the Monitor's Primary Menu

The Initialization Options panel has two selection fields: **Optimizer control** and **terminal processing**. The **Optimizer control** selection field lets you decide whether you want to start the Optimizer or go directly to the Monitor without starting the Optimizer. The **terminal processing** selection field lets you select the name that is used to identify your VTAM terminals: CICS Termid or VTAM Netname.

This panel also displays the following information:

- status of the Optimizer (active or inactive)
- version and date of the product distribution tape
- password field that lets you control who is authorized to start the Optimizer or change the **terminal processing** field

Primary Menu

After initialization, the Primary Menu is the first panel to be displayed. This panel displays the options for the following items:

- controlling optimization
- reviewing data stream statistics
- analyzing data streams
- displaying status
- printing or resetting statistics

The Primary Menu also displays the version and date of the product distribution tape and status of the following items:

- Optimizer (active or inactive)
- Imaging, Input Suppression, and SCS Printer optimization (on or off)
- Erase Input Key Allowed optimization (yes or no)

This panel also provides a password field that lets you control who is authorized to change Monitor optimization controls and features.

For more information, see "Starting a Monitor Session" on page 2-4.

Optimization Control Menu

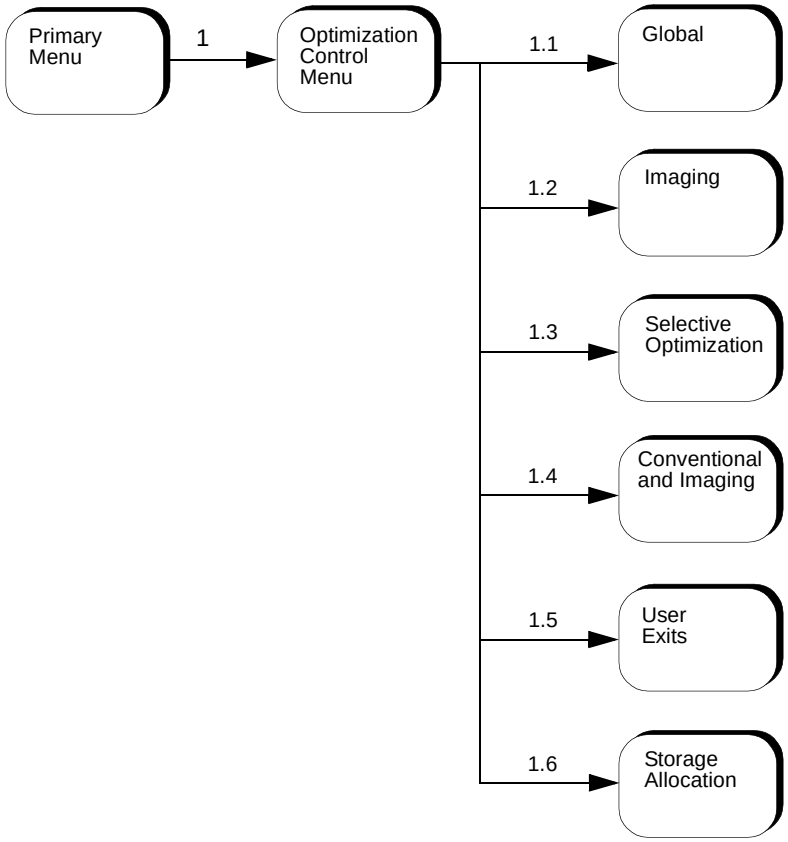
You can fine-tune the way that your data streams are optimized. To achieve the highest optimization possible, select one of the options that are displayed on the Optimization Control Menu.

Table 1-1 Optimization Control Menu Options

Option	Description	Action
1.1	Global Optimization	control the optimization of all data streams
1.2	Imaging Optimization	control the optimization of data streams by using Imaging, Input Suppression, or Erase Input Key Allowed techniques
1.3	Selective Optimization	control optimization of the following items: • SCS printers • 3600/4700 or 3790 user program data streams, using SNA Data Compression • local BTAM and VTAM 3270 terminals (channel-attached) • data streams for transactions with Saved TIOAs from local BTAM and TCAM 3270 terminals
1.4	Conventional and Imaging	control the use of Conventional and Imaging features during optimization of data streams. This option controls the following features: • Field Merge • Blank Elimination • Non-Display Fields • Attribute Elimination
1.5	User Exits	process inbound and outbound data streams before and after optimization, using a user exit program that is written by your installation
1.6	Storage Allocation	control the amount of virtual storage used by the Optimizer for the following items: • Imaging and SCS Printer optimization • work areas for data streams and 3270 buffers • dynamic terminals and Transid areas

Figure 1-2 shows the panel hierarchy for the Optimization Control Menu. For more information, see Chapter 4, “Controlling Optimization of Your Data Streams.”

Figure 1-2 Optimization Control Menu Hierarchy



Data Stream Statistics Menu

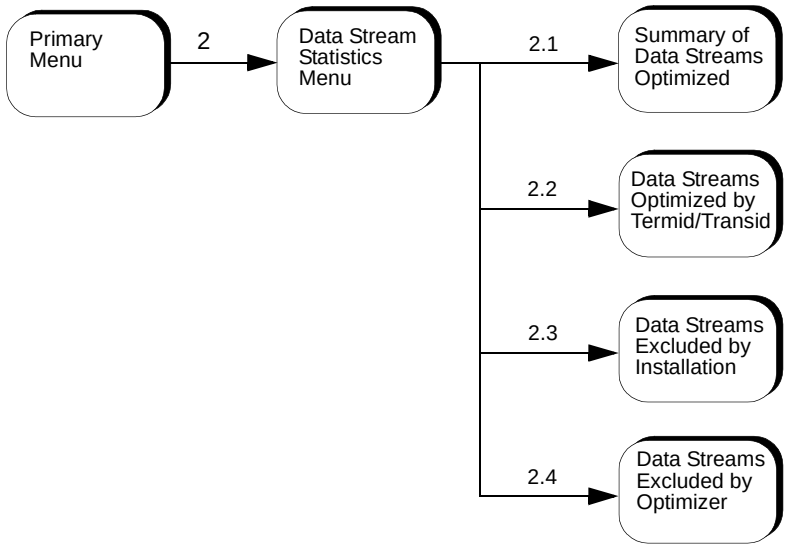
To display information about the optimization of your data streams, select one of the options that is displayed on the Data Stream Statistics Menu.

Table 1-2 Data Stream Statistics Options

Option	Description	Function
2.1	Summary of Data Streams Optimized	displays statistics about the optimization of all data streams
2.2	Data Streams Optimized by Termid/Transid	displays statistics about the optimization of data streams by Termid or Transid
2.3	Data Streams Excluded by Installation	displays information about any data streams that were excluded from optimization by your installation
2.4	Data Streams Excluded by Optimizer	displays information about any data streams that were excluded from optimization by the Optimizer

Figure 1-3 shows the Data Stream Statistics Menu hierarchy. For more information, see Chapter 6, “Displaying Information about Your Data Streams.”

Figure 1-3 Data Stream Statistics Menu Hierarchy



Data Stream Analysis Menu

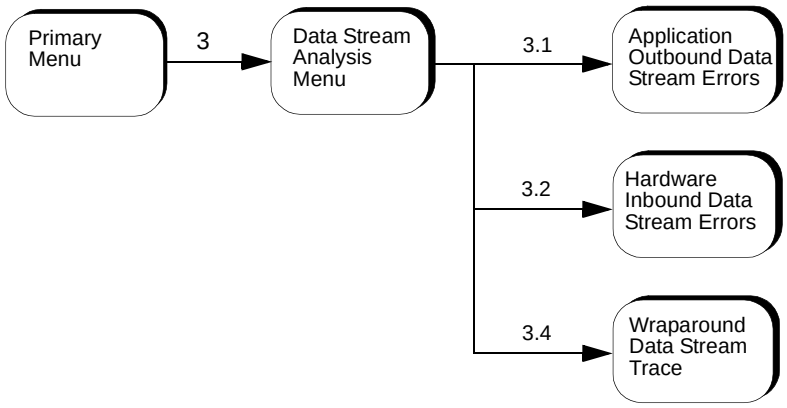
To display information about the frequency and types of errors that are found in your CICS data streams, select one of the options that is displayed on the Data Stream Analysis Menu. You can also capture and examine any of your CICS data streams.

Table 1-3 Data Stream Analysis Options

Option	Description	Function
3.1	Application Outbound Data Stream Errors	displays information about the application outbound data stream errors that are found by the Optimizer
3.2	Hardware Inbound Data Stream Errors	displays information about the hardware inbound data stream errors that are found by the Optimizer
3.4	Wraparound Data Stream Trace	provides you with the ability to continually capture data streams by wrapping around the allocated storage This trace can be stopped when you have determined that the target data stream has been captured. Use this trace in most instances.

Figure 1-4 shows the Data Stream Analysis Menu hierarchy. For more information, see Chapter 7, “Analyzing Errors in Your Data Streams.”

Figure 1-4 Data Stream Analysis Menu Hierarchy



Status Menu

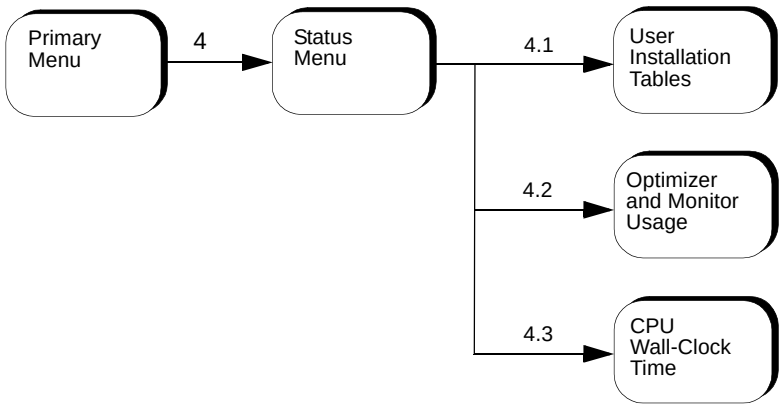
You can display information about the optimization of your data streams by selecting one of the options that is displayed on the Status Menu. The options are listed in Table 1-4.

Table 1-4 Status Options

Option	Description	Function
4.1	User Installation Tables	displays any user installation tables that are created by your installation
4.2	Optimizer and Monitor Usage	displays information about the Optimizer and the Monitor's usage by your installation
4.3	CPU Wall-Clock Time	displays the wall-clock time that is used by the Optimizer.

Figure 1-5 shows the Status Menu hierarchy. For more information, see Chapter 8, "Checking Optimizer and Monitor Status," and Chapter 5, "Working with User Installation Tables."

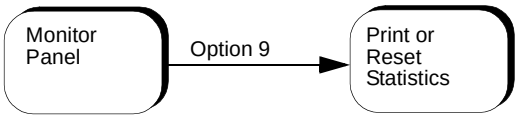
Figure 1-5 Status Menu Hierarchy



Print or Reset Statistics

If you select Option 9 from any of the Monitor panels, the Print or Reset Statistics panel is displayed. Figure 1-6 shows the Print or Reset Statistics panel hierarchy.

Figure 1-6 Print or Reset Statistics Panel Hierarchy



This panel lets you print and reset statistics at the following times:

- immediately
- an interval
- whenever the Optimizer is shut down

See Chapter 9, “Printing and Resetting Optimization Statistics,” for more information.

Note: If PRINT (**F9** or **F21**) is selected, the screen image is sent to the printer that is named in the PRINTTO parameter on your terminal control table (TCT) entry.

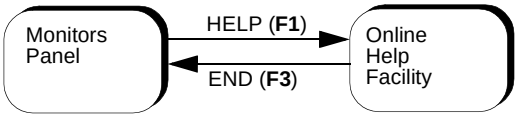
Online Help

The Help facility provides general information about the panel from which you requested help or information about how to enter data in the fields that can be modified.

The Monitor Help facility provides online help for the Monitor panels. Each panel has a corresponding Help panel that gives a brief tutorial on how to enter data or a brief description of the statistics.

If you press the HELP function key (**F1** or **F13**) from any Monitor panel, an appropriate Help panel is displayed. When you are finished viewing the help panel, press the END function key to return to the panel from which you requested help. Figure 1-7 shows this relationship.

Figure 1-7 Online Help Hierarchy



To return to the Monitor panel from which help was requested, press END (**F3** or **F15**).

To return to the Monitor's Primary Menu, press RETURN (**F4** or **F16**).

Chapter 2 Accessing and Controlling SUPEROPT

This chapter describes the following tasks:

- starting a Monitor session
- initializing the Optimizer
- setting Primary Menu options without starting the Optimizer
- starting the Optimizer
- stopping the Optimizer
- shutting down the Optimizer
- canceling shutdown

This chapter presents the following topics:

How to Start the Optimizer

To access and control SUPEROPT options, you must enter a session with the Monitor. You can change optimization options *without* starting the Optimizer. SUPEROPT remembers the values that you set and uses them when you start the Optimizer.

Note: You must have previously defined to CICS a COPOPT file to save the options that you set when you do not start the Optimizer. For more information, see the *3270 SUPEROPTIMIZER/CICS Customization Guide*.

You can also start the Optimizer through a Program List Table (PLT). For more information, see the *3270 SUPEROPTIMIZER/CICS Customization Guide*.

Initialization Options

The Initialization Options panel (Figure 2-1 on page 2-5) provides the following selection fields:

Note: Termid refers to the CICS Termid or the VTAM Netname, depending on the selection that is made.

- The **Optimizer control choice** selection field lets you decide whether you want to start the Optimizer before the Monitor's Primary Menu is displayed.

- The **Select terminal processing to be performed** field lets you select the name that is used to identify your VTAM terminals: CICS Termid or VTAM Netname.

  The **Select terminal processing to be performed** field *is not* displayed on any other Monitor panel. If you do not make a selection in this field, the default CICS Termid is used for your VTAM terminals. The identifier that the Monitor uses for your VTAM terminals is displayed on the Primary Menu panel.

Setting Options

If you defined and allocated the COPOPT options file to CICS, any changes that you make to the fields that are displayed on the Monitor's panels are saved to this file when you exit the Monitor.

You can also set the identifier that was used for your VTAM terminals with the batch Set Options program (supplied by BMC Software). For more information, see the *3270 SUPEROPTIMIZER/CICS Customization Guide*.

Considerations for MVS and VSE/ESA

When the Optimizer starts in an MVS environment or in a VSE/ESA environment, a message is logged to the CICS transient data destination, CSSL. The message is preceded by a date and time stamp.

Considerations for MVS Only

When the Optimizer starts in an MVS environment, a write-to-operator (WTO) message is sent to the operator's console.

After the Optimizer Is Started

When the Optimizer is started, the Optimizer uses the options that you set previously. While the Optimizer is running, you can perform the following actions:

- change the Monitor options that have been set
- view data stream statistics
- view data stream analysis
- view status of the following items:
  - — User Installation Tables
  - — Optimizer and Monitor usage
  - — CPU wall-clock time
- exit the Monitor and perform other processing

Starting a Monitor Session

Summary: In this task, you will start a session with the Monitor.

To start a session with the Monitor, perform the following step:

Type the CICS Transid that is defined for the Monitor.

Note: The CICS transaction ID (Transid) COPM is the default Transid that is defined for starting the Monitor during SUPEROPT installation. You can change the Transid. For more information about CICS Transids, see the Program Control Table (PCT) Assembly step in the *3270 SUPEROPTIMIZER/CICS Customization Guide*.

If you are accessing the Monitor for the first time (the Optimizer has not been started) *or* if the Optimizer was shut down and not re-entered from the Monitor's Primary Menu, the Monitor's Initialization Options panel is displayed. See Figure 2-1 on page 2-5.

If the Optimizer has been started previously, the Monitor's Primary Menu panel is displayed. See Figure 2-2 on page 2-6.

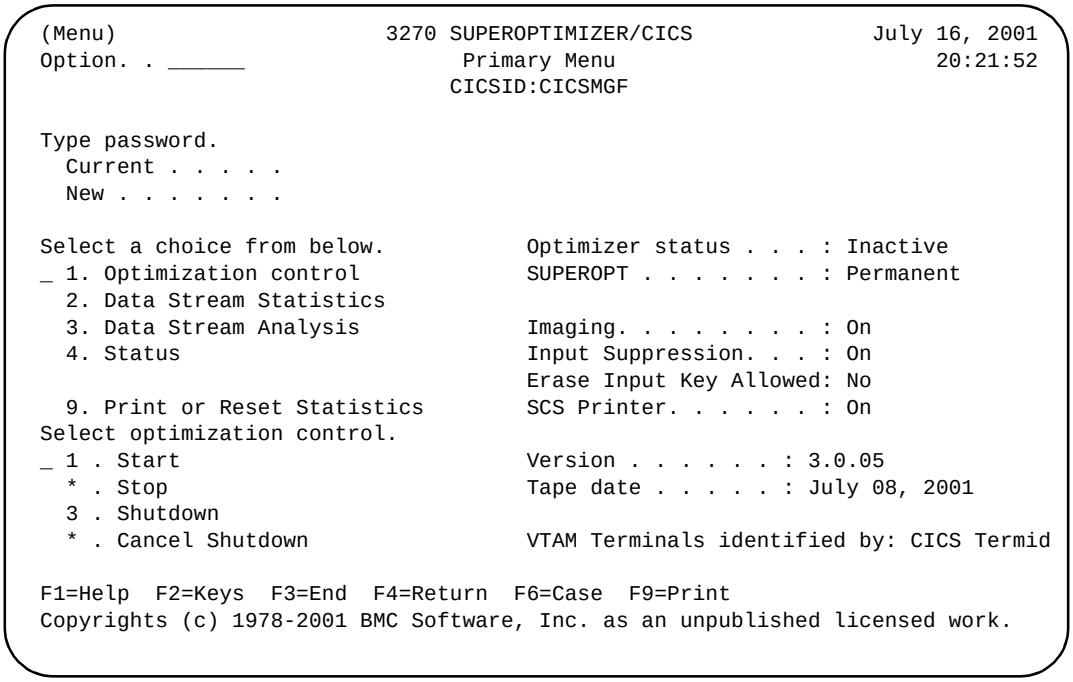
The Initialization Options panel is displayed (Figure 2-1) when you start a Monitor session for the first time (you have never initially started the Optimizer, or the Optimizer was last shut down from the Monitor's Primary Menu).

Figure 2-1 Initialization Options Panel

```
                              3270 SUPEROPTIMIZER/CICS              July 16, 2001
Option. . ______              Initialization Options                    20:37:57
                                  CICSID:CICSMGF

Type password . . .

Optimizer control choice.
_ 1. DO NOT start optimizer
  2. Start optimization


Select terminal processing to be performed.
(Default is CICS Termid unless previously selected)
1 1. CICS Termid
  2. VTAM Netname


                                          Optimizer . . . : Inactive
                                          Version . . . . : 3.0.05
                                          Tape date . . . : July 08, 2001

F1=Help  F2=Keys  F3=End  F4=Return
Copyrights (c) 1978-2001 BMC Software, Inc. as an unpublished licensed work.
```

The Primary Menu (Figure 2-2) is displayed when you start a Monitor session after the initial startup of the Optimizer.

Figure 2-2 Primary Menu Panel



Warning! Authorized users can interfere with each other when they change options through the Monitor. When two or more people change any of the options simultaneously, the Monitor retains the *last command that was processed*.

Initializing the Optimizer

Summary: In this task, you will initialize the Optimizer.

To initialize the Optimizer, perform one of the following tasks:

- Insert a COPINIT entry in the CICS Start-up Program List Table (DFHPLTPI).

  Note: For more information about using a COPINIT entry, see the *3270 SUPEROPTIMIZER/CICS Customization Guide*.

- Access the Initialization Options panel (Figure 2-1 on page 2-5).

Setting Options without Starting the Optimizer

Summary: In this task, you will set options on the Primary Menu without starting the Optimizer.

Before you set the options, ensure that a COPOPT options file has been defined to CICS, so that the options that you set are saved. To set or change optimization options, perform the following steps:

Step 1 Type **1** in the **Optimizer control choice** field of the Initialization Options panel.

Step 2 To select the method that the Monitor uses to identify your VTAM terminals, perform one of the following steps:

- Type **1** to identify the terminals by the CICS Termid.
- Type **2** to identify the terminals by the VTAM Netname.

Step 3 Press **Enter**.

The Monitor's Primary Menu is displayed.

Step 4 Type an option number in the **Select a choice from below** selection field.

Step 5 Press **Enter**.

Based on the option number you selected, the next appropriate menu is displayed.

Step 6 When you have finished setting options, press **End**.

The Monitor's Primary Menu is displayed.

Saving Option Selections

Summary: In this task, you will save your option selections.

To save your option selections, perform the following steps:

Step 1 Change options on one menu panel.

Step 2 Return to the Primary Menu, and select another panel.

Step 3 When you have finished setting optimization options, press **Clear** to exit the Monitor.

Your option settings are saved to the COPOPT file and will be displayed the next time that you start the Monitor. This feature lets you start the Optimizer without resetting optimization options.

Starting the Optimizer

Summary: In this task, you will start the Optimizer.

To start the Optimizer from the Monitor's Initialization Options panel, perform the following steps:

Step 1 Type **2** in the **Optimizer control choice** field.

Step 2 To select the name that the Monitor uses to identify your VTAM terminals, perform one of the following steps:

- Type **1** to identify the terminals by the CICS Termid.
- Type **2** to identify the terminals by the VTAM Netname.

The message `The Optimizer has been successfully started. . .` is displayed at the bottom of the screen.

Step 3 Press **Enter**.

The Optimizer begins optimizing data streams.

Starting the Optimizer from the Monitor's Primary Menu Panel

Summary: In this task, you will start the Optimizer by using the Monitor's Primary Menu panel.

To start the Optimizer from the Monitor's Primary Menu panel, perform the following steps:

Step 1 Type **1** in the **Select optimization control** field.

Step 2 Press **Enter**.

The Optimizer is started and begins optimizing data streams.

How to Stop the Optimizer

When you stop the Optimizer, the following events occur:

- After an erase/write data stream is sent to a terminal or printer, no new data streams are processed, even though the CICS exits are still active. The Optimizer goes into a *quiesce process*.
- The stopped status is written to the COPOPT file. If the product is stopped, it remains stopped at the next CICS startup. This stopped state remains in effect until you select the Start option from the Primary Menu.

What Is the Quiesce Process?

Imaging and SCS Printer optimization techniques store data for every terminal for which a data stream is optimized. For the Optimizer to stop, the stored data must be released, and the terminal must be returned to its original state. This process is known as the quiesce process. The quiesce process stops imaging without disrupting other programs.

To release the stored data, the Optimizer *must* wait for an erase/write data stream to be sent to each terminal that is still active. All data saved for SCS printers is released immediately. After all stored data is released, the quiesce process can conclude. This method ensures the Optimizer stops gracefully without impacting any user applications.

The Imaging and SCS Storage panel (1.6.1) displays the number of terminals that are still active and the number of active images that are being saved. To obtain a list of the active terminals, type **S** in the **List Active Images by Termid** field of this panel. The Active Images List panel displays the terminals for which the quiesce process is waiting.

To help the quiesce process, you can send a message to clear the screens of the terminals that have active images listed or log them off. When the **Number of terminals active** field on the panel is zero, the quiesce process has been completed.

Canceling the Quiesce Process

If you stop the Optimizer, then cancel the quiesce process, the optimization percentage statistics will be lower than normal. These statistics are lower because the Optimizer might have skipped some data streams, and some terminal images might have been deleted, which means that new images must be built.

Considerations when Stopping the Optimizer

It is *not* necessary to stop the Optimizer to change any of the options that are displayed by the Monitor (except for the VTAM Netname option that is displayed on the Initialization Options panel).

A message is logged to the CICS transient data destination CSSL whenever the Optimizer stops. The message is preceded by a date and time stamp. This logging occurs in both MVS and VSE/ESA environments.

For MVS environments only, when the Optimizer stops, a WTO message is sent to the operator console and to the programmer log.

When the Optimizer Is Stopped

Table 2-1 describes the conditions that apply when the Optimizer is quiesced successfully from the Primary Menu.

Table 2-1 Conditions in Effect when the Optimizer Is Stopped

Condition	Description
The Optimizer status is inactive.	The Optimizer does not act on any CICS exit point. Verify by using option 4.2.0. Detailed transaction and terminal statistics are not retained. The COPOPT residence count is one. A CEMT SET PROGRAM (COPOPT) NEWCOPY is not possible.
CICS is warm-started, and the COPOPT data set is available.	The summary statistics that were gathered before stopping can still be displayed by the Monitor. Options that were changed remain in effect when the Optimizer is restarted. The Optimizer remains in its stopped condition. No data streams are optimized until you restart the Optimizer from the Primary Menu.
CICS is cold-started, and the COPOPT data set is available	The statistics that were gathered before stopping are *not* available. Options that were changed before stopping the Optimizer remain in effect. The Optimizer remains in its stopped condition. No data streams are optimized until the Optimizer is restarted from the Primary Menu.
CICS is cold-started, and the COPOPT data set is *not* available	The statistics that were gathered before stopping are *not* available. Options that were changed before stopping are no longer in effect. Data streams will be optimized as soon as the Optimizer successfully completes its restart procedure.

Stopping the Optimizer

Summary: In this task, you will stop the Optimizer.

If the Optimizer is active, perform the following steps to stop it:

Step 1 From the Monitor's Primary Menu, type **2** in the **Select optimization control** field.

Step 2 Press **Enter**.

The Optimizer is stopped. If SUPEROPT is installed and Imaging is active, the Optimizer goes through a quiesce process when you stop the Optimizer.

How to Shut Down the Optimizer

When you shut down the Optimizer, the CICS exit points that the Optimizer uses are removed, and all data streams are no longer optimized.

The Optimizer goes into a quiesce process when the Optimizer is stopped or shut down from the Primary Menu *and* Imaging optimization is active. If you shut down the Optimizer, then cancel the quiesce process, the optimization percentage statistics will be lower than normal.

If you want to print panels and reset statistics at shutdown, the panels are printed and the statistics reset before shutdown. A DFHPLTSD must be present to print and reset statistics before shutdown. For more information, see the *3270 SUPEROPTIMIZER/CICS Customization Guide*.

If you use the CICS shutdown DFHPLTSD, the Optimizer *does not* go through the quiesce process to release Imaging storage. If COPSHUT is in the PLTSD, statistics processing occurs.

It is *not* necessary to shut down the Optimizer to change any of the options that are displayed by the Monitor, except for the VTAM Netname option that is displayed on the Initialization Options panel. To change the method that is used to identify your VTAM terminals (CICS Termid or VTAM Netname), you must shut down the Optimizer.

A message is logged to the CICS transient data destination CSSL whenever the Optimizer is shut down. The message is preceded by a date and time stamp. This logging occurs in MVS and VSE/ESA environments.

For MVS environments only, a WTO message is sent to the operator console and to the programmer log when the Optimizer is shut down.

Table 2-2 describes the conditions that apply when the Optimizer is successfully shut down from the Primary Menu and the Optimizer has quiesced.

Table 2-2 Conditions in Effect when the Optimizer Is Shut Down

Condition	Description
The Optimizer is inactive.	The Optimizer does not receive control from any CICS exit point. The COPOPT residence count is zero. A CEMT SET PROGRAM (COPOPT) NEWCOPY can be performed.
CICS is warm-started, and the COPOPT data set is available.	The detailed statistics that were gathered before shutdown are not available. Summary statistics are kept until you perform a reset. Options that were changed before shutdown remain in effect. Data streams are optimized as soon as the Optimizer has successfully completed its restart procedure, provided the Optimizer was *not* stopped before shutdown.
CICS is cold-started, and the COPOPT data set is available.	All statistics (detailed and summary) are reset. Data streams are optimized as soon as the Optimizer has successfully completed its restart procedure, provided that the Optimizer was *not* stopped before shutdown.
CICS is restarted (either warm or cold), and the COPOPT data set is *not* available.	The statistics that were gathered before shutdown are *not* available. Options that were changed before shutdown are *not* available. Data streams are optimized as soon as the Optimizer successfully completes its restart procedure.

Shutting Down the Optimizer

Summary: In this task, you will shut down the Optimizer.

If the Optimizer is active, perform the following steps to shut it down:

Step 1 From the Monitor's Primary Menu, type **3** in the **Select optimization control** field.

Step 2 Press **Enter**.

The Optimizer shuts down. If Imaging optimization is active, the Optimizer will go through a quiesce process, then shut down.

Canceling Shutdown

Summary: In this process, you will cancel the shutdown by restarting the Optimizer.

The Optimizer goes into a quiesce process when Imaging optimization is active and optimizing data streams, and the Optimizer is stopped or shut down from the Primary Menu. If you stop or shut down the Optimizer, then cancel shutdown, the quiesce process is also canceled.

To restart the Optimizer, perform the following steps:

Step 1 From the Monitor's Primary Menu, type **4** in the **Select optimization control** field.

Step 2 Press **Enter**.

The Optimizer quiesce process is canceled.

Note: When the Optimizer restarts, SCS printer data streams are not optimized until an OPNDST or CLSDST is detected for the SCS printer.

Chapter 3 Using the Monitor

This chapter describes how to use the Monitor to define options. For information about starting a Monitor session, see Chapter 2, “Accessing and Controlling SUPEROPT.”

This chapter presents the following topics:

Overview

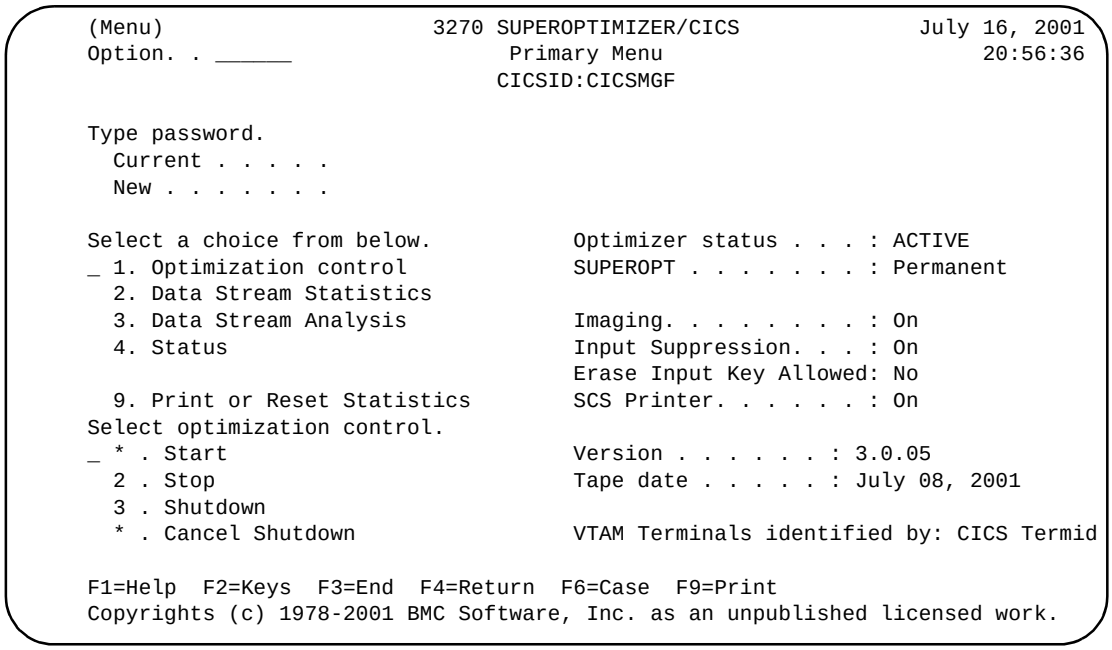
You can use the Monitor to set options with or without starting the Optimizer. All options will be saved to the COPOPT file that you previously defined to CICS.

When you initiate a Monitor session, the first panel to be displayed is the Primary Menu. From the Primary Menu, other Monitor panels can be displayed when you enter an option number in the **Option** field.

How to Display the Monitor Primary Menu

Figure 3-1 shows the Monitor Primary Menu panel. This panel is displayed when you select whether to start the Optimizer on the Initialization Options panel (Figure 2-1 on page 2-5). The Monitor Primary Menu also is displayed when the Optimizer has been started from a program list table for program initialization (PLTPI). For more information about PLTPI, see the *3270 SUPEROPTIMIZER/CICS Customization Guide*.

Figure 3-1 Monitor Primary Menu Panel



The Primary Menu displays the following information:

- status of the Optimizer (active, inactive, quiescing, or stopped)
- status of Erase Input Key Allowed optimization (yes or no)
- version and date of the product distribution tape
- status of Imaging, Input Suppression, and SCS Printer optimization (on or off)

From the Primary Menu, you can control the status of the Optimizer. Use the **Select optimization control** field to perform the following actions:

- start the Optimizer
- stop the Optimizer
- shut down the Optimizer
- cancel shutdown of the Optimizer

From the Primary Menu, you can also access panels to perform the following actions:

- control optimization
- display data stream statistics
- analyze data streams
- display the status of the Monitor and the Optimizer

How to Use the Monitor Password Option

The Primary Menu panel provides a password option that lets you control who is authorized to change Monitor optimization controls and features. Normally, you would only need to use this option if your site does not have a security facility (such as RACF) installed.

The Primary Menu has two password fields: **Current** and **New**. You can use these fields to control who is authorized to modify the Monitor's options and features.

Only one password at a time can be in effect for the Monitor. If more than one person will use the Monitor, each person must know the password.

Note: The password does *not* remain in effect after the Optimizer is shut down unless the COPOPT options file was created. For more information about this feature, see the *3270 SUPEROPTIMIZER/CICS Customization Guide*.

If you have forgotten the password, you must create another COPOPT options file to reset the password. It is not possible to look at the options file and immediately find the password. The password is encrypted before it is stored in this file. This feature prevents a user who does not know the password from resetting it.

When password protection is turned on, and you do not know the password, you can change only the following information:

- option field (present on every panel)
- option 2.1 **Select** and **By** fields
- option 2.2 **Select** fields
- option 4.1 Browse

You can still view all panels when password protection is turned on.

Activating Password Protection

Summary: In this task, you will activate password protection.

A password can be one to eight characters. The characters that you type in the password fields are not displayed. To activate password protection, perform the following steps:

Step 1 Type **SUPEROPT** in the **Current** password field on the Monitor Primary Menu.

Step 2 Type the new password in the **New** password field.

Step 3 Press **Enter**.

Message BMC7184A is displayed, which requests that you enter the new password a second time.

Step 4 Type the new password in the **New** password field again.

Step 5 Press **Enter**.

If this password matches the password that you first entered in the New password field, the new password is accepted, and your password is changed.

If the password does not match, message BMC7185A is displayed. This message requests that you enter the new password a third time. This password must match the *second* password that you entered, not the first one.

Changing Your Password

Summary: In this task, you will change your password.

You can change the Monitor's password when you start a Monitor session. To ensure the security of your password, entries that you make in the password fields are *not* displayed. To change your password, perform the following steps:

Step 1 Type your current password in the **Current** password field on the Monitor Primary Menu.

Step 2 Type the new password in the **New** password field.

Step 3 Press **Enter**.

The Monitor displays message BMC7184A, which requests you to enter the password a second time.

Step 4 Type the new password in the **New** password field again.

Step 5 Press **Enter**.

If this password matches the one that you first entered in the **New** password field, the new password is accepted, and your password is changed.

If the password does not match, message BMC7185A is displayed. This message requests that you enter the new password a third time. This password must match the *second* password that you entered, not the first one.

Removing Password Protection

Summary: In this task, you will remove password protection.

If you no longer need password protection, you can disable this feature. To disable password protection, perform the following steps:

Step 1 Type your password in the **Current** password field on the Monitor Primary Menu.

Step 2 Type ***NOPASS*** in the **New** password field.

Step 3 Press **Enter**.

Password protection is removed. Message BMC7179I, `Password reset Password no longer required`, is displayed. No password is required to change any Monitor options or features.

How to Use Function Keys

The Monitor's use of function keys has no effect on any other user applications' defined function key usage, including the permanent assignment of function keys in the program control table (PCT).

If there are no errors, pressing **Enter** or a function key causes the selected options to take effect and any statistics that are displayed on the panel to be refreshed.

Program Function Key Definitions

Table 3-2 describes the program function (F) keys that are used by the Monitor.

Table 3-1 Monitor Function Key Definitions

F Key	Name	Description
1 or 13	Help	displays Help panels
2 or 14	F Keys	displays F key assignments
3 or 15	End	returns to the next higher-level menu panel
4 or 16	Return	returns to the Primary Menu, or (from the Primary Menu) clears the screen
6 or 18	Caps On/Off	switch from Caps On to Off and back again. The default is Caps On. Unless this F key is switched to Caps Off and the terminal is defined with UCTRAN=NO or UCTRAN=TRANID, the Monitor automatically translates any data that is entered to uppercase characters.
7 or 19	Scroll Up	scroll up through the displayed data
8 or 20	Scroll Down	scroll down through the displayed data
9 or 21	Print	prints a panel, using the CICS Issue Print facility. For more information, see the *CICS Command Level Application Programming Reference* manual
10 or 22	Table List	displays the User Installation Tables panel (option 4.1.0) This key is valid only on panels displaying a Table Name field.
12 or 24	Cancel	displays the next higher-level panel Data that was changed on the current panel is not saved.

Note: **F1** through **F24** are considered a TASKREQ, not a Transid. These keys cannot be used as an include/exclude entry.

Program Attention Key Definitions

Table 3-2 describes the program attention (PA) keys that are used by the Monitor.

Table 3-2 Monitor PA Key Definitions

PA Key	Name	Description
1	Clear	clears the panel and exits the Monitor
2	Refresh	refreshes the panel If you type any data on the panel and have not pressed **Enter** or a function key, all fields on the panel are restored.
3	Clear	clears the panel and exits the Monitor

Note: **PA1** and **PA2** are considered a TASKREQ, not a Transid. These keys cannot be used as an include/exclude entry. **PA3** will function correctly as a Transid.

How to Use the Option Field

This section describes features that are common to all Monitor panels and explains how to use fast path navigation.

Monitor Panel Common Items

All Monitor panels have an **Option** field. The panels also have a common header that displays the current date and time and your CICS Applid. The last line on each panel is reserved for error messages.

Fast Path Navigation

If you know the number of an option or feature that you want to use, you can enter an *equal sign* (**=**) followed by the *option number* in the **Option** field of any Monitor panel. When you press **Enter**, you are taken directly to the panel that is defined for that option. To return directly to the Primary Menu, type *two equal signs* (**==**).

For example, if you type =1.4.1 in the **Option** field of the panel that you are using, you will be taken directly to the Monitor panel for controlling the use of the Field Merge feature.

Entering Data

If you enter any alphabetic characters in lowercase characters, the Monitor translates them to uppercase characters. For example, if you type Termid ps01, the Monitor translate your entry as PS01.

If the data should *not* be translated to uppercase characters, use **F6** (or **F18**) to switch to Caps Off mode.

Note: Use of **F6** (or **F18**) does not override the UCTRAN option of the terminal. To enter lowercase data, you must turn off UCTRAN.

You do not need to blank out any underscores in a field. The Monitor treats underscores as blanks. For example, all of the following entries are considered a 1:

‘**1_**’, ‘**_1**’, or ‘**1**’

Data that you enter in a field on a Monitor panel is checked for syntax when you press **Enter** before it is accepted. If an error is found, a message is displayed, and no changes take effect. If the fields have no errors, the changed data is accepted, and the COPOPT VSAM file (if present) is updated. If a function key was used, its function is also executed.

Note: If two or more authorized users are using the Monitor to change trace options or to exclude data streams from optimization, the users may interfere with one another.

You can use a generic entry in the **Single** field. *Generic* refers to a group of Termids or Transids that are similarly named. TCAM QIDs do not allow generic entries.

To specify a generic entry, type at least one asterisk (*) in the **Termid** or **Transid** field. For example, SAM* would be the generic Termid for all Termids that begin with SAM.

An asterisk (*) can be placed in any position; for example:

- *ECT
- K*MH
- TR*H
- STS*

A generic entry is padded on the right with asterisks. For example, if you type P* for a generic Transid, the Monitor interprets your entry as P***.

How to Monitor Include/Exclude Fields

You can include in or exclude from certain optimization techniques the following items:

- transactions
- terminal IDs
- TCAM QIDs

You can include or exclude items as follows:

- individually
- as a group
- globally

Including and Excluding Entries

Summary: The rules for including and excluding entries are provided in this task.

A data stream is first checked for exclusion before optimization processing begins. If the data stream is not excluded, it is then checked for inclusion. Includes and excludes are processed in the following order:

1. exclude Termid
2. exclude Transid
3. exclude TCAM QID
4. include Termid
5. include Transid
6. include TCAM QID

The optimization feature must be turned on for any include or exclude processing to occur. Excluded entries override included entries. An excluded data stream cannot also be included. These rules apply to single and table entries.

