CICS Online Transmission Time Optimizer

Compatibility Mode Guide

Version 1 Release 2

SC34-6780-00

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Note

Before using this information and the product it supports, be sure to read the general information under Appendix C, "Notices," on page 63.

First Edition (September 2006)

This edition applies to Version 1 Release 2 of CICS® Online Transmission Time Optimizer, program number 5655-I05, and to all subsequent versions, releases, and modifications until otherwise indicated in new editions.

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PREFACE

CICS Online Transmission Time Optimizer (CICS OTTO) is a tool for the IBM Customer Information Control System (CICS). CICS OTTO improves user productivity and 3270 network utilization.

Who Should Use This Book

This book is intended for use by the system programmer responsible for the operation of CICS OTTO. It contains all the relevant information needed to control the optimization features using the CICS OTTO's native command language.

How to Use This Book

This book is intended for use when CICS OTTO is controlled using native commands. It contains the following chapters.

- "Chapter 1: Using the Compatibility Mode" on page 1 introduces the command screen and general rules regarding the commands that are used to control the optimization features.
- " Chapter 2: Optimization Control Commands" on page 9 explains how to use the CICS OTTO native commands to define your site specific optimization settings.
- "Chapter 3: DISPLAY Commands" on page 29 describes commands that can be used to view optimization controls and statistics.
- "Appendix A: Troubleshooting" on page 57 provides hints to resolving problems and describes what information should be provided for technical support in case of difficulties. Additionally, FAQs about the image pool are listed.
- Appendix B: Technical Support Checklist" on page 61 is a technical support checklist that should be completed before contacting your technical support representative.
- "Appendix C: Notices" on page 63 contains legal notices and trademarks.
- The comprehensive "Index" on page 67 allows you to access specific information quickly.

Contacting IBM support

Information on IBM support policy can be found on the Web site. Follow the Support link in the left-hand column at http://www.ibm.com/software/ts/cics/.

How to Send Your Comments

IBM welcomes your comments. You can send your comments by any one of the following methods:

1. Electronically to this address:

   idrcf@hursley.ibm.com

   Be sure to include your network address if you want a reply.

2. By FAX, to the following numbers:

   UK: 01962-816151

   Other countries: +44-1962-816151

3. By mail to the following address:

   User Technologies
   Mail Point 095
   IBM United Kingdom Laboratories
   Hursley Park
   Winchester
   Hampshire
   SO21 2JN
   United Kingdom

Where to Get More Information

For more information, the following books complete the library of CICS OTTO:

- *Program Directory* explains how to install CICS OTTO.
- *CICS Online Transmission Time Optimizer Message Guide* provides an explanation for the messages that may be issued and explains any action that may be necessary.
- *CICS Online Transmission Time Optimizer User's Guide* is a reference guide on how to use the CICS dialog panels to control optimization. The CICS panels are an alternative to using the native commands documented in this book.

What's New in Release 1.2

The following enhancements are included in release 1.2:

- Statistics are collected for inbound and outbound data stream errors. These statistics show the number of data streams in which an error was detected, as well as information on the terminal for which the error most recently occurred. Such information includes date, time, LU/module name, partition ID and size, along with the displacement of the error in data stream, and failing 3270 order or data.

- Inbound and outbound data streams can be traced using a CICS OTTO storage area in which the trace records are stored. Such a trace enables you to track and evaluate specific inbound and outbound data stream errors.

Therefore, the associated commands and keywords have been added to this document for any end-users who elect to use the compatibility mode instead of the CICS OTTO online interface.

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CHAPTER 1: USING THE COMPATIBILITY MODE

To control CICS OTTO, a set of powerful commands allows you to define the optimization features and display a variety of information such as the optimization effect. The actual commands are detailed the subsequent chapters. This chapter is intended to provide the general information that is needed before using these commands.

There are two ways to control the optimization features:

1. Using CICS dialog panels. Optimization features can be controlled using these interactive and self-explanatory panels without the need to know or understand the native command language described in this book. For details on using the CICS menus and for complete information about CICS OTTO, refer to the *CICS Online Transmission Time Optimizer User's Guide.*

2. Using the Compatibility Mode. In general, the Compatibility Mode allows you to control the optimization features using the native commands described in this book instead of using the online dialog. To access the Compatibility Mode from the CICS panels, enter option 14 on the CICS OTTO PRIMARY OPTION MENU.