Example 1

To exclude terminal AC01 from Imaging optimization, go to panel 1.2.1 (see Figure 4-3 on page 4-12). Ensure that Imaging optimization is on for CRTs *or* printers or CRTs *and* printers, or no Imaging will occur. Then type **AC01** in the **Exclude by Termid Single** field.

Example 2

To include several transaction IDs in subsequent optimization features, go to panel 1.1.1 (see Figure 4-2 on page 4-7). Set Global Optimization Control on for CRTs *or* printers or CRTs *and* printers, or no optimization will occur. Create a list, or table, for transaction IDs that you want to include. To exclude one of these transactions from a subsequent optimization feature, such as Blank Elimination, exclude the single transaction ID from that optimization feature.

You can create a table to include or exclude multiple Termids, Transids, or TCAM QIDs. Instructions on how to create these tables are provided in Chapter 5, “Working with User Installation Tables.”

Accessing Include/Exclude Options

Summary: This task lists the panels and describes the fields that you need for accessing include/exclude options.

Several optimization options let you specify include/exclude options on one or more of that option's panels:

- Global Optimization Control (1.1)
- Imaging (1.2)
- Selective Optimization (1.3)
- Conventional and Imaging features (1.4)
- Summary of Data Streams Optimized (2.1)
- Data Streams Optimized by Termid/Transid (2.2)

The panels contain one or more of the following fields:

- **Action**
- **Single**
- **Table**

Use these fields when you need to perform the following activities:

- specify a single Termid, Transid, or TCAM QID
- create or edit a table of Termids, Transids, or TCAM QIDs
- add or delete entries to a table without displaying the Table Build panel

To create a table, the COPOPT options file must have been created and allocated to CICS. For more information about this feature, see the *3270 SUPEROPTIMIZER/CICS Customization Guide*.

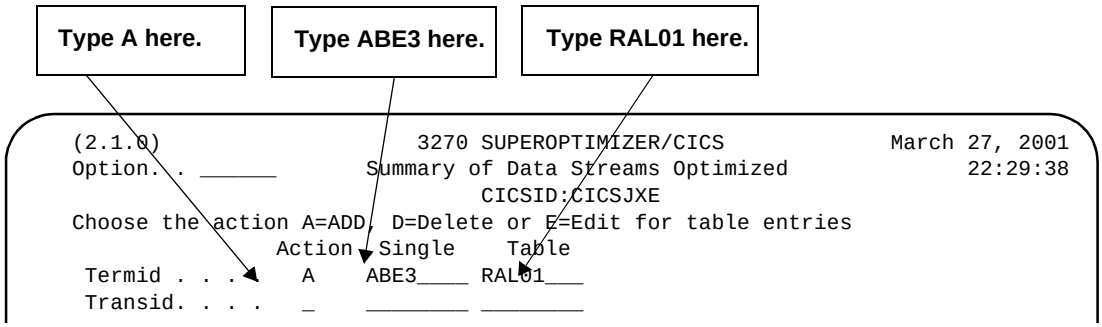
Note: **F1** through **F24**, **PA1**, and **PA2** are considered a TASKREQ, not a Transid. These keys cannot be used as include/exclude entries. **PA3** will function correctly as a Transid.

Action Field

The **Action** field lets you specify an action to perform on a table of Termids, Transids, or TCAM QID. Valid entries in this field are as follows:

- A for add
- D for delete
- E for edit

For example, to add the Termid ABE3 to the table RAL01, type **A** in the **Action** field, **ABE3** in the **Single Termid** field, and **RAL01** in the **Termid Table** field as follows:



The entry is added to the table, and the table remains in effect for this option.

Single Field

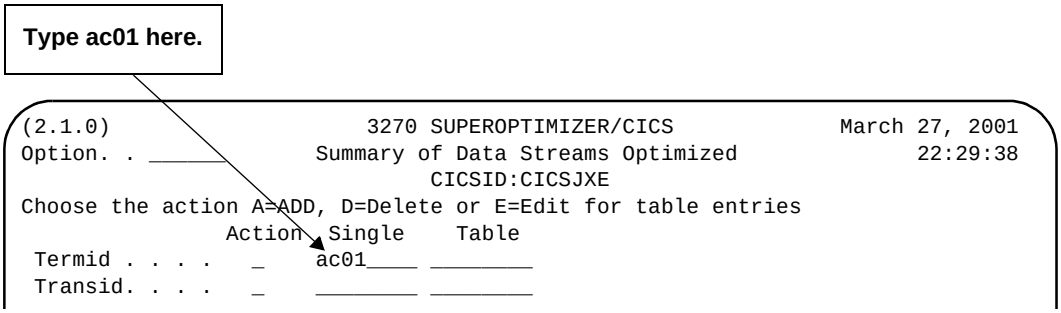
Use the **Single** field to perform the following actions:

- exclude a single Termid, Transid, or TCAM QID from an optimization technique or feature
- include a single Termid, Transid, or TCAM QID in an optimization technique or feature
- list statistics for a single Termid, Transid, or TCAM QID

You can also use a generic entry in the **Single** field.

When you use the **Single** entry field, do *not* enter an action in the **Action** field.

The following example shows an entry of **ac01** in the **Single Termid** field:



Note: If you type a new entry in the **Single** field, you replace the old entry, and it is no longer active. To remove a single entry, type blanks in the field. If you require more than a single entry, build a table.

Table Field

A table is a list of Termids, Transids, or TCAM QIDs that you can use to control the optimization of data streams or the display of statistics. By using the **Table** field with the **Action** field, you can create a table, add entries to a table, or delete an entry from a table.

Leaving the Monitor

Summary: In this task, you will leave the Monitor.

To leave the Monitor, perform one of the following steps:

- To terminate the Monitor session from the Primary Menu, press **F3**, **F4**, **F15**, **F16**, or **Clear**.
- To exit from any panel, press **F4**, **F16**, or **Clear**.

Chapter 4 Controlling Optimization of Your Data Streams

This chapter describes the options that are available on the Optimization Control Menu panel. This chapter presents the following topics:

Optimization Control Menu Options

To fine-tune the way that your data streams are optimized and achieve the highest optimization possible, use the options that are available on the Optimization Control Menu panel (Figure 4-1 on page 4-6). Table 4-1 lists the options that are discussed in this chapter.

Table 4-1 Optimization Control Menu Options

Option	Option Name	Function
1.1.1	Global Optimization	controls whether any optimization techniques will be attempted for CRTs and/or printers
1.2.1	Imaging Optimization	controls Imaging techniques for printers and/or terminals
1.2.2	Input Suppression	controls Input Suppression technique for terminals; requires option 1.2.1 to be on
1.2.3	Erase Input Key Allowed	controls Erase Input Key Allowed technique for terminals; requires option 1.2.2 to be on
1.3.1	SCS Printer Optimization	controls SCS printer optimization and replaces trailing blanks with new line order
1.3.2	SCS Horizontal Tabs	controls whether horizontal tabs will be used on SCS printers
1.3.3	PT Order Generation	controls whether Program Tabs (PTs) will be generated; requires option 1.2.1 to be on
1.3.4	SNA Data Compression	controls whether SNA compression technique will be used
1.3.5	Local Terminals and Saved TIOA	provides an intermediate level of control under Global optimization (option 1.1.1)
1.4.1	Field Merge	controls use of the Field Merge technique for CRTs and printers
1.4.2	Blank Elimination	controls use of the Blank Elimination technique for CRTs and printers
1.4.3	Non-Display Fields	controls use of the Non-Display Field Elimination technique for CRTs and printers
1.4.4	Attribute Elimination	controls use of the Attribute Elimination technique on printers
1.5.1	User Exits	allows user exits to be activated/deactivated
1.6.1	Imaging and SCS Storage	controls the use of virtual storage the Optimizer needs
1.6.2	Work Area Storage	controls the amount of virtual storage for work areas
1.6.3	Dynamic Terminal and Transid Areas	controls the allocation/use of dynamic terminal areas (DTAs) and Transid Statistic Areas

How Optimization Works

Data streams are optimized based on how the optimization technique options are set within a certain hierarchy. A data stream has certain characteristics that determine whether and how it will be optimized. Here are some examples of data stream characteristics:

- destination Termid/TCAM QID
- generating Transid
- TIOA to be saved
- whether destination terminal is LOCAL or REMOTE under VTAM 1.3
- whether destination terminal is BTAM (CRT, PRT), or VTAM (LU0, LU1, LU3, or LU4)

Based on the settings, the data stream is optimized by using all applicable techniques.

Controlling Global Optimization

Global optimization is the highest level of controlling optimization techniques. You can use the Global Optimization Control panel (Figure 4-2 on page 4-7) to include or exclude the following items from any type of optimization:

- all CRTs
- all printers
- a single (or generic) Termid, Transid, or TCAM QID
- a list of Termids, Transids, or TCAM QIDs in a table

The Global Optimization Control panel also lets you edit the entries and tables that you might have created previously and to add and delete single entries and tables. For more information about tables, see Chapter 5, “Working with User Installation Tables.”

Processing a Data Stream with Optimizer Techniques

The Global optimization option determines whether a data stream will be subjected to any subsequent optimization techniques.

Some techniques cannot be used unless another technique is also used. Specifically, you cannot use Input Suppression or PT techniques unless you are using Imaging. You also cannot use the Erase Input Allowed technique unless you are using Input Suppression.

Using Imaging with Conventional Techniques

If Imaging is used with Conventional techniques (Field Merge, Blank Elimination, Non-Display Fields, and Attribute Elimination), and you attempt to exclude a transaction that issues a WRITE command, the data stream might not be skipped. This safeguard occurs to ensure that the buffer integrity is maintained.

Displaying the Optimization Control Menu

Summary: In this task, you will display the Optimization Control Menu.

To display the Optimization Control Menu (Figure 4-1), perform the following steps:

Step 1 Type **1** on the Monitor Primary Menu.

Step 2 Press **Enter**.

The Optimization Control Menu is displayed.

Figure 4-1 Optimization Control Menu

```
(1.0.0)                    3270 SUPEROPTIMIZER/CICS          February 25, 2001
Option. . ______           Optimization Control Menu                 17:34:19
                                CICSID:CICSJXE

Select the menu from below.
1.1.x  Global                                 1.4.x Conventional and Imaging
  _ 1. Global optimization control              _ 1. Field Merge
                                                  2. Blank Elimination
1.2.x  Imaging                                    3. Non-Display Fields
  _ 1. Imaging                                    4. Attribute Elimination
    2. Input Suppression
    3. Erase Input Key Allowed                1.5.x  User Exits
                                                  _ 1. User Exits
1.3.x  Selective Optimization
  _ 1. SCS Printer Optimization               1.6.x  Storage Allocation
    2. SCS Horizontal Tabs                      _ 1. Imaging and SCS Storage
    3. PT Order Generation                        2. Work Area Storage
    4. SNA Data Compression                       3. Dynamic Terminal and
    5. BTAM/VTAM Local Terminals and                 Transid Areas
       BTAM/TCAM Saved TIOAs


F1=Help  F2=Keys  F3=End  F4=Return
```

Displaying the Global Optimization Control Panel

Summary: In this task, you will display the Global Optimization Control panel.

To display the Global Optimization Control panel (Figure 4-2), perform the following steps:

Step 1 Select option **1** on the Monitor Primary Menu.

Step 2 Press **Enter**.

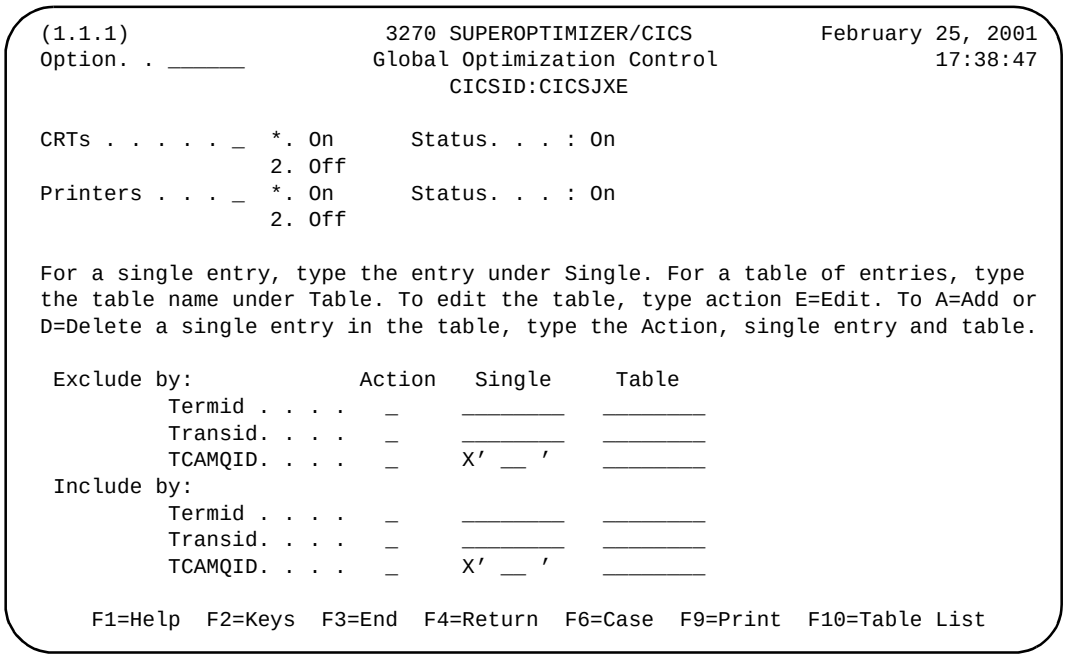
The Optimization Control Menu is displayed.

Step 3 Select option **1.1.1**.

Step 4 Press **Enter**.

The Global Optimization Control panel is displayed.

Figure 4-2 Global Optimization Control Panel



```
(1.1.1)                    3270 SUPEROPTIMIZER/CICS          February 25, 2001
Option. . ______           Global Optimization Control                17:38:47
                                CICSID:CICSJXE

CRTs . . . . . _  *. On      Status. . . : On
                  2. Off
Printers . . . _  *. On      Status. . . : On
                  2. Off

For a single entry, type the entry under Single. For a table of entries, type
the table name under Table. To edit the table, type action E=Edit. To A=Add or
D=Delete a single entry in the table, type the Action, single entry and table.

 Exclude by:             Action   Single     Table
          Termid . . . .   _     ________   ________
          Transid. . . .   _     ________   ________
          TCAMQID. . . .   _     X' __ '    ________
 Include by:
          Termid . . . .   _     ________   ________
          Transid. . . .   _     ________   ________
          TCAMQID. . . .   _     X' __ '    ________

    F1=Help  F2=Keys  F3=End  F4=Return  F6=Case  F9=Print  F10=Table List
```

Table 4-2 describes the fields on the Global Optimization Control panel.

Table 4-2 Global Optimization Control Panel Fields

Field	Purpose	Default
CRTs	controls the optimization of all data streams sent to CRTs Set to **On** to optimize all data streams that are sent to CRTs, subject to subsequent include/exclude options and Optimizer features. When set to Off, data streams that are sent to CRTs are *not* optimized.	On
Status	displays current status of optimization for all data streams that are sent to CRTs	On
Printers	controls the optimization of all printers Set to **On** to optimize all data streams that are sent to printers, subject to subsequent include/exclude options and Optimizer features. When set to Off, data streams that are sent to printers are *not* optimized.	On
Status	displays current status of optimization for all data streams that are sent to printers	On
Action	lets you specify an action when you are working with tables. Valid actions are as follows: • A to add a single (or generic) Termid, Transid, or TCAM QID to a table • D to delete a single (or generic) Termid, Transid, or TCAM QID from a table • E to edit a table (list of Termids, Transids, or TCAM QIDs) **Note:** This field is *not* used with single entries.	blank
Exclude by Single	lets you specify a single (or generic) Termid, Transid, or TCAM QID to exclude from subsequent optimization techniques	blank
Exclude by Table	lets you specify a list of Termids, Transids, or TCAM QIDs to exclude from subsequent optimization techniques	blank
Include by Single	lets you specify a single (or generic) Termid, Transid, or TCAM QID to include in subsequent optimization techniques	blank
Include by Table	lets you specify a table (list of Termids, Transids, or TCAM QIDs) to include in subsequent optimization techniques	blank

Including/Excluding Data Streams for All CRTs/Printers

Summary: You can control whether CRTs, printers, Termids, Transids, and TCAM QIDs are included in, or excluded from, global optimization. In this task, you will include or exclude data streams for all CRTs or printers from optimization.

To include or exclude data streams for all CRTs or printers in subsequent optimization techniques, perform the following steps:

Step 1 Examine the **CRTs Status** and **Printers Status** fields.

Step 2 If the devices that you want to include or exclude are CRTs, turn on **CRT Status**.

Step 3 If the devices that you want to include or exclude are printers, turn on **Printer Status**.

Step 4 Perform one of the following steps:

- Press **Enter** to save the changes and remain on this panel.
- Press **F3** to save the changes and return to the Monitor Primary Menu.

Including/Excluding Data Streams for Termids/Transids/TCAM QIDs

Summary: You can control whether CRTs, printers, Termids, Transids, and TCAM QIDs are included in, or excluded from, global optimization. In this task, you will include or exclude individual devices from optimization.

To use a single (or generic) Termid, Transid, or TCAM QID, or a table name (list of Termids, Transids, or TCAM QIDs) to include data streams in, or exclude data streams from, subsequent optimization techniques, perform the following steps:

Step 1 To include or exclude a single Termid, Transid, or TCAM QID, type the name in the appropriate row under **Single**.

The named devices will be included in, or excluded from, optimization.

Step 2 To include or exclude a list of Termids, Transids, or TCAM QIDs, type the name in the appropriate row under **Table**.

The devices that are listed in the table will be included in, or excluded from, optimization.

Step 3 Perform one of the following steps:

- Press **Enter** to save the changes and remain on this panel.
- Press **F3** to save the changes and return to the Monitor Primary Menu.

How to Control Imaging Optimization

Imaging, Input Suppression, and Erase Input Key Allowed techniques are available with SUPEROPT. You can use these Imaging options to perform the following actions:

- turn Imaging optimization on and off for all CRTs and printers
- turn Input Suppression optimization on and off for all CRTs
- set Erase Input Key Allowed optimization to yes or no for all CRTs
- exclude a single (or generic) Termid or Transid from Imaging, Input Suppression, or Erase Input Key Allowed optimization
- exclude a list of Termids or Transids from Imaging, Input Suppression, or Erase Input Key Allowed optimization
- include a single (or generic) Termid or Transid in Imaging, Input Suppression, or Erase Input Key Allowed optimization
- include a list of Termids or Transids in Imaging, Input Suppression, or Erase Input Key Allowed optimization

The Imaging panel (Figure 4-3 on page 4-12) also provides statistics on the number of data streams that were not optimized for the following reasons:

- They were excluded from Imaging optimization.
- They were not included in Imaging optimization.
- Storage was insufficient.

If you turn Imaging optimization off, your data streams are optimized by using active Conventional optimization techniques.

Displaying the Imaging Optimization Panel

Summary: In this task, you will display the Imaging optimization panel.

To display the Imaging optimization panel (Figure 4-3), perform the following steps:

Step 1 Select option **1** on the Monitor Primary Menu.

Step 2 Press **Enter**.

The Optimization Control Menu is displayed.

Step 3 Select option **1.2.1**.

Step 4 Press **Enter**.

The Imaging optimization panel is displayed.

Figure 4-3 Imaging Optimization Panel

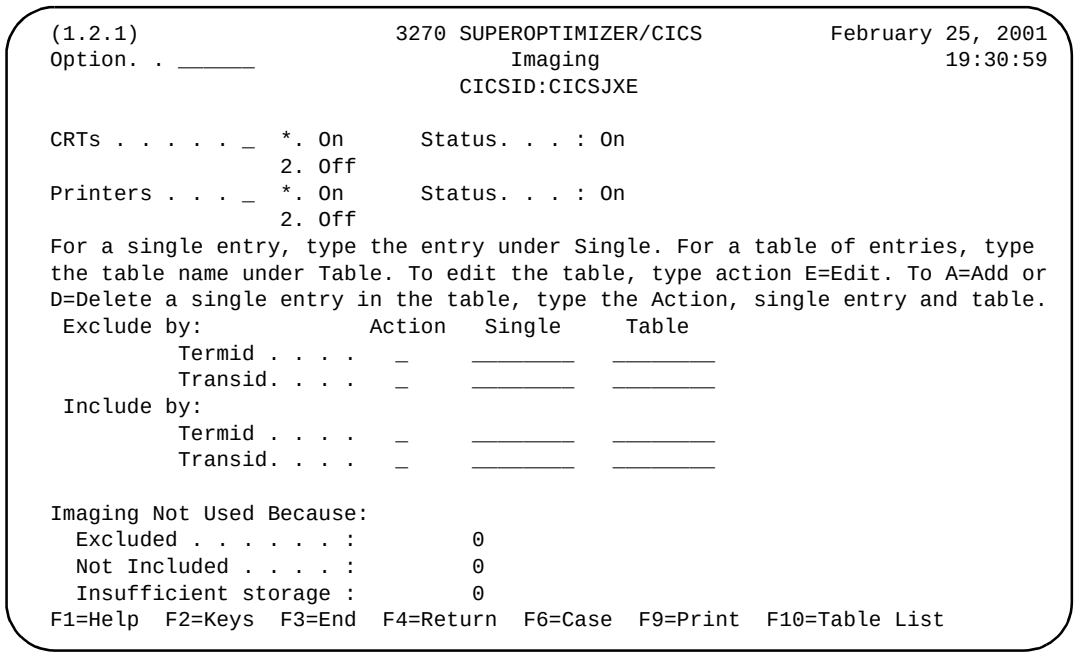


Table 4-3 describes the fields on the Imaging optimization panel.

Warning! If your site has applications that change the printer device buffer, you should exclude these applications or Termids from Imaging optimization. For example, a printer device buffer may be changed by an operator performing a local print copy function (shared printer mode).

Table 4-3 Imaging Optimization Panel Fields (Part 1 of 2)

Field	Purpose	Default
CRTs	controls the use of Imaging on all data streams that are sent to CRTs Set **CRTs Status** to **On** to optimize using Imaging techniques on all data streams that are sent to CRTs. When **CRTs Status** is Off, data streams that are sent to CRTs are not optimized by using Imaging optimization. Data streams are optimized by using Conventional optimization.	On
Status	displays current status of optimization for all data streams that are sent to CRTs	On
Printers	controls the Imaging optimization of all printers Set **Printers Status** to **On** to optimize all data streams that are sent to printers. When **Printers Status** is Off, data streams that are sent to printers are not optimized by using Imaging optimization. Data streams are optimized by using Conventional optimization.	On
Status	displays current status of Imaging optimization for all data streams that are sent to printers	On
Action	lets you specify an action when you are working with tables Valid actions are as follows: • A to add a single (or generic) Termid or Transid to a table • D to delete a single (or generic) Termid or Transid from a table • E to edit a table (list of Termids or Transids) **Note:** This field is not used with single entries.	blank
Exclude by: Single	lets you specify a single (or generic) Termid or Transid to exclude from Imaging optimization	blank
Exclude by: Table	lets you specify a table (list of Termids or Transids) to exclude from Imaging optimization	blank
Include by: Single	lets you specify a single (or generic) Termid or Transid to include in Imaging optimization	blank

Table 4-3 Imaging Optimization Panel Fields (Part 2 of 2)

Field	Purpose	Default
Include by: Table	lets you specify name of a table (list of Termids or Transids) to include in Imaging optimization	blank
Imaging Not Used Because	displays the number of data streams that were not optimized by using Imaging optimization for the following reasons: • They were excluded. • They were not included. • Storage was insufficient.	NA

Including/Excluding Imaging Optimization for All CRTs and Printers

Summary: You can control whether CRTs, printers, Termids, and Transids are included in, or excluded from, Imaging optimization. In this task, you will include and exclude Imaging optimization for all CRTs and printers.

To include and exclude data streams for all CRTs and printers in optimization techniques, perform the following steps:

Step 1 Examine the **CRTs Status** and **Printers Status** fields.

Step 2 If the devices that you want to include or exclude are CRTs, turn on **CRTs Status**.

Step 3 If the devices that you want to include or exclude are printers, turn on **Printers Status**.

Step 4 To include or exclude a single Termid or Transid, type the name in the appropriate row under **Single**.

The named devices will be included in, or excluded from, optimization.

Step 5 To include or exclude a list of Termids or Transids, type the name in the appropriate row under **Table**.

The devices that are listed in the table will be included in, or excluded from, optimization.

Step 6 Perform one of the following steps:

- Press **Enter** to save changes and remain on this panel.
- Press **F3** to save changes and return to the Monitor Primary Menu.

Data streams for the specified Termids and Transids are included in or excluded from Imaging optimization.

How to Control Input Suppression Optimization

If Input Suppression optimization is turned on, all inbound data streams that are included or not excluded are optimized with this technique. If Imaging optimization is turned off, Input Suppression cannot be used.

If any of your terminal operators use the **Erase Input** (**Er Inp**) key, see “How to Control Erase Input Key Allowed” on page 4-20 for more information. The **Erase EOF** (**ErEOF**) key has no effect on Input Suppression.

Displaying the Input Suppression Optimization Panel

Summary: In this task, you will display the Input Suppression optimization panel.

To display the Input Suppression optimization panel (Figure 4-4), perform the following steps:

Step 1 Select option **1** on the Monitor Primary Menu.

The Optimization Control Menu is displayed.

Step 2 Press **Enter**.

Step 3 Select option **1.2.2**.

Step 4 Press **Enter**.

The Input Suppression panel is displayed.

Figure 4-4 Input Suppression Optimization Panel

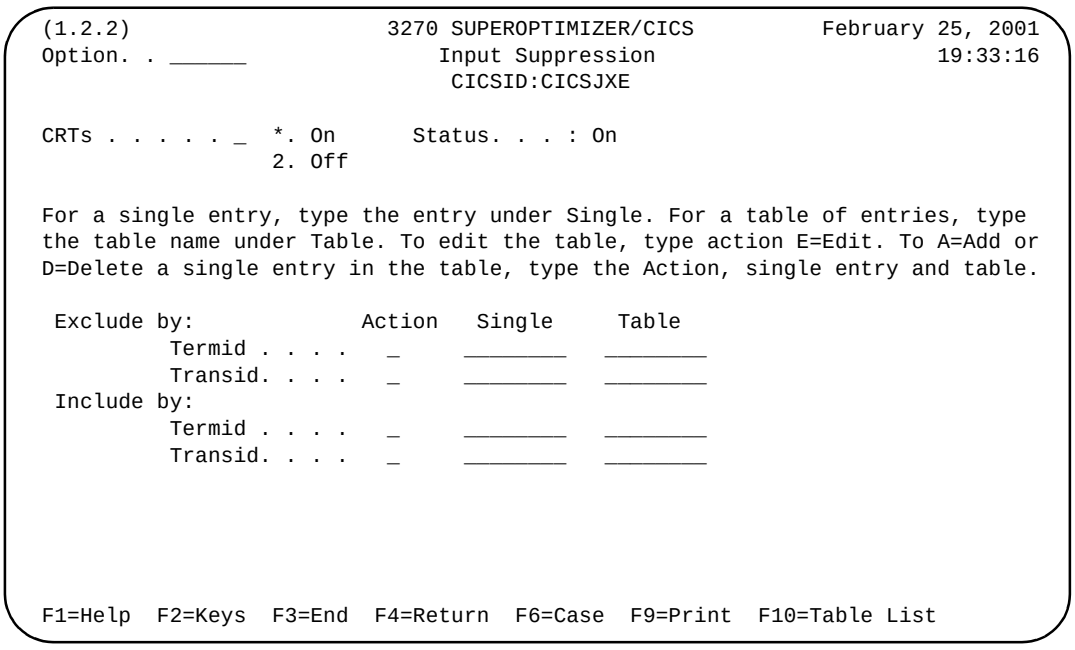


Table 4-4 describes the fields on the Input Suppression optimization panel.

Table 4-4 Input Suppression Optimization Panel Fields

Field	Purpose	Default
CRTs	controls the optimization of all data streams that are sent to CRTs Set to **On** to use Input Suppression to optimize all data streams that are sent to CRTs. When set to Off, Input Suppression is not used to optimize data streams that are sent to CRTs.	On
Status	displays current status of optimization for all data streams that are sent to CRTs	On
Action	lets you specify an action when working with tables Valid actions are as follows: • A to add a single (or generic) Termid or Transid to a table • D to delete a single (or generic) Termid or Transid from a table • E to edit a table (list of Termids or Transids) **Note:** This field is not used with single entries.	blank
Exclude by: Single	lets you specify a single (or generic) Termid or Transid to exclude from Input Suppression optimization	blank
Exclude by: Table	lets you specify a table (list of Termids or Transids) to exclude from Input Suppression optimization	blank
Include by: Single	lets you specify a single (or generic) Termid or Transid to include in Input Suppression optimization	blank
Include by: Table	lets you specify a table (list of Termids or Transids) to include in Input Suppression optimization	blank

Including/Excluding Input Suppression Optimization for All CRTs

Summary: You can control whether CRTs, Transids, and Termids are included in, or excluded from, Input Suppression optimization. In this task, you will include and exclude for optimization the data streams for all CRTs.

To include and exclude data streams for all CRTs for optimization techniques, perform the following steps:

Step 1 Set the **CRTs Status** field to **On**.

Step 2 To include or exclude a single (or generic) Termid or Transid, type the name in the appropriate row under **Single**.

The named devices will be included in, or excluded from, optimization.

Step 3 To include or exclude a list of Termids or Transids, type the name in the appropriate row under **Table**.

The devices that are listed in the table will be included in, or excluded from, optimization.

Step 4 Perform one of the following steps:

- Press **Enter** to save the changes and remain on this panel.
- Press **F3** to save changes and return to the Monitor Primary Menu.

How to Control Erase Input Key Allowed

If Input Suppression optimization is active, and your terminal operators use **Erase Input**, set **Erase Input Key Allowed** to **Yes**. This value allows as much Input Suppression optimization as possible on all inbound data streams. If your terminal operators do *not* use **Erase Input**, set **Erase Input Key Allowed** to **No**. If this value is not set correctly, the data stream for which you press **Erase Input** will not reflect that the data was erased.

To obtain the maximum optimization for your data streams, set the Erase Input Key Allowed option to the appropriate status and ensure that Imaging and Input Suppression are active (Status = On).

If you use **Erase Input**, the device clears all fields to nulls and sets the modified data tags (MDTs) off. CICS is not notified that the fields on the screen were modified. If you use this key, the Erase Input Key Allowed optimization option must be active (Status = Yes).

Erase EOF can be used with the Imaging and the Input Suppression optimization techniques, irrespective of the **Erase Input** setting.

Displaying the Erase Input Key Allowed Panel

Summary: In this task, you will display the Erase Input Key Allowed panel.

To display the Erase Input Key Allowed panel (Figure 4-5), perform the following steps:

Step 1 Select option **1** on the Monitor Primary Menu.

Step 2 Press **Enter**.

The Optimization Control Menu is displayed.

Step 3 Select option **1.2.3**.

Step 4 Press **Enter**.

The Erase Input Key Allowed panel is displayed.

Figure 4-5 Erase Input Key Allowed Panel

```
(1.2.3)                    3270 SUPEROPTIMIZER/CICS          February 25, 2001
Option. . ______            Erase Input Key Allowed                  19:34:16
                                CICSID:CICSJXE

Erase Input Key Allowed . .  _   1. Yes     Status. . . : No
                                 *. No

For a single entry, type the entry under Single. For a table of entries, type
the table name under Table. To edit the table, type action E=Edit. To A=Add or
D=Delete a single entry in the table, type the Action, single entry and table.

 Exclude by:             Action   Single     Table
          Termid . . . .   _     ________   ________
          Transid. . . .   _     ________   ________

 Include by:
          Termid . . . .   _     ________   ________
          Transid. . . .   _     ________   ________



F1=Help  F2=Keys  F3=End  F4=Return  F6=Case  F9=Print  F10=Table List
```

Table 4-5 describes the fields on the Erase Input Key Allowed panel.

Table 4-5 Erase Input Key Allowed Panel Fields

Field	Function	Default
Erase Input Key Allowed	controls the optimization of all data streams that are sent to CRTs When **Erase Input Key Allowed** is set to Yes, usually less optimization occurs.	No
Status	displays the current status of optimization for all data streams that are sent to CRTs	No
Action	lets you specify an action when working with tables Valid actions are as follows: • A to add a single (or generic) Termid or Transid to a table • D to delete a single (or generic) Termid or Transid from a table • E to edit a table (list of Termids or Transids) **Note:** This field is not used with single entries.	blank
Exclude by: Single	lets you specify the name of a single (or generic) Termid or Transid to exclude from Erase Input Key Allowed	blank
Exclude by: Table	lets you specify the name of a table (list of Termids or Transids) to exclude from Erase Input Key Allowed	blank
Include by: Single	lets you specify the name of a single (or generic) Termid or Transid to include in Erase Input Key Allowed	blank
Include by: Table	lets you specify the name of a table (list of Termids or Transids) to include in Erase Input Key Allowed	blank

Including/Excluding Data Streams for Erase Input Key Allowed

Summary: You can control whether CRTs, Termids, and Transids are included in, or excluded from, Erase Input Key Allowed. In this task, you will include or exclude data streams for Erase Input Key Allowed.

To include or exclude data streams for all CRTs for Erase Input Key Allowed, perform the following steps:

Step 1 Turn **CRT Status** to **Yes**.

Step 2 To include or exclude a single Termid or Transid, type the name in the appropriate row under **Single**.

The devices that are named will be included in, or excluded from, optimization.

Step 3 To include or exclude a list of Termids or Transids, type the name in the appropriate row under **Table**.

The devices that are listed in the table will be included in, or excluded from, optimization.

Step 4 Perform one of the following steps:

- Press **Enter** to save the changes and remain on this panel.
- Press **F3** to save changes and return to the Monitor Primary Menu.

How to Control Selective Optimization

With the Selective Optimization options, you can control the optimization of data streams through the use of SCS Printer optimization, SCS Horizontal Tabs, PT Order Generation, SNA Data Compression, BTAM/VTAM Local Terminals, and BTAM/TCAM Saved TIOA techniques. These options let you perform the following actions:

- turn SCS Printer optimization on and off
- specify the default print line length for SCS printers
- specify an alternate print line length for SCS printers and the Termids and Transids to which it applies
- turn SCS Horizontal Tabs optimization on and off
- turn PT Order Generation on and off
- turn SNA Data Compression on and off
- exclude a single (or generic) Termid or Transid from SCS Horizontal Tabs, PT Order Generation, SNA Data Compression, BTAM/VTAM Local Terminals, and BTAM/TCAM Saved TIOA
- include a single (or generic) Termid or Transid in SCS Horizontal Tabs, PT Order Generation, SNA Data Compression, BTAM/VTAM Local Terminals, and BTAM/TCAM Saved TIOA

SCS Printer optimization and the SCS Horizontal Tabs option apply only to SCS printers.

The PT Order Generation option applies only to 3270 terminals and non-SCS printers.

The SNA Data Compression option applies only to 3600/4700 controllers and 3790 devices with decompression capability.

The BTAM/VTAM Local Terminals option applies only to local (channel-attached) CRTs and printers on systems with BTAM or VTAM installed. This option does not apply to systems using VTAM 3 or later. The BTAM/TCAM Saved TIOA option applies only to data streams in a BTAM or TCAM environment that use Saved TIOAs.

SCS Horizontal Tabs Optimization Option

The SCS Horizontal Tabs option lets you specify whether the Optimizer uses SCS Horizontal Tabs to reduce the size of output data streams for SCS printers.

If your SCS printers support the horizontal formatting control codes (Set Horizontal Format and Set Horizontal Tab), use SCS Horizontal Tabs to achieve maximum optimization.

If SCS Horizontal Tabs are *not* supported, you can exclude SCS printers from SCS Horizontal Tabs optimization by performing one of the following actions:

- turning SCS Horizontal Tabs off
- excluding or including a single (or generic) Termid or Transid
- excluding or including a list of Termids or Transids

For information about how to determine whether your SCS printers support SCS Horizontal Tabs, see the *3270 SUPEROPTIMIZER/CICS Customization Guide*.

PT Order Generation Optimization Option

The Program Tab (PT) Order Generation option lets you specify whether the Optimizer uses PT orders to reduce the size of output data streams.

If your 3270 terminals and non-SCS printers support PT Orders, use PT Order Generation to achieve maximum optimization.

If PT Orders are not supported, you can exclude devices from PT Order Generation optimization by performing one of the following actions:

- turning PT Order Generation optimization off
- excluding or including a single (or generic) Termid or Transid
- excluding or including a list of Termids or Transids

Note: PT Order Generation does not apply to SCS printer data streams.

SNA Data Compression Option

The SNA Data Compression option lets you specify whether the Optimizer uses SNA data compression to reduce the size of output data streams for 3600, 4700, and 3790 user program devices. Although the SNA Data Compression option supports these specific devices, it does *not* support any 3270 emulators.

If SNA data compression is not supported, you can exclude 3600, 4700, and 3790 user program devices from SNA data compression by performing one of the following actions:

- turning SNA Data Compression off
- excluding or including a single (or generic) Termid
- excluding or including a list of Termids

IBM VTAM data compression and the 3270 optimization options are not related and do not interfere with one another. SNA Data Compression options apply only to 3600/4700 controllers and 3790 devices with decompression capability. The controller must have its own decompression routine. BMC Software does not supply a routine with the product. For more information about VTAM data compression, see the IBM *VTAM Release Guide version 3 release 4.1 for MVS/ESA*.

Local Terminals and Saved TIOA Options and Capabilities

The BTAM/VTAM Local Terminal option lets you specify whether data streams for local terminals (channel-attached) operating in a BTAM/VTAM environment are optimized to reduce the size of data streams. The BTAM/TCAM Saved TIOAs option lets you specify whether data streams for terminals that operate in a BTAM/TCAM environment and use Saved TIOAs are optimized to reduce the size of data streams.

Note: Local terminals are no longer defined in VTAM 3.0 and later.

BTAM/VTAM Local Terminal Options and Capabilities

With the BTAM/VTAM Local Terminal option, you can perform the following actions:

- turn the BTAM/VTAM Local Terminals option on and off for all local terminals
- exclude the following items from optimization:
  - individual Termids
  - a generic Termid (for example, TR*)
  - a list of Termids, using a table name
- include the following items in optimization:
  - individual Termids
  - a generic Termid (for example, TE*)
  - a list of Termids, using a table name

BTAM/VTAM Saved TIOA Options and Capabilities

With the BTAM/TCAM Saved TIOAs option, you can perform the following actions:

- turn the BTAM/TCAM Saved TIOAs option on and off for all local terminals
- exclude the following items from optimization:
  - individual Transids
  - a generic Transid (for example, TR*)
  - a list of Transids, using a table name
- include the following items in optimization:
  - individual Transids
  - a generic Transid (for example, TR*)
  - a list of Transids, using a table name

Considerations before Using the Local Terminals Option

The BTAM/VTAM Local Terminals option applies to all optimization techniques. This option is used to optimize data streams for BTAM and local VTAM 3270 terminals (pre-VTAM 3.0 and channel-attached).

When the BTAM/VTAM Local Terminals Status = Off, data streams for BTAM and local (pre-VTAM 3.0 and channel-attached) VTAM CRTs and printers are *not* optimized. The default setting for this option is Status = Off. You might want to optimize data streams for the following reasons:

- SUPEROPT is first installed for testing.
- SUPEROPT is installed, and you are using Imaging.
- You want to reduce access method buffer use and channel time.

If you are using VTAM 3.0 or later, all terminals are treated as remote terminals.

If you are using a 43*xx* CPU with an Integrated Communications Adapter in a VTAM environment, or you are using VM PASSTHRU, all terminals are treated as local terminals. You must turn on the BTAM/VTAM Local Terminals option.

Considerations before Using the Saved TIOAs Option

The BTAM/TCAM Saved TIOAs option applies to all optimization techniques.

When a data stream is optimized, the Optimizer reduces the length of the data stream and moves the data around in the TIOA. If the CICS application program is expecting data to be in a specific location in the TIOA, you should exclude the Transid from optimization.

Output data streams can have a Saved TIOA for the following reasons:

- CICS application programs are coded to reuse a TIOA.
- A definite response is required in the Terminal Control Table Terminal Entry (TCTTE).

Only macro-level CICS programs can have Saved TIOAs.

Displaying the SCS Printer Optimization Panel

Summary: In this task, you will display the SCS Printer Optimization panel.

To display the SCS Printer Optimization panel (Figure 4-6), perform the following steps:

Step 1 Select option **1** on the Monitor Primary Menu.

Step 2 Press **Enter**.

The Optimization Control Menu is displayed.

Step 3 Select option **1.3.1**.

Step 4 Press **Enter**.

The SCS Printer Optimization panel is displayed.

Figure 4-6 SCS Printer Optimization Panel

```
(1.3.1)                    3270 SUPEROPTIMIZER/CICS          February 25, 2001
Option. . ______           SCS Printer Optimization                   19:35:35
                                CICSID:CICSJXE

SCS Printer Optimization . . . . . _   *. On   Status . . . : On
                                       2. Off

Default Print Line Length . . . . . .   132    maximum value 255
Alternate Print Line Length . . . . .   ___    maximum value 255

Specify Termids and/or Transids that will use the alternate print line length.
For a single entry, type the entry under Single. For a table of entries, type
the table name under Table. To edit the table, type action E=Edit. To A=Add or
D=Delete a single entry in the table, type the Action, single entry and table.

                         Action   Single     Table
          Transid. . . .   _     ________   ________
          Termid . . . .   _     ________   ________




F1=Help  F2=Keys  F3=End  F4=Return  F6=Case  F9=Print  F10=Table List
```

Table 4-6 describes the fields on the SCS Printer Optimization panel.

Table 4-6 SCS Printer Optimization Panel Fields

Field	Purpose	Default
SCS Printer Optimization	controls the optimization of data streams that are sent to SCS printers Set **SCS Printer Optimization** to **On** to optimize all data streams that are sent to SCS printers by using SCS Printer Optimization. When **SCS Printer Optimization** is Off, data streams that are sent to SCS printers are not optimized by using SCS Printer Optimization.	On
Status	displays the current status of optimization for all data streams that are sent to SCS printers	On
Default Print Line Length	default print line length that is used by all SCS printers The default print line length can be from 1 to 255 characters.	132
Alternate Print Line Length	alternate print line length that is used by user-specified SCS printers in the specified table The alternate print line length can be from 1 to 255 characters.	blank
Action	lets you specify an action when working with tables Valid actions are as follows: • A to add a single (or generic) Termid or Transid to a table • D to delete a single (or generic) Termid or Transid from a table • E to edit a table (list of Termids or Transids) **Note:** This field is not used with single entries.	blank
Termid	lets you specify name of a single (or generic) Termid or a list of Termids that should use the alternate print line length	blank
Transid	lets you specify name of a single (or generic) Transid or a list of Transids that should use the alternate print line length	blank

Including/Excluding All SCS Printers in SCS Printer Optimization

Summary: In this task, you will include and exclude data streams for all SCS printers in SCS Printer Optimization.

To include and exclude data streams for all SCS printers for SCS Printer Optimization, perform the following steps:

Step 1 Examine the **SCS printer optimization status** field.

Status = On means that all SCS printers are already included in SCS Printer Optimization.

Status = Off means that all SCS printers are already excluded from SCS Printer Optimization.

Step 2 Accept or type one of the following values:

- **1**, to turn **SCS Printer Optimization** On and include all SCS printers in SCS Printer Optimization
- **2**, to turn **SCS Printer Optimization** Off and exclude all SCS printers in SCS Printer Optimization

Step 3 Press **Enter**.

Data streams for all SCS printers are included in or excluded from SCS Printer Optimization.

Specifying an Alternate Print Line Length

Summary: The default print line length for SCS printers is 132 characters. The default is used for all Termids and Transids that do not have an alternate print line length specified for their use. You can specify a default print line length from 1 to 255. In this task, you will designate certain SCS printers to use an alternate print line length.

You can designate certain SCS printers to use an alternate print line length. To specify the name of a single (or generic) Termid or Transid or a table name (list of Termids or Transids), perform the following steps:

Step 1 Type a number from 1 to 255 in the **Alternate Print Line Length** field.

Step 2 Specify the Termids and/or Transids that will use the alternate printer line length by typing the Termid or Transid name in the appropriate row.

Step 3 Press **Enter**.

Data streams for the specified Termids and Transids will use the alternate print line length.

Displaying the SCS Horizontal Tabs Optimization Panel

Summary: In this task, you will display the SCS Horizontal Tabs optimization panel.

To display the SCS Horizontal Tabs optimization panel (Figure 4-7), perform the following steps:

Step 1 Select option **1** on the Monitor Primary Menu.

Step 2 Press **Enter**.

The Optimization Control Menu is displayed.

Step 3 Select option **1.3.2**.

Step 4 Press **Enter**.

The SCS Horizontal Tabs panel is displayed.

Figure 4-7 SCS Horizontal Tabs Optimization Panel

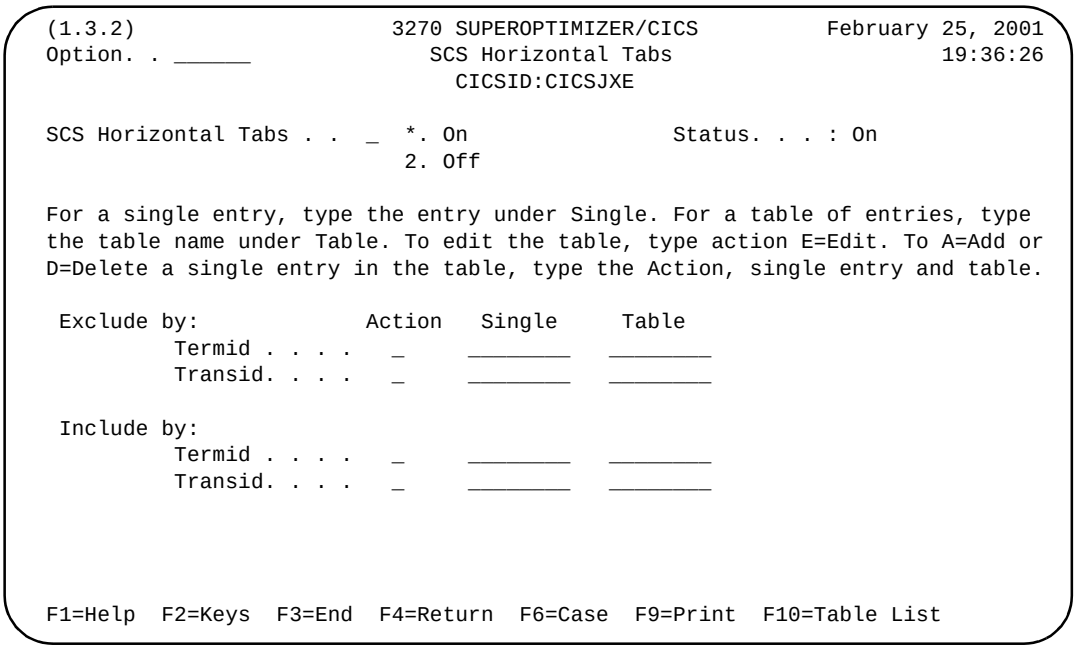


Table 4-7 describes the fields on the SCS Horizontal Tabs optimization panel.

Table 4-7 SCS Horizontal Tabs Optimization Panel Fields

Field	Purpose	Default
SCS Horizontal Tabs	controls the optimization of all data streams that are sent to SCS printers Set **SCS Horizontal Tabs** to **On** to use SCS Horizontal Tabs optimization for all data streams that are sent to SCS printers. When **SCS Horizontal Tabs** is set to Off, data streams that are sent to SCS printers are not optimized by using SCS Horizontal Tabs optimization.	On
Status	displays the current status of optimization for all data streams that are sent to SCS printers.	On
Action	lets you specify an action when working with tables Valid actions are as follows: • A to add a single (or generic) Termid or Transid to a table • D to delete a single (or generic) Termid or Transid from a table • E to edit a table (list of Termids or Transids) **Note:** This field is not used with single entries.	blank
Exclude by: Single	lets you specify name of a single (or generic) Termid or Transid to exclude from SCS horizontal Tabs optimization	blank
Exclude by: Table	lets you specify name of a table (list of Termids or Transids) to exclude from SCS Horizontal Tabs optimization	blank
Include by: Single	lets you specify name of a single (or generic) Termid or Transid to include in SCS Horizontal Tabs optimization	blank
Include by: Table	lets you specify name of a table (list of Termids or Transids) to include in SCS Horizontal Tabs optimization	blank

Including/Excluding for SCS Horizontal Tabs Optimization

Summary: You can control whether SCS printers are included in or excluded from SCS Horizontal Tabs optimization. In this task, you will include and exclude data streams for SCS Horizontal Tabs optimization.

To include and exclude data streams for all SCS printers in optimization techniques, perform the following steps:

Step 1 Turn on **Printer Status**.

Step 2 To include or exclude a single (or generic) Termid or Transid, type the name in the appropriate box under **Single**.

The named devices will be included in, or excluded from, optimization.

Step 3 To include or exclude a list of Termids or Transids, type the name in the appropriate box under **Table**.

The devices that are listed in the table will be included in, or excluded from, optimization.

Step 4 Perform one of the following steps:

- Press **Enter** to save the changes and remain on this panel.
- Press **F3** to save changes and return to the Monitor Primary Menu.

Displaying the PT Order Generation Optimization Panel

Summary: In this task, you will display the PT Order Generation panel.

To display the PT Order Generation optimization panel (Figure 4-8), perform the following steps:

Step 1 Select option **1** on the Monitor Primary Menu.

Step 2 Press **Enter**.

The Optimization Control Menu is displayed.

Step 3 Select option **1.3.3**.

Step 4 Press **Enter**.

The PT Order Generation panel is displayed.

Figure 4-8 PT Order Generation Optimization Panel

```
(1.3.3)                    3270 SUPEROPTIMIZER/CICS          February 25, 2001
Option. . ______              PT Order Generation                      20:04:37
                                CICSID:CICSJXE

PT Order Generation . . . _   *. On              Status . . . : On
                              2. Off

For a single entry, type the entry under Single. For a table of entries, type
the table name under Table. To edit the table, type action E=Edit. To A=Add or
D=Delete a single entry in the table, type the Action, single entry and table.

 Exclude by:             Action   Single     Table
          Termid . . . .   _     ________   ________
          Transid. . . .   _     ________   ________

 Include by:
          Termid . . . .   _     ________   ________
          Transid. . . .   _     ________   ________



F1=Help  F2=Keys  F3=End  F4=Return  F6=Case  F9=Print  F10=Table List
```

Table 4-8 describes the fields on the PT Order Generation optimization panel.

Table 4-8 PT Order Generation Optimization Panel Fields

Field	Purpose	Default
PT Order Generation	controls the optimization of all data streams that are sent to 3270 terminals and non-SCS printers Set **PT Order Generation** to **On** to optimize all data streams that are sent to 3270 terminals and non-SCS printers by using PT Order Generation optimization. When **PT Order Generation** is Off, data streams that are sent to 3270 terminals and non-SCS printers are not optimized by using PT Order Generation optimization.	On
Status	displays current status of optimization for all data streams that are sent to 3270 terminals and non-SCS printers	On
Action	lets you specify an action when working with tables Valid actions are as follows: • A to add a single (or generic) Termid or Transid to a table • D to delete a single (or generic) Termid or Transid from a table • E to edit a table (list of Termids or Transids) **Note:** This field is not used with single entries.	blank
Exclude by: Single	lets you specify the name of a single (or generic) Termid or Transid to exclude from PT Order Generation optimization	blank
Exclude by: Table	lets you specify the name of a table (list of Termids or Transids) to exclude from PT Order Generation optimization	blank
Include by: Single	lets you specify the name of a single (or generic) Termid or Transid to include in PT Order Generation optimization	blank
Include by: Table	lets you specify the name of a table (list of Termids or Transids) to include in PT Order Generation optimization	blank

Including/Excluding Data Streams for PT Order Generation Optimization

Summary: You can control whether 3270 terminals and non-SCS printers are included in, or excluded from, PT Order Generation optimization. In this task, you will include and exclude devices in PT Order Generation optimization.

To include and exclude data streams for 3270 terminals and non-SCS printers in optimization techniques, perform the following steps:

Step 1 Turn on the **PT Order Generation Status** field.

Step 2 To include or exclude a single Termid or Transid, type the name in the appropriate row under **Single**.

The named devices will be included in, or excluded from, optimization.

Step 3 To include or exclude a list of Termids or Transids, type the name in the appropriate row under **Table**.

The devices that are listed in the table will be included in, or excluded from, optimization.

Step 4 Perform one of the following steps:

- Press **Enter** to save the changes and remain on this panel.
- Press **F3** to save changes and return to the Monitor Primary Menu.

Displaying the SNA Data Compression Panel

Summary: In this task, you will display the SNA Data Compression panel.

To display the SNA Data Compression panel (Figure 4-9), perform the following steps:

Step 1 Select option **1** on the Monitor Primary Menu.

Step 2 Press **Enter**.

The Optimization Control Menu is displayed.

Step 3 Select option **1.3.4**.

Step 4 Press **Enter**.

The SNA Data Compression panel is displayed.

Figure 4-9 SNA Data Compression Panel

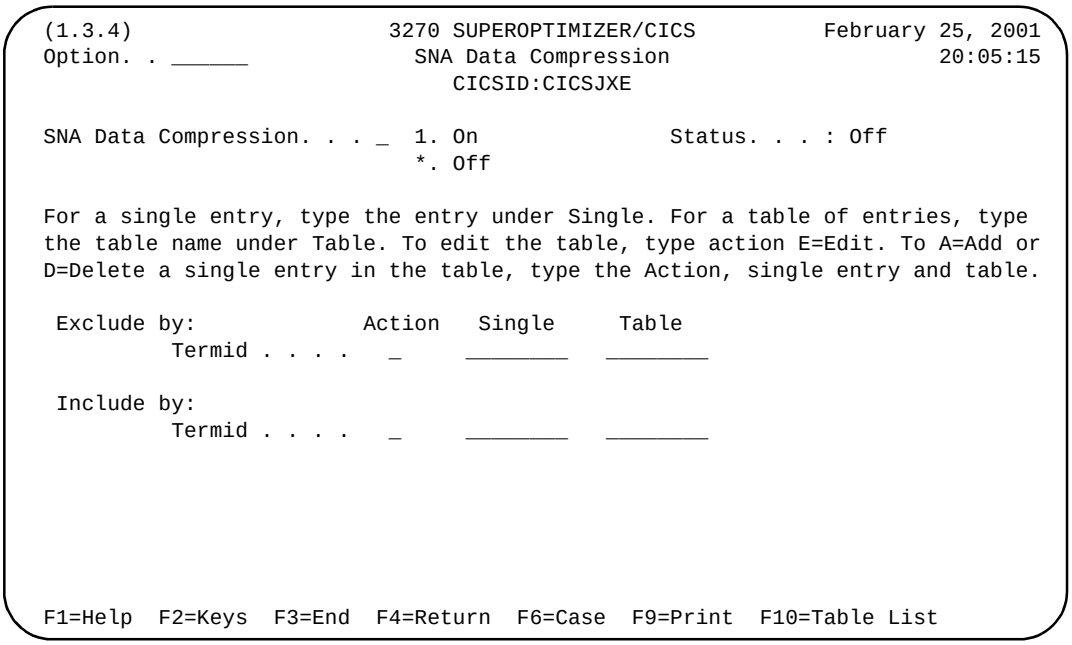


Table 4-9 describes the fields on the SNA Data Compression panel.

Table 4-9 SNA Data Compression Panel Fields

Field	Purpose	Default
SNA Data Compression	controls the compression of all data streams that are sent to 3600, 4700, and 3790 user programs Set **SNA Data Compression Status** to **On** to use SNA Data Compression to compress all 3600/4700 data streams and 3790 user program data streams that have been included or not excluded. To use **SNA Data Compression Status=On**, you must write the front-end program with the decompression logic. When **SNA Data Compression Status** is Off, the 3600/4700 data streams and 3790 user program data streams are not compressed.	Off
Status	displays the current status of compression for all data streams that have been included or not excluded for data compression	Off
Action	lets you specify an action when working with tables Valid actions are as follows: • A to add a single (or generic) Termid or Transid to a table • D to delete a single (or generic) Termid or Transid from a table • E to edit a table (list of Termids) **Note:** This field is not used with single entries.	blank
Exclude by: Single	lets you specify the name of a single (or generic) Termid or Transid to exclude from SNA Data Compression	blank
Exclude by: Table	lets you specify the name of a table (list of Termids or Transids) to exclude from SNA Data Compression	blank
Include by: Single	lets you specify the name of a single (or generic) Termid or Transid to include in SNA Data Compression	blank
Include by: Table	lets you specify the name of a table (list of Termids or Transids) to include in SNA Data Compression	blank

Turning SNA Data Compression On and Off

Summary: You can control whether data streams for all 3600, 4700, and 3790 user program devices are included in, or excluded from, SNA Data Compression.

To include and exclude data streams for all 3600, 4700, and 3790 user program devices for SNA Data Compression, perform the following steps:

Step 1 Turn on the **SNA Data Compression Status** field.

Step 2 To exclude or include a single Termid, type the name in the appropriate box under **Single**.

The named devices will be included in, or excluded from, optimization.

Step 3 To exclude or include a list of Termids, type the name in the appropriate box under **Table**.

The devices that are listed in the table will be included in, or excluded from, optimization.

Step 4 Perform one of the following steps:

- Press **Enter** to save the changes and remain on this panel.
- Press **F3** to save changes and return to the Monitor Primary Menu.

Displaying the Local Terminals and Saved TIOA Panel

Summary: In this task, you will display the Local Terminals and Saved TIOA panel.

To display the Local Terminals and Saved TIOA panel (Figure 4-10), perform the following steps:

Step 1 Select option **1** on the Monitor Primary Menu.

Step 2 Press **Enter**.

The Optimization Control Menu is displayed.

Step 3 Select option **1.3.5**.

Step 4 Press **Enter**.

The Local Terminals and Saved TIOA panel is displayed.

Figure 4-10 Local Terminals and Saved TIOA Panel

```
(1.3.5)                    3270 SUPEROPTIMIZER/CICS              July 20, 2001
Option. . ______         Local Terminals and Saved TIOA               19:28:51
                                CICSID:CICSMGF

For a single entry, type the entry under Single. For a table of entries, type
the table name under Table. To edit the table, type action E=Edit. To A=Add or
D=Delete a single entry in the table, type the Action, single entry and table.

BTAM/VTAM Local Terminals. . . _   1. On         Status. . . : Off
                                   *. Off

                          Action   Single     Table
 Exclude by Termid . . . . _     ________   ________
 Include by Termid . . . . _     ________   ________

BTAM/TCAM Saved TIOAs . . . .  _   *. On         Status. . . : On
                                   2. Off

                          Action   Single     Table
 Exclude by Transid. . . . _     ________   ________
 Include by Transid. . . . _     ________   ________

F1=Help  F2=Keys  F3=End  F4=Return  F6=Case  F9=Print  F10=Table List
```

Table 4-10 describes the fields on the Local Terminals and Saved TIOA panel for the Local Terminals option.

Table 4-10 Local Terminals and Saved TIOA Panel (Local Terminals Option) Fields

Field	Purpose	Default
BTAM/VTAM Local Terminals	controls the optimization of all local CRTs and printers that are operating in a BTAM or VTAM environment Set **BTAM/VTAM Local Terminals** to **Off**, so that all data streams for local terminals are not optimized. When **BTAM/VTAM Local Terminals** is On, all data streams for local terminals are optimized.	Off
Status	displays the current status of optimization for all data streams that are associated with local terminals operating in a BTAM or VTAM environment	Off
Action	lets you specify an action when working with tables Valid actions are as follows: • A to add a single (or generic) Termid or Transid to a table • D to delete a single (or generic) Termid or Transid from a table • E to edit a table (list of Termids) **Note:** This field is not used with single entries.	blank
Exclude by: Termid	lets you specify a single (or generic) Termid or list of Termids to exclude from optimization by using the BTAM/VTAM Local Terminals option	blank
Include by: Termid	lets you specify a single (or generic) Termid or list of Termids to include in optimization by using the BTAM/VTAM Local Terminals option	blank

Table 4-11 describes the fields on the Local Terminals and Saved TIOA panel for the Saved TIOAs option.

Table 4-11 Local Terminals and Saved TIOA Panel (Saved TIOAs Option) Fields

Field	Purpose	Default
BTAM/TCAM Saved TIOAs	controls the optimization of all CRTs and printers that are operating in a BTAM or TCAM environment that use Saved TIOAs Set **BTAM/TCAM Saved TIOAs** to **On** to optimize all data streams for Saved TIOAs. When **BTAM/TCAM Saved TIOAs** is Off, all data streams for Saved TIOAs are not optimized.	On
Status	displays the current status of optimization for all data streams that are associated with Saved TIOAs operating in a BTAM or TCAM environment	On
Action	lets you specify an action when working with tables Valid actions are as follows: • A to add a single (or generic) Transid to a table • D to delete a single (or generic) Transid from a table • E to edit a table (list of Transids) **Note:** This field is not used with single entries.	blank
Exclude by: Transid	lets you specify a single (or generic) Transid or list of Transids to exclude from optimization by using the BTAM/TCAM Saved TIOAs option	blank
Include by: Transid	lets you specify a single (or generic) Transid or list of Transids to include in optimization by using the BTAM/TCAM Saved TIOAs option	blank

Turning the BTAM/VTAM Local Terminals Option On and Off

Summary: In this task, you will turn on and off the BTAM/VTAM Local Terminals option.

To use the BTAM/VTAM Local Terminals option to include all data streams for local terminals for optimization, perform the following steps:

Step 1 Turn on the **BTAM/VTAM Local Terminals Status** field.

To exclude or include a single (or generic) Termid, type the name in the appropriate box under **Single**.

The named devices will be included in, or excluded from, optimization.

Step 2 To exclude or include a list of Termids, type the name in the appropriate box under **Table**.

The devices that are listed in the table will be included, or excluded from, optimization.

Step 3 Perform one of the following steps:

- Press **Enter** to save the changes and remain on this panel.
- Press **F3** to save changes and return to the Monitor Primary Menu.

Turning the BTAM/TCAM Saved TIOAs Option On and Off

Summary: In this task, you will turn on and off the BTAM/TCAM Saved TIOAs option.

To include and exclude all data streams for terminals that operate in a BTAM/TCAM environment and use Saved TIOAs in optimization, perform the following steps:

Step 1 Turn on the **BTM/TCAM Saved TIOAs status** field.

Step 2 To exclude or include a single Transid, type the name in the appropriate box under **Single**.

The named devices will be included in, or excluded from, optimization.

Step 3 To exclude or include a list of Transids, type the name in the appropriate box under **Table**.

The devices that are listed in the table will be included in, or excluded from, optimization.

Step 4 Perform one of the following steps:

- Press **Enter** to save the changes and remain on this panel.
- Press **F3** to save the changes and return to the Monitor Primary Menu.

How to Control Conventional and Imaging Features

The features that are described in this section affect the way that the Optimizer optimizes output data streams when Conventional or Imaging optimization techniques are used. None of these features completely excludes a data stream from Conventional or Imaging optimization. These features are as follows:

- Field Merge
- Blank Elimination
- Non-Display Fields
- Attribute Elimination

Field Merge Feature

The Field Merge feature lets you eliminate start field (SF) orders from consecutive protected fields when the field attributes are the same. When this feature is turned off, normal start field processing is used.

Note: In the fields that are affected by the Field Merge feature, the screen appears and functions the same as before.

Although this feature lets you maximize optimization, it should *not* be used if either of the following conditions applies:

- Imaging optimization is on, *and* your terminal operators use a *terminal hardware* feature to perform String and Block Copy functions.

  For example, a 3290 lets you copy a string or block of data from one partition to another partition.

- Imaging optimization is *off* (Conventional optimization is being used), and one of the following conditions occurs:

  — A CICS application program uses program tab orders to clear a field that is eligible for Field Merge.

  — A CICS application program modifies existing attributes on the CRT for fields that are eligible for Field Merge.

  — A CICS application issues a READB (Read Buffer) and expects the resulting inbound data stream to contain all of the original attributes that were sent out.

Blank Elimination Feature

The Blank Elimination feature removes blanks from outbound data streams that are sent to CRTs and printers. For CRTs, blanks are removed only from protected fields. When this feature is off, the Optimizer uses Repeat-to-Address (RA) orders to optimize the blanks.

The Blank Elimination feature affects how the Optimizer optimizes output data streams when Conventional or Imaging optimization techniques are used. This feature does not completely exclude a data stream from being optimized by the Conventional or Imaging techniques.

Note: In the fields that are affected by the Blank Elimination feature, the data remains in the proper relative positions.

Although this feature lets you maximize optimization, it should not be used if either of the following conditions applies:

- Imaging optimization is on, *and* your terminal operators use a *terminal hardware* feature to perform String and Block Copy functions.

  For example, a 3290 lets you copy a string or block of data from one partition to another partition.

- Imaging optimization is *off* (Conventional optimization is being used), and one of the following conditions occurs:

  — A CICS application program changes protected fields to unprotected.
  — A CICS application issues a READB and expects the resulting inbound data stream to contain all of the original attributes that were sent out.

Non-Display Fields Feature

The Non-Display Fields feature eliminates non-display fields from outbound data streams that are sent to CRTs and printers. For CRTs, only protected non-display fields will be eliminated. When this feature is off, the Optimizer will use other optimization techniques on the non-display fields.

Although this feature lets you maximize optimization, it should not be used if either of the following conditions exists:

- Imaging optimization is on, *and* your terminal operators use a *terminal hardware* feature to perform String and Block Copy functions.

  For example, a 3290 lets you copy a string or block of data from one partition to another partition.

- Imaging optimization is *off* (Conventional optimization is being used), and one of the following events occurs:

  — A CICS application program modifies any field on a CRT that has existing attributes of being data protected, is non-premodified, or is not light-pen-detectable.

  — A CICS application issues a READB and expects the resulting inbound data stream to contain all of the original attributes that were sent out.

Attribute Elimination Feature

The Attribute Elimination feature eliminates all attributes that are embedded in outbound data streams that are sent to printers.

Although this feature lets you maximize the optimization of data streams sent to printers, you should not use it when the following conditions apply:

- The printer is a color printer, and the default colors are used.
- A CICS application program sends an erase/write data stream to a printer, followed by a non-erase/write data stream that depends on the attributes that are included in the first data stream. In this case, the feature should not be used with Conventional optimization.

Displaying the Field Merge Panel

Summary: In this task, you will display the Field Merge panel.

To display the Field Merge panel (Figure 4-11), perform the following steps:

Step 1 Select option **1** on the Monitor Primary Menu.

Step 2 Press **Enter**.

The Optimization Control Menu is displayed.

Step 3 Select option **1.4.1**.

Step 4 Press **Enter**.

The Field Merge panel is displayed.

Figure 4-11 Field Merge Panel

```
(1.4.1)                    3270 SUPEROPTIMIZER/CICS          February 25, 2001
Option. . ______                    Field Merge                        20:06:32
                                  CICSID:CICSJXE

CRTs . . . . . . . . . . _   *. On   Status. . . : On
                             2. Off

Printers . . . . . . . . _   *. On   Status. . . : On
                             2. Off

For a single entry, type the entry under Single. For a table of entries, type
the table name under Table. To edit the table, type action E=Edit. To A=Add or
D=Delete a single entry in the table, type the Action, single entry and table.

 Exclude by:             Action   Single     Table
          Termid . . . .   _     ________   ________
          Transid. . . .   _     ________   ________




F1=Help  F2=Keys  F3=End  F4=Return  F6=Case  F9=Print  F10=Table List
```

Table 4-12 describes the fields on the Field Merge panel.

Table 4-12 Field Merge Panel Fields

Field	Purpose	Default
CRTs	controls the optimization of all data streams that are sent to CRTs Set **CRTs** to **On** to use the Field Merge feature to optimize all data streams that are sent to CRTs. When **CRTs** is Off, data streams that are sent to CRTs are not optimized by using the Field Merge feature.	On
Status	displays the current status of optimization for all data streams that are sent to CRTs	N/A
Printers	used to control the optimization of all data streams that are sent to printers	On
Printers Status	current status of optimization for all data streams that are sent to printers When **Printers Status** is On, all data streams that are sent to printers are optimized by using the Field Merge feature. When **Printers Status** is Off, data streams that are sent to printers are not optimized by using the Field Merge feature.	On
Action	lets you specify an action when working with tables Valid actions are as follows: • A to add a single (or generic) Termid or Transid to a table • D to delete a single (or generic) Termid or Transid from a table • E to edit a table (list of Termids or Transids) **Note:** This field is not used with single entries.	blank
Exclude by: Single	lets you specify a single (or generic) Termid or Transid to exclude from Field Merge optimization	blank
Exclude by: Table	lets you specify a table (list of Termids or Transids) to exclude from Field Merge optimization	blank

Including/Excluding Printers in Field Merge Optimization

Summary: You can control whether CRTs, printers, Transids, and Termids are included in or excluded from Field Merge optimization.

To include and exclude data streams for all CRTs and printers optimization techniques, perform the following steps:

Step 1 Examine the **CRTs** and **Printers Status** fields.

Step 2 If the devices that you want to include or exclude are CRTs, turn on **CRT Status**.

Step 3 If the devices that you want to include or exclude are printers, turn on **Printer Status**.

Step 4 If you are excluding a single (or generic) Termid or Transid, type the name in the appropriate box under **Single**.

The named devices will be included in, or excluded from, optimization.

Step 5 If you are excluding a list of Termids or Transids, type the name in the appropriate box under **Table**.

The devices that are listed in the table will be included in, or excluded from, optimization.

Step 6 Perform one of the following steps:

- Press **Enter** to save the changes and remain on this panel.
- Press **F3** to save changes and return to the Monitor Primary Menu.

Displaying the Blank Elimination Panel

Summary: In this task, you will display the Blank Elimination panel.

To display the Blank Elimination panel (Figure 4-12), perform the following steps:

Step 1 Select option **1** on the Monitor Primary Menu.

Step 2 Press **Enter**.

The Optimization Control Menu is displayed.

Step 3 Select option **1.4.2**.

Step 4 Press **Enter**.

The Blank Elimination panel is displayed.

Figure 4-12 Blank Elimination Panel

```
(1.4.2)                    3270 SUPEROPTIMIZER/CICS          February 25, 2001
Option. . ______                Blank Elimination                      20:07:17
                                 CICSID:CICSJXE

CRTs . . . . . . . . . . _   *. On   Status. . . : On
                             2. Off

Printers . . . . . . . . _   *. On   Status. . . : On
                             2. Off

For a single entry, type the entry under Single. For a table of entries, type
the table name under Table. To edit the table, type action E=Edit. To A=Add or
D=Delete a single entry in the table, type the Action, single entry and table.

 Exclude by:             Action   Single     Table
          Termid . . . .   _     ________   ________
          Transid. . . .   _     ________   ________




F1=Help  F2=Keys  F3=End  F4=Return  F6=Case  F9=Print  F10=Table List
```

Table 4-13 describes the fields on the Blank Elimination panel.

Table 4-13 Blank Elimination Panel Fields

Field	Purpose	Default
CRTs	controls the optimization of all data streams that are sent to CRTs Set **CRTs** to **On** to use the Blank Elimination feature to optimize all data streams that are sent to CRTs. When **CRTs** is Off, data streams sent to CRTs are not optimized by using the Blank Elimination feature.	On
Status	displays the current status of optimization for all data streams that are sent to CRTs	On
Printers	controls the optimization of all data streams that are sent to printers Set **Printers Status** to **On** to use the Blank Elimination feature to optimize all data streams that are sent to printers. When **Printers Status** is Off, data streams that are sent to printers are not optimized by using the Blank Elimination feature.	On
Status	displays the current status of optimization for all data streams that are sent to printers.	On
Action	lets you specify an action when working with tables Valid actions are as follows: • A to add a single (or generic) Termid or Transid to a table • D to delete a single (or generic) Termid or Transid from a table • E to edit a table (list of Termids or Transids) **Note:** This field is not used with single entries.	blank
Exclude by: Single	lets you specify a single (or generic) Termid or Transid to exclude from Blank Elimination optimization	blank
Exclude by: Table	lets you specify a table (list of Termids or Transids) to exclude from Blank Elimination optimization	blank

Including/Excluding for Blank Elimination Optimization

Summary: You can control whether CRTs, printers, Termids, and Transids are excluded from Blank Elimination optimization.

To include or exclude data streams for all CRTs or printers for optimization techniques, perform the following steps:

Step 1 Examine the **CRTs** and **Printers Status** fields.

Step 2 If the devices that you want to include or exclude are CRTs, turn on **CRT Status**.

Step 3 If the devices that you want to include or exclude are printers, turn on **Printer Status**.

Step 4 To exclude a single Termid or Transid, type the name in the appropriate box under **Single**.

The named device is excluded from optimization.

Step 5 To exclude a list of Termids or Transids, type the name in the appropriate box under **Table**.

The named devices are excluded from optimization.

Step 6 Perform one of the following steps:

- Press **Enter** to save the changes and remain on this panel.
- Press **F3** to save changes and return to the Monitor Primary Menu.

Displaying the Non-Display Fields Panel

Summary: In this task, you will display the Non-Display Fields panel.

To display the Non-Display Fields panel (Figure 4-13), perform the following steps:

Step 1 Select option **1** on the Monitor Primary Menu.

Step 2 Press **Enter**.

The Optimization Control Menu is displayed.

Step 3 Select option **1.4.3**.

Step 4 Press **Enter**.

The Non-Display Fields panel is displayed.

Figure 4-13 Non-Display Fields Panel

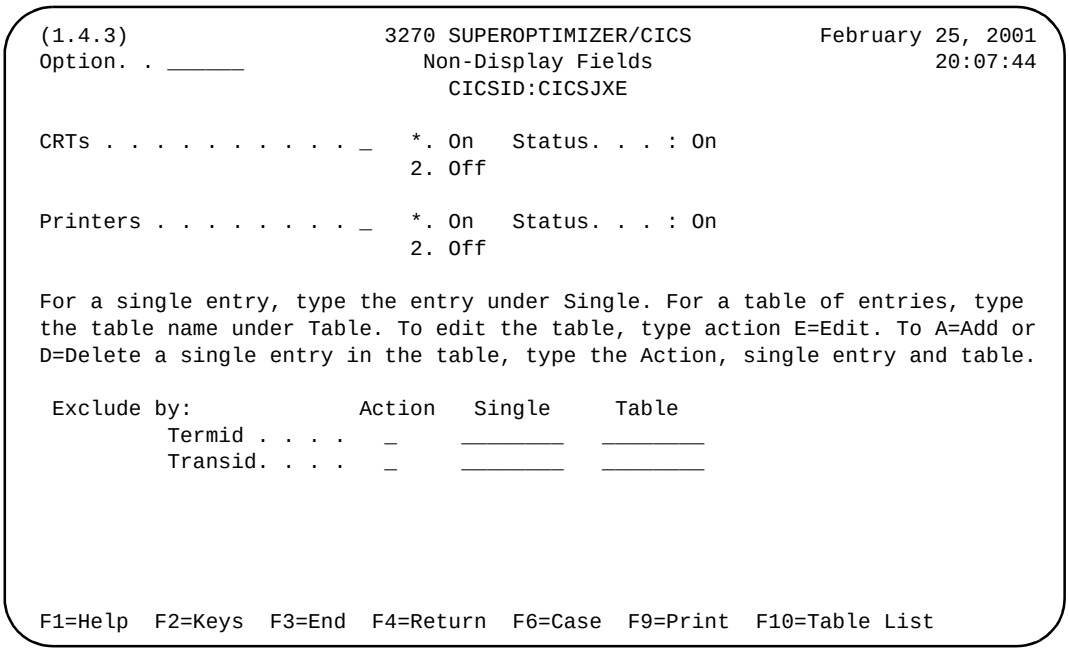


Table 4-14 describes the fields on the Non-Display Fields panel.

Table 4-14 Non-Display Fields Panel Fields

Field	Purpose	Default
CRTs	controls the optimization of all data streams that are sent to CRTs Set **CRTs** to **On** to use the Non-Display Fields feature to optimize all data streams that are sent to CRTs. When **CRTs** is Off, data streams that are sent to CRTs are not optimized by using the Non-Display Fields feature.	On
Status	displays the current status of optimization for all data streams that are sent to CRTs	On
Printers	controls the optimization of all data streams that are sent to printers Set **Printers** to **On** to use the Non-Display Fields feature to optimize all data streams that are sent to printers. When **Printers** is Off, data streams that are sent to printers are not optimized by using the Non-Display Fields feature.	On
Status	displays the current status of optimization for all data streams that are sent to printers	NA
Action	lets you specify an action when working with tables Valid actions are as follows: • A to add a single (or generic) Termid or Transid to a table (list of Termids or Transids) • D to delete a single (or generic) Termid or Transid from a table (list of Termids or Transids) • E to edit a table (list of Termids or Transids) **Note:** This field is not used with single entries.	blank
Exclude by: Single	lets you specify a single (or generic) Termid or Transid to exclude from Non-Display Fields optimization	blank
Exclude by: Table	lets you specify a table (list of Termids or Transids) to exclude from Non-Display Fields optimization	blank

Excluding for Non-Display Fields Optimization

Summary: You can control whether CRTs, printers, Termids, and Transids are excluded from Non-Display Fields optimization.

To include and exclude data streams for all CRTs and printers optimization techniques, perform the following steps:

Step 1 Examine the **CRTs** and **Printers Status** fields.

Step 2 To exclude CRTs, turn on **CRT Status**.

Step 3 To exclude printers, turn on **Printer Status**.

Step 4 To exclude a single (or generic) Termid or Transid, type the name in the appropriate box under **Single**.

The named devices are excluded from optimization.

Step 5 To exclude a list of Termids or Transids, type the name in the appropriate box under **Table**.

The devices that are listed in the table are excluded from optimization.

Step 6 Perform one of the following steps:

- Press **Enter** to save the changes and remain on this panel.
- Press **F3** to save changes and return to the Monitor Primary Menu.

Displaying the Attribute Elimination Panel

Summary: In this task, you will display the Attribute Elimination panel.

To display the Attribute Elimination panel (Figure 4-14), perform the following steps:

Step 1 Select option **1** on the Monitor Primary Menu.

Step 2 Press **Enter**.

The Optimization Control Menu is displayed.

Step 3 Select option **1.4.4**.

Step 4 Press **Enter**.

The Attribute Elimination panel is displayed.

Figure 4-14 Attribute Elimination Panel

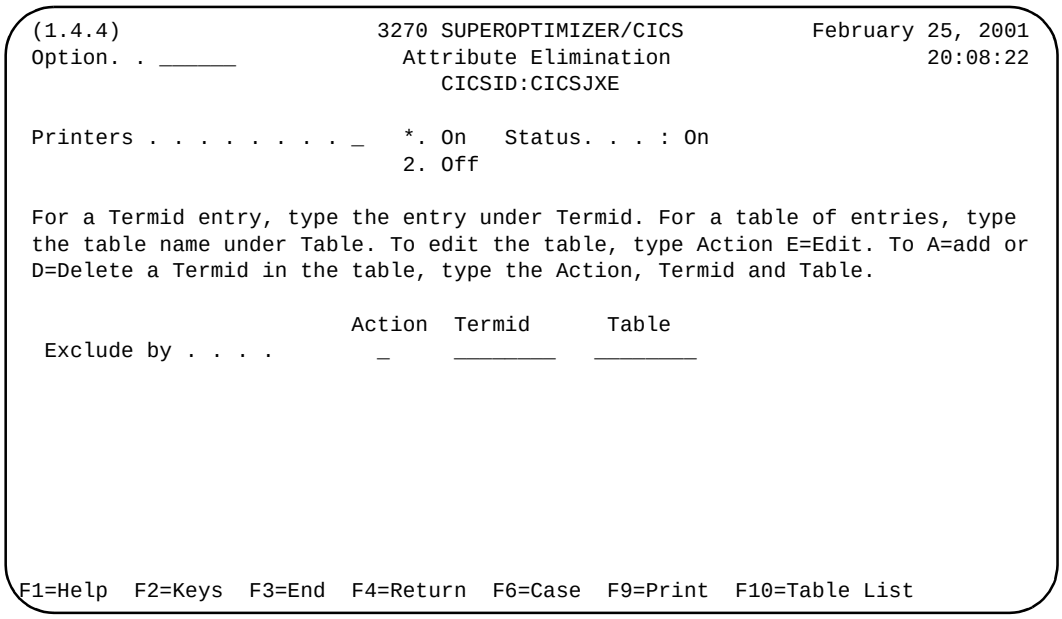


Table 4-15 describes the fields on the Attribute Elimination panel.

Table 4-15 Attribute Elimination Panel Fields

Field	Purpose	Default
Printers	controls the optimization of all data streams that are sent to printers Set **Printers** to **On** to use the Attribute Elimination feature to optimize all data streams that are sent to printers. When **Printers** is Off, data streams that are sent to printers are not optimized by using the Attribute Elimination feature.	On
Status	displays the current status of optimization for all data streams that are sent to printers.	On
Action	lets you specify an action when you are working with tables Valid actions are as follows: • A to add a single (or generic) Termid to a table • D to delete a single (or generic) Termid from a table • E to edit a table (list of Termids) **Note:** This field is not used with single entries.	blank
Exclude by: Termid	lets you specify a single (or generic) Termid to exclude from Attribute Elimination optimization	blank
Exclude by: Table	lets you specify a table (list of Termids) to exclude from Attribute Elimination optimization	blank

Excluding Data Streams from Attribute Elimination Optimization

Summary: You can control whether printers and Termids are excluded from Attribute Elimination optimization.

To exclude data streams for printers from optimization techniques, perform the following steps:

Step 1 Examine the **Printers Status** field.

Step 2 For partial optimization, set **Status** to **On**.

Step 3 To exclude a single Termid, type the Termid name in the appropriate box under **Single**.

The named device is excluded from optimization.

Step 4 To exclude a list of Termids, type the Termid table name in the appropriate box under **Table**.

The named devices are excluded from optimization.

Step 5 Perform one of the following steps:

- Press **Enter** to save the changes and remain on this panel.
- Press **F3** to save changes and return to the Monitor Primary menu.

How to Use User Exits

SUPEROPT provides the following user exits:

- Inbound Before Optimization
- Inbound After Optimization
- Outbound Before Optimization
- Outbound After Optimization
- Terminal Name Change (inbound and outbound)

For instructions on creating user exit programs, see the *3270 SUPEROPTIMIZER/CICS Customization Guide.* A sample user exit program is also provided.

Activating a User Exit

To activate your user exit program, type the name of your program in the appropriate **Program ID** field on the User Exits panel (Figure 4-15 on page 4-64).

The library that contains the program must be available to CICS. In addition, the program must have an entry in the Program Processing Table (PPT) and must be enabled.

Deactivating a User Exit

To stop a user exit program, blank out the name of the program in the appropriate **Program ID** field on the User Exits panel.

Inbound Before Optimization Exit

This user exit lets you perform the following actions:

- remove any non-3270 data from the data stream that was inserted by the hardware
- correct data stream errors before the Optimizer processes the data stream

Inbound After Optimization Exit

This user exit lets you translate inbound data streams. Fields can be inserted or removed, as long as the *data stream length does not exceed the size of the storage area that is provided.*

Outbound Before Optimization Exit

This user exit lets you further preprocess output data streams or include/exclude output data streams from optimization. Directions that are received from the user exit program override existing options as follows:

- If the program excludes a data stream, the Optimizer completely bypasses the data stream.
- If the program includes a data stream, all other selection criteria are bypassed, and the data stream is optimized.

This exit lets you change which optimization techniques are used or exclude a portion of the data stream from optimization.

Outbound After Optimization Exit

This user exit lets you insert or change data in the data stream that is being transmitted to the device. This exit is *not* recommended for data stream processing, because the optimized data stream will be much more complex than the original data stream, and the Optimizer will not detect data stream errors that are generated in the exit.

Terminal Name Change Exit

This user exit lets you pass a terminal ID to the Optimizer that is different from the name found in the terminal control table (TCT). The terminal ID is used by the Optimizer for include and exclude control and for tracking statistics. No changes are made to any CICS control blocks by this exit.

SUPEROPT uses this exit for inbound and outbound data streams.

Displaying the User Exits Panel

Summary: All user exits are controlled from the User Exits panel. In this task, you will display the User Exits panel.

To display the User Exits panel (Figure 4-15), perform the following steps:

Step 1 Select option 1 on the Monitor Primary Menu.

Step 2 Press **Enter**.

The Optimization Control Menu is displayed.

Step 3 Select option **1.5.1**.

Step 4 Press **Enter**.

The User Exits panel is displayed.

Figure 4-15 User Exits Panel

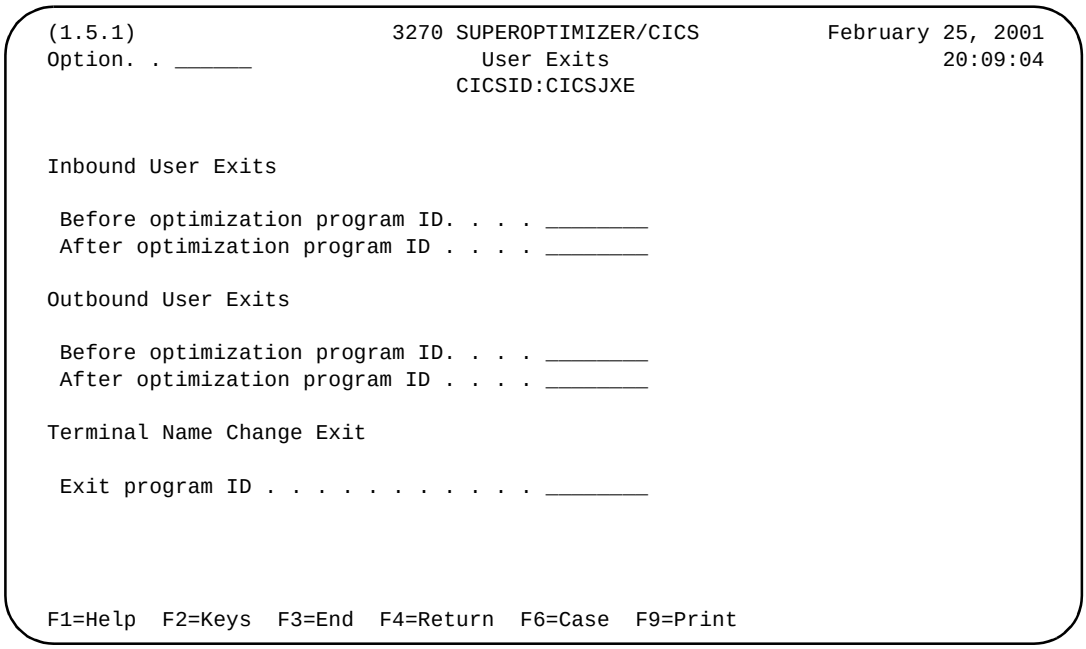


Table 4-16 describes the fields on the User Exits panel.

Table 4-16 User Exits Panel Fields

Field		Definition	Default
Inbound User Exits	**Before optimization program ID**	name of an inbound user exit program before optimization	blank
	After optimization program ID	name of an inbound user exit program after optimization	blank
Outbound User Exits	**Before optimization program ID**	name of an outbound user exit program before optimization	blank
	After optimization program ID	name of an outbound user exit program after optimization	blank
Terminal Name Change Exit	**Exit program ID**	name of a Terminal Name Change user exit program	blank

How to Control Storage That Is Used by the Optimizer

SUPEROPT lets you control the use of virtual storage that is required by the Optimizer. The following options are provided for controlling storage:

- Imaging and SCS Storage (1.6.1)
- Storage Compression (1.6.1)
- Work Area Storage (1.6.2)
- Dynamic Terminal and Transid Areas (1.6.3)

Imaging and SCS Storage Option

Imaging and SCS Printers optimization techniques use virtual storage to save data. The Optimizer uses the Imaging and the SCS Printer optimization techniques to optimize as many data streams as possible, by using the amount of storage that is allocated to the Optimizer. If the amount of allocated storage is insufficient, the Optimizer uses Conventional optimization for any additional data streams (except those for SCS printers) when storage is exhausted. The Imaging panel displays the number of data streams that are excluded from Imaging and SCS Printer optimization because of insufficient storage.

You can change the amount of allocated storage at any time. There is no need to stop the Optimizer. If you are using the extended architecture (XA) option of CICS 1.7 or later in an MVS/ESA, OS/390, z/OS, or VSE/ESA 1.3 or later environment, the storage that you allocate is obtained from extended private storage (above the 16 MB line). If you are using CICS 3.0 or later, storage is obtained from Extended DSA (EDSA).

Warning! If you do not use the correct resource definition online (RDO) definitions, and SUPEROPT is not started from the PLT, the product will use EUDSA (*not* ECDSA) to obtain storage.

Allocating Imaging Storage

The amount of Imaging storage that you allocate to the Optimizer must be a multiple of *four* (for example, 16, 32, 64, 1024). The maximum amount that you can allocate depends on the operating system environment. Table 4-17 shows the maximum amount of storage for each environment.

Table 4-17 Storage Allocation by Operating System

Operating System Environment	Storage Allocation Size
MVS/ESA, OS/390, or z/OS with the XA option of CICS	0 to 2,097,144 KB
All other environments	0 to 16,376 KB

For each terminal that is optimized, the Optimizer requires approximately the amount of storage that is listed in Table 4-18.

Table 4-18 Imaging Storage Required for Each Terminal

Compression Percentage	Imaging Storage for Each Terminal
0%	2 KB
20-50%	1 KB
40-80%	512 bytes

If your terminal buffers are significantly larger than average, you might need more storage. For example, you could be using 3270 displays with a screen size of 43 by 80, or you could make extensive use of extended attributes.

If you are using the XA option of CICS 1.7 or later in an MVS/ESA, OS/390, or z/OS environment, the storage that you allocate is obtained above the 16 MB line. If you are using CICS 3.0 or later, storage is obtained from EDSA.

Note: Unless storage is at a premium, do *not* use compression.

Imaging and SCS Storage Management Considerations

Observe the following considerations when using the Imaging and SCS Storage optimization techniques:

- If no storage is allocated or it is not available, Imaging and SCS Storage optimization techniques are not used to optimize your data streams.
- If you are using Imaging optimization, 8 KB of the storage that you allocated is reserved by the Optimizer.
- To reduce the amount of virtual storage that is required by Imaging, the data can be reduced in size (compressed) before it is stored. Use the Imaging and SCS Storage panel (Figure 4-17 on page 4-75) to select the amount of storage compression that you want to use for stored images. For more information about this feature, see “Selecting the Amount of Storage Compression” on page 4-69.

Changing the Amount of Imaging Storage

To change the amount of storage allocated to the Optimizer, type the storage amount that you want to use in the **Allocation Size** field and press **Enter**.

The amount of storage that is allocated to the Optimizer is changed.

Displaying the Active Images by Termid List

To display a list of active images by Termid, type a non-blank character in the **List Active Images by Termid** field and press **Enter**.

The Active Images List panel is displayed.

Figure 4-16 shows a sample Active Image List panel. This panel lists active images by Termid.

Figure 4-16 Active Image List

```
(Active Images)            3270 SUPEROPTIMIZER/CICS            August 05, 2001
Option. . ______                Active Image List                     15:29:59
                                 CICSID:CICSMGF

Termid        Termid        Termid        Termid        Termid        Termid
ADC2          LBR1          IRA4

F1=Help  F2=Keys  F3=End  F7=Scroll Up  F8=Scroll Down
```

Selecting the Amount of Storage Compression

The Storage Compression option reduces the amount of virtual storage that is used by Imaging optimization. This option compresses the data that is saved in the Imaging and SCS storage area. If you have a limited amount of virtual storage and can tolerate an increase in the amount of CPU time that is used by the Optimizer, use Storage Compression to take full advantage of Imaging optimization.

To help you determine how much storage compression to use for a storage-constrained environment, see the example on page 4-71.

Select the amount of storage compression to use for Imaging optimization on the Imaging and SCS Storage panel.

Allocating Data Stream Work Areas

The Optimizer uses the data stream work area to hold a copy of the data stream that is being optimized. This feature lets you increase or decrease the amount of virtual storage that the Optimizer uses for its data stream work areas. Two data stream work areas are required. The size of each area should be the size of the largest data stream that you want optimized.

If the work area is insufficient to hold a data stream, the data stream is not optimized. Review the statistics that are displayed on the Work Area Storage panel to determine whether any data streams are not being optimized because the data stream work area is too small. If data streams are not being optimized, increase the amount of storage that is allocated for the data stream work area.

You can determine the amount of storage that is required by starting the Optimizer and letting it run for a while. Then check the Work Area Storage panel to determine the size of the largest data stream that the Optimizer processed. This number is shown in bytes. Round the number up to the nearest kilobyte. For example, if the largest data stream processed was 1,452 bytes, round this number to 2 KB.

Warning! If you set the data stream work area value too low, invalid data streams can be sent to a terminal, causing a terminal error such as a PROG40*x*.

Changing the Amount of Data Stream Storage

To change the amount of storage that is allocated to the Optimizer for data stream storage, type the storage amount you want to use (any number from 1 to 31) in the **Data stream storage size** field and press **Enter**.

Allocating 3270 Buffer Storage Areas

The Optimizer uses 3270 buffer storage areas to hold the 3270 buffer that is associated with the data stream that is being optimized. This feature lets you increase or decrease the amount of virtual storage that the Optimizer uses for its 3270 buffer storage areas. Three 3270 buffer storage areas are required. The size of each area should be the size of the largest 3270 terminal size that you want optimized.

If the 3270 buffer storage area is insufficient to hold the 3270 buffer, the data stream is not optimized. Review the statistics that are displayed on the Work Area Storage panel to determine whether any data streams are not being optimized because the 3270 buffer storage area is too small. If data streams are not being optimized, increase the amount of storage that is allocated for 3270 buffer storage.

You can determine the amount of required storage by starting the Optimizer and letting it run for a while. Then check the Work Area Storage panel to determine the size of the largest 3270 buffer that is required by the Optimizer. This number is shown in bytes. Round the number up to the nearest kilobyte. For example, if the largest 3270 buffer required was 1,952 bytes, round this number to 2 KB.

Warning! If you set the 3270 buffer storage area value too low, invalid data streams can be sent to a terminal, causing a terminal error such as a PROG40*x*.

To calculate the amount of required storage, multiply the largest number of required rows by the largest number of columns, multiply by three, then round the product to the next highest kilobyte:

(largest number of required rows) × (largest number of columns) × 3 = amount of required storage in bytes

Round product to next highest kilobyte.

Example

The largest device is a model 5 with 27 rows and 132 columns.

$27 \times 132 \times 3 = 10{,}692$ bytes

Round 10,692 bytes to the next highest kilobyte; use 11 KB.

Changing the Amount of Allocated 3270 Buffer Storage

To change the amount of storage that is allocated to the Optimizer for 3270 buffer storage, type the storage amount that you want to use (use any number from 1 to 31) in the **3270 Buffer Storage Size** field and press **Enter**.

Using the Dynamic Terminal and Transid Areas Option

You can use the Dynamic Terminal and Transid Areas option to perform the following actions:

- turn the REUSE option on and off
- control the allocation of Dynamic Terminal Areas
- control the allocation of Transid Statistic Areas

The Dynamic Terminal and Transid Area panel also displays statistics on the Optimizer's use of the Dynamic Terminal Areas and Transid Statistic Areas.

If you are using the XA option of CICS 1.7 or later in an MVS/ESA, OS/390, or z/OS environment, the storage that you allocate is obtained above the 16 MB line. If you are using CICS 3.0 or later, storage is obtained from EDSA.

Warning! If you do not use the correct resource definition online (RDO) definitions, and SUPEROPT is not started from the PLT, the product will use EUDSA (*not* ECDSA) to obtain storage.

Using the REUSE Option

The Optimizer uses each Dynamic Terminal Area for a single terminal only. When the REUSE option is set to YES, each area can be reused by another terminal after a CLSDST is received from the terminal that is assigned the area. If REUSE=YES, the Optimizer uses more CPU time but less storage for Dynamic Terminal Areas.

BMC Software recommends that you specify REUSE=NO. If your Autoinstall program uses arbitrary or sequential Termids such that a terminal is assigned a different Termid each time it logs on, optimize by Netname. If optimizing by Netname is not possible, specify **REUSE=YES** so that the DTA can be used by another terminal.

Allocating Dynamic Terminal Areas

The Optimizer allocates 100 bytes of storage for each terminal that logs on through the Autoinstall (automatic installation of terminals) feature of CICS/VS 1.7 or later. This 100-byte dynamic terminal area (DTA) is for the exclusive use of the autoinstalled terminal.

The number of DTAs is set with the **Dynamic Terminal Areas Number allocated** field on the Dynamic Terminal and Transid Areas panel (Figure 4-19 on page 4-79). If this number is insufficient for the number of terminals that are logged on, data streams for terminals that could not allocate a DTA *will not be optimized*. Review the statistics for **Data streams not optimized** and **Too few dynamic terminals** on the Dynamic Terminal and Transid Areas panel to determine how many DTAs are lacking. Increase the number of DTAs that are allocated to reflect the maximum number of terminals to be signed on at a time.

If your Autoinstall program uses arbitrary or sequential Termids such that a terminal is assigned a different Termid each time it logs on, see “Using the REUSE Option” on page 4-72.

Terminals that are defined in the TCT have terminal areas allocated for them internally when the Optimizer is initialized. These areas are not part of the DTA.

Changing the Number of Allocated Dynamic Terminal Areas

To change the number of DTAs that are allocated to the Optimizer, type the number of DTAs that you want to use (any number from 1 to 32,767—each area is 92 bytes) in the **Dynamic Terminal Areas Number allocated** field and press **Enter**.

The number of DTAs that are allocated to the Optimizer is changed.

Allocating Transid Statistic Areas

The Optimizer saves 48 bytes of information for every unique transaction ID that is processed. Each 48-byte area is called a *Transid area*. When the Optimizer is initially started, the Monitor allocates no Transid statistic areas.

To display or print data stream statistics by Transid, you must use the Transid Statistics Areas option.

The Optimizer collects statistics for as many Transids as there are Transid statistic areas. If all Transid areas are used, the Optimizer will not collect statistics for any new Transids. Review the statistics that are displayed on the Dynamic Terminal and Transid Areas panel to determine whether you need to increase the number of Transid statistic areas that are allocated.

To change the number of Transid statistic areas that are allocated to the Optimizer, type the number of Transid statistic areas that you want to use (any number from 1 to 32,767) in the **Transid Statistic Areas Number allocated** field and press **Enter**.

The number of Transid Statistic Areas that are allocated to the Optimizer is changed.

Displaying the Imaging and SCS Storage Panel

Summary: In this task, you will display the Imaging and SCS Storage panel.

To display the Imaging and SCS Storage panel (Figure 4-17), perform the following steps:

Step 1 Select option **1** on the Monitor Primary Menu.

Step 2 Press **Enter**.

The Optimization Control Menu is displayed.

Step 3 Select option **1.6.1**.

Step 4 Press **Enter**.

The Imaging and SCS Storage panel is displayed.

Figure 4-17 Imaging and SCS Storage Panel

```
(1.6.1)                    3270 SUPEROPTIMIZER/CICS             March 30, 2001
Option. . ______             Imaging and SCS Storage                  21:26:27
                                 CICSID:CICSJXE

Allocation Size . . . . . .     2048 K
List Active Images by Termid. . . . . _

Select a storage compression percentage from below.
_ * . 0%                         Status. . . :     0 %
  2 . 20-50%
  3 . 40-80%


 Compression Percentage. . . . . :        0.0 %
 Termid currently active . . . . . : L3ABE3
 Number of terminals active. . . . . :          1
 Current storage used. . . . . :          3 K
 Peak Storage Used . . . . . :          3 K



F1=Help  F2=Keys  F3=End  F4=Return  F6=Case F9=Print  F10=Table List
```

Table 4-19 lists the fields that are displayed on the Imaging and SCS Storage panel.

Table 4-19 Imaging and SCS Storage Panel Fields

Field	Definition	Default
Allocation Size	amount of storage, in kilobytes (KB), currently allocated to Imaging and SCS Printer optimization	varies from 4 KB to 2048 KB and depends on your operating system environment and the number of terminals that you are optimizing
List Active Images by Termid	lets you display a list of all Termids with an active image	blank
Select a storage compression percentage from below	lets you select the amount of storage compression You can select 0%, 20-50%, or 40-80%.	0%
Status	displays the amount of storage compression that is used by the Optimizer	NA
Compression Percentage	represents the average percentage reduction of all data streams	NA
Termid currently active	Termid (or VTAM Netname) of the last active terminal for which data was saved	NA
Number of terminals active	number of terminals (both CRTs and printers) being supported by the amount of storage that is allocated to the Optimizer	varies depending on the number of terminals you are optimizing
Current storage used	amount of storage (in kilobytes) that is being used for Imaging and SCS Printers optimization	varies depending on the number of terminals that you are optimizing
Peak Storage Used	maximum amount of storage (in kilobytes) that is used for optimization	varies depending on the number of terminals that you are optimizing

Using the Work Area Storage Panel

Summary: You can use the Work Area Storage panel to increase or decrease the amount of virtual storage that the Optimizer needs for data streams and 3270 buffers. The Work Area Storage panel also displays statistics on the Optimizer's use of the data stream storage and the 3270 buffer storage.

Note: If you are using the XA option of CICS 1.7 or later in an MVS/ESA, OS/390, or z/OS environment, the storage that you allocate is obtained above the 16 MB line. If you are using CICS 3.0 or later, storage is obtained from EDSA.

You can change the amount of allocated storage at any time. You do not need to stop the Optimizer. To display the Work Area Storage panel (Figure 4-18 on page 4-78), perform the following steps:

Step 1 Select option **1** on the Monitor Primary Menu.

Step 2 Press **Enter**.

The Optimization Control Menu is displayed.

Step 1 Select option **1.6.2**.

Step 2 Press **Enter**.

The Work Area Storage panel is displayed.

Figure 4-18 shows the Work Area Storage panel.

Figure 4-18 Work Area Storage Panel

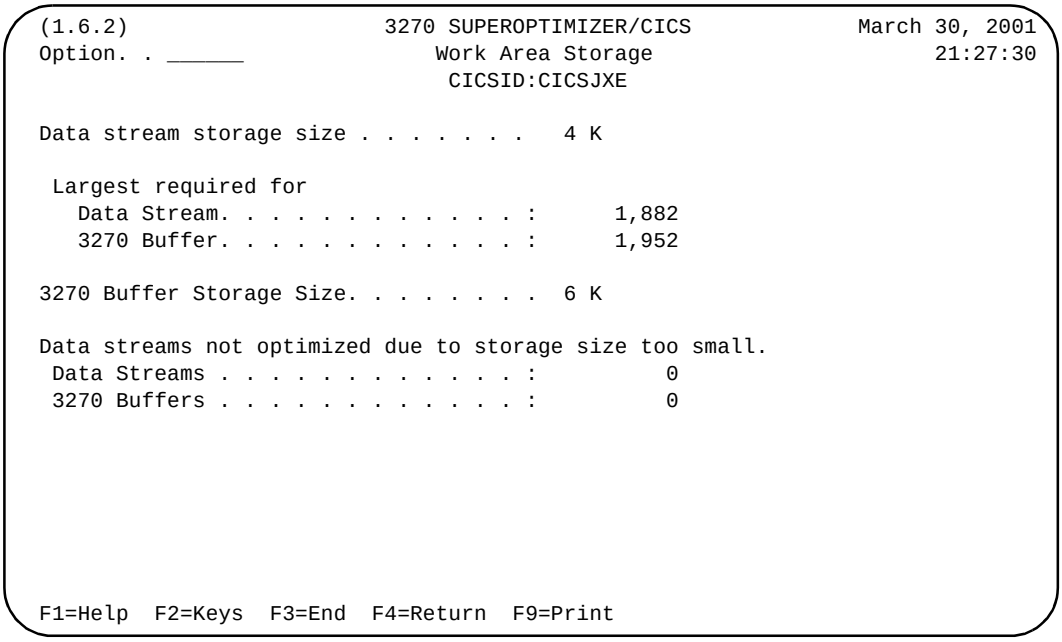


Table 4-20 describes the fields on the Work Area Storage panel.

Table 4-20 Work Area Storage Panel Fields

Field		Definition	Default
Data Stream Storage Size		lets you specify the amount of storage, in kilobytes (KB), that the Optimizer can use during data stream optimization You can use any number from 1 to 31. If you use a Data Stream Storage size of zero, the Optimizer cannot optimize your data streams.	4 KB *–or–* 31 KB[a]
Largest required for	Data Stream	size (in bytes) of the largest data stream that is processed by the Optimizer	
	3270 Buffer	size (in bytes) of the largest 3270 buffer that is used by the Optimizer	
3270 Buffer Storage Size		lets you specify the amount of storage, in kilobytes, that the Optimizer can use for 3270 buffers during data stream optimization You can use any number from 1 to 31.	6 KB *–or–* 31 KB[a]
Data streams not optimized due to storage size too small	Data Streams	number of data streams that were excluded from optimization because the allocated Data Stream Storage was insufficient.	
	3270 Buffers	number of data streams that were excluded from optimization because the allocated 3270 Buffer Storage was insufficient	

[a] If running in 31-bit mode, the default is 31 KB.

Displaying the Dynamic Terminal and Transid Areas Panel

Summary: You can change the number of allocated areas at any time. There is no need to stop the Optimizer.

To display the Dynamic Terminal and Transid Areas panel (Figure 4-19), perform the following steps:

Step 1 Select option **1** on the Monitor Primary Menu.

Step 2 Press **Enter**.

The Optimization Control Menu is displayed.

Step 3 Select option **1.6.3**.

Step 4 Press **Enter**.

The Dynamic Terminal and Transid Areas panel is displayed.

Figure 4-19 Dynamic Terminal and Transid Areas Panel

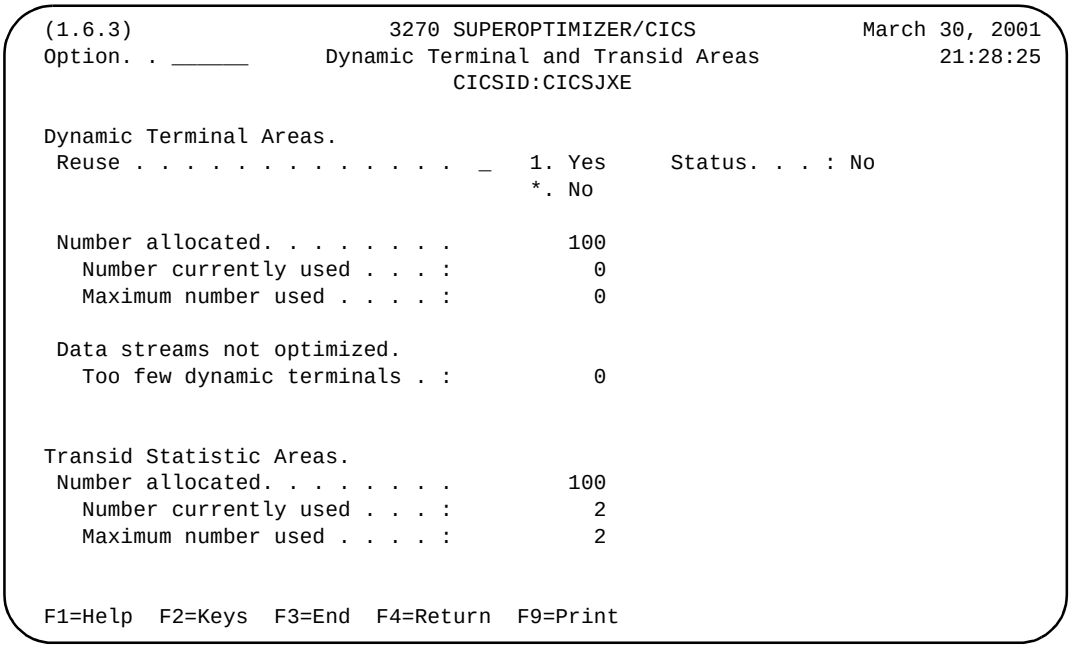


Table 4-21 describes the fields on the Dynamic Terminal and Transid Areas panel.

Table 4-21 Dynamic Terminal and Transid Areas Fields

Field		Definition	Default
Dynamic Terminal Areas	Reuse	lets you specify whether you want each Dynamic Terminal Area storage to be reused	No
	Number allocated	lets you specify the number of Dynamic Terminal Areas for the Optimizer to use You can use any number from 0 to 32,767. Each Dynamic Terminal Area requires 100 bytes. The default value appears on the Dynamic Terminal and Transid Areas panel.	varies from 0 to 100, depending on the release of CICS that you are using and the number of terminals that are supported by SUPEROPT
	Number currently used	number of Dynamic Terminal Areas being used	0
	Maximum number used	maximum number of Dynamic Terminal Areas used If the REUSE option has not been changed to **YES** since the Optimizer was last started, the **Maximum number used** equals the **Number currently used**.	0
	Data streams not optimized. Too few dynamic terminals	number of data streams excluded from optimization because the value for Dynamic Terminal Areas allocated was insufficient	0
Transid Statistic Areas	Number allocated	lets you specify the number of Transid Statistic Areas for the Optimizer to use You can use any number from 0 to 32,767.	0
	Number currently used	number of Transid Statistic Areas being used by the Optimizer	0
	Maximum number used	maximum number of Transid Statistic Areas that are used by the Optimizer	0

Chapter 5 Working with User Installation Tables

This chapter describes how to use the User Installation Tables option to perform the following actions:

- create a table
- add entries to a table
- repeat a table entry
- insert a blank table entry
- delete entries from a table
- edit a table
- save a table
- rename a table
- copy a table
- delete a table
- browse a table

This chapter presents the following topics:

How to Access the User Installation Tables Panel

The User Installation Tables option lets you create lists, or *tables*, of Termids, Transids, or TCAM QIDs to perform the following actions:

- exclude data streams from optimization
- include data streams in optimization
- report optimization statistics

You can access this option from the following menus or panels:

- Monitor Status Menu (option 4.1)
- any panel that has an **Action**, **Single**, and/or **Table** field to control data stream optimization

Note: For more information, see Chapter 3, "Using the Monitor." You can also use option 4.1 to ensure that your site is using the correct user installation tables

To use the tables option, you must have the COPOPT options file available.

To activate a table, you must connect it to the optimization option for which it was built. To connect the table, display the Monitor panel for the optimization option and type the table name in the appropriate table field on the panel.

Displaying the Status Menu

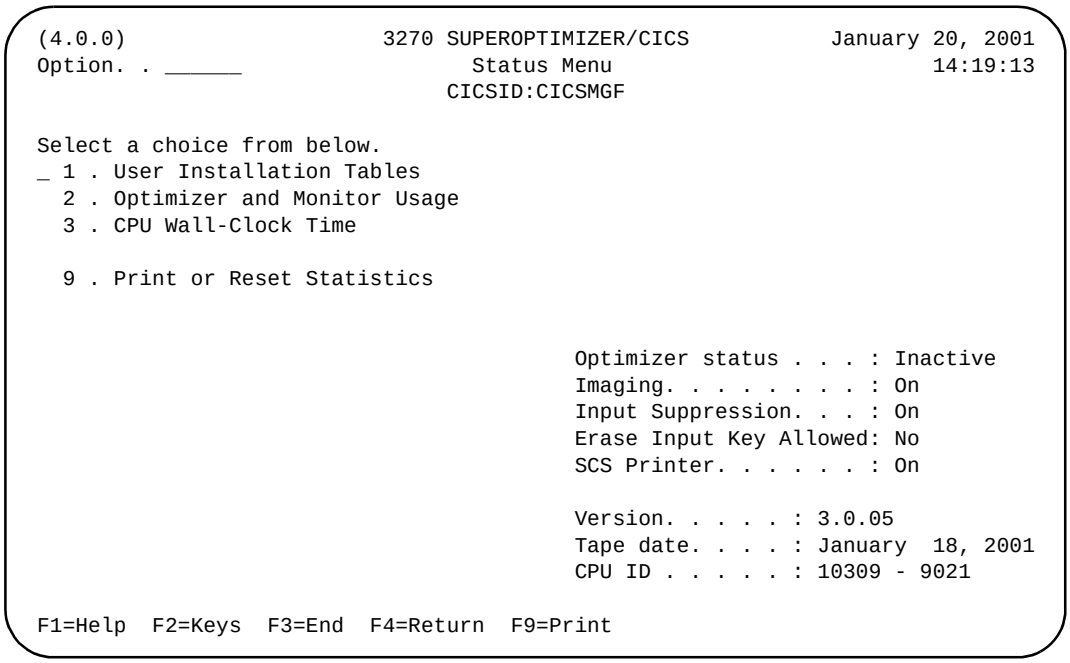
Summary: In this task, you will display the Status Menu.

Figure 5-1 shows the Monitor Status Menu. From this panel, you can select the User Installation Tables option to display the User Installation Tables (Table Build) panel. To access the Monitor Status Menu, perform the following steps:

Step 1 Select choice **4** on the Monitor's Primary Menu.

Step 2 Press **Enter**.

Figure 5-1 Monitor Status Menu



Displaying the User Installation Tables Panel

Summary: In this task, you will display the User Installation Tables panel.

To display the User Installation Tables panel (Figure 5-2) from the Monitor Status Menu, perform the following steps:

Step 1 Type **4** in the **Select a choice** field on the Monitor's Primary Menu.

Step 2 Press **Enter**.

The Status Menu is displayed.

Step 3 Select option **1**.

Step 4 Press **Enter**.

The User Installation Tables panel is displayed.

Figure 5-2 User Installation Tables Panel

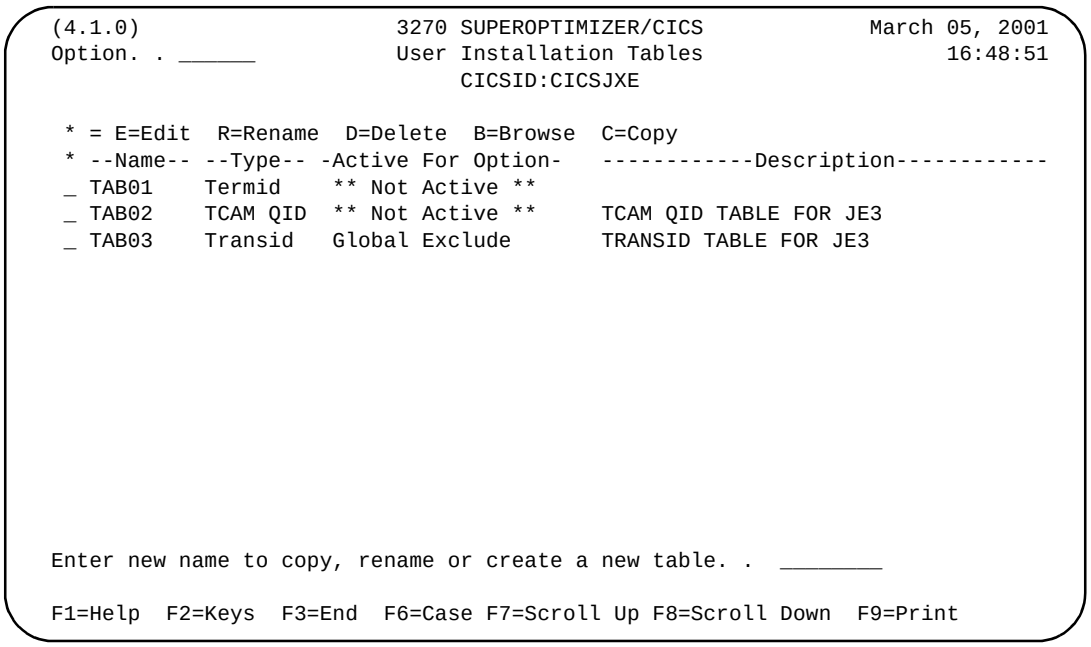


Table 5-1 describes the fields on the User Installation Tables panel.

Table 5-1 User Installation Tables Fields

Field	Definition
*	action that you want to perform on a table The following actions are allowed: • E for edit • R for rename • D for delete • B for browse • C for copy
Name	the name that you assigned to the table
Type	the contents of the table list The table type must be • Termid • Transid • TCAM QID
Active For Option	the option or feature that is associated with the table. If `**Not Active**` is displayed in this field, the table is not in use.
Description	a short (35 characters maximum) description that you enter when the table is created or whenever it is updated
Enter new name	the table name that you want assigned to a table that you are creating, renaming, or copying

To move up through the list of tables, use **Scroll Up** (**F7** or **F19**). To move down through the list of tables, use **Scroll Down** (**F8** or **F20**).

How to Use Monitor Include/Exclude Fields

You can include or exclude transactions, terminal IDs, or TCAM QIDs from certain optimization techniques. A data stream is first checked for exclusion before optimization processing begins. If it is not excluded, it is then checked for inclusion. Excludes and includes are processed in the following order:

1. exclude Termid
2. exclude Transid
3. exclude TCAM QID
4. include Termid
5. include Transid
6. include TCAM QID

The optimization feature must be turned on for any exclude or include processing to occur. Excluded entries override included entries. An excluded data stream will not be included. These rules apply to both single and table entries.

Example 1

To exclude terminal AC01 from Imaging optimization, go to the Imaging Optimization panel. Ensure that Imaging optimization is on for CRTs or printers or CRTs and printers, or no Imaging will occur. Then type **AC01** in the **Exclude by Termid Single** field.

Example 2

To include several transaction IDs in subsequent optimization features, go to the Global Optimization panel. Set Global Optimization Control on for CRTs or printers or CRTs and printers, or no optimization will occur. Create a list, or table, for those transaction IDs that you want to include. To exclude one of these transactions from a subsequent optimization feature, such as Blank Elimination, exclude the single transaction ID from that optimization feature.

Single Include/Exclude

Depending on the Monitor feature, a single Termid, Transid, or TCAM QID can be excluded or included dynamically from the Monitor.

Each single entry may cover more than one Termid or Transid if the entry is generic. A generic entry is indicated by an asterisk (*) in the entry.

Example

ABC* represents all Termids or Transids that begin with “ABC.”

AB** represents all Termids or Transids that begin with “AB.”

***ABC** represents all Termids or Transids that end with “ABC.”

Only one entry may be included/excluded. If you specify a new entry, the old entry will *not* be included or excluded.

If the same entry is entered for include and exclude, the entry will be excluded.

Note: TCAM QIDs cannot be part of a generic entry.

Multiple Includes/Excludes

You can create a table to include or exclude multiple Termids, Transids, or TCAM QIDs. Instructions for creating these tables begin with “Creating a Table from the Monitor Status Menu” on page 5-12.

Controlling Data Stream Optimization

The Monitor provides three types of fields for controlling the optimization of data streams: **Single**, **Table**, and **Action**. The following options have one or more panels with at least one of these fields:

- Global Optimization Control (1.1)
- Imaging (1.2)
- Selective Optimization (1.3)
- Conventional and Imaging features (1.4)
- Summary of Data Streams Optimized (2.1)
- Data Streams Optimized by Termid/Transid (2.2)

You can use these fields when you need to perform the following actions:

- specify a single Termid, Transid, or TCAM QID
- create or edit a table of Termids, Transids, or TCAM QIDs
- add or delete entries to a table without displaying the Table Build panel

To create a table, the COPOPT options file must have been created and allocated to CICS. For more information about this feature, see the *3270 SUPEROPTIMIZER/CICS Customization Guide*.

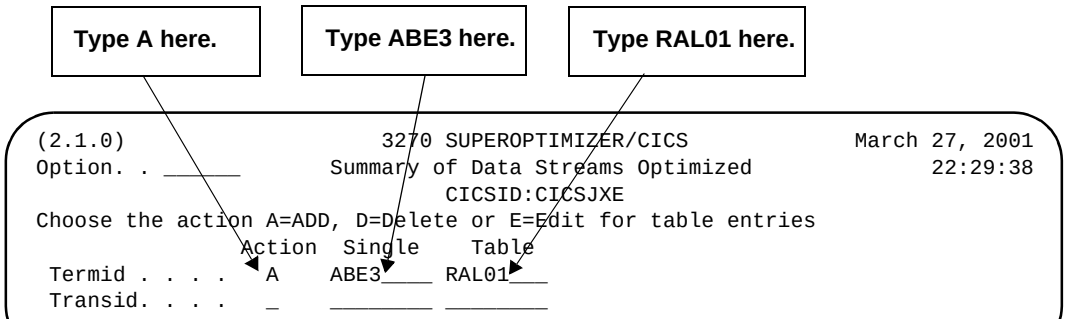
Note: **F1** through **F24**, **PA1**, and **PA2** are considered a TASKREQ, not a Transid. They cannot be used as an include/exclude entry. **PA3** will function correctly as a Transid.

Action Field

The **Action** field lets you specify an action to perform on a table of Termids, Transids, or TCAM QIDs. Valid entries in this field are as follows:

- A for add
- D for delete
- E for edit

For example, to add the Termid ABE3 to the table RAL01, type **A** in the **Action** field, **ABE3** in the **Single Termid** field, and **RAL01** in the **Termid Table** field as shown in the following figure.



The entry is added to the table, and the table remains in effect for this option.

Single Field

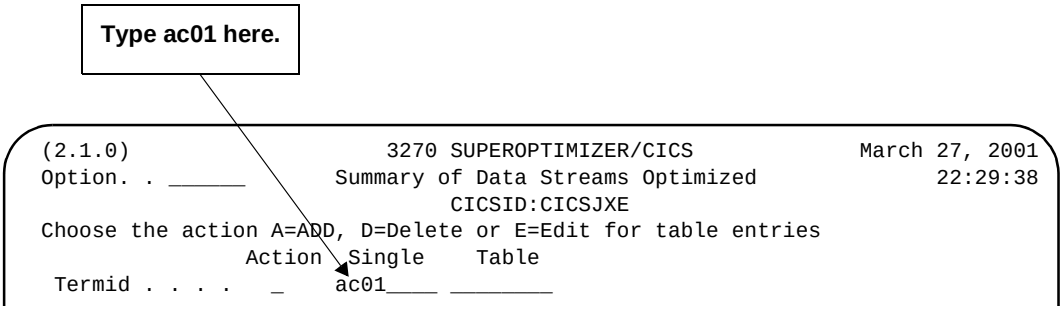
Use the **Single** field to perform the following actions:

- exclude a single Termid, Transid, or TCAM QID from an optimization technique or feature
- include a single Termid, Transid, or TCAM QID in an optimization technique or feature
- list statistics for a single Termid, Transid, or TCAM QID

You can also use a generic entry in the **Single** field.

When you use the **Single** entry field, do *not* enter an action in the **Action** field or specify a table name in the **Table** field.

The following example shows an entry of ac01 in the **Single Termid** field:



Note: If you type a new entry in the **Single** field, you replace the old entry (which is no longer active). To remove a single entry, type blanks in the field. If you require more than a single entry, build a table.

Table Field

Use the **Table** field with the **Action** field to create a table, add entries to a table, or delete an entry in a table.

Creating a Table from the Monitor Status Menu

Summary: Use the User Installation Tables (Table Build) panel to add the names of Termids, Transids, or TCAM QIDs to a user installation table.

To create a table from the Monitor Status Menu, perform the following steps:

Step 1 Type **4** in the **Select a choice** field on the Monitor's Primary Menu panel.

Step 2 Press **Enter**.

The Status Menu is displayed.

Step 3 Select option **1**.

Step 4 Press **Enter**.

The User Installation Tables panel (Figure 5-2 on page 5-5) is displayed.

Step 5 Type a table name in the **Enter new name** field.

Step 6 Press **Enter**.

The first User Installation Tables (Table Build) panel is displayed.

Step 7 Type a table type in the **Table Type** field.

Valid entries are as follows:

- Termid
- Transid
- TCAM QID

The second User Installation Tables (Table Build) panel is displayed.

Step 8 Press **Enter**.

Step 9 Type the names of the entries that you want in the table.

Step 10 Press **F3** or **F15** (END) to save your entries.

The Monitor creates a table, using the table name from Step 5.

Creating a Table from an Optimization Panel

Summary: You can create tables from a data stream optimization panel if the panel contains Action, Single, and Table fields. The **Action** field lets you use the Edit (E) action to display the Table Build panel and add one or more entries. For more information about using the applicable panels, see "How to Use Monitor Include/Exclude Fields" on page 5-7.

To create a table from an optimization panel, perform the following steps:

Step 1 Type **E** in the **Action** field of the Optimization Control Menu submenu panel that is displayed.

Step 2 Type the name of the new table in the **Table** field.

Step 3 Press **Enter**.

The User Installation Tables (Table Build) panel is displayed.

Step 4 Type the names of the entries that you want in the table.

Step 5 Press **F3** to save your entries.

The Monitor creates a table, using the table name from Step 2.

Figure 5-3 and Figure 5-4 show the User Installation Tables (Table Build) panels. In this section, these panels are referred to as the Table Build panels.

Figure 5-3 Table Build Panel for Specifying Table Type

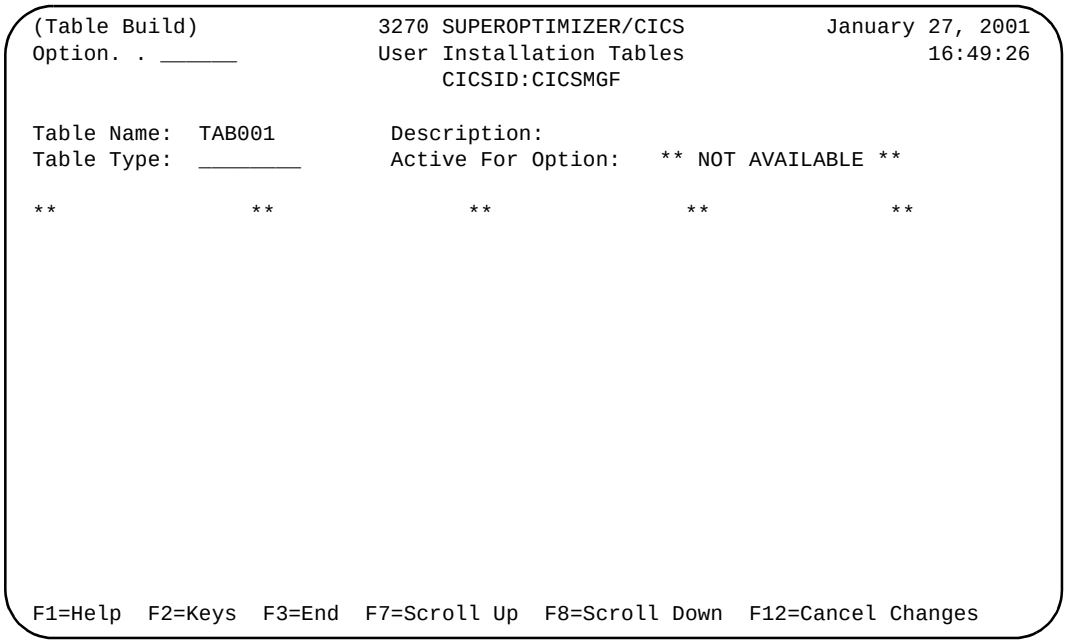


Figure 5-4 Table Build Panel for Excluding Transids

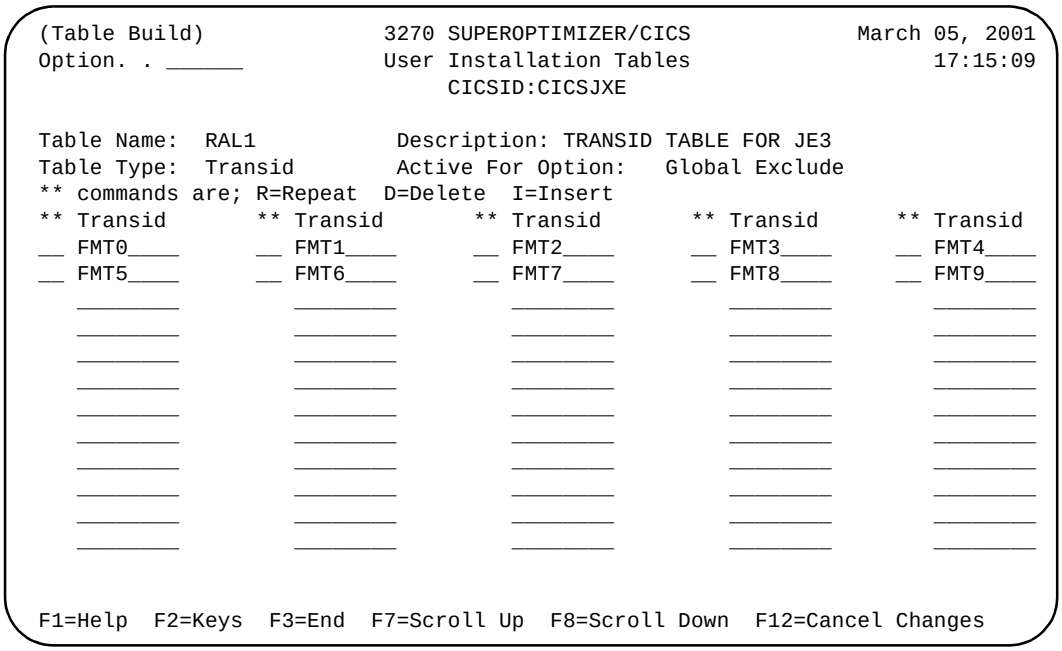


Table 5-2 describes the fields on the Table Build panel.

Table 5-2 Table Build Panel Fields

Field	Definition
Table Name	the name of the table
Table Type	the type of table. Valid types are as follows: • Termid • Transid • TCAM QID
Description	can be used to describe the contents of the table or why it was created, up to 35 bytes in length

Example

As an example, create a table by using the name RAL1 from the Summary of Data Streams Optimized panel (Figure 6-2 on page 6-6). The table is to have three Transids (FMT0, FMT1, and FMT2).

To create the table, perform the following steps:

1. Type **E** in the **Transid Action** field on the Summary of Data Streams Optimized panel.

2. Type **RAL1** in the **Transid Table** field.

3. Press **Enter**.

The Table Build panel is displayed.

4. Type the following data in the **Transid** fields:

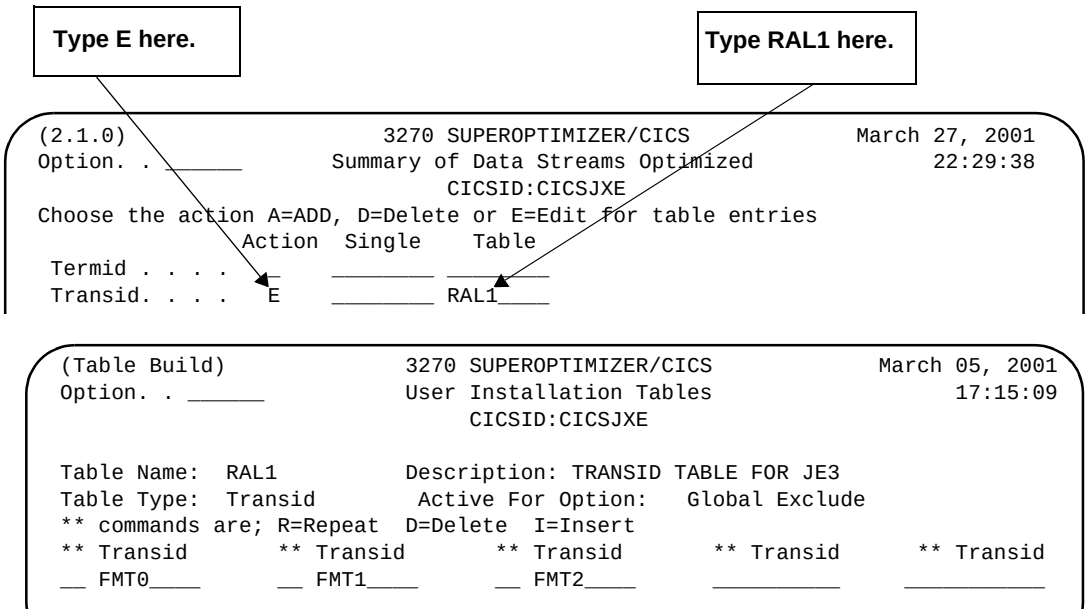
   - **FMT0**
   - **FMT1**
   - **FMT2**

5. Press **F3** (END) to save your entries.

Table RAL1 is created.

Figure 5-5 shows sample Table Build panels for Transids.

Figure 5-5 Sample Table Build Panels for Transids



Adding Table Entries One at a Time

Summary: You can add entries to a table without displaying the Table Build panels.

To add a single entry to a table, perform the following steps:

Step 1 Type **A** in the **Action** field of the panel.

Step 2 Type the name of the entry in the **Single** field.

Step 3 Type the name of the table in the **Table** field.

Step 4 Press **Enter**.

The entry is added to the table.

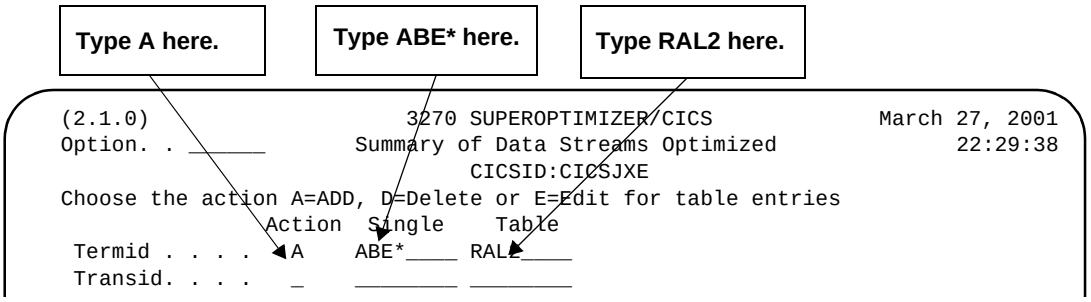
Example

As an example, add the generic entry ABE* to the Termid table RAL2 by performing the following steps:

1. Type **A** in the **Termid Action** field.
2. Type the entry (**ABE***) in the **Single Termid** field.
3. Type the table name (**RAL2**) in the **Termid Table** field.
4. Press **Enter**.

   As soon as you press **Enter** or transfer to another panel, the entry is added to the table. The entry is used immediately for inclusion or exclusion of data streams.

The following figure shows a sample panel for adding generic entries to a Termid table.



Deleting Table Entries One at a Time

Summary: You can delete entries in a table without displaying the Table Build panels.

To delete a single entry in a table, perform the following steps:

Step 1 Type **D** in the **Action** field of the panel.

Step 2 Type the name of the entry in the **Single** field.

Step 3 Type the name of the table in the **Table** field.

Step 4 Press **Enter**.

The entry is deleted from the table.

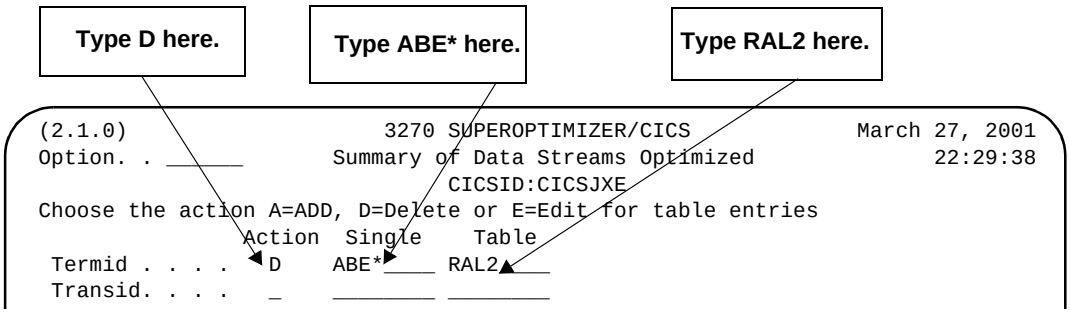
Example

As an example, delete the generic entry ABE* in the Termid table RAL2 by performing the following steps:

1. Type **D** in the **Action** field.
2. Type the entry (**ABE***) in the **Single Termid** field.
3. Type the table name (**RAL2**) in the **Termid Table** field.
4. Press **Enter**.

   As soon as you press **Enter** or transfer to another panel, the entry is deleted from the table. The exclusion/inclusion restriction for that entry is removed immediately.

The following figure shows a sample panel for deleting generic entries from a Termid table.



How to Edit a Table

You can edit a table from the Status Menu or from an optimization panel.

From the Status Menu, you can use the Edit action to change the names of Termids, Transids, or TCAM QIDs in an existing table. For more information about this feature, see the task “Editing a Table from the Monitor Status Menu” on page 5-20.

From an optimization option panel, you can use the Table Build panel to add, modify, or delete entries in an existing table. For more information about this feature, see the task “Editing a Table from an Optimization Panel” on page 5-21.

Editing a Table from the Monitor Status Menu

Summary: Use the Edit action to change the names of Termids, Transids, or TCAM QIDs in an existing table.

To edit a table from the Monitor Status Menu, perform the following steps:

Step 1 Type **4** in the **Select a choice** field on the Monitor's Primary Menu panel.

Step 2 Press **Enter**.

The Status Menu is displayed.

Step 3 Select option **1**.

The User Installation Tables panel is displayed.

Step 4 Use **Scroll Down** (**F8** or **F20**) to scroll through the list of tables until you locate the name of the table that you want to edit.

Step 5 Press **Tab** to position the cursor in the ***** field on the table name that you have selected.

Step 6 Type **E** in the ***** field.

Step 7 Press **Enter**.

The Table Build panel is displayed for the table that you selected.

Step 8 Make any necessary changes to the table entries.

Step 9 Press **Enter**.

The table is updated.

Editing a Table from an Optimization Panel

Summary: Use the Table Build panel to add, modify, or delete entries in an existing table.

To edit a table from an optimization option panel, perform the following steps:

Step 1 Type **E** in the **Action** field of the panel.

Step 2 Type the name of the table in the **Table** field.

Step 3 Press **Enter**.

The table is displayed.

Step 4 Make any necessary changes to the name by using one of the actions that are shown in “Table Build Panel Actions” on page 5-28.

Step 5 Press **F3** (END).

The table is saved.

User Installation Tables Panel Options

The User Installation Tables panel options let you perform the following functions:

- edit a table
- delete a table
- rename a table
- browse a table
- copy a table

Note: To edit a table, see “How to Edit a Table” on page 5-19.

Making an Active Table Inactive

Summary: If a table is active, you must make the table inactive before you can delete or rename it.

To make an active table inactive, perform the following steps:

Step 1 Type **4** in the **Select a choice** field on the Monitor's Primary Menu panel.

Step 2 Press **Enter**.

The Status Menu is displayed.

Step 3 Select option **1**.

Step 4 Press **Enter**.

The User Installation Tables panel (Figure 5-2 on page 5-5) is displayed.

Step 5 Use **Scroll Down** (**F8** or **F20**) to scroll through the list of tables until you locate the name of the table that you want to delete.

Step 6 Verify for which option the table is active.

The **Active For Option** field displays the table status.

Step 7 Display the corresponding Monitor panel for the option for which the table is active.

For example, if Global Exclude is displayed in the **Active For Option** field, go to the Primary Menu and select **Optimization Control,** then select **Global**.

Step 8 Replace the table name on the option panel with the name of another table or with blanks.

Step 9 Press **Enter**.

The table status changes to `**Not Active**`.

Step 10 Press **F10** to access the User Installation Tables panel (4.1.0) and verify that the table status is `**Not Active**`.

Deleting a Table

Summary: Use the Delete action to delete a table that is no longer needed. A table can be deleted only if the **Active For Option** field displays `Not Active`.

To delete a table, perform the following steps:

Step 1 Type **=4.1** in the **Option** field of the Monitor panel.

Step 2 Press **Enter**.

The User Installation Tables panel (Figure 5-2 on page 5-5) is displayed.

Step 3 Use **Scroll Down** (**F8** or **F20**) to scroll through the list of tables until you locate the name of the table that you want to delete.

Step 4 Press **Tab** to position the cursor in the ***** field on the table name that you have selected.

Step 5 Type **D** in the ***** field.

Step 6 Press **Enter**.

The table is deleted.

Renaming a Table

Summary: To rename an existing table, you must make the table inactive before you can specify a new table name. The new table can be used for excludes/includes as soon as **Enter** is pressed and the new entry has been processed. The old table will no longer be used. Use the Rename action to change the name of a table.

To rename a table, perform the following steps:

Step 1 Type **=4.1** in the **Option** field of the Monitor panel.

Step 2 Press **Enter**.

The User Installation Tables panel (Figure 5-2 on page 5-5) is displayed.

Step 3 Use **Scroll Down** (**F8** or **F20**) to scroll through the list of tables until you locate the name of the table that you want to rename.

Step 4 Press **Tab** to position the cursor in the ***** field on the table name that you have selected.

Step 5 Type **R** in the ***** field.

Step 6 Type the new table name in the **Enter new name** field.

Step 7 Press **Enter**.

The table is renamed. The new name is displayed in the table list.

Browsing a Table

Summary: Use the Browse action to look at the contents of a table. The Table Build panel for the table that you selected is displayed. From this panel, you can browse the table entries. You cannot update a table in Browse mode.

To browse a table, perform the following steps:

Step 1 Type **4** in the **Select a choice** field on the Monitor's Primary Menu panel.

Step 2 Press **Enter**.

The Status Menu is displayed.

Step 3 Select option **1**.

Step 4 Press **Enter**.

The User Installation Tables panel is displayed.

Step 5 Use **Scroll Down** (**F8** or **F20**) to scroll through the list of tables until you locate the name of the table that you want to browse.

Step 6 Press **Tab** to position the cursor in the ***** field on the table name that you have selected.

Step 7 Type **B** in the ***** field.

Step 8 Press **Enter**.

The Table Build panel for the table that you selected is displayed.

Copying a Table

Summary: To create several tables that have only minor differences between them, you can use the Copy action to make a copy of a table and use the Edit action to change it.

To copy a table, perform the following steps:

Step 1 Type **4** in the **Select a choice** field on the Monitor's Primary Menu panel.

Step 2 Press **Enter**.

The Status Menu is displayed.

Step 3 Select option **1**.

Step 4 Press **Enter**.

The User Installation Tables panel is displayed.

Step 5 Use **Scroll Down** (**F8** or **F20**) to scroll through the list of tables until you locate the name of the table that you want to copy.

Step 6 Press **Tab** to position the cursor in the ***** field on the table name that you have selected.

Step 7 Type **C** in the ***** field.

Step 8 Press **Enter**.

Message BMC7092A is displayed, requesting that you enter a table name in the **Enter new name** field.

Step 9 Type the new table name in the **Enter new name** field.

Press **Enter**.

The table is copied and appears in the table list by the new name that you supplied.

Table Build Panel Actions

From the Table Build panel, you can edit an entry in an existing table. You can also perform the following actions on the entries in a table:

- add
- repeat
- insert
- delete

Adding Table Entries

Summary: In this task, you will add table entries.

To add table entries, perform the following steps:

Step 1 Press **Tab** to move the cursor to the first entry field.

Step 2 Type your first entry.

If the entry consists of eight characters, the cursor moves from left to right to the next entry field.

Step 3 If an entry consists of fewer than eight characters, press **Tab** to move to the next field.

Step 4 Type the next entry.

Duplicate entries are removed by the Monitor when the table is saved.

Repeating a Table Entry

Summary: In this task, you will repeat a table entry. If several table entries are similar, you might want to repeat an entry.

To repeat an entry, perform one of the following steps:

- To repeat the entry once, type **R** in the ****** field next to an existing entry.
- To repeat an entry more than once, type **R*n*** (where *n* is a number from 1 to 9) in the ****** field next to an existing entry.

  For example, R3 repeats an entry three times.

Inserting a Blank Table Entry

Summary: In this task, you will insert a blank table entry.

To insert a blank table entry, perform one of the following steps:

- To insert one blank entry between two existing entries, type **I** in the ****** field next to the first entry.
- To insert more than one blank entry, type **I*n*** (where *n* is a number from 1 to 9) in the ****** field next to the first entry.

  For example, I2 inserts two blank entries.

Deleting a Table Entry

Summary: In this task, you will delete a table entry.

To delete an entry, perform one of the following steps:

- To delete one entry, type **D** in the ****** field next to the entry.
- To delete more than one entry, type **D*n*** (where *n* is a number from 1 to 9) in the ****** field next to the entry.

  For example, D9 deletes nine entries.

Saving a Table

Summary: In this task, you will save a table. Your table is saved automatically when you transfer to another panel. Any table entries that you make are not used for inclusion/exclusion until the table is saved.

To save a table, perform one of the following steps:

- Press **F3** (or **F15**)
- Use the **Option** field to go to another Monitor option.

Note: If you press **Clear**, you suspend editing, and your changes are neither saved nor canceled.

Canceling Changes to a Table

Summary: In this task, you will cancel changes to a table.

To cancel any changes that you made to a table, perform the following step:

Press **F12** (or **F24**).

Your changes are not saved.

Chapter 6 Displaying Information about Your Data Streams

This chapter describes how to access the panels for the Data Stream Statistics Menu options and how to display statistical information.

This chapter presents the following topics:

Data Stream Statistics

The SUPEROPT Data Stream Statistics Menu provides four options to display information about the optimization of your data streams. Table 6-1 describes these options.

Table 6-1 Data Stream Statistics Options

Option	Description
1	Summary of Data Streams Optimized
2	Data Streams Optimized by Termid/Transid
3	Data Streams Excluded by Installation
4	Data Streams Excluded by Optimizer

All data streams that are excluded from optimization are counted and reported on panels 2.3.0 and 2.4.0. The Total Number of Data Streams Reviewed number is an actual account of all data streams that the Customer Information Control System (CICS) has passed to the Optimizer.

If a data stream cannot be optimized, it is not added to the number of excluded data streams. Because the data stream was eligible to be optimized, it is added to the optimized data streams and reported on panels 2.1.0 and 2.2.0.

How to Display Data Stream Statistical Information

This section describes how to access the panels for these options and how to display statistical information.

Displaying the Data Stream Statistics Menu

Summary: In this task, you will display the Data Stream Statistics Menu. The Data Stream Statistics Menu displays the data stream statistics panels when you select an appropriate option.

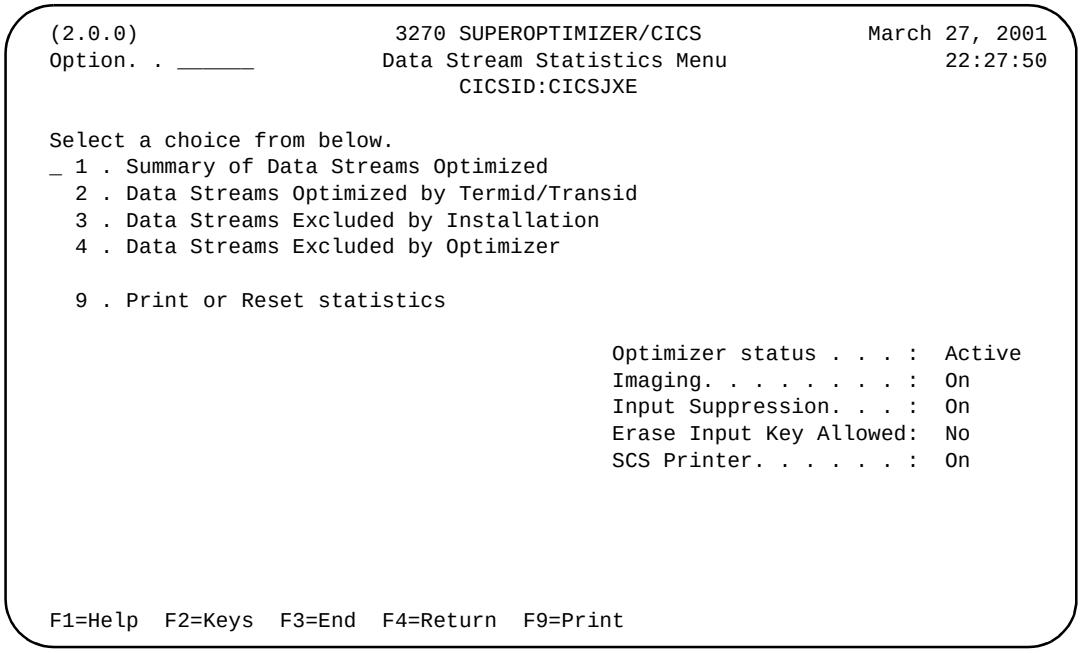
To display the Data Stream Statistics Menu (Figure 6-1), perform the following steps:

Step 1 Select option **2** on the Monitor Primary Menu.

Step 2 Press **Enter**.

The Data Stream Statistics Menu is displayed.

Figure 6-1 Data Stream Statistics Menu



Option 1 lets you display a summary of data stream statistics by using the following information:

- Termid or Transid
- terminal type
- location
- access method

Option 2 lets you display detailed data stream statistics for the following items:

- all Transids
- all CRTs
- all printers
- one or more Termids or Transids

Option 3 lets you display statistics for data streams that your site excluded from optimization.

Option 4 lets you display statistics for data streams that the Optimizer excluded from optimization.

Summary statistics are maintained across Optimizer shutdowns and warm-starts of CICS if the COPOPT file is defined. (An FCT entry for the file should be in CICS.) To maintain accurate statistics across CICS warm-starts, you must add COPSHUT to your PLTSD.

Detailed statistics are reset when the Optimizer is shut down, at user-specified times, and when you perform a warm-start of CICS.

Summary statistics are reset only when you perform a cold-start of CICS or you request that the statistics be reset on the Print panel. For more information, see Chapter 9, “Printing and Resetting Optimization Statistics.”

Displaying a Summary of Data Streams Optimized

Summary: In this task, you will display the Summary of Data Streams Optimized panel.

To display the Summary of Data Streams Optimized panel (Figure 6-2), perform the following steps:

Step 1 Select option **2** on the Monitor Primary Menu.

Step 2 Press **Enter**.

The Data Stream Statistics Menu is displayed.

Step 3 Select option **1**.

Step 4 Press **Enter**.

The Summary of Data Stream Optimized panel is displayed.

Step 5 To update the Summary of Data Streams Optimized panel, press **Enter**.

The Monitor updates the summary of statistics with any data streams that were optimized since the last time you pressed **Enter**.

The statistics on the Summary of Data Streams Optimized panel show the number of data streams that were optimized since the statistics were last reset. These statistics are reset when the Optimizer is shut down, at user-specified times, and at a cold-start of CICS. The Reset Statistics options can be set by using option 9. For more information, see Chapter 9, “Printing and Resetting Optimization Statistics.”

The selections that you made are retained after the Optimizer is shut down *only* if the COPOPT options file was defined and allocated to CICS. See the *3270 SUPEROPTIMIZER/CICS Customization Guide*. The Monitor updates this file when any modifiable fields on this panel change.

Note: The Termid statistics will not be accurate if you are using the Autoinstall feature of CICS/VS 1.7 or later and you have allocated an insufficient number of Dynamic Terminal Areas (DTAs). If you use the REUSE option (REUSE = YES), and the number of Autoinstall terminals exceeds the number of allocated DTAs, the Termid statistics displayed on this panel might not reflect all data.

The Transid statistics will be unavailable and inaccurate if the following conditions exist:

- Transid statistics will not be available if the number of Transid Statistics Areas is equal to zero.
- Transid statistics will not be accurate if the number of allocated Transid Statistics Areas is insufficient.

Neither PAII nor CMF statistics will show the optimized data stream sizes. Their hooks for capturing statistics occur before the Optimizer has optimized the data streams.

Figure 6-2 Summary of Data Streams Optimized Panel

```
(2.1.0)                    3270 SUPEROPTIMIZER/CICS           January 28, 2001
Option. . ______       Summary of Data Streams Optimized              15:33:27
                                CICSID:CICSMGF
Choose the Action A=Add, D=Delete or E=Edit to modify table entries.
               Action  Single    Table
 Termid . . . .   _    ________ ________
 Transid. . . .   _    ________ ________
By:      Terminal Type   _       C=CRT    P=Printer  S=SCS   N=SNA
         Location        _       L=Local  R=Remote
         Access Method   _       V=VTAM   B=BTAM   T=TCAM
--------------------------------------------------------------------------------
          Data Streams    Bytes Before     Bytes After   Bytes Reduced  Percent
In  Total           17             748             748               0     0.0%
      Avg                           44              44               0
Out Total           17          17,241          12,206           5,035    29.3%
      Avg                        1,014             718             296
All Total           34          17,989          12,954           5,035    28.0%
      Avg                          529             381             148
--------------------------------------------------------------------------------
Data Stream:         Before     After   Reduced    Percent    Transid  Termid
  Last                   62        62         0       0.0%    COPM     A000
  Largest Reduced     1,210       665       545      45.0%    COPM     A000
        % Reduced     1,210       665       545      45.0%    COPM     A000
```

Table 6-2 lists the data stream options and information that are displayed on the Summary of Data Streams Optimized panel.

Table 6-2 Summary of Data Streams Optimized Fields (Part 1 of 3)

Field		Definition
Action		lets you specify an action Valid actions are as follows: • A to add a single (or generic) Termid or Transid to a table • D to delete a single (or generic) Termid or Transid from a table • E to edit a table (list of Termids or Transids)
Termid–Single		name of a single (or generic) Termid
Termid–Table		name of a table (list of Termids)
Transid–Single		name of a single (or generic) Transid
Transid–Table		name of a table (list of Transids)
Terminal Type		lets you display a subset of the summary statistics by terminal type Valid types are as follows: • blank for all terminal types • C for all CRTs • P for all printers • S for all SCS printers • N for all SNA Data Compression devices
Location		lets you display a subset of the summary statistics by location Valid entries are as follows: • blank for all terminals • L for all local terminals • R for all remote terminals **Note:** With VTAM 3.0 and later, CICS defines all terminals as remote.
Access Method		lets you display a subset of the summary statistics by access method Valid entries are as follows: • blank for all access methods • V for VTAM • B for BTAM • T for TCAM
Data Streams	In Total	number of inbound data streams optimized that meet your selection criteria for summary statistics
	Out Total	number of outbound data streams optimized that meet your selection criteria for summary statistics
	All Total	number of inbound and outbound data streams optimized that meet your selection criteria for summary statistics

Table 6-2 Summary of Data Streams Optimized Fields (Part 2 of 3)

Field		Definition
Bytes Before	In Total	lengths of all inbound data streams before optimization
	In Total –Avg	average length of all inbound data streams before optimization
	Out Total	lengths of all outbound data streams before optimization
	Out Total–Avg	average length of all outbound data streams before optimization
	All Total	lengths of all inbound and outbound data streams before optimization
	All Total–Avg	average lengths of all inbound and outbound data streams before optimization
Bytes After	In Total	lengths of all inbound data streams after optimization
	In Total–Avg	average length of all inbound data streams after optimization
	Out Total	lengths of all outbound data streams after optimization
	Out Total–Avg	average length of all outbound data streams after optimization
	All Total	lengths of all inbound and outbound data streams after optimization
	All Total–Avg	average lengths of all inbound and outbound data streams after optimization
Bytes Reduced	In Total	number of bytes all inbound data streams were reduced in length after optimization
	In Total–Avg	average number of bytes all inbound data streams were reduced in length after optimization
	Out Total	number of bytes all outbound data streams were reduced in length after optimization
	Out Total–Avg	average number of bytes all outbound data streams were reduced in length after optimization
	All Total	number of bytes all inbound and outbound data streams were reduced in length after optimization
	All Total–Avg	average number of bytes all inbound and outbound data streams were reduced in length after optimization
Percent	In Total	percentage of reduction in the lengths of all inbound data streams after optimization
	Out Total	percentage of reduction in the lengths of all outbound data streams after optimization
	All Total	percentage of reduction in the lengths of all inbound and outbound data streams after optimization
Data Stream: Before	Last	length of the last data stream before optimization
	Largest Reduced	length of the largest reduced data stream before optimization
	% Reduced	length of the largest percent reduced data stream before optimization
Data Stream: After	Last	length of the last data stream after optimization
	Largest Reduced	length of the largest reduced data stream after optimization
	% Reduced	length of the largest percent reduced data stream after optimization

Table 6-2 Summary of Data Streams Optimized Fields (Part 3 of 3)

Field		Definition
Data Stream: Reduced	Last	number of bytes the last data stream was reduced in length after optimization
	Largest Reduced	number of bytes the largest data stream was reduced in length after optimization
	% Reduced	number of bytes the largest percent reduced data stream was reduced in length after optimization
Data Stream: Percent	Last	percentage of reduction in the length of the last data stream optimized
	Largest Reduced	percentage of reduction in the length of the largest reduced data stream optimized
	% Reduced	percentage of reduction in the length of the largest percent reduced data stream optimized
Data Stream: Termid	Last	Termid of the last data stream optimized
	Largest Reduced	Termid of the largest reduced data stream optimized
	% Reduced	Termid of the largest percent reduced data stream optimized
Data Stream: Transid	Last	Transid of the last data stream optimized
	Largest Reduced	Transid of the largest reduced data stream optimized
	% Reduced	Transid of the largest percent reduced data stream optimized

Selecting How Summary Statistics Are Displayed

Summary: In this task, you will select how summary statistics are displayed.

You can specify how you want statistics to be displayed for the Summary of Data Streams Optimized panel. To select how statistics are displayed, perform the following steps:

Step 1 Perform one of the following steps:

- If you want to use a single (or generic) Termid or a table (list of Termids), type the name in the appropriate field. Go to Step 3.
- If you do not want to use Termids, go to Step 2.

Step 2 Perform one of the following steps:

- If you want to use a single (or generic) Transid or a table (list of Transids), type the name in the appropriate field.
- If you do not want to use Transids, go to Step 3.

Step 3 Perform one of the following steps:

- If you want to display statistics by terminal type, type the appropriate letter in the **By Terminal Type** field:
  - **C** for all CRTs
  - **P** for all printers
  - **S** for all SCS printers
  - **N** for all SNA Data Compression devices
- If you do not want to display statistics by terminal type, go to Step 4.

Step 4 Perform one of the following steps:

- If you want to display statistics by location, type the appropriate letter in the **By Location** field:
  - **L** for all local terminals
  - **R** for all remote terminals
- If you do not want to display statistics by location, go to Step 5.

Step 5 Perform one of the following actions:

- If you want to display statistics by access method, type the appropriate letter in the **By Access Method** field:

  — **V** for VTAM
  — **B** for BTAM
  — **T** for TCAM

- If you do not want to display statistics by access method, go to Step 6.

Step 6 Press **Enter**.

Summary statistics are displayed for the criteria that you specified on the panel.

Displaying Information about Data Streams Optimized by Termid/Transid

Summary: In this task, you will display the Data Streams Optimized by Termid/Transid panel.

To display the Data Streams Optimized by Termid/Transid panel (Figure 6-3), perform the following steps:

Step 1 Select option **2** on the Monitor Primary Menu.

Step 2 Press **Enter**.

The Data Stream Statistics Menu is displayed.

Step 3 Select option **2**.

Step 4 Press **Enter**.

The Data Streams Optimized by Termid/Transid panel is displayed.

Figure 6-3 Data Streams Optimized by Termid/Transid Panel

```
(2.2.0)                    3270 SUPEROPTIMIZER/CICS             March 30, 2001
Option. . ______   Data Streams Optimized by Termid/Transid           18:15:47
                             CICSID:CICSJXE

Select:  All Transids  _    All CRTs _    All Printers _
    Or -             Action  Single    Table
         Termid. . .  _    ________  ________              2 Termids Selected
         Transid . .  _    ________  ________
Type of statistics to display. . .   X Input   X Output  X Total
-------------------------------------------------------------------------------
Termid       Data Streams   Bytes Before    Bytes After  Bytes Reduced Percent
AAA3     In             3             32             32              0    0.0%
         Out            4          1,428          1,219            209   14.7%
         Tot            7          1,460          1,251            209   14.4%
ABE3     In             6            158             41            117   74.1%
         Out            6          5,589          3,956          1,633   29.3%
         Tot           12          5,747          3,997          1,750   30.5%




F1=Help  F2=Keys  F3=End  F6=Case  F7=Scroll Up  F8=Scroll Down  F9=Print
```

If no options are selected, the default statistics that are displayed represent statistics for all Termids (input, output, and total).

The statistics that are shown on this panel are for data streams that have been optimized since the statistics were last reset.

The statistics that are shown on this panel are reset whenever the Optimizer is shut down, and at user-specified times. The Reset options can be set with option 9. Fore more information about this feature, see Chapter 9, “Printing and Resetting Optimization Statistics.”

The selections that you made are retained after the Optimizer is shut down *only* if the COPOPT options file was defined and allocated to CICS. See the *3270 SUPEROPTIMIZER/CICS Customization Guide*. The Monitor updates this file when any fields on this panel change.

Table 6-3 lists the data stream options and information that is displayed on the Data Streams Optimized by Termid/Transid panel.

Table 6-3 Data Streams Optimized by Termid/Transid Fields (Part 1 of 2)

Field		Definition
All Transids		lets you display statistics for all data streams optimized for all Transids by typing a nonblank character in this field
All CRTs		lets you display statistics for all data streams optimized for all CRTs by typing a nonblank character in this field
All Printers		lets you display statistics for all data streams optimized for all printers by typing a nonblank character in this field
Action		lets you specify an action Valid actions are as follows: • A to add a single (or generic) Termid or Transid to a table • D to delete a single (or generic) Termid or Transid from a table • E to edit a table (list of Termids or Transids)
Termid–Single		name of a single (or generic) Termid
Termid–Table		name of a table (list of Termids)
Transid–Single		name of a single (or generic) Transid
Transid–Table		name of a table (list of Transids)
Type of Statistics to Display	Input	lets you display statistics for inbound data streams only
	Output	lets you display statistics for outbound data streams only
	Total	lets you display statistics for both inbound and outbound data streams
Termid		Termid name that is associated with the statistics that are displayed on the panel

Table 6-3 Data Streams Optimized by Termid/Transid Fields (Part 2 of 2)

Field		Definition
Data Streams	In	number of inbound data streams optimized that meet your selection criteria for statistics
	Out	number of outbound data streams optimized that meet your selection criteria for statistics
	Total	number of inbound and outbound data streams optimized that meet your selection criteria for statistics
Bytes Before	In	lengths of all inbound data streams before optimization
	Out	lengths of all outbound data streams before optimization
	Total	lengths of all inbound and outbound data streams before optimization
Bytes After	In	lengths of all inbound data streams after optimization
	Out	lengths of all outbound data streams after optimization
	Total	lengths of all inbound and outbound data streams after optimization
Bytes Reduced	In	number of bytes by which all inbound data streams were reduced in length after optimization
	Out	number of bytes by which all outbound data streams were reduced in length after optimization
	Total	number of bytes by which all inbound and outbound data streams were reduced in length after optimization
Percent	In	percent of reduction in the lengths of all inbound data streams after optimization
	Out	percent of reduction in the lengths of all outbound data streams after optimization
	Total	percent of reduction in the lengths of all inbound and outbound data streams after optimization

Selecting How Statistics Are Displayed

Summary: In this task, you will select how you want to display statistics on the Data Streams Optimized by Termid/Transid panel.

To specify how you want statistics displayed on the Data Streams Optimized by Termid/Transid panel, perform the following steps:

Step 1 Perform one of the following steps:

- To select one of the following fields, type a nonblank character in the appropriate field:

  — **All Transids**
  — **All CRTs**
  — **All Printers**

- Go to Step 2.

Step 2 Perform one of the following steps:

- To use a single (or generic) Termid or a table (list of Termids), type the name in the appropriate field.

- Go to Step 3.

Step 3 Perform one of the following steps:

- To use a single (or generic) Transid or a table (list of Transids), type the name in the appropriate field.

- Go to Step 4.

Step 4 Perform one of the following steps:

- To select the type of statistics to be displayed, based on the direction of the data stream, type a nonblank character in the appropriate field:

  — **Input**
  — **Output**
  — **Total**

- Go to Step 5.

Step 5 Press **Enter**.

Data Streams Optimized by Termid/Transid statistics are displayed for the criteria that you specified on the panel.

Displaying Information about Data Streams Excluded by Your Site

Summary: In this task, you will display the Data Streams Excluded by Installation panel.

To display the Data Streams Excluded by Installation panel (Figure 6-4), perform the following steps:

Step 1 Select option **2** on the Monitor Primary Menu.

Step 2 Press **Enter**.

The Data Stream Statistics Menu is displayed.

Step 3 Select option **3**.

Step 4 Press **Enter**.

The Data Streams Excluded by Installation panel is displayed.

Figure 6-4 Data Streams Excluded by Installation Panel

```
(2.3.0)                    3270 SUPEROPTIMIZER/CICS           January 28, 2001
Option. . ______     Data Streams Excluded by Installation            15:38:35
                                 CICSID:CICSMGF
                                           Last        Last
                                           Termid    Transid   Miscellaneous
Global Exclude - Transid. :          0
       - Termid/TCAM QID. :          0
Global Include - Transid. :          0
       - Termid/TCAM QID. :          0
Input Suppression Off . . :          0
BTAM/VTAM Local Terminals :          0
Short Data Stream Storage :          0
Short 3270 Buffers Storage:          0
User Exits. . . . . . . . :          0
No Dynamic Terminal Areas :          0
SCS Printer Off or SOS. . :          0
SNA Data Compression Off. :          0
BTAM/TCAM Saved TIOAs . . :          0
Total . . . . . . . . . . :          0

Totals for all Data Streams:
  Reviewed:        34     Excluded:         0     Optimized:        34
F1=Help  F2=Keys  F3=End  F4=Return  F9=Print
```

The statistics that are shown on the Data Streams Excluded by Installation panel are reset whenever the Optimizer is shut down and at user-specified times. The Reset Statistics options can be set by using option 9. For more information about this option, see Chapter 9, “Printing and Resetting Optimization Statistics.”

The data that is reflected in the statistics is accurate. However, some data streams that you expected to be excluded might not be. For example:

- The output is a write, and the last data stream was *not* excluded.
- The input to start transactions is considered to belong to the last transaction to write to the screen.

Table 6-4 lists the data stream information that is displayed on the Data Streams Excluded by Installation panel.

Table 6-4 Data Streams Excluded by Installation Fields (Part 1 of 2)

Field	Definition
Global Exclude—Transid	number of data streams excluded from optimization because • you excluded a single Transid/TASKREQ or a list of Transids/TASKREQs using option 1.1.1 • the data stream is a PC file transfer
Global Exclude—Termid/TCAM QID	number of data streams excluded from optimization because you used option 1.1.1 to exclude • a single Termid/TCAM QID • a list of Termids/TCAM QIDs (table) • all CRTs • all printers
Global Include—Transid	number of data streams excluded because you used option 1.1.1 to include • a single Transid/TASKREQ • a list of Transids/TASKREQs (table)
Global Include—Termid/TCAM QID	number of data streams excluded from optimization because you used option 1.1.1 to include • a single Termid/TCAM QID • a list of Termids/TCAM QIDs (table)
Input Suppression Off	number of data streams excluded from optimization because you used option 1.2.2 to exclude • a single Transid/TASKREQ or a list of Transids/TASKREQs (table) • a single Termid/TCAM QID or a list of Termids/TCAM QIDs (table) • all Termids/TCAM QIDs or Transids/TASKREQs
BTAM/VTAM Local Terminals	number of data streams excluded from optimization because the BTAM/VTAM Local Terminals option was turned off or you excluded them using option 1.3.5
Short Data Stream Storage	number of data streams excluded from optimization because the Data Stream Storage Size was too small

Table 6-4 Data Streams Excluded by Installation Fields (Part 2 of 2)

Field	Definition
Short 3270 Buffers Storage	number of data streams excluded from optimization because the 3270 Buffers Storage Size was too small
User Exits	number of data streams excluded from optimization, using the Outbound Before Optimization user exit program
No Dynamic Terminals Areas	number of data streams excluded from optimization because not enough Dynamic Terminals Areas were allocated
SCS Printer Off or SOS	number of data streams excluded from optimization because you used option 1.3.1 to exclude • a single Transid/TASKREQ or a list of Transids/TASKREQs (table) • a single Termid/TCAM QID or a list of Termids/TCAM QIDs (table) • all SCS printers This statistic also includes data streams that were excluded because the Imaging and SCS Storage Allocation size was not large enough.
SNA Data Compression Off	number of data streams excluded from optimization because you used option 1.3.4 to exclude • a single Transid/TASKREQ or a list of Transids/TASKREQs (table) • a single Termid/TCAM QID or a list of Termids/TCAM QIDs (table) • all data streams
BTAM/TCAM Saved TIOAs	number of data streams excluded from optimization because the BTAM/TCAM Saved TIOAs option was turned off or you excluded them using option 1.3.5
Last Termid	Termid/TCAM QID of the last data stream excluded from optimization
Last Transid	Transid/TASKREQ of the last data stream excluded from optimization
Miscellaneous	other information about the category of data stream excluded from optimization (for example, a return code)
Total	total number of data streams excluded from optimization by your installation
Total for all Data Streams Reviewed	total number of data streams reviewed by the Optimizer, including those that were optimized and those that were excluded from optimization
Total for all Data Streams Excluded	total number of data streams excluded from optimization, including those excluded by your installation and by the Optimizer
Total for all Data Streams Optimized	total number of data streams optimized

Displaying Information about Data Streams Excluded by the Optimizer

Summary: In this task, you will display the Data Streams Excluded by Optimizer panel.

To display the Data Streams Excluded by Optimizer panel (Figure 6-5), perform the following steps:

Step 1 Select option **2** on the Monitor Primary Menu.

Step 2 Press **Enter**.

The Data Stream Statistics Menu is displayed.

Step 3 Select option **4**.

Step 4 Press **Enter**.

The Data Streams Excluded by Optimizer panel is displayed.

Figure 6-5 Data Streams Excluded by Optimizer Panel

```
(2.4.0)                    3270 SUPEROPTIMIZER/CICS           October 18, 2001
Option. . ______       Data Streams Excluded by Optimizer              10:47:54
                                CICSID:CICSMGF
                                          Last      Last
                                          Termid    Transid   Miscellaneous
Unsupported Device Type . :          0
Error in Data Stream. . . :          0

Other . . . . . . . . . . :          0

Total . . . . . . . . . . :          0









Totals for all Data Streams:
  Reviewed:         0     Excluded:         0     Optimized:         0
F1=Help  F2=Keys  F3=End  F4=Return  F9=Print
```

The statistics that are shown on the Data Streams Excluded by Optimizer panel are reset whenever the Optimizer is shut down and at user-specified times. The Reset Statistics options can be set by using option 9. For more information about this feature, see Chapter 9, “Printing and Resetting Optimization Statistics.”

Table 6-5 lists the data stream information that is displayed on the Data Streams Excluded By Optimizer panel.

Table 6-5 Data Streams Excluded by Optimizer Fields

Field	Definition
Unsupported Device Type	number of data streams excluded from optimization because they were sent to a terminal; that is, they were defined in the CICS TCT, not by a • 3270 terminal • 3600/4700 device • 3790 user program BTAM and TCAM 3270 terminals are treated as LU Type 0 devices.
Error in Data Stream	number of data streams excluded from optimization for • application outbound data stream errors • hardware inbound data stream errors
Other	number of data streams excluded from optimization for a variety of minor reasons. See Table 6-4 on page 6-18.
More than XXXX terminals	number of data streams for a Termid that exceeded the number of terminals that can be optimized by SUPEROPT If you have the unlimited number of terminals version of SUPEROPT, this field is not displayed.
Last Termid	Termid of the last data stream excluded from optimization
Last Transid	Transid of the last data stream excluded from optimization
Miscellaneous	displays other information about the category of data stream excluded from optimization; for example, a reason code, a return code, or an error code
Total	total number of data streams excluded from optimization by the Optimizer
Total for all Data Streams Reviewed	total number of data streams reviewed by the Optimizer, including those that were optimized and those that were excluded from optimization
Total for all Data Streams Excluded	total number of data streams excluded from optimization, including those excluded by your installation and by the Optimizer
Total for all Data Streams Optimized	total number of data streams optimized

Table 6-6 lists the reason codes (for error code “OTHER”) that are displayed on the Data Streams Excluded by Optimizer panel.

Table 6-6 Data Streams Excluded by Optimizer Reason Codes

Reason Code	Description
A	The last data stream was not optimized because the Optimizer is quiescing.
B	The last data stream was not optimized because the data stream was in Explicit Partition State and only Conventional optimization was being used. Only the Imaging technology has the ability to optimize partitioned data streams.
C	The last data stream was not optimized because the data stream was identified as a PC file transfer.
D	The last data stream was not optimized because the partition size is unknown.
E	The last inbound data stream was not optimized because the corresponding outbound data stream was excluded from optimization.
F	The last data stream was not optimized because it contains DBCS characters and Imaging is off.
L	The last data stream was not optimized because a DBCS bits logic error occurred.
S	The last outbound data stream for a CRT was not optimized because the default screen size is zero.

Chapter 7 Analyzing Errors in Your Data Streams

This chapter describes how to analyze data stream errors and how to perform data stream traces.

This chapter presents the following topics:

Data Stream Analysis

The SUPEROPT Data Stream Analysis Menu provides three options to analyze errors that the Optimizer found during the optimization of your data streams. Table 7-1 lists the Data Stream Analysis Menu options.

Table 7-1 Data Stream Analysis Options

Option	Description
1	Application Outbound Data Stream Errors
2	Hardware Inbound Data Stream Errors
4	Wraparound Data Stream Trace

Options 1 and 2 let you determine the frequency and types (application outbound and hardware inbound) of errors that were found in your data streams. Option 4 lets you capture and examine your Customer Information Control System (CICS) data streams.

How to Detect Data Stream Errors and Search for Specific Information

Although the Optimizer can detect data stream errors, it cannot correct any of them for the following reasons:

- The Optimizer does not know the application's true intent.

  For example, when a bad Set Buffer Address (SBA) has been found, the Optimizer could attempt to correct the error by guessing what the correct address should be. However, if the Optimizer guesses incorrectly, the way that your panels are displayed could vary, which could make things difficult for the terminal user and impossible for your applications to process.

- SUPEROPT has been designed to operate transparently in your environment.

  For example, a CICS application programmer might not be aware of an error if BMC Software corrected an X PROG error.

System Checks for Specific Information

Examine your system for the following information:

- devices that intercept outbound or inbound data streams to search for specific information
- PC software that checks the 3270 data streams for specific information

When SUPEROPT is installed, the data that is being searched for might no longer be transmitted.

Note: PC software should look at the buffer instead of the data stream whenever possible.

If Optimization Should Cause Incorrect Results

If you discover devices or applications that intercept data streams to search for specific information, ensure that they work correctly when optimization is active. If optimization causes incorrect results, consider one of the following solutions:

- Use the Monitor to exclude terminals or transactions from optimization.
- Use one of the user exits (controlled from option 1.5.1) to insert data into the following data streams:
  - outbound data stream (after optimization)
  - inbound data stream (after the Optimizer has finished its processing)

Displaying the Data Stream Analysis Menu

Summary: In this task, you will display the Data Stream Analysis Menu.

The Data Stream Analysis Menu (Figure 7-1) displays the data stream analysis panels when you select an appropriate option. To display the Data Streams Analysis Menu, perform the following steps:

Step 1 Select option **3** on the Monitor Primary Menu.

Step 2 Press **Enter**.

The Data Stream Analysis Menu is displayed.

Figure 7-1 Data Stream Analysis Menu

```
(3.0.0)                    3270 SUPEROPTIMIZER/CICS            March 30, 2001
Option. . ______           Data Stream Analysis Menu                 19:13:04
                                CICSID:CICSJXE

Select a choice from below.
_ 1 . Application Outbound Data Stream Errors
  2 . Hardware Inbound Data Stream Errors
  4 . Wraparound Data Stream Trace


  9 . Print or Reset Statistics

                                          Optimizer status . . . :  Active
                                          Imaging. . . . . . . . :  On
                                          Input Suppression. . . :  On
                                          Erase Input Key Allowed:  No
                                          SCS Printer. . . . . . :  On




F1=Help  F2=Keys  F3=End  F4=Return  F9=Print
```

Options 1 and 2 let you determine the frequency and types (application outbound and hardware inbound) of errors that were found in your data streams. Option 4 lets you capture and examine your CICS data streams.

Displaying Application Outbound Data Stream Errors

Summary: In this task, you will display the Application Outbound Data Stream Errors panel.

To display the Application Outbound Data Stream Errors panel (Figure 7-2 on page 7-6), perform the following steps:

Step 1 Select option **3** on the Monitor Primary Menu.

Step 2 Press **Enter**.

The Data Stream Analysis Menu is displayed.

Step 3 Select option **1**.

Step 4 Press **Enter**.

The Application Outbound Data Stream Errors panel is displayed.

Figure 7-2 shows a typical example of the information that the Optimizer provides for any errors in your outbound data streams. Twenty-three types of errors can occur. Table 7-3 on page 7-8 lists all possible error codes and provides a description of each code. The Monitor displays only errors that were found by the Optimizer. If the Optimizer determines that a data stream contains an error, the data stream is excluded from optimization.

Figure 7-2 Application Outbound Data Stream Errors Panel

```
(3.1.0)                    3270 SUPEROPTIMIZER/CICS          December 02, 2001
Option. . ______     Application Outbound Data Stream Errors           15:01:41
                             CICSID:CICS321

------Error------       -------------Data Stream Error Information-------------
Code  Description       Frequency Termid   Transid  SF PI  PS  Dspl OR/COM TV/A
A18   Invalid SO/SI pairing
                                4 NS0C     SIM1     40 00 0780 0001 00     000A
A05   Invalid data stream order
                                4 NS0C     SIMP     40 00 0780 000D 04     000A









Total Outbound Errors . . . . . :         8
Total Errors. . . . . . . . . . :         8
F1=Help  F2=Keys  F3=End  F4=Return  F9=Print
```

The statistics that are displayed by the Application Outbound Data Stream Errors panel and the Hardware Inbound Data Stream Errors panel are reset at the following times:

- cold-start of CICS
- when the Optimizer is shut down
- user-specified times

If a COPSHUT statement is in your DFHPLTSD table, and the COPOPT file is available, these statistics are retained when you perform a warm-start of CICS.

The Reset Statistics options can be set by using option 9. For more information about this option, see Chapter 9, “Printing and Resetting Optimization Statistics.”

For more information about outbound data stream errors, see the *IBM 3270 Information Display System Data Stream Programmer’s Reference*.

Table 7-2 describes the data stream error information that is displayed on the Application Outbound Data Stream Errors panel.

Table 7-2 Data Stream Error Information Fields

Field	Definition
Error Code	three-character identifier in the format *A*xx or *Hxx*, where • *A* indicates an application outbound data stream error • *H* indicates a hardware inbound data stream error • *xx* is a two-digit number that identifies the error For specific error codes and their descriptions, see Table 7-3 on page 7-8 and Table 7-4 on page 7-14.
Error Description	short message that accompanies the error code For specific error codes and their descriptions, see Table 7-3 on page 7-8 and Table 7-4 on page 7-14.
Frequency	number of data streams in which the Optimizer detected the error
Termid	CICS Termid or VTAM Netname
Transid	CICS Transid or TASKREQ
SF	structured field code For a list of valid structured field codes, see the glossary.
PI	partition ID or the Local Character Set Identifier (LCID) for programmed symbols
PS	buffer size or partition size, depending on the state of the device For programmed symbols, this field contains the structured field length.
Dspl	displacement of the error in the data stream or the buffer address (for codes A17 through A20)
OR/COM	3270 order or command code, depending on the error type For programmed symbols, this field contains the flag byte with the data format type. For a list of valid command codes and 3270 orders, see the glossary.
TV/A	Type-Value pair or 3270 address, depending on the error type For programmed symbols, this field contains other information that is relevant to the error code.
Total Outbound Errors	total number of application outbound data stream errors that were found by the Optimizer
Total Inbound Errors	total number of hardware inbound data stream errors that were found by the Optimizer
Total Errors	total number of errors that were found by the Optimizer

Table 7-3 lists each possible application outbound data stream error code that you can receive, its associated error message, and a description of the error.

Table 7-3 Application Outbound Data Stream Error Codes (Part 1 of 2)

Error Code	Description
A01	*Truncated parameter list* An outbound data stream ended with an incomplete 3270 order.
A02	*Unknown character set attribute* An SA, SFE, or MF order contains an unknown local character set identifier (LCID). The LCID should have been loaded by a previous load programmed symbol (LPS) structured field. This is usually an application program error. The Optimizer might have detected this error incorrectly if the data stream containing the LPS was excluded from optimization or the Optimizer was not active at the time the LPS was sent to the controller.
A03	*Partition ID unknown or invalid* The partition ID specified in the structured field was either unknown or invalid for the device. This is usually an application program error. The Optimizer might have detected this error incorrectly if the data stream containing the Create Partition (CP) was excluded from optimization or the Optimizer was not active at the time the CP was sent to the controller.
A04	*Invalid structured field* An unknown or invalid structured field was detected.
A05	*Invalid data stream order* An invalid 3270 data stream order was detected. If this was an SCS Printer data stream, then an invalid set function, MPP, left and right margins, or horizontal tab were specified. See the glossary for a list of valid 3270 orders. If an invalid SCS data stream is detected, all subsequent SCS data streams that are sent to the associated SCS printer will not be optimized.
A06	*Invalid address* An invalid buffer address was detected in an EUA, RA, or SBA order. One of the following conditions was found: • Address is unknown. • Address is larger than the current device buffer size. • Addressing mode is not in sync with the data stream (12, 14, or 16-bit addressing mode). The addressing mode is set in the Create Partition (CP) structured field.
A07	*Invalid attribute type* An invalid attribute type was detected in an MF, SA, or SFE order. Valid attribute types are • 3270 Field Attributes • Extended Highlighting • Extended Color • Character Set • Field Outlining • Background Transparency • Field Validation
A08	*Invalid attribute value* An invalid attribute value was found for an attribute type other than Character Set in an MF, SA, or SFE order.
A09	*Invalid character set* An invalid LCID was found in the attribute value field of an attribute type Character Set (programmed symbols) in an MF, SA, or SFE order. This value must be: X'00' or X'40' to X'FE'.

Table 7-3 Application Outbound Data Stream Error Codes (Part 2 of 2)

Error Code	Description
A10	*Invalid graphic escape character* An invalid GE (Graphic Escape) order was detected. Valid values are: X'40' to X'FE'.
A11	*Invalid AID* An invalid AID was detected in a 3270 outbound data stream.
A12	*Invalid repeat character* An invalid repeat character was specified for an RA (Repeat-to-Address) order. The valid repeat characters are: X'00' and, X'40' to X'FE'.
A13	*Invalid LCID in a Load Programmed Symbols structured field* An invalid LCID was detected in a LPS (load programmed symbol) structured field. Valid values for the LCID are: X'40' to X'EF'.
A14	*Invalid RWS in a Load Programmed Symbols structured field* An invalid RWS (Read/Write Store) was detected in a LPS (Load Programmed Symbol) structured field. Valid values for the RWS are: X'02' to X'0B'.
A15	*Invalid reply mode in a Set Reply Mode structured field* An invalid Reply Mode was detected in the SRM (Set Reply Mode) structured field. Valid Reply Modes are as follows: • Field • Extended Field • Character
A16	*Target of a modify field is not an attribute* The target of a MF order must be an attribute byte. In this case, the target was not an attribute byte.
A17	*Invalid character set in DBCS field* Character set character attributes were detected in a DBCS field. The character set character attributes were set by an SA order.
A18	*Invalid Shift Out/Shift In pairing* A Shift Out/Shift In (SO/SI) pair was detected that is invalid or incomplete. The SO and SI orders must appear as pairs in the terminal buffer.
A19	*Invalid DBCS character* An invalid DBCS character was detected. Valid DBCS characters are: X'4040' to X'FEFE'.
A20	*Invalid DBCS field* A DBCS field was detected that has an odd number of bytes and the next byte is not an attribute. This is usually found in conjunction with a SA (Set Attribute) order.
A21	*Invalid structured field length* A structured field was present in the outbound data stream which was longer than the remaining length of the data stream.
A22	*Load Programmed Symbols beginning code point invalid* The beginning code point of a LPS (Load Programmed Symbol) must be in the range from X'41' to X'FE'.
A23	*Load Programmed Symbols data exceeds RWS limit* The programmed symbol (PS) data, which started at the specified beginning code point in the PS set RWS (Read/Write Store), has overflowed. It has exceeded the maximum code point that is allowed for that RWS.

How to Display Hardware Inbound Data Stream Errors

The Hardware Inbound Data Stream Errors panel displays information about any hardware inbound data stream errors that were found by the Optimizer. These errors can also be caused by the following items:

- incorrect microcode in the device controller
- incorrect 3270 emulation
- Applids acting as secondary LUs that generate incorrect data streams or incorrect scripts in such an Applid

Displaying the Hardware Inbound Data Stream Errors Panel

Summary: In this task, you will display the Hardware Inbound Data Stream Errors panel.

To display the Hardware Inbound Data Stream Errors panel (Figure 7-3 on page 7-12), perform the following steps:

Step 1 Select option **3** on the Monitor Primary Menu panel.

Step 2 Press **Enter**.

The Data Stream Analysis Menu is displayed.

Step 3 Select option **2**.

Step 4 Press **Enter**.

The Hardware Inbound Data Stream Errors panel is displayed.

Figure 7-3 shows a typical example of the information that is provided by the Optimizer for any errors in your inbound data streams. Twenty-one types of errors can occur. Table 7-4 on page 7-14 lists all possible error codes and provides a description of each one. The Monitor displays only errors that are found by the Optimizer. If the Optimizer determines that a data stream contains an error, the data stream is excluded from optimization.

Figure 7-3 Hardware Inbound Data Stream Errors Panel

```
(3.2.0)                    3270 SUPEROPTIMIZER/CICS            August 10, 2001
Option. . ______       Hardware Inbound Data Stream Errors              16:33:21
                                CICSID:CICS212

------Error------       -------------Data Stream Error Information ------------
Code  Description       Frequency Termid   Transid  SF PI  PS  Dspl OR/COM TV/A
H17   Structured field longer than data stream
                                3 NS11     SIM1     80 00 0000 002B 88     0011









Total Inbound Errors. . . . :         3
Total Errors. . . . . . . . :         5
F1=Help  F2=Keys  F3=End  F4=Return  F9=Print
```

The statistics that are displayed by the Application Outbound Data Stream Errors panel and the Hardware Inbound Data Stream Errors panel are reset at the following times:

- cold-start of CICS
- when the Optimizer is shut down
- user-specified times

The Reset Statistics options can be set by using option 9. For more information about this option, see Chapter 9, “Printing and Resetting Optimization Statistics.”

If a COPSHUT statement is in your DFHPLTSD table, and the COPOPT file is available, these statistics are retained when you perform a warm-start of CICS.

For more information on inbound data stream errors, see the *IBM 3270 Information Display System Data Stream Programmer’s Reference*.

Table 7-2 on page 7-7 provides a description of the fields that are displayed on the Hardware Inbound Data Stream Errors panel.

Table 7-4 lists hardware inbound data stream error codes that you can receive, their associated error message, and descriptions of the errors.

Table 7-4 Hardware Inbound Data Stream Error Codes (Part 1 of 2)

Error Code	Description
H01	*Truncated parameter list* An inbound data stream ended with an incomplete 3270 order
H02	*Unknown character set attribute* An SA, SFE, or MF order contains an unknown local character set identifier (LCID). The LCID should have been loaded by a previous load programmed symbol (LPS) structured field. This is usually a hardware error. The Optimizer might have detected this error incorrectly if the data stream containing the LPS was excluded from optimization or the Optimizer was not active at the time that the LPS was sent to the controller.
H03	*Partition ID unknown or invalid* The partition ID specified in the structured field was either unknown or invalid for the device. This is usually a hardware error. The Optimizer might have detected this error incorrectly if the data stream containing the Create Partition (CP) was excluded from optimization or the Optimizer was not active at the time that the CP was sent to the controller.
H04	*Invalid structured field* An unknown or invalid structured field was detected.
H05	*Invalid data stream order* An invalid 3270 data stream order was detected when • an order (for example, SBA) occurred in an unformatted read-modified or READB data stream is detected • a protected non-light-pen-detectable field is modified by a terminal operator See the glossary for a list of valid 3270 orders.
H06	*Invalid address* An invalid buffer address was detected in an EUA, RA, or SBA order. One of the following conditions was found: • Address is unknown. • Address is larger than the current device buffer size. • Addressing mode is not in sync with the data stream (12, 14, or 16-bit addressing mode). The addressing mode is set in the CP (Create Partition) structured field. • An SBA order's nonzero address was not greater than the previous SBA order's address. • An SBA order does not correspond to a field on the screen.
H07	*Invalid attribute type* An invalid attribute type was detected in an MF, SA, or SFE order. Valid attribute types are • 3270 Field Attributes • Extended Highlighting • Extended Color • Character Set • Field Outlining • Background Transparency • Field Validation
H08	*Invalid attribute value* An invalid attribute value was found for an attribute type other than Character Set in an MF, SA, or SFE order.

Table 7-4 Hardware Inbound Data Stream Error Codes (Part 2 of 2)

Error Code	Description
H09	*Invalid character set* An invalid LCID was found in the attribute value field of an attribute type Character Set (programmed symbols) in an MF, SA, or SFE order. This value must be X'00' or X'40' to X'FE'.
H10	*Invalid graphic escape character* An invalid Graphic Escape (GE) order was detected. Valid values are: X'40' to X'FE'.
H11	*Invalid AID* An invalid AID was detected in a 3270 outbound data stream.
H12	*Data stream SBA out of sequence* An SBA was encountered in the inbound data stream whose address was less than the address of the preceding SBA. This situation is not valid for inbound data streams unless the address is zero (X'4040')
H13	*Data stream field longer than image field* A field was present in the inbound data stream that was longer than the field which was last sent to the screen at that location.
H14	*Data stream contains both SF and SBA* An inbound data stream contains both Start Field and Set Buffer Address orders. This situation is not valid for inbound data streams.
H15	*SBA found but not at start of data* An SBA at the beginning of the inbound data stream indicates a formatted Read Modified (RM) data stream. If no SBA is present at the beginning of the data stream, the data stream is unformatted and cannot contain other SBA orders.
H16	*Unmodifiable field in Read Modified* A field that is protected and not pre-modified or Select Pen Detectable has been found in the inbound data stream. This situation cannot occur with a valid 3270 device.
H17	*Structured field longer than data stream* A structured field length is larger than the remaining length of the data stream.
H18	*Incomplete Read Buffer* A Read Buffer (RB) data stream was found to be too short (not all data was read from the buffer) or too long (more data was read than the buffer should contain).
H19	*Data stream protected field differs from image field* An inbound field that is protected has been changed since the data was last sent to the screen. This situation is not possible with a valid 3270 device.
H20	*Data stream protected field shorter than image field* In the inbound data stream, a field was found that was shorter than the field that was last sent to the device. This situation is not valid if the field is protected.
H21	*Query reply descriptor length invalid* The Descriptor Length in the Character Sets or Graphic Symbol Set query reply was invalid or zero.

How to Trace Data Streams

You can use the trace feature to capture data streams for analysis. Even data streams that were not optimized can be captured. Only one wraparound trace at a time can be active.

Wraparound Data Stream Trace

The wraparound trace continues capturing data streams by wrapping to the top of the storage that you have allocated. This trace lets you continue capturing data streams until your target data stream is captured.

The wraparound trace is a powerful tool. The diagnostic wraparound trace provides valuable information for support personnel and customers.

To capture a large number of data streams or to leave the trace active for a long period of time to capture an error, use a wraparound trace.

How Wraparound Data Stream Trace Works

An outbound or inbound data stream is captured only if it matches the selection criteria that you established with the trace. If no criteria are specified, all data streams are captured.

One set of environment statistics and options is captured for each of the following types of data streams:

- inbound (before and after optimization)
- outbound (before and after optimization)

The trace status is retained between Optimizer shutdown and startup. If the trace was started before shutdown, it will continue tracing data streams after startup. The wrap trace buffer is deleted at shutdown.

Data Stream Trace Display Panels

After a data stream has been captured, the panels that are listed in Table 7-5 are available for your use.

Table 7-5 Data Stream Trace Display Panels

Panel Type	Trace Type	Description
Data Display	Wraparound	displays the data stream
Environment	Wraparound	lists the following information: • operating system • CICS environment • lengths of captured data streams • information about errors (if any were found)
Options	Wraparound	lists the following information at time of trace: • information about the data stream being traced • status of the Optimizer control options and features
TCTTE	Wraparound Diagnostic	displays the Terminal Control Table Terminal Entry (TCTTE) that is associated with the data stream being traced
RPL	Wraparound Diagnostic	displays the RPL that is associated with the data stream being traced
List	Wraparound	displays summary information for any captured data streams

From the Wraparound Data Stream Trace panel, you can perform the following actions:

- start a trace
- stop a trace
- display a condensed list of traced data streams
- print the captured information
- delete a wraparound data stream trace

Even data streams that were not optimized can be captured for analysis.

Retention of Entries at Shutdown

If the COPOPT options file has been defined and allocated to CICS, the entries are retained (except the Trace Header) after the Optimizer is shut down. For more information about this feature, see the *3270 SUPEROPTIMIZER/CICS Customization Guide*. This file is updated by the Monitor when any fields on this panel are changed.

Wraparound Data Stream Trace Status

The Wraparound Data Stream Trace panel displays the status of the wraparound data stream trace:

- *Inactive*

  The trace is not running, and there is no trace data to be examined.

- *Started*

  The trace has been started, and data streams are being captured.

- *Stopped*

  The trace has been stopped, and there might be trace data to examine.

Trace Buffer Allocation Size

When a wraparound data stream trace is started, the Monitor sets aside a storage area to store any captured trace data. The trace buffer allocation size area is obtained above the 16 MB line.

Any amount from 1 through 9999 can be used. The amount of storage that you allocate must be at least twice the size of the Data stream storage size that you used on the Work Area Storage panel (Figure 4-18 on page 4-78). The default storage size is listed in Table 7-6.

Table 7-6 Default Trace Buffer Sizes

Environment	Default Trace Storage Area Size
MVS/ESA, OS/390, z/OS, or VSE/ESA environments using the XA option of CICS	100 KB
MVS/370	32 KB
VSE/ESA	16 KB

The trace storage area is not released until the trace is stopped and the captured trace is deleted, or until no trace has been captured. If the Optimizer does not have enough storage area to store the trace, the trace is not started.

If you are using the XA option of CICS 1.7 or later in an MVS/ESA, OS/390, z/OS, or VSE/ESA 1.3 (or later) environment, the trace storage area is obtained above the 16 MB line. Otherwise, the trace storage area is obtained from the CICS shared subpool in the CICS dynamic storage area (DSA). No data set is required, and no I/O activity will take place until requested.

If you are using CICS 3 or later, storage is obtained from extended DSA (EDSA).

Wraparound Data Stream Trace Start Options

You can capture a data stream by leaving all start option fields blank, or by specifying one or more of the start options that are listed in Table 7-7.

Table 7-7 Wraparound Data Stream Trace Start Options

Field	Description	Default
Trace buffer allocation size	This amount of storage, in kilobytes, is set aside by the Monitor to store any captured data streams Any number between 1 and 9999 can be used; it should be twice the data stream storage size.	100 KB
Termid	Data streams belonging to the Termid/VTAM Netname that you specified are traced.	blank
Transid	Data streams belonging to the Transid/TASKREQ that you specified are traced.	blank
Data Stream Error Code	Only data streams that belong to the specified data stream error code are traced. The data stream error code can be any application outbound error code from A01 through A23 or any hardware inbound error code from H01 through H21. The application outbound error codes are listed in Table 7-3 on page 7-8. The hardware inbound error codes are listed in Table 7-4 on page 7-14.	blank

The **Transid**, **Termid**, or **Data Stream Error Code** fields, as well as stop conditions, can be changed without stopping the trace, even if some data streams have been captured. If you overlay an old entry with a new entry, the old entry is replaced and only the new entry applies.

The Transid, Termid, and Data Stream Error Code entries can be generic. To indicate a generic entry, use an asterisk (*). For example, A*, CDC*, A0*, or VTA*.

Wraparound Data Stream Trace Stop Conditions

The stop condition specifies when to stop the trace. Select a stop condition at the same time that you select your start options. To stop a wraparound data stream trace, specify one of the stop options in Table 7-8.

Table 7-8 Wraparound Data Stream Trace Stop Options

Field	Description	Default
Stop when data stream error code	lets you automatically stop the wraparound data stream trace after it has captured the specified error code	blank
Stop At Buffer	lets you automatically stop the wraparound data stream trace when it reaches the end of the trace buffer If you leave this option blank or type N (for No), the trace will not stop at the end of the trace buffer. It will wrap around to the top of the buffer and continue tracing data streams.	blank

When you start a wraparound data stream trace, you can specify when the trace is to automatically stop capturing data streams. If you do not specify either stop condition (Stop when Data Stream Error Code or At Buffer Wrap), the trace continues to capture data streams until you stop it manually.

Example 1

All data streams with a Transid of FMT1 and a Termid of FC01 are captured if you enter the following information:

Transid=FMT1
Termid=FC01

Example 2

All data streams with a Transid of STAT and a Termid of TS11 that contain any errors are captured if you enter the following information:

Transid=STAT
Termid=TS11
Data Stream Error Code=*

Wraparound Data Stream Trace Statistics

When a wraparound data stream trace starts, and at least one data stream has been captured, the lower portion of Wraparound Data Stream Trace panel displays the following information about the last data stream that was captured:

- number that is assigned to the data stream (from 1 to 99,999)
- Termid
- Transid
- outbound or inbound length before and after optimization

If an outbound data stream was excluded from optimization, before and after lengths will be the same.

Wraparound Data Stream Trace (List) Panel

When a wraparound data stream trace has been started, you can display a condensed list of the data streams that have been captured. The last captured data stream is displayed at the bottom of the list. The list is updated when new data streams are captured.

The data streams are numbered from 1 to 99,999. If an application or hardware error has been found in any data stream, the data stream is highlighted.

The Optimizer does not stop capturing data streams until one of the following actions occurs:

- The Stop options that you specified when starting the trace have been satisfied (the data stream error code was found, or the buffer wrap point was reached).

- You stop the trace, from this panel or from the Wraparound Data Stream Trace panel.

For each captured data stream, the following information is displayed on the Wraparound Data Stream Trace List panel:

- number assigned to each data stream
- data stream direction (In for inbound and Out for outbound)
- length of the before data stream
- length of the after data stream
- Termid of the data stream
- Transid of the data stream
- time that the data stream was captured
- first six hexadecimal characters of the data stream

Scrolling to a Specific Data Stream

The **Num** field on the very first data stream line can be modified. You can enter the number of any data stream to which you would like to scroll.

Scrolling through the List of Data Streams

Use **F8** (or **F20**) to scroll down through the data and **F7** (or **F19**) to scroll up through the data. You can only scroll through the list after the trace has been stopped. When the trace is active, the most recently captured data stream is displayed.

Displaying a Wraparound Data Stream Trace Panel

Summary: In this task, you will display a Wraparound Data Stream Trace panel.

To display the Wraparound Data Stream Trace panel (Figure 7-4), perform the following steps:

Step 1 Select option **3** on the Monitor Primary Menu.

Step 2 Press **Enter**.

The Data Stream Analysis Menu is displayed.

Step 3 Select option **4**.

Step 4 Press **Enter**.

The Wraparound Data Stream Trace panel is displayed.

Figure 7-4 Wraparound Data Stream Trace Panel

```
(3.4.0)                    3270 SUPEROPTIMIZER/CICS          January 20, 2001
Option. . ______         Wraparound Data Stream Trace                19:19:25
                               CICSID:CICSMGF

Trace action. . . . . . . . . . . . . .  _    1. Start  Status. . :  Inactive
                                              *. Stop
                                              *. List
                                              *. Delete
                                              5. Start diagnostic trace
 Trace buffer allocation size . . . .   100 K
 Termid . . . . . . . . . . . . . . .  ________
 Transid. . . . . . . . . . . . . . .  ____
 Data Stream Error Code . . . . . . .  ___
 Stop when data stream error code . .  ___   or At Buffer Wrap  _ Y=Yes
```

Starting a Diagnostic Wraparound Data Stream Trace

Summary: When you execute a diagnostic wraparound data stream trace, you can specify certain start options and a stop condition. Or, you can start a trace with no options or conditions specified. In this task, you will start a diagnostic wraparound data stream trace for BMC Software Customer Support.

To start a diagnostic trace for BMC Software Customer Support, perform the following steps:

Step 1 Type **5** in the **Trace action** field.

Step 2 Enter a value in one or more of the following start options, if desired (none are required):

- Trace buffer allocation size
- Termid
- Transid
- Data Stream Error Code

Step 3 To use one of the Stop options to stop a trace automatically, type **Y** (for yes) in one of the following fields:

- **Stop when data stream error code**
- **At Buffer Wrap**

Step 4 Press **Enter**.

The Monitor starts a diagnostic trace, based on the start options that you specified. The message `BMC 7102I Trace options set` is displayed. Trace status changes to `Started`.

Starting a Wraparound Data Stream Trace

Summary: When you execute a wraparound data stream trace, you can specify certain start options and a stop condition. Or, you can start a trace with no options or conditions specified.

To start a wraparound data stream trace, perform the following steps:

Step 1 Type **1** in the **Trace action** field.

Step 2 Enter a value in one or more of the following start options, if desired (none are required):

- Trace buffer allocation size
- Termid
- Transid
- Data Stream Error Code

Step 3 To use one of the Stop options to stop a trace automatically, type **Y** (for yes) in one of the following fields:

- **Stop when data stream error code**
- **At Buffer Wrap**

Step 4 Press **Enter**.

The Monitor starts a data stream trace that is based on the start options that you specified. Message `BMC 7102I Trace options set` is displayed. Trace status changes to `Started`.

Note: The wraparound data stream trace can be restarted at any time. The trace does not have to be deleted before it is restarted.

Stopping a Wraparound Data Stream Trace

Summary: In this task, you will stop a wraparound data stream trace.

A trace can be stopped at any time. To stop a wraparound data stream trace, perform the following steps:

Step 1 Type **2** in the Trace action field.

Step 2 Press **Enter**.

The wraparound data stream trace is stopped when all data stream pairs have been captured. Trace status changes to Stopped or Inactive when the trace has stopped.

Displaying the Wraparound Data Stream Trace (List) Panel

Summary: In this task, you will display the Wraparound Data Stream Trace (List) panel.

To display the Wraparound Data Stream Trace (List) panel (Figure 7-5), perform the following steps:

Step 1 Type **3** in the **Trace action** field.

Step 2 Press **Enter**.

The Wraparound Data Stream Trace (List) panel is displayed. Figure 7-5 shows a sample Wraparound Data Stream Trace (List) panel.

Figure 7-5 Wraparound Data Stream Trace (List) Panel

```
(List)                    3270 SUPEROPTIMIZER/CICS          November 30, 2001
Option. . ______         Wraparound Data Stream Trace                15:46:05
                               CICSID:CICSMGF

Start Trace. . . _            Status. . . : Stopped
Actions are; B=Before, A=After, E=Environment, O=Option, or P=Print

Act   Num   Dir    Before     After  Termid   Transid    Time    Data
 _   00001  Out     1,210       685  A000     COPM     15:45:00  7EC71140401D
 _   00002  In         42        42  A000     COPM     15:45:09  7DC15C1140D6
 _   00003  Out       222       181  A000     COPM     15:45:09  F1C61140D51D
 _   00004  Out         0         0  A000     COPM     15:45:09
 _   00005  In         46        46  A000     COPM     15:45:15  7D4DC81140D6









F1=Help  F2=Keys  F3=End  F4=Return  F7=Scroll Up  F8=Scroll Down
```

In the **Act** field on each data stream line, you can enter one of the actions that are listed in Table 7-9.

Table 7-9 Wraparound Data Stream Trace List Actions

Action	Description
Before	The before data stream is displayed on the Wraparound Data Stream Trace (Data Display) panel. See Figure 7-6 on page 7-29.
After	The after data stream is displayed on the Wraparound Data Stream Trace (Data Display) panel. See Figure 7-6 on page 7-29.
Environment	The Wraparound Data Stream Trace (Environment) panel is displayed. See Figure 7-7 on page 7-31.
Option	The Wraparound Data Stream Trace (Options) panel is displayed. See Figure 7-8 on page 7-31.
Print	The selected data stream will be printed. The destination must already have been specified by using option 3.4.0.
CICS TCTTE	The CICS TCTTE is displayed if a diagnostic trace was taken.
RPL	The VTAM request parameter list (RPL) is displayed if a diagnostic trace was taken.

To return to the Wraparound Data Stream Trace (List) panel from any panel, press **F3** (or **F15**).

The Wraparound Data Stream Trace (Data Display) panel displays the inbound and outbound data streams. The following information is displayed on each line of the Wraparound Data Stream Trace (Data Display) panel:

- hexadecimal displacement of the line
- trace in hexadecimal
- trace line translated into character display

Figure 7-6 shows a sample Wraparound Data Stream Trace (Data Display) panel.

Figure 7-6 Wraparound Data Stream Trace (Data Display) Panel

```
(Data Display)             3270 SUPEROPTIMIZER/CICS             March 30, 2001
Option. . ______          Wraparound Data Stream Trace                19:58:30
                                CICSID:CICSJXE

       Offset : 0000                Output Before Data Stream # 00001
       Length : 04A0        Captured at 19:53:20 on     March 30, 1992
       0000    7EC71140 401DF84D F34BF44B F05D4040    =G.  .8(3.4.0)
       0010    40404040 40404040 4040401D F9401140              .9 .
       0020    5B1DF8F3 F2F7F040 E2E4D7C5 D9D6D7E3    $.83270 SUPEROPT
       0030    C9D4C9E9 C5D961C3 C9C3E211 407C1DF0    IMIZER/CICS. @.0
       0040    40404040 D4819983 8840F3F0 6B40F1F9        March 30, 19
       0050    F9F211C1 501DF8D6 97A38996 954B404B    92.A&.8Option. .
       0060    1DC96D6D 6D6D6D6D 1DF0401D F8404040    .I______.0 .8
       0070    404040E6 99819781 9996A495 8440C481       Wraparound Da
       0080    A38140E2 A3998581 9440E399 81838540    ta Stream Trace
       0090    40404040 4011C2D6 1DF0F1F9 7AF5F37A         .BO.019:53:
       00A0    F2F011C3 401DF0C3 C9C3E2C9 C47AC3C9    20.C .0CICSID:CI
       00B0    C3E2D1E7 C54011C3 E41D7DC3 D6D74BC3    CSJXE .CU.'COP.C
       00C0    E34BF3F4 F0F011C5 401DF8E3 99818385    T.3400.E .8Trace
       00D0    408183A3 8996954B 404B404B 404B404B     action. . . . .
       00E0    404B404B 404B404B 404B404B 404B404B     . . . . . . . .
       00F0    404B4011 C5E71DC8 6D1DF040 001DF05C     . .EX.H_.0 ..0*
F1=Help  F2=Keys  F3=End  F7=Scroll Up  F8=Scroll Down
```

Displaying a Specific Displacement

To display a specific hexadecimal displacement, modify the **Offset** field. You can enter any hexadecimal characters from 0 to F.

The length of the data stream is displayed for your information.

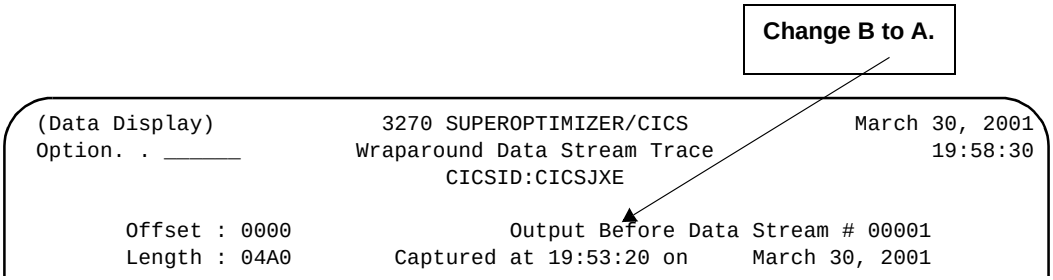
Scrolling through the Data

Use **F8** (or **F20**) to scroll down through the trace and **F7** (or **F19**) to scroll up through the trace. The default scroll value is '0100'.

Displaying a Before or After Data Stream

If the Wraparound Data Stream Trace (Data Display) panel is displaying a **Before data stream** information field, you can switch to an **After data stream** by changing the *B* in the word *Before* to *A*.

If the Wraparound Data Stream Trace (Data Display) panel is displaying an after data stream, you can switch to a before data stream by changing the *A* in the word *After* to *B*.



The Wraparound Data Stream Trace (Environment) panel displays the following information about the environment of the data stream that was captured:

- operating system
- CICS environment
- information about the terminal
- lengths of the captured data streams
- information about any errors that were found

If you are using VTAM 1.3 or later, the **Location** field is shown as **Unknown**. Figure 7-7 shows the Wraparound Data Stream Trace (Environment) panel.

Figure 7-7 Wraparound Data Stream Trace (Environment) Panel

```
(Environment)              3270 SUPEROPTIMIZER/CICS              April 11, 2001
Option. . ______          Wraparound Data Stream Trace                  20:00:54
                                CICSID:CICSJXE

Version. . . . . . . : CICS   3.2      Output Data Stream # 00001
Operating System . . : ESA/(R)         Termid  :  ABE3      Transid  : COPM
Access Method. . . . : VTAM (3.3.0)
                                       Outbound Length Before . :     1,184
Terminal Type. . . . : LUTYPE2  (SNA)  Outbound Length After. . :        75
Location . . . . . . : Unknown         Time captured. . . . . . :  19:53:20
Screen Width . . . . :  80             Date captured :     March 30, 2001
Default Screen Size. :  24 X  80
Alternate screen size:  24 X  80

Addressing Mode. . . : 12 Bit
Inbound Reply Mode . : FM              Minimum TIOA Size. . . . :       256
ASIS . . . . . . . . : Yes             Saved TIOA . . . . . . . :  No
                                       Uppercase Translation. . :  Yes




Tape Date and Time :    April 7, 2001 / 11.21   Version: 3.0.05 C
```

Figure 7-8 shows the Wraparound Data Stream Trace (Options) panel with Optimization Control options that are used to process the data stream.

Figure 7-8 Wraparound Data Stream Trace (Options) Panel

```
(Options)                  3270 SUPEROPTIMIZER/CICS          November 30, 2001
Option. . ______          Wraparound Data Stream Trace                  15:49:29
                                CICSID:CICSMGF

Imaging . . . . . . . . . . : Off      Output Data Stream # 00001
Input Suppression . . . . . : Off      Termid :  A000       Transid : COPM
Erase Input Key Allowed . . : No
SCS Printer Optimization. . : On
SCS Horizontal Tabs . . . . : On       Imaging/SCS storage    :        2,048 K
PT Order Generation . . . . : On       Storage compression    :            0 %
SNA Data Compression  . . . : Off      Data Stream storage    :            4 K
                                       3270 Buffers storage   :            6 K
Field Merge . . . . . . . . : On
Blank Elimination . . . . . : On       Reuse  . . . . . . . . : No
Non-Display Fields  . . . . : On       Dynamic Terminal Areas :    100
Attribute Elimination . . . : On       Transid Statistic Areas:      0

Global optimization status
 CRTs . . . . . . . . . . . : On
 Printers . . . . . . . . . : Off
 BTAM/VTAM Local's  . . . . : Off      Tape date  . . . . : November 02, 2001
 BTAM/TCAM Saved TIOAs  . . : On       Tape time  . . . . : 14.00
```

The wraparound data stream trace can be printed at any time after at least one data stream has been captured and the trace has been stopped. The trace is deleted at shutdown.

The printed trace will contain the following information for outbound and inbound data streams:

- Wraparound Data Stream Trace panel (Figure 7-4 on page 7-23)
- Environment panel (Figure 7-7 on page 7-31)
- Options panel (Figure 7-8 on page 7-31)
- Data Display panel (Figure 7-6 on page 7-29) with the data stream
  - before optimization
  - after optimization (only if no errors were found)

Note: The trace must be stopped before you can print a data stream trace. If the trace has not been stopped, see "Stopping a Wraparound Data Stream Trace" on page 7-26.

SUPEROPT provides you with a number of ways to print the data streams that you captured with the Wraparound Data Stream Trace option. You can select from the options that are listed in Table 7-10.

Table 7-10 Wraparound Data Stream Trace Print Options

Option	Description	Default
Print Trace	The Wraparound Data Stream Trace is printed if you type a nonblank character in this field. The trace must have already been captured.	Blank
VSAM File ID	You can type any VSAM DDNAME. The DDNAME must already have been specified in the File Control Table (FCT) or the CICS system definition file (CSD). See the *3270 SUPEROPTIMIZER/CICS Customization Guide.* **Note:** A diagnostic trace cannot be processed. The VSAM file will contain encrypted information that only BMC Software can process.	Blank
Printer ID	Your CICS printer ID	Blank
DCT ID	The CICS DCT destination ID	Blank
Trace Header	You can type any 20 characters in this field. The Monitor does not validate this field. When the trace is printed, the Monitor uses these characters to create a header for the trace.	Blank
Uppercase	To print the trace in uppercase only, enter **Y** (for yes).	N

If you type a nonblank character in the **Print Trace** field, an entry is required in one of the following fields:

- **VSAM File ID**
- **Printer ID**
- **DCT ID**

To print the Wraparound Data Stream Trace, use the print options that are in Table 7-10.

Performing a Wraparound Data Stream Trace (List) Action

Summary: In this task, you will perform one of the Wraparound Data Stream Trace (List) actions.

To perform one of the Wraparound Data Stream Trace (List) actions on a specific data stream, perform the following steps:

Step 1 Type one of the following actions in the **Act** field of the data stream that you want to display:

- **B** for before
- **A** for after
- **E** for environment
- **O** for option
- **P** for print
- **C** for TCTTE (diagnostic trace only)
- **R** for RPL (diagnostic trace only)

Step 2 To select a data stream, perform one of the following actions:

- Type the number of the data stream you want to select in the **Num** field. (For example, to select data stream 46, type **00046** in the **Num** field.)
- Scroll through the list of data streams, using **F8** (or **F20**).

Step 3 Press **Enter**.

The action is performed on the data stream that you selected.

Printing the Entire Wraparound Data Stream Trace

Summary: In this task, you will print the entire wraparound data stream trace.

To print the entire wraparound data stream trace, perform the following steps:

Step 1 Type a nonblank character in the **Print Trace** field.

Step 2 Type an entry in one of the following fields:

- **VSAM File ID**
- **Printer ID**
- **DCT ID**

Step 3 Type a trace header in the **Trace Header** field.

The trace header can be up to 20 characters.

Step 4 Type one of the following values in the **Uppercase** field to indicate the type of printing that you prefer:

- **Y** (print uppercase characters only)
- **N** (print mixed-case characters)

Step 5 Press **Enter**.

The print job is sent to the output media that you selected.

Printing a Portion of the Wraparound Data Stream Trace

Summary: In this task, you will print a portion of the wraparound data stream trace.

To print a portion of the wraparound data stream trace, perform the following steps:

Step 1 Type **3** in the **Trace action** field.

Step 2 Type a value for one of the following fields:

- **VSAM File ID**
- **Printer ID**
- **DCT ID**

Step 3 Type a trace header in the **Trace Header** field.

The trace header can be up to 20 characters.

Step 4 Type one of the following values in the **Uppercase** field to indicate the type of printing that you prefer:

- **Y** (print uppercase characters only)
- **N** (print mixed-case characters)

Step 5 Press **Enter**.

The Wraparound Data Stream Trace List panel is displayed.

Step 6 To select a data stream, perform one of the following actions:

- Type the number of the data stream that you want to print in the **Num** field. (For example, to select data stream 46, type **00046** in the **Num** field.)

- Use **F8** (or **F20**) to scroll through the list of data streams.

Step 7 Type **P** in the **Act** field of each data stream that you want to print.

Step 8 Press **Enter**.

The print job is sent to the output media that you selected.

Deleting a Wraparound Data Stream Trace

Summary: The Monitor will not delete a trace unless directed to do so. If you do not delete the trace, the trace is deleted when the Optimizer is shut down. In this task, you will delete a wraparound data stream trace.

Warning! The trace must be stopped before you can delete a wraparound data stream trace. If the trace has not been stopped, see "Stopping a Wraparound Data Stream Trace" on page 7-26.

To delete a wraparound data stream trace, perform the following steps:

Step 1 Type **4** in the **Trace action** field.

Step 2 Press **Enter**.

The trace is deleted. The trace status changes to **Inactive** when the trace has been deleted.

Chapter 8 Checking Optimizer and Monitor Status

This chapter describes how to access the Optimizer and Monitor Usage and CPU Wall-Clock Time panels to obtain the following status information:

- how often the Optimizer and Monitor have been invoked
- when the Optimizer was last started or stopped and by which Termid
- when the Optimization Control options were last changed and by which Termid
- how much CPU Wall-Clock time (in seconds) the Optimizer has used since the statistics were last reset

This chapter presents the following topics:

Status Menu

SUPEROPT provides the ability to check the status of the Optimizer and the Monitor. This information is accessed through the Monitor Status Menu.

There are two status panels. These panels are described in Table 8-1.

Table 8-1 Status Menu Options

Option	Description
2	Optimizer and Monitor Usage
3	CPU Wall-Clock Time

How to Check Optimizer and Monitor Status

This section describes how to access the Optimizer and Monitor Usage and CPU Wall-Clock Time panels to obtain the following status information:

- how often the Optimizer and Monitor have been invoked
- when the Optimizer was last started or stopped and by which Termid
- when the Optimization Control options were last changed and by which Termid
- how much CPU Wall-Clock time (in seconds) the Optimizer has used since the statistics were last reset

Displaying the Status Menu Panel

Summary: In this task, you will display the Monitor Status Menu panel.

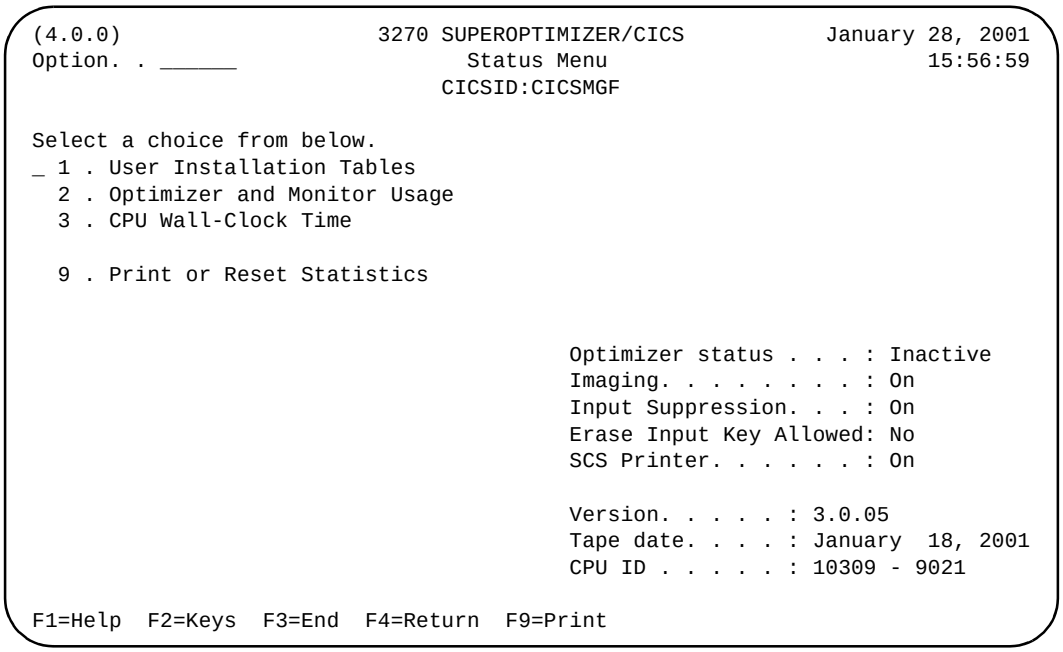
To display the Monitor Status Menu panel (Figure 8-1), perform the following steps:

Step 1 Select option **4** on the Monitor Primary Menu panel.

Step 2 Press **Enter**.

The Status Menu is displayed.

Figure 8-1 Monitor Status Menu Panel



Option 1 lets you create and work with tables that you can build to exclude specific Termids, Transids, and TCAMV QIDs from optimization or include specific Termids, Transids, and TCAMV QIDs in optimization. For more information, see Chapter 5, “Working with User Installation Tables.”

Option 2 displays information about the way your installation has used the Optimizer and the Monitor. The Optimizer and Monitor Usage panel is shown in Figure 8-2 on page 8-5. You can use this option to check the following information:

- how often the Optimizer and Monitor were invoked
- when the Optimizer was last started or stopped and by which Termid
- when the Optimization Control options were last changed and by which Termid

Option 3 displays information about the CPU Wall-Clock time (in seconds) that the Optimizer has used since the statistics were last reset. This panel is shown in Figure 8-3 on page 8-7.

The Optimizer and Monitor statistics (detailed and summary) are reset when the Optimizer is shut down and CICS is cold-started, or at user-specified intervals. When a warm-start of CICS is performed, only the summary statistics are retained.

You must have a COPMON or COPSHUT entry in your DFHPLTSD table to maintain *accurate* statistics over a warm start of CICS.

The Reset Statistics option can be set with option 9. For more information about this option, see Chapter 9, “Printing and Resetting Optimization Statistics.”

Displaying the Optimizer and Monitor Usage Panel

Summary: In this task, you will display the Optimizer and Monitor Usage panel.

To display the Optimizer and Monitor Usage panel (Figure 8-2), perform the following steps:

Step 1 Select option **4** on the Monitor Primary Menu panel.

Step 2 Press **Enter**.

The Status Menu is displayed.

Step 3 Select option **2**.

Step 4 Press **Enter**.

The Optimizer and Monitor Usage panel is displayed.

Figure 8-2 Optimizer and Monitor Usage Panel

```
(4.2.0)                    3270 SUPEROPTIMIZER/CICS              March 30, 2001
Option. . ______          Optimizer and Monitor Usage                  20:34:25
                                CICSID:CICSJXE

Optimizer:
  Number of Times Entered From -         Last Started -
  Input  VTAM . . . . :       168          On     Monday,     March 30, 2001
         BTAM . . . . :         0          At 18:03:01
         TCAM . . . . :         0          From Termid AAA3
  Output VTAM . . . . :       188
         BTAM . . . . :         0        Last Stopped -
         TCAM . . . . :         0          On   Thursday,     March 26, 2001
  Task Control:             1,573          At 10:26:16
  Total . . . :             1,929          From Termid ABE3

Monitor:    Total Times Entered -       141

Optimization Control Options
Last Changed:
  On Monday,         March 30, 2001
  At 18:36:28
  From Termid ABE3
F1=Help  F2=Keys  F3=End  F4=Return  F9=Print
```

Table 8-2 describes the fields that are displayed on the Optimizer and Monitor Usage panel.

Table 8-2 Optimizer and Monitor Usage Fields

Field		Definition
Optimizer:	Number of Times Entered From	lists the number of times that the Optimizer was entered from each CICS exit, and the total number of times that the Optimizer was entered since the statistics were last reset
	Last Started	for the last time the Optimizer was started, lists the following information: • date • time • Termid
	Last Stopped	for the last time that the Optimizer was stopped, lists the following information: • date • time • Termid
Monitor:	Total Times Entered	lists the number of times that the Monitor was entered
Optimization Control Options	Last Changed	for the last time that the Optimizer Control options were changed, lists the following information: • date • time • Termid These statistics are displayed only if options 1.1 through 1.6 were changed.

The information that may be displayed in the **Optimization Control Options Last Changed** field depends on how these options have been set:

- If you use the defaults for the Optimization Control options, no information is displayed.
- If the options are changed, the Optimizer is shut down, and the COPOPT file is not being used (or is not available), no information is retained.
- If the options are changed, the Optimizer is shut down, and the COPOPT file is available, the information is retained for later display.

The Optimization Control information is not reset when the other statistics are reset.

Use the CPU Wall-Clock Time panel (option 4.3.0) to display information about the amount of time (in seconds) that the Optimizer used to optimize your data streams.

Displaying the CPU Wall-Clock Time Panel

Summary: In this task, you will display the CPU Wall-Clock Time panel.

To display the CPU Wall-Clock Time panel (Figure 8-3), perform the following steps:

Step 1 Select option **4** on the Monitor Primary Menu panel.

Step 2 Press **Enter**.

The Status Menu is displayed.

Step 3 Select option **3**.

Step 4 Press **Enter**.

The CPU Wall-Clock Time panel is displayed.

Figure 8-3 CPU Wall-Clock Time Panel

```
(4.3.0)                    3270 SUPEROPTIMIZER/CICS          January 28, 2001
Option. . ______              CPU Wall-Clock Time                    16:04:35
                                CICSID:CICSMGF

Optimizer started at . . . 16:02:23 on   January 28, 2001

--------Inbound Data Streams---------   --------Outbound Data Streams--------
Number Optimized . :               17   Number Optimized . :               25
Total Elapsed Time :         0.000895   Total Elapsed Time :         0.114446
Avg Time per Data Stream:    0.000052   Avg Time per Data Stream     0.004577

Time Used to Optimize Data Stream.      Time Used to Optimize Data Stream.
  Last. . . . . . . . . . :    0.000050     Last. . . . . . . . . . :    0.000766
  With Largest Reduction:    0.000050     With Largest Reduction:    0.002106
  With Largest % Reduction   0.000050     With Largest % Reduction   0.002106

                  -----Total Optimized Data Streams-----
                  Number Optimized. . . . :                42
                  Total Elapsed Time. . . :          0.115341
                  Avg Time per Data Stream:          0.002746

           Total Wall-Clock Time in Optimizer. . :           0.306481
F1=Help  F2=Keys  F3=End  F4=Return
```

Table 8-3 describes the fields that are displayed on the CPU Wall-Clock Time panel.

Table 8-3 CPU Wall-Clock Time Fields

Field		Description
Optimizer started at		date and time when the Optimizer was last started
Inbound Data Streams	Number Optimized	total number of inbound data streams optimized
	Total Elapsed Time	total wall-clock time (in seconds) that was used by the Optimizer to optimize inbound data streams
	Avg Time per Data Stream	average amount of time (in seconds) that was used by the Optimizer to optimize one inbound data stream
	Time Used to Optimize Last Data Stream	elapsed time (in seconds) that was used by the Optimizer to process the last inbound data stream
	Time Used to Optimize Data Stream with Largest Reduction	elapsed time (in seconds) that was used by the Optimizer to process the inbound data stream with the largest reduction in length
	Time Used to Optimize Data Stream with Largest % Reduction	elapsed time (in seconds) that was used by the Optimizer to process the inbound data stream with the largest percentage reduction in length
Outbound Data Streams	Number Optimized	total number of outbound data streams that have been optimized
	Total Elapsed Time	total wall-clock time (in seconds) that was used by the Optimizer to optimize outbound data streams
	Avg Time per Data Stream	average amount of time (in seconds) that was used by the Optimizer to optimize one outbound data stream
	Time Used to Optimize Last Data Stream	elapsed time (in seconds) that was used by the Optimizer to process the last outbound data stream
	Time Used to Optimize Data Stream with Largest Reduction	elapsed time (in seconds) that was used by the Optimizer to process the outbound data stream with the largest reduction in length
	Time Used to Optimize Data Stream with Largest % Reduction	elapsed time (in seconds) that was used by the Optimizer to process the outbound data stream with the largest percentage reduction in length
Total Optimized Data Streams	Number Optimized	total number of inbound and outbound data streams optimized by the Optimizer
	Total Elapsed Time	wall-clock time (in seconds) that was used by the Optimizer to optimize all data streams
	Avg Time per Data Stream	average amount of time (in seconds) that was used by the Optimizer to optimize one data stream
Total Wall-Clock Time in Optimizer		elapsed (wall-clock) time since the Optimizer was last started This time includes any time spent performing the following functions: • optimizing data streams • processing data streams excluded from optimization • monitoring CICS for LOGON/LOGOFF activity, terminal errors, and other data stream related events

Chapter 9 Printing and Resetting Optimization Statistics

This chapter describes how to print or reset statistics when you select option 9, Print or Reset Statistics, from Monitor's Primary Menu.

This chapter presents the following topics:

Optimization Statistics

SUPEROPT provides you a number of ways to print the Monitor panels or reset statistics. Table 9-1 describes these options.

Table 9-1 Print Statistics Options

Selection	Options
when to print panels or reset statistics	• now (immediately) • at an interval that you specify • when the Optimizer is shut down
what to print	• all panels • one or more panels that you select from a list of panels
where to send the print file	• VSAM file ID • printer ID (Termid) • DCT ID
how to print panels	• mixed-case characters • uppercase characters only

How to Print and Reset Statistics

Before you print any panels, you need to know the following information:

- Panels will not be printed if your terminal screen is cleared.
- To print any VSAM entry-sequenced data set (ESDS) file that you used to collect panels for printing, perform one of the following actions:
  - — Use IDCAMS to either PRINT directly or REPRO to another VSAM ESDS file.
  - — Use COPBPRT, the batch program that is supplied by BMC Software. For more information about this program, see the *3270 SUPEROPTIMIZER/CICS Customization Guide*.
- When you have printed the VSAM ESDS file, use IDCAMS to delete and redefine this file, or use the REUSE option to empty the file, then collect and print another group of panels. For more information about the REUSE option, see the *3270 SUPEROPTIMIZER/CICS Customization Guide*.
- The Print/Reset options do not take effect until you press **Enter** or use the **Option** field or **F3** (or **F15**) to transfer to another Monitor panel.
- You must use a CICS Termid (*not* a VTAM Netname) for the printer ID.
- You must specify a VSAM file ID, a printer ID, or a destination control table (DCT) ID before the panels will print.

To print the Monitor panels and reset the statistics that the Monitor displays at some interval that you specify, use the options that are shown in Table 9-5 on page 9-14.

To print and reset statistics at an interval, you must have an entry for COPP, COPQ, and COPR in the PCT.

If you warm-start CICS Interval Control, you must have an entry for COPSHUT in your program list table shutdown (DFHPLTSD). The COPSHUT modules can perform any required cleanup tasks when invoked by the DFHPLTSD. If the cleanup tasks are not performed, the old Print At Interval request remains active, and multiple print requests can occur.

To print the Monitor panels and reset the statistics that the Monitor displays when the Optimizer is shut down, use the options that are listed in Table 9-6 on page 9-17.

Summary statistics are retained after the Optimizer is shut down if the following conditions apply:

- you do not reset the statistics and perform a warm-start of CICS
- a COPOPT file is defined to CICS
- COPSHUT has an entry in the DFHPLTSD

Note: Detailed statistics are not retained if the Optimizer is shut down. All statistics (detailed and summary) are reset when you perform a cold-start of CICS.

Table 9-2 lists the panels that you can print.

Table 9-2 Panels That Can Be Printed with Option 9

Panel Option	Panel Name
	Primary Menu
1.1.0	Optimization Control Menu
1.1.1	Global Optimization
1.2.1	Imaging
1.2.2	Input Suppression
1.2.3	Erase Input Key Allowed
1.3.1	SCS Printer Optimization
1.3.2	SCS Horizontal Tabs
1.3.3	PT Order Generation
1.3.4	SNA Data Compression
1.3.5	Local Terminals and Saved TIOA
1.4.1	Field Merge
1.4.2	Blank Elimination
1.4.3	Non-Display Fields
1.4.4	Attribute Elimination
1.5.1	User Exits
1.6.1	Imaging and/or SCS Data Storage
1.6.2	Work Area Storage
1.6.3	Dynamic Terminal and Transid Areas
2.0	Data Stream Statistics Menu
2.1.0	Summary of Data Streams Optimized
2.2.0	Data Streams Optimized by Termid/Transid
2.3.0	Data Streams Excluded by Installation
2.4.0	Data Streams Excluded by Optimizer
3.0	Data Stream Analysis Menu
3.1.0	Application Outbound Data Stream Errors
3.2.0	Hardware Inbound Data Stream Errors
4.0	Status Menu
4.1.0	User Installation Tables
4.2.0	Optimizer and Monitor Usages
4.3.0	CPU Wall-Clock Time
	Table Build—list contents of table(s)
	Print/Reset Statistics—print screens or reset statistics

To view the entire list of panels, you will need to scroll down. To see the other List panels, use **F8** (or **F20**) to scroll down to the next panel or use **F7** (or **F19**) to scroll up.

If you change your mind and do not want to print the panels that you selected, press **F12** (or **F24**). Your selections are canceled.

Table 9-3 lists the statistics that you can reset.

Table 9-3 Statistics That Can Be Reset with Option 9

Panel Option	Panel Name
1.2.1	Imaging
2.1.0	Summary of Data Streams Optimized
2.2.0	Data Streams Optimized by Termid/Transid
2.3.0	Data Streams Excluded by Installation
2.4.0	Data Streams Excluded by Optimizer
3.1.0	Application Outbound Data Stream Errors
3.2.0	Hardware Inbound Data Stream Errors
4.2.0	Optimizer and Monitor Usages
4.3.0	CPU Wall-Clock Time

Displaying the Print or Reset Statistics Panel

Summary: If you select option 9 from the Monitor Primary Menu panel, the Print or Reset Statistics panel is displayed. The Print or Reset Statistics panel lets you print statistics to multiple locations, such as a VSAM file, a printer device, and a DCT.

Note: For a list of panels that you can print and statistics that you can reset, see Table 9-2 on page 9-5 and Table 9-3 on page 9-6.

To display the Print or Reset Statistics panel (Figure 9-1), perform the following steps:

Step 1 Select option **9** on the Monitor Primary Menu.

Step 2 Press **Enter**.

The Print or Reset Statistics panel is displayed. When you indicate whether you want to print immediately, at an interval that you specify, or at shutdown, and have specified a destination for the print file, a list panel is displayed. This panel displays a list of the panels that can be printed.

Figure 9-1 Print or Reset Statistics (Print/Reset) Panel

```
(Print/Reset)              3270 SUPEROPTIMIZER/CICS          January 28, 2001
Option. . ______           Print or Reset Statistics                 12:36:25
                                CICSID:CICSMGF

Print Now.                                              Uppercase. .  N Y=Yes
 All Screens. . . . .  _
 List of Screens. . .  _
 VSAM File ID . . . .  _________  Printer ID. . . 3985     DCT ID . .  ____
 Reset Statistics . .  _

Print At Intervals.     Status. . . : Inactive          Uppercase. .  N Y=Yes
 Every __ Hours   Starting At __ : __
 All Screens. . . . .  _
 List of Screens. . .  _
 VSAM File ID . . . .  _________  Printer ID. . . _________ DCT ID . .  ____
 Reset Every __ Hours   Starting At __ : __

Print At Shutdown.      Status. . . : Inactive          Uppercase. .  N Y=Yes
 All screens. . . . .  _
 List of Screens. . .  _
 VSAM File ID . . . .  _________  Printer ID. . . _________ DCT ID . .  ____
 Reset Statistics . .  N
F1=Help  F2=Keys  F3=End  F6=Case  F9=Print  F12=Cancel
```

Printing All Monitor Panels and Resetting Statistics Now

Summary: In this task, you will print all Monitor panels and reset the statistics now.

Note: If you want to print the Monitor panels and reset the statistics displayed by the Monitor now (immediately), see the options that are listed in Table 9-4 on page 9-11.

To print all Monitor panels and reset the statistics now, perform the following steps:

Step 1 In the Print Now portion of the Print or Reset Statistics panel, type a nonblank character in the **All Screens** field.

Step 2 Type one of the following values in the **Uppercase** field to indicate the type of printing that you prefer:

- **Y** (print uppercase characters only)
- **N** (print mixed-case characters)

Step 3 Type a value for one or more of the following fields:

- **VSAM File ID**
- **Printer ID**
- **DCT ID**

Step 4 To reset the statistics that are displayed by the Monitor panels after you have printed them, type a nonblank character in the **Reset Statistics** field.

Step 5 Press **Enter**.

The print job is sent to the output media that you selected. If you also elected to reset statistics, they are reset after the panels are printed. The panels are printed when you return to the Print/Reset panel or select another Monitor panel, using the **Option** field.

Printing a List of Monitor Panels and Resetting Statistics Now

Summary: In this task, you will print a list of Monitor panels and reset the statistics now.

To print a list of Monitor panels and reset the statistics now, perform the following steps:

Step 1 In the Print Now portion of the panel, type a nonblank character in the **List of Screens** field.

Step 2 Type one of the following values in the **Uppercase** field to indicate the type of printing that you prefer:

- **Y** (print uppercase characters only)
- **N** (print mixed case characters)

Step 3 Type a value for one or more of the following fields:

- **VSAM File ID**
- **Printer ID**
- **DCT ID**

Step 4 To reset the statistics that are displayed by the Monitor panels after you have printed them, type a nonblank character in the **Reset Statistics** field.

Step 5 Press **Enter**.

The List for Now panel is displayed.

Figure 9-2 shows the Print or Reset Statistics (List for *XXXXXX*) panel. This panel is also displayed when you select the Print at Intervals and Print at Shutdown options.

Figure 9-2 Print or Reset Statistics (List for *XXXXXX*) Panel

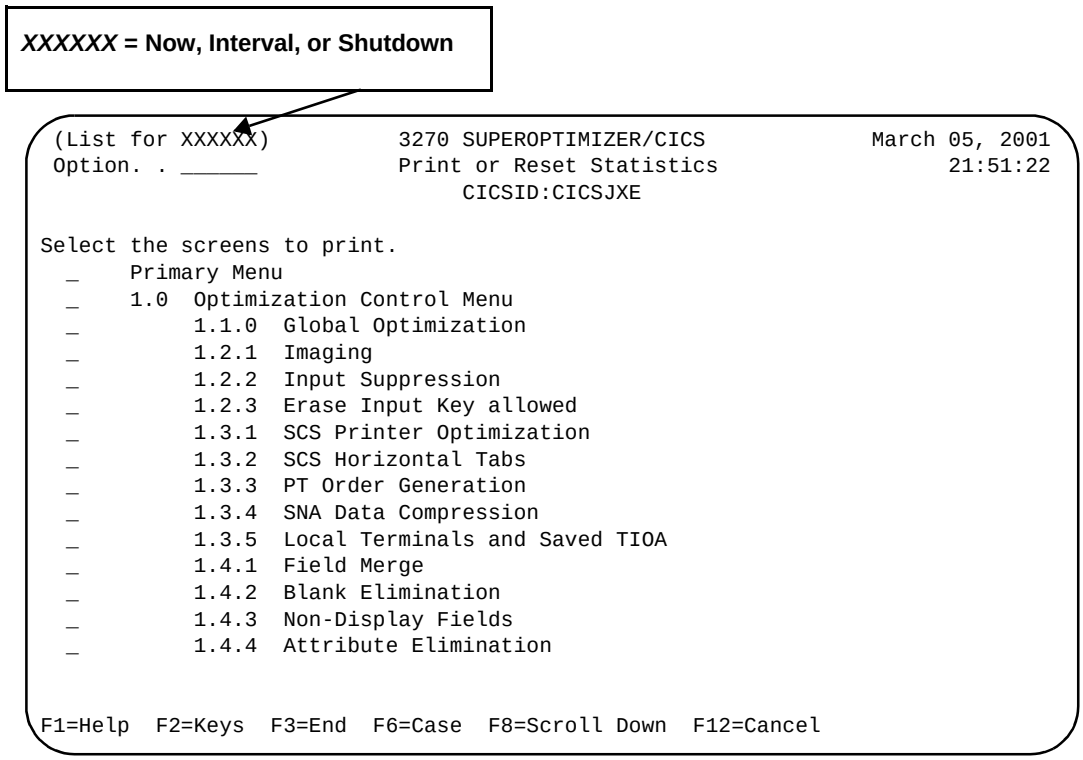


Table 9-4 shows the options that are provided by the Monitor for printing and resetting statistics now (immediately).

Table 9-4 Print Now Options

Field	Description	Default
Uppercase	To print panels in uppercase characters only, type **Y** (for yes).	N
All Screens	If you type any nonblank character in this field, all Monitor panels are printed as soon as you press **Enter** or transfer to another Monitor panel.	blank
List of Screens	If you type any nonblank character in this field, the List for Now panel (Figure 9-2 on page 9-10) is displayed. You can scroll through the list of Monitor panel titles and select only the panels that you want to print. The panels are printed when you return to the Print or Reset Statistics panel or select another Monitor panel.	blank
VSAM File ID	You can type any VSAM data definition name (DDNAME). The DDNAME must already have been specified in the File Control Table (FCT) or CICS system definition (CSD) file. For more information, see the *3270 SUPEROPTIMIZER/CICS Customization Guide.*	blank
Printer ID	This field represents your CICS Termid.	blank
DCT ID	This field represents your CICS DCT destination ID.	blank
Reset Statistics	lets you reset the statistics that are displayed on the Monitor panels immediately. If you also requested the printing of Monitor panels at this time, the statistics are reset after the printing is completed.	blank

Note: If you type a nonblank character in any of the **All Screens** or the **List of Screens** fields, an entry is required in at least one of the following fields:

- **VSAM File ID**
- **Printer ID**
- **DCT ID**

Printing All Monitor Panels and Resetting Statistics at Intervals

Summary: In this task, you will print all Monitor panels and reset the statistics at a specified interval.

To print all Monitor panels and reset the statistics at a specified interval, perform the following steps:

Step 1 In the Print At Interval portion of the panel, type a nonblank character in the **All Screens** field.

Step 2 Type one of the following values in the **Uppercase** field to indicate the type of printing that you prefer:

- **Y** (print uppercase characters only)
- **N** (print mixed-case characters)

Step 3 Type a number from 1 to 99 in the **Every __ Hours** field to specify the interval that you want to use for printing the panels.

Step 4 Type the hour (0 to 23) and the minutes (0 to 59) in the **Starting At** field to specify the time that you want to start printing the panels.

Step 5 Type a value for one or more of the following fields:

- **VSAM File ID**
- **Printer ID**
- **DCT ID**

Step 6 If you also want to reset the statistics that are displayed by the Monitor panels after you have printed them, type a nonblank character in the **Reset Statistics** field.

Step 7 Type a number from 1 to 99 in the **Reset Every __ Hours** field to specify the interval that you want to use for resetting the panels.

Step 8 Type the hour (0 to 23) and the minutes (0 to 59) in the **Starting At __ : __** field to specify the time that you want to start resetting the panels.

Step 9 Press **Enter**.

The print job is sent to the output media that you selected. If you also elected to reset statistics, the statistics are reset based on the start time and interval that you specified.

Printing a List of Monitor Panels and Resetting Statistics at Intervals

Summary: In this task, you will print a list of Monitor panels and reset the statistics at a specified interval.

To print the list of Monitor panels and reset the statistics at a specified interval, perform the following steps:

Step 1 In the Print At Interval portion of the panel, type a nonblank character in the **List of Screens** field.

Step 2 Type one of the following values in the **Uppercase** field to indicate the type of printing that you prefer:

- **Y** (print uppercase characters only)
- **N** (print mixed-case characters)

Step 3 Type a number from 1 to 99 in the **Every __ Hours** field to specify the interval that you want to use for printing the panels.

Step 4 Type the hour (0 to 23) and the minutes (0 to 59) in the **Starting At** field to Specify the time that you want to start printing the panels.

Step 5 Type a value for one or more of the following fields:

- **VSAM File ID**
- **Printer ID**
- **DCT ID**

Step 6 Type a number from 1 to 99 in the **Reset Every __ Hours** field to specify the interval that you want to use for resetting the panels.

Step 7 Type the hour (0 to 23) and the minutes (0 to 59) in the **Starting At __ : __** field to specify the time that you want to start resetting the panels.

Step 8 Press **Enter**.

The List for At Interval panel is displayed.

Step 9 Type a nonblank character in the **Select the screens to print** field for each panel that you want to print.

Tip: Use **F8** (or **F20**) to scroll down through the list and **F7** (or **F19**) to scroll up.

Step 10 Press **F3** (or **F15**) or use the **Option** field to leave the List panel.

The print job is sent to the output media that you selected. If you also elected to reset statistics, they are reset based on the start time and interval that you specified.

Table 9-5 describes the options that are provided by the Monitor for printing and resetting statistics at an interval that you specify.

Table 9-5 Print at Intervals Options

Field	Description	Default
Status	displays the status of the print option, depending on what you have specified Status can be one of the following: • Inactive • All Screens • Screen List	Inactive
Uppercase	lets you specify whether you want to print panels in uppercase characters only	N
Print Every __ Hours	lets you set the time interval for printing the Monitor panels Use any number from 1 to 99.	blank
Print Starting At	lets you specify when to start printing the Monitor panels Specify both the hour (0 to 23) and the minute (0 to 59).	blank
All Screens	If you type any nonblank character in this field, all Monitor panels are printed as soon as you press **Enter** or transfer to another Monitor panel.	blank
List of Screens	If you type any nonblank character in this field, the List for Interval panel (Figure 9-2 on page 9-10) is displayed. You can scroll through the list of Monitor panel titles and select only the panels that you want to print. The panels are printed when you return to the Print or Reset Statistics panel or select another Monitor panel.	blank
VSAM File ID	Use any VSAM DDNAME. The DDNAME must already have been specified in the FCT or CSD file. For more information, see the *3270 SUPEROPTIMIZER/CICS Customization Guide.*	blank
Printer ID	your CICS Termid	blank
DCT ID	your CICS DCT destination ID	blank
Reset Every __ Hours	lets you set the time interval for resetting the statistics that are displayed on Monitor panels Use any number from 1 to 99.	blank
Reset Starting At	lets you specify when to reset the statistics that are displayed on the Monitor panels Specify both the hour (0 to 23) and the minute (0 to 59).	blank

Note: If you type a nonblank character in any of the **All Screens** or the **List of Screens** fields, you must make an entry in one of the following fields:

- **VSAM File ID**
- **Printer ID**
- **DCT ID**

Printing All Monitor Panels and Resetting Statistics at Shutdown

Summary: In this task, you will print all Monitor panels and reset the statistics when the Optimizer is shut down.

To print all Monitor panels and reset the statistics when the Optimizer is shut down, perform the following steps:

Step 1 In the Print At Shutdown portion of the panel, type a nonblank character in the **All Screens** field.

Step 2 Type one of the following values in the **Uppercase** field to indicate the type of printing that you prefer:

- **Y** (print uppercase characters only)
- **N** (print mixed-case characters)

Step 3 Type a value in one of the following fields:

- **VSAM File ID**
- **Printer ID**
- **DCT ID**

Step 4 If you also want to reset the statistics that are displayed by the Monitor panels after you have printed them, type a nonblank character in the **Reset Statistics** field.

Step 5 Press **Enter**.

The print job is sent to the output media that you selected. If you also elected to reset the statistics, the statistics are reset after the panels are printed.

Printing a List of Monitor Panels and Resetting Statistics at Shutdown

Summary: In this task, you will print the list of Monitor panels and reset the statistics when the Optimizer is shut down.

To print a list of Monitor panels and reset the statistics when the Optimizer is shut down, perform the following steps:

Step 1 In the Print At Shutdown portion of the panel, type a nonblank character in the **List of Screens** field.

Step 2 Type one of the following values in the **Uppercase** field to indicate the type of printing that you prefer:

- **Y** (print uppercase characters only)
- **N** (print mixed-case characters)

Step 3 Type a value in one of the following fields:

- **VSAM File ID**
- **Printer ID**
- **DCT ID**

Step 4 If you also want to reset the statistics that are displayed by the Monitor panels after you have printed them, type a nonblank character in the **Reset Statistics** field.

Step 5 Press **Enter**.

The List for Now panel is displayed.

Step 6 Type a nonblank character in the **Select the screens to print** field for each panel that you want to print.

Tip: You can use **F8** (or **F20**) to scroll down through the list and **F7** (or **F19**) to scroll up.

Step 7 Press **F3** (or **F15**) or use the **Option** field to leave the List panel.

The print job is sent to the output media that you selected. If you also elected to reset statistics, they are reset after the panels are printed.

Table 9-6 lists the options that are provided by the Monitor for printing and resetting statistics at Optimizer shutdown.

Table 9-6 Print at Shutdown Options

Field	Description	Default
Status	displays the status of the print option, depending on what you specified Status can be one of the following: Inactive All Screens Screen List	Inactive
Uppercase	lets you specify whether you want to print panels in uppercase characters only	N
All Screens	If you type any nonblank character in this field, all Monitor panels are printed as soon as you press **Enter** or transfer to another Monitor panel.	blank
List of Screens	If you type any nonblank character in this field, the List for Shutdown panel (Figure 9-2 on page 9-10) is displayed. You can scroll through the list of Monitor panel titles and select only the panels that you want to print. The panels are printed when you return to the Print or Reset Statistics panel or select another Monitor panel.	blank
VSAM File ID	You can use any VSAM DDNAME. The DDNAME must already have been specified in the FCT or CSD file. For more information, see the *3270 SUPEROPTIMIZER/CICS Customization Guide.*	blank
Printer ID	your CICS Termid	blank
DCT ID	your CICS DCT destination ID	blank
Reset Statistics	lets you reset the statistics that are displayed on the Monitor panels when the Optimizer is shut down If you also requested the printing of Monitor panels, the statistics are reset after the printing is completed.	N

Note: If you type a nonblank character in any of the **All Screens** or the **List of Screens** fields, an entry is required in one of the following fields:

- **VSAM File ID**
- **Printer ID**
- **DCT ID**

Chapter 10 Resolving Problems

This chapter contains some of the most common questions that 3270 SUPEROPTIMIZER/CICS users have asked and the recommended solutions.

This information is targeted for those installations that have already installed SUPEROPT and are familiar with the Monitor panels.

If you have any concerns or problems that are not covered in this manual, please call your BMC Software sales representative or contact BMC Software Customer Support. The phone numbers are listed at the front of this manual.

BMC Software Customer Support is available 24 hours a day, 7 days a week. When you call, tell the operator that you need support for the 3270 SUPEROPTIMIZER for *CICS*. (BMC Software also has optimization products for IMS, TSO, and VTAM.)

This chapter presents the following topics:

Nonworking Input Suppression

Review this section if your Input Suppression is not working properly.

Problem

Determine whether the **Erase Input** key is used in your installation. Do *not* confuse the **Erase Input** key with the **Erase EOF** key. Input Suppression will not work properly with the **Erase Input** key. The **Erase EOF** key does not impact Input Suppression.

Solution

If the **Erase Input** key is used, change the status of the Erase Input Key Allowed to **Yes**. Erase Input Key Allowed can be controlled from option 1.2.3.

For more information about the **Erase Input** key, see “Erase Input Key Allowed Optimization” on page 1-7.

Incorrect Panels

Review this section when a panel does not look like it should look.

Conventional and/or Imaging Optimization

You might need to exclude a transaction or device from one of the four Conventional and Imaging features. These features and their option panels are listed in Table 10-1.

Table 10-1 Conventional and Imaging Features

Feature	Option Panel
Field Merge	1.4.1
Blank Elimination	1.4.2
Non-Display Fields	1.4.3
Attribute Eliminations	1.4.4

For more information about Conventional and Imaging features, see Chapter 4, “Controlling Optimization of Your Data Streams.”

BTAM or TCAM Transactions Using Saved TIOAs

Determine whether your transaction is a macro-level program that uses Saved TIOAs. Some product releases that use Saved TIOAs are as follows:

- Keyfast
- Omegamon
- InterTest
- ICCF (for example - I$$6 or sometimes I$$1)

Use the Saved TIOA feature on option 1.3.5 to exclude the transactions from optimization.

Note: If you have CICS/VS 1.6 or later, all VTAM Saved TIOA transactions will be optimized transparently to the CICS application.

Incorrect Alternate Panel Sizes

If one of your transactions uses an alternate panel size that has not been defined in the terminal table, the panels might not be displayed properly. To correct this problem, define the panel size in the TCT or the Autoinstall definition.

Hardware Incompatibility

A few customers have terminals that are not completely 3270-compatible. If these terminals do not support all of the standard 3270 data stream orders, your panels might be incorrect. You might want to contact your hardware support to see whether the support people can fix the 3270-compatibility problem.

Try to re-create the problem by using an IBM terminal or printer. To confirm that the hardware is the problem, please call BMC Software Customer Support.

If the hardware *is* the problem, perform the following steps:

Step 1 Try excluding the terminal from PT Order Generation by using option 1.3.3. Your terminal might not support a program tab (PT) order.

Step 2 Try excluding the terminal from Imaging by using option 1.2.1. The terminal might not support a Write Command Code.

Step 3 Use option 1.1.1 to exclude the terminals from optimization.

No Optimization

Review this section when optimization is not occurring.

Check Monitor Panels for Statistics

Monitor options 2.3.0 and 2.4.0 list all categories for which a data stream can be excluded from optimization, by the site or by Optimizer. If you have no optimization, check these statistics panels to help you resolve this problem.

Options 2.3.0 and 2.4.0 Are All Zeros

If options 2.3.0 and 2.4.0 are all zeros, one of the following items could be the problem:

- The Optimizer is inactive. Check the Primary Menu to ensure that the Optimizer is active. If it is inactive, start it from the Primary Menu.
- Your trial tape has expired. Contact your BMC Software sales representative. (The Optimizer code cannot be “zapped” to extend the trial period.)
- Someone in your data center might have made a local modification to your CICS system that no longer invokes the CICS user exits. To verify whether the Optimizer is being invoked by the CICS user exits, display option 4.2.0. This panel lists the Optimizer exit statistics.

Options 2.3.0 and 2.4.0 Are Not All Zeros

If options 2.3.0 and 2.4.0 are *not* all zeros, your data streams are all being excluded/included from optimization. Check the categories that are listed on options 2.3.0 and 2.4.0 to determine the cause.

Local Terminals Are Not Being Optimized

The 3270 SUPEROPTIMIZER®/CICS default is to optimize data streams for remote terminals only. You will need to turn on optimization for local terminals when the following conditions exits:

- Your CICS system contains only local devices or you have excluded all your remote devices.
- Someone in your data center has included only certain Termids for optimization and none of these Termids has been used.
- Someone in your data center has included only certain Transids for optimization and none of these Transids has been used.

To turn on optimization for local terminals, use the **BTAM/VTAM Locals Terminals** field on option 1.3.5.

Note: All terminals are treated as remote when you are using VTAM version 4.3.

Insufficient Storage Counts (Option 1.2.1)

Review this section when option 1.2.1 has insufficient storage counts.

Insufficient Storage

The **Insufficient storage** field on option 1.2.1 displays the number of data streams that have not been optimized with Imaging. If this field does not contain zero, your optimization is lower than it could be.

To lower this number to zero, increase the amount of storage that is specified in the Allocation Size for Imaging and/or SCS that is displayed in option 1.6.1 *and* use option 9 to reset the statistics.

If you are running CICS/ESA, all of the imaging storage is obtained from Extended DSA (EDSA).

If you are running an MVS/ESA, OS/390, z/OS system, or VSE/ESA 1.3 (or later), and your CICS system is using the XA option, all Imaging storage will be obtained above the 16 MB line. In this case, BMC Software recommends that the amount of storage be set to 2048 KB, or to about 2 KB per terminal, whichever is greater.

If you do *not* have MVS/ESA, OS/390, z/OS, or VSE/ESA 1.3 or later, the storage will come out of the CICS shared subpool, which will affect the size of your DSA. In this case, if you cannot afford to increase the amount of storage, you could run in an MRO environment or use the Storage Compression Percentage feature. (The Storage Compression Percentage feature can be specified in option 1.6.1.)

Storage Reserves

The Optimizer attempts to reserve 8 KB of storage for emergency use. Consequently, the peak amount of storage that is shown on option 1.6.1 might be 8 KB less than the amount that you allocated, and yet the insufficient storage count is still not zero. For example, if the peak amount of storage shown on option 1.6.1 is 66 KB, and you have 72 KB allocated, you will probably have an insufficient storage count that is not zero.

Data Stream Errors (Options 3.1.0 and 3.2.0)

Review this section when options 3.1.0 and 3.2.0 display data stream errors.

Optimizer Detects Errors but Does Not Correct Them

The Optimizer can detect application and hardware errors in your outbound and inbound data streams. However, it will make no attempt to correct the errors. If a data stream contains errors, it is excluded from optimization.

Monitor Lets You Trace Errors

The Monitor provides the ability to trace the errors by using option 3.4.0. The trace captures data streams based on the selection criteria that you establish, such as specifying the data stream error code (or a generic). For outbound data stream errors (usually an application error), route the trace to the unit that is responsible for the transaction in error. For inbound data stream errors (which are hardware generated), BMC Software recommends that the problem be routed to your hardware support staff.

Message CSV019I

Review this section when message CSV019I is displayed.

Problem

You might see this message if your operating system is MVS/ESA, OS/390, or z/OS. The message indicates that your CICS system is not running in protect key 8.

The message is issued when CICS uses the OS services to load the SUPEROPT modules above the 16 MB line (MVS/ESA, OS/390, and z/OS require that the modules be authorized for non-protect key 8).

Solutions

To solve this problem, you can perform one of the following activities:

- Link the BMC Software modules as authorized and place them in an authorized library.

  If you perform this activity, ensure that every library concatenated in your DFHRPL is authorized.

- Link the BMC Software modules as authorized and place them in an LPA library.

- Change the protect key to 8.

  BMC Software recommends this option because COBOL 2 will also require you to change the protect key to 8.

Other Common Problems

This section describes other common problems that you might experience with SUPEROPT and suggests solutions to those problems.

Traces Do Not Capture Any Data Streams

The traces will not capture any data streams when the following conditions exist:

- The Termid and/or Transid has been incorrectly specified. (Check the Termid and/or Transid that has been entered.)
- The Optimizer is not active. (Check the Primary Menu.)
- The Optimizer does not have enough storage to capture a trace.

  For a wraparound data stream trace, increase the size of the storage option that is displayed on option 3.4.0.

Monitor Lists Your Local Terminal as Remote

A terminal will appear as a remote terminal to the Optimizer when the following conditions exist at your site:

- You have two or more CPUs with cross domain, and the data streams from your local terminal are transmitted across a 37*xx* channel.
- You are using a “relay-type” Session Manager in the same domain.
- You are using VTAM 3.1 or later.

Local Copy Is Used with SUPEROPT

Local Copy is a configuration option that is available on 3270 control units. It can also be a hardware feature on the 3276. If Local Copy is active, it is invoked with the print key.

The print from a Local Copy is not presented to the operating system for routing, so SUPEROPT does not know what printed last. The Optimizer must know exactly what is in the print buffer for Imaging to work correctly. Use option 1.2.1 to exclude these printers from Imaging.

You Are Using 3270 Emulation

When you are using 3270 emulation, and you are processing the screen buffer or data stream, much of the optimization depends on what you see on the terminal screen. If you use applications that serve as screen processors (instead of human interaction), you will need consider the following items:

- The application should view the 3270 buffer, not incoming data streams. If the application views the data stream, it cannot be optimized.
- Nulls and blanks should be processed in the same manner because they are not discernible on a screen. The Blank Elimination feature might change blanks to nulls.
- If you count fields on a screen, ignore protected fields because they may be field-merged.
- Avoid processing dark fields because non-display fields might be eliminated.

If an application is already written or you decide to ignore the preceding items, perform the actions that are listed in Table 10-2.

Table 10-2 Considerations when You Are Using 3270 Emulation

Item	Action
The application looks at a data set and not at the buffer.	Do not use optimization. (You might want to modify your application code.)
The application counts fields.	Turn off Field Merge.
Required data is in dark fields.	Turn off Non-Display Fields.
Blanks and nulls are not processed in the same manner.	Turn off Blank Elimination.

Contacting BMC Software Customer Support

If you have a data stream problem or an abend, and you think BMC Software is responsible, please contact BMC Software Customer Support. The technical support analyst might be able to diagnose the problem by telephone.

To help the technical support analyst resolve your problem quickly, check the items that are listed in Table 10-3.

Table 10-3 Checklist for Problem Resolution

Question	Answer
What kind of problem do you have? Examples: • An application is not working correctly. • The output panel is not formatted correctly. • The terminal is getting PROG*xxxx* errors.	
Can you repeat the problem?	
Can you exclude the terminal or transaction from optimization and circumvent the problem temporarily?	
What is the model and vendor of the terminal and control unit?	
How has the terminal been defined to CICS?	
What is the date and version displayed on the Monitor Primary Menu?	
What is your CICS level and PTF level?	
Has anything changed in your CICS environment? Examples: • A new product or transaction has just been moved into this CICS system. • A new release of CICS has just been installed. • CICS maintenance has just been applied. • A SUPEROPT maintenance tape has just been installed.	**Note:** For MVS, ensure that you specify **REPLACE** in your IEBCOPY if you apply your maintenance to your existing library. Also, if the Optimizer is LPA resident, ensure that a CLPA IPL has been performed since installation.
Have any messages been logged to the CICS transient data destination CSMT?	
VSE/ESA only: Have any messages been sent to the operator console or the programmer log?	

If a BMC Software technical support analyst needs detailed information, the representative might request supporting dumps or other information. The representative will provide an overnight courier account number if your problem needs immediate resolution.

If you have been asked to use the Wraparound Data Stream Trace to trace a data stream problem, observe the following standards:

- If possible, trace only a specific Termid or Transid.
- If you are tracing a Termid, try to use a different terminal to start and stop the trace.
- Try to begin and end the trace sequence with the CLEAR key.
- Ensure that *all* of the traced data streams are printed and shipped. (To print either trace, use the print options that are provided with the traces, *not* the Local Copy.)
- If possible, send a copy of the terminal screen or printer output with and without optimization. (To print the screens, it is easiest to use the Local Copy print function.)
  - — If your operating system is MVS/ESA, OS/390, z/OS, or VSE/ESA 1.3 or later, and your CICS system is using the XA option, ensure the area above the 16 MB line is included in the dumps that you send. Some dump packages capture and/or print this area as an option only.
  - — If the amount of data you need to send is small, please fax the information. Please telephone BMC Software Customer Support for the fax number and let them know that the fax is coming.
  - — If your site has the available facilities to allow Customer Support staff to access your system (dial-up), the technical support analyst might be able to diagnose your problem online.

Glossary

AID: Attention Identifier. The AID appears as the first byte in an inbound 3270 data stream. It indicates the source or type of data that follows. If the inbound data stream consists of structured fields, an additional AID byte can be embedded in the inbound 3270 data stream structured field. Valid AID bytes are as follows:

- **60** (No AID generated)
- **E8** (No AID generated)
- **88** (Structured field)
- **61** (Read partition)
- **7F** (Trigger action)
- **F1** (F1 key)
- **F2** (F2 key)
- **F3** (F3 key)
- **F4** (F4 key)
- **F5** (F5 key)
- **F6** (F6 key)
- **F7** (F7 key)
- **F8** (F8 key)
- **F9** (F9 key)
- **7A** (F10 key)
- **7B** (F11 key)
- **7C** (F12 key)
- **C1** (F13 key)
- **C2** (F14 key)
- **C3** (F15 key)
- **C4** (F16 key)
- **C5** (F17 key)
- **C6** (F18 key)
- **C7** (F19 key)
- **C8** (F20 key)
- **C9** (F21 key)
- **4A** (F22 key)
- **4B** (F23 key)

- **4C** (F24 key)
- **6C** (PA1 key)
- **6E** (PA2 key)
- **6B** (PA3 key)
- **6D** (Clear key)
- **6A** (Clear partition key)
- **7D** (Enter key)
- **7E** (Selector pen attention)
- **E6** (Magnetic Operator ID reader)
- **E7** (Magnetic reader number)

Background Transparency A 3270 extended attribute that determines (for those devices that support this attribute) if the graphics presentation layer is visible to the operator through the alphanumeric layer.

BTAM Basic Telecommunications Access Method. One of the telecommunications access methods that CICS and 3270 SUPEROPTIMIZER/CICS support.

Character Set The multiple character sets or program symbols a device supports. All devices support a base character set. Devices with the APL feature support an alternate character set. Some devices support up to six additional character sets (program symbol sets), or RWS (Read/Write Stores) which may be loaded by the application program via a Load Program Symbol (LPS) Structured Field.

Command Code A 3270 command code is a hexadecimal character sent to a 3270 terminal to read, write, or copy the buffer. Valid command codes are as follows:

- **COPY** (Copy)
- **EAU** (Erase All Unprotected)
- **EW** (Erase Write)
- **EWA** (Erase Write Alternate)
- **RB** (Read Buffer)
- **RM** (Read Modified)
- **RMA** (Read Modified All)
- **W** (Write)
- **WSF** (Write Structured Field)

COPY A command code that causes the device buffer to be copied to another device, usually a printer.

CP Create Partition. A Structured Field that defines a partition for a device, including such items as width, height, and cell size.

CUT Control Unit Terminal. A terminal whose data streams are executed and generated by the control unit (for example, an IBM 3174). The terminal performs only display functions. All keystrokes are sent to the control unit for execution. Some examples of CUT terminals are: 3180, 3278, and 3279.

DBCS Double-Byte Character Set. In countries where an alphabet is not used, characters are used to represent words. Since a single-byte character set (SBCS) can have at most 256 characters, a double-byte character set, using two bytes, is used. This provides for 256 times 256 (65,536) possible characters.

DBCS requires special processing for optimization, as DBCS fields and characters are specified using special orders.

DCT Destination Control Table. In CICS, the DCT controls the routing of certain internal and external queues. SUPEROPT uses the DCT queue CSMT to log critical messages. CSMT is a CICS-required DCT queue and optionally uses a DCT queue to print screens.

See the *3270 SUPEROPTIMIZER/CICS Customization Guide* for information about using a DCT queue to print and on defining a DCT queue to CICS before it can be used for printing.

DCT ID DCT Identifier. This refers to the four-character identifier used within CICS to refer to a particular DCT queue. It is left-justified and padded on the right with blanks.

DFT Distributed Function Terminal. A terminal whose data streams are executed and generated by the terminal. The terminal performs all functions. Some examples of DFT terminals are 3290, 3179, and 3192.

DSC Printer Data Stream Compatible Printer. A printer, under VTAM SNA architecture, which accepts a data stream defined as LU type 3. The printer accepts 3270 data streams containing both buffer and printer orders which cannot be printed until the full data stream has been received by the printer. This contrasts with an LU type 1 printer where the data stream is characterized by imbedded orders and commands that are executed as they are received at the printer, allowing concurrent data transfer and printing.

DTA *See* dynamic terminal area.

dynamic terminal area
An area that is assigned to each terminal that is dynamically allocated by using the CICS Autoinstall feature. You can specify up to 32,767 of these areas, each of which is 92 bytes.

EAU Erase All Unprotected. A command code that causes all unprotected fields to be erased.

ESDS Entry-Sequenced Data Set. The type of VSAM data set used by the Monitor for optional printing of user-specified screens, statistics, and/or traces.

EUA: Erase Unprotected-to-Address. A 3270 order that erases all unprotected buffer positions from the current buffer address to a specified address.

EW Erase Write. A 3270 command code that causes the buffer to be set to all nulls (X’00’) before the write occurs. The buffer is set to its default screen size.

EWA Erase Write Alternate. A 3270 command code that causes the buffer to be set to all nulls (X'00') before the write occurs. The buffer is set to its alternate screen size.

Extended Attribute An attribute not supported in the original 3270 architecture; for example, color or extended highlighting.

Extended Color An extended attribute that defines colors; for example, red or blue.

Extended Highlighting An extended attribute that defines reverse video, blink, or underscore.

FCT File Control Table. In CICS, the FCT defines files to CICS. SUPEROPT uses the file COPOPT to record the current status of the Optimizer, as well as all user-specified options.

See the *3270 SUPEROPTIMIZER/CICS Customization Guide* for information on how to define a file to CICS, before it can be used for this purpose and for information on creating a FCT. SUPEROPT can optionally use a file for printing.

Field On a 3270, an area on the screen that starts with an attribute byte and ends with the next attribute byte. Except on terminals with extended attributes, all characters in the field share the same attributes, such as bright or protected.

Field Outlining Field outlining is a 3270 extended field attribute used for displaying and printing the field frame by a combination of horizontal and vertical lines. This attribute can be used to improve the readability of the screens and printout.

Field Validation Field validation is a 3270 extended field attribute used to specify the mandatory fill, mandatory entry, and trigger attributes of a field.

F*n* Function key. A key designated F*n* on a 3270 terminal keyboard. *n* is a number. When used instead of **Enter**, designates a particular function to be executed by the Monitor.

GE Graphic Escape. A 3270 order that, combined with the byte following, generates a character from the alternate character set of the device.

Generic A group of similarly-named terminals, transactions, or error codes.

Generic Error Code Any Error Code. An example is *.

Generic Termid A group of similarly-named terminals. An example is PS*, which refers to all terminal IDs (Termids) that start with PS.

Generic Transid Refers to a group of similarly-named application IDs (Applids). An example is AB*, which refers to all transaction IDs (Transids) that start with AB.

IC Insert Cursor. A 3270 order that causes the cursor to be placed in the current buffer location.

LCID Local Character Set Identifier. The 3270 architecture supports program symbols. An application can use program symbols by issuing a Load Program Symbol (LPS) Structured Field which equates one of the six Read/Write Stores (RWS) in a device with a user-specified identifier called the LCID. The LCID may be referred to in subsequent SA, SFE, or MF orders.

Light-Pen–Detectable A field attribute on a 3270 that causes the field to be eligible for selection with a light-pen. The field then behaves similarly to a field modified by the terminal operator.

LPS Load Program Symbol. A Structured Field used to define program symbols to a device and defines the equate between the LCID and the RWS.

MDT: Modified Data Tag. A bit in each attribute byte describing the field in the 3270 buffer. This bit is set On if the terminal operator modifies the field, or it can be set pre-modified by the application program. On a subsequent read-modified command, only the modified fields are sent back to the CPU or communications controller.

MF Modify Field. A 3270 order that modifies an existing attribute in the 3270 buffer or extended buffer.

MPP Maximum Print Position On SCS Printers indicates the maximum print position in which a character may be printed.

Non-Display Field Also known as dark, an attribute of a 3270 field that causes data in the field to not be displayed.

PA: Program Attention. A key designated PAn on a 3270 terminal keyboard. When used instead of the Enter key, designates a particular function to be executed by the Monitor.

Partition A concept in the extended 3270 data stream architecture in which the terminal buffer storage is divided into multiple areas. Each area is called a partition. A partition can be written to or read from individually, using the appropriate structured fields.

Partition ID A binary number that identifies which partition a structured field is addressing.

PLT Program List Table.

PLTPI Program List Table for Program Initialization. In CICS, the PLTPI is a list of programs invoked during CICS System Initialization processing. The Monitor module, COPINIT, if placed in this list, can optionally start the Optimizer at system initialization time automatically. See the *3270 SUPEROPTIMIZER/CICS Customization Guide* for more information.

PLTSD Program List Table Shutdown. In CICS, the PLTSD is a list of programs invoked during CICS Shutdown processing. The Monitor module, COPMON, if placed in this list, can optionally print the Monitor panels at Shutdown time to provide a permanent record of performance data. The Optimizer is also stopped. See the *3270 SUPEROPTIMIZER/CICS Customization Guide* for more information.

PPT Program Processing Table. In CICS, the PPT defines the list of programs and their properties for CICS. There are five required entries in the PPT for SUPEROPT and a number of optional entries. See the *3270 SUPEROPTIMIZER/CICS Customization Guide* for more information.

Pre-Modified Field Any attribute in the output data stream that has the MDT bit set On by the application program.

Printer ID Printer Identification. For SUPEROPT, refers to any terminal defined in the CICS Terminal Control Table as a hardcopy device with a capacity of at least 80 characters per line. It does not have to be a 3270-type printer.

Program Symbols A data stream that contains definable symbols (characters) for 3270's which have that feature.

Protected An attribute of a 3270 field that makes the field protected from a terminal operator. The terminal operator may not enter data in a protected field or alter it in any manner.

PT Order PT is an abbreviation for Program Tab. The PT order advances the current buffer address to the first character of the next unprotected field. It causes the erasure of the data up to the end of the current field.

QID Queue Identifier. In CICS, the queue ID is the one defined in the CICS Terminal Control Table TYPE=LINE macro by the QUEUEID operand.

Query Certain terminals describe what 3270 features they support when a Query structured field is sent to the terminal. The data stream with the Query structured field is called a Query.

Query Reply Certain terminals describe what 3270 features they support whenever a Query structured field is sent to the terminal. The inbound data stream that contains the information is called a Query Reply.

RA Repeat-to-Address. A 3270 order that causes a specified character to be repeated until a specified buffer address.

RB Read Buffer. A command code that causes the aid byte, cursor address, and device buffer to be read inbound. The format of the data stream after the cursor address is a function of the reply mode. The RB contrasts with the RM (Read Modified), in which only the fields with the MDT (Modified Data Tag) bit ON are transmitted inbound.

RM Read Modified. A command code that causes the aid byte (for a short read, such as PA1 or Clear) or, the aid byte, cursor address, and all fields with the MDT (Modified Data Tag) bit On to be transmitted, each of which is prefixed by an SBA. The format of the data is affected by the Reply Mode. If the aid is Light-Pen, then only the SBAs are transmitted inbound.

RMA Read Modified All. This is a command code that functions exactly like a RM (Read Modified), except the format for all AIDs includes all modified fields.

RPL Request Parameter List. A control block that contains parameters necessary for processing a request for data transfer, establishing or terminating a session, an input or output operation or some other operation.

RWS Read/Write Store. Certain 3270 devices have the capability to be loaded with up to six different sets of program symbols, or character sets. The hardware area in which they are kept is called a Read/Write Store.

SA Set Attribute. A 3270 order that specifies an extended attribute. This order may be specified at any position in a field.

Saved TIOA In CICS, a TIOA that is indicated to be saved when the terminal input/output operation is complete. CICS would otherwise release the storage. Macro-level programs can specify in the DFHTC macro that a TIOA is to be saved.

SBA Set Buffer Address. A 3270 order that changes the current buffer address to a specified value.

SCS Printer SNA Character String Printer. A printer, under VTAM SNA architecture, which accepts a data stream defined as LU type 1. The data stream is characterized by imbedded orders and commands that are executed as they are received at the printer, allowing concurrent data transfer and printing. This contrasts with an LU type 3 printer that accepts 3270 data streams containing both buffer and printer orders which cannot be printed until the full data stream has been received by the printer.

SF Start Field or Structured Field. Start Field is a 3270 order that causes a field to be defined starting at the current buffer address. See also *Structured Field*.

SFE Start Field Extended. A 3270 order that is similar to the SF order, except that it may specify extended attributes as well.

Shift Out/Shift In A special pair of 3270 orders that indicate that the characters between the two orders are DBCS characters. The Shift Out (SO) order is indicated by a X'0E'. The Shift In (SI) order is indicated by a X'0F'.

SIT System Initialization Table. In CICS, a table that describes the initialization parameters that CICS is to use for this execution. SUPEROPT requires two parameters to be set in this table or in the PARM override. See the *3270 SUPEROPTIMIZER/CICS Customization Guide* for more information.

SNA Data Streams Systems Network Architecture. Data streams that contain special SNA characters for formatting the data streams.

SRM Set Reply Mode. A structured field that causes the setting of the inbound reply mode. There are three inbound reply modes: Field Mode (FM), Extended Field Mode (EF), and Character Mode (CM). Each mode causes progressively more information to be returned on read commands. This enables the application program to exploit more of the device capabilities.

Structured Fields A Structured Field (SF) is an architectural extension to 3270 and SCS data streams. It allows the use of multiple functions, such as defining partitions and Load Program Symbols (LPS). An SF may be present in both outbound and inbound 3270 data streams and is implemented by the Write Structured Field command and Structured Field Aid. In SCS data streams they are implemented with an FMH1 header. The valid Structured Field codes are as follows:

- **X'00'** (Reset Partition)
- **X'01'** (Read Partition)
- **X'03'** (Erase/Reset)
- **X'06'** (Load Program Symbols [LPS])
- **X'09'** (Set Reply Mode [SRM])
- **X'0B'** (Set Window Origin)
- **X'0C'** (Create Partition [CP])
- **X'0D'** (Destroy Partition)

- **X’0E’** (Activate Partition)
- **X’40’** (3270 Outbound Data Stream)
- **X’41’** (SCS Data)
- **X’4A’** (Select Format Group)
- **X’4B’** (Present Absolute Format)
- **X’4C’** (Present Relative Format)
- **X’80’** (3270 Inbound Data Stream)
- **X’81’** (Query Reply)
- **X’D0’** (PC File Transfer)
- **X’0F01’** (Magnetic Stripe Reader [MSR] Control)
- **X’0F02’** (Destination/Origin)
- **X’0F0A’** (Modify Partition)
- **X’0F0F’** (Graphic Data)
- **X’0F10’** (Graphic Picture)
- **X’0F11’** (Graphic Control)
- **X’0F1F’** (Other Equipment Manufacturer [OEM] Data)
- **X’0F71’** (Text Header Outbound)
- **X’0FB1’** (Text Header Inbound)
- **X’0FC1’** (Type 1 Text)
- **X’1034’** (Save/Restore Format)

TASKREQ An alternative Transaction Request Identifier. Examples are PA1, OPID, LPA, and F1.

TCAM Telecommunications Access Method. One of the telecommunications access methods that CICS and SUPEROPT support.

TCTTE Terminal Control Table Terminal Entry. A CICS control block that describes the CICS terminal, useful for debugging.

TIOA Terminal Input/Output Area. A CICS storage area that contains a data stream.

Type Value For 3270 extended data streams, type value means a type/value pair of hexadecimal characters that follow an SA, MF, or SFE order in the data stream. They may define such things as color or extended highlighting. Only certain valid values exist. See the IBM 3270 Component Description manual for more information.

VSAM Virtual Storage Access Method. The access method used by SUPEROPT for the COPOPT file and all optional files for printing.

VSAM ID VSAM FCT Identifier. This refers to the eight-character identifier used within CICS to refer to a particular FCT file. It is left-justified and padded on the right with blanks.

VTAM Virtual Telecommunications Access Method. One of the telecommunications access methods that CICS and SUPEROPT support.

VTAM RPL VTAM Request Parameter List. A VTAM control block which describes the data stream being sent or received by VTAM. It is useful for debugging problems.

W Write. A command code that updates the device buffer with the data stream which normally follows.

WCC Write Control Character. A 3270 write control character is sent to the 3270 terminal to control the following: print format, the alarm, keyboard lock, printer startup, and setting the MDT bits.

WSF Write Structured Field. A command code that indicates that a series of one or more structured fields follows. This allows an architectural extension that allows program symbols to be loaded, partitions to be defined, modified, and deleted.

3270 Address An address in a 3270 terminal buffer. Buffer addresses are numbered sequentially, starting at zero. For a terminal with alternate screen sizes, certain addresses may be valid or invalid depending on the mode of the terminal.

3270 Field Attribute An attribute in a 3270 terminal buffer. Field attributes are created by either a SF or SFE order in the data stream.

3270 Order When sent to a 3270, a 3270 order causes the terminal to perform certain functions, such as, defining the start of a field or defining where to place the cursor. Valid 3270 orders are as follows:

- **EUA** (Erase Unprotected-to-Address)
- **GE** (Graphic Escape)
- **IC** (Insert Cursor)
- **MF** (Modify Field)
- **PT** (Program Tab)
- **RA** (Repeat-to-Address)
- **SA** (Set Attribute)
- **SBA** (Set Buffer Address)
- **SF** (Start Field)
- **SFE** (Start Field Extended)
- **SO/SI** (Shift Out/Shift In)

Index

Numerics

A

B

C

D

E

F

G

H

I

K

L

M

N

O

P

Q

R

S

T

U

V

W

X

Z

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GOVERNING LAW. This Agreement is governed by the substantive laws in force, without regard to conflict of laws principles: (a) in the State of New York, if you acquired the License in the United States, Puerto Rico, or any country in Central or South America; (b) in the Province of Ontario, if you acquired the License in Canada (subsections (a) and (b) collectively referred to as the "**Americas Region**"); (c) in Singapore, if you acquired the License in Japan, South Korea, Peoples Republic of China, Special Administrative Region of Hong Kong, Republic of China, Philippines, Indonesia, Malaysia, Singapore, India, Australia, New Zealand, or Thailand (collectively, "**Asia Pacific Region**"); or (d) in the Netherlands, if you acquired the License in any other country not described above. The United Nations Convention on Contracts for the International Sale of Goods is specifically disclaimed in its entirety.

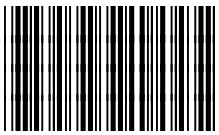
ARBITRATION. ANY DISPUTE BETWEEN YOU AND BMC ARISING OUT OF THIS AGREEMENT OR THE BREACH OR ALLEGED BREACH, SHALL BE DETERMINED BY BINDING ARBITRATION CONDUCTED IN ENGLISH. IF THE DISPUTE IS INITIATED IN THE AMERICAS REGION, THE ARBITRATION SHALL BE HELD IN NEW YORK, U.S.A., UNDER THE CURRENT COMMERCIAL OR INTERNATIONAL, AS APPLICABLE, RULES OF THE AMERICAN ARBITRATION ASSOCIATION. IF THE DISPUTE IS INITIATED IN A COUNTRY IN THE ASIA PACIFIC REGION, THE ARBITRATION SHALL BE HELD IN SINGAPORE, SINGAPORE UNDER THE CURRENT UNCITRAL ARBITRATION RULES. IF THE DISPUTE IS INITIATED IN A COUNTRY OUTSIDE OF THE AMERICAS REGION OR ASIA PACIFIC REGION, THE ARBITRATION SHALL BE HELD IN AMSTERDAM, NETHERLANDS UNDER THE CURRENT UNCITRAL ARBITRATION RULES. THE COSTS OF THE ARBITRATION SHALL BE BORNE EQUALLY PENDING THE ARBITRATOR'S AWARD. THE AWARD RENDERED SHALL BE FINAL AND BINDING UPON THE PARTIES AND SHALL NOT BE SUBJECT TO APPEAL TO ANY COURT, AND MAY BE ENFORCED IN ANY COURT OF COMPETENT JURISDICTION. NOTHING IN THIS AGREEMENT SHALL BE DEEMED AS PREVENTING EITHER PARTY FROM SEEKING INJUNCTIVE RELIEF FROM ANY COURT HAVING JURISDICTION OVER THE PARTIES AND THE SUBJECT MATTER OF THE DISPUTE AS NECESSARY TO PROTECT EITHER PARTY'S CONFIDENTIAL INFORMATION, OWNERSHIP, OR ANY OTHER

PROPRIETARY RIGHTS. ALL ARBITRATION PROCEEDINGS SHALL BE CONDUCTED IN CONFIDENCE, AND THE PARTY PREVAILING IN ARBITRATION SHALL BE ENTITLED TO RECOVER ITS REASONABLE ATTORNEYS' FEES AND NECESSARY COSTS INCURRED RELATED THERETO FROM THE OTHER PARTY.

U.S. GOVERNMENT RESTRICTED RIGHTS. The Software under this Agreement is "commercial computer software" as that term is described in 48 C.F.R. 252.227-7014(a)(1). If acquired by or on behalf of a civilian agency, the U.S. Government acquires this commercial computer software and/or commercial computer software documentation subject to the terms of this Agreement as specified in 48 C.F.R. 12.212 (Computer Software) and 12.211 (Technical Data) of the Federal Acquisition Regulations ("**FAR**") and its successors. If acquired by or on behalf of any agency within the Department of Defense ("**DOD**"), the U.S. Government acquires this commercial computer software and/or commercial computer software documentation subject to the terms of this Agreement as specified in 48 C.F.R. 227.7202 of the DOD FAR Supplement and its successors.

MISCELLANEOUS TERMS. You agree to pay BMC all amounts owed no later than 30 days from the date of the applicable invoice, unless otherwise provided on the order for the License to the Products. You will pay, or reimburse BMC, for taxes of any kind, including sales, use, duty, tariffs, customs, withholding, property, value-added (VAT), and other similar federal, state or local taxes (other than taxes based on BMC's net income) imposed in connection with the Product and/or the Support. This Agreement constitutes the entire agreement between You and BMC and supersedes any prior or contemporaneous negotiations or agreements, whether oral, written or displayed electronically, concerning the Product and related subject matter. No modification or waiver of any provision hereof will be effective unless made in a writing signed by both BMC and You. You may not assign or transfer this Agreement or a License to a third party without BMC's prior written consent. Should any provision of this Agreement be invalid or unenforceable, the remainder of the provisions will remain in effect. The parties have agreed that this Agreement and the documents related thereto be drawn up in the English language. Les parties exigent que la présente convention ainsi que les documents qui s'y rattachent soient rédigés en anglais.

Notes



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