1.1 Activating the Command Screen

To enter commands, activate the command screen using the Compatibility Mode. To do this. you will need to access the online dialog and choose this option from the main menu (see *CICS Online Transmission Time Optimizer User's Guide*).

1.2 General Layout of the Command Screen

Option 14 of the PRIMARY OPTION MENU displays the native command screen illustrated below.

```
appl-id              Online Transmission Time Optimizer V1R2          vvmm/ptf
              Copyright Software Engineering GmbH, 1987-2006

---LU--- --DATE-- --TIME-- INEX POOL EXIT CTR  TRACE --3270-- --SCS--- --3600--
tid      date     time     LU-x  pu  eid  VSM  SEQ     sopt     sopt     sopt
                           MO-x      oo   ovf  onoff   olev     OUT      olev
                           SE-x               ovf

display line 1
display line 2
display line 3
display line 4
display line 5
display line 6
display line 7
display line 8
display line 9
display line 10
display line 11
display line 12
display line 13

message line
OTTO COMMAND ===>_____________________________________________________________  F3=END
```

Figure 1: Command Screen Layout

The following general information applies to using this screen.

- Commands are entered on the OTTO COMMAND line.
- The CLEAR or PF3 keys end the transaction.
- All lines other than the *display lines* are updated each time a command is entered. The *display lines* are updated only when a DISPLAY or HELP command is entered.

Layout Description

appl-id	TP systems application-ID.
vvmm/ptf	CICS OTTO version and modification level and PTF level.
tid	Terminal-ID or VTAM node name of terminal where the OTTO transaction was activated.
date	Current date.
time	Current time.

LU-x	*x*=Y if terminal exclusion list exists or *x*=N if terminal exclusion list does not exist.
MO-x	*x*=Y if module exclusion list exists or *x*=N if module exclusion list does not exist.
SE-x	*x*=Y if terminal selection list exists or *x*=N if terminal selection list does not exist.
pu	Current percentage of image pool usage.
eid	User exit suffix or -NA- if a user exit does not exist.
oo	ON if user exit is enabled or OFF if user exit is disabled. This field is blank if no user exit exists.
ovf	OVF if an overflow occurred on the control or trace file.
onoff	ON if trace is active or OFF if trace is not active.
sopt	Start option for component: STOPPED if component is not started. STOPPING if the component has been stopped but not all terminals have been reset yet. FULL if component is fully started. SELECTED if component is selectively started.
olev	Optimization level for 3270: OUTIMAGE if output messages are optimized including the image function. OUT if output messages are optimized without the image function. Optimization level for 3600: FULL if both input and output messages are optimized. OUT if only output messages are optimized.
display lines 1-13	Filled by the execution of the various DISPLAY and HELP commands.
message line	Confirmation and error messages.
OTTO COMMAND	Input field for command input.

1.2.1 General Rules

- A command must be entered in the OTTO COMMAND line.
- Commands and keywords can be entered in an abbreviated format. See online HELP for a quick reference on using commands.
- Successful processing of a command is confirmed by an appropriate message. In the event of an error situation, an error message is displayed. See the *CICS Online Transmission Time Optimizer Message Guide* for a listing of command messages and corrective actions.
- All commands are executed temporarily if the keyword PERMANENT is not specified, except the SET POOL and SET TERMNO commands. Permanent execution of a command means that the action is stored in the CICS OTTO command file and is still valid at the next startup of the TP system.
- The command and the keyword(s) must be separated from each other by either
  1) one or more blanks, or
  2) one comma.
- The keywords can be entered in any sequence.
- If a keyword allows data specification, its format is 'keyword=data'.
- If a data list is allowed, the data must be enclosed in parentheses and the list elements must be separated by a comma: 'keyword=(ele1,ele2)'.

1.2.2 Using Generic Notation

With many command keywords, LU or module names must be entered. When entering the name of an LU or module, generic notation is often allowed. Generic notation is a way of generically grouping LUs or modules with similar names.

There are two types of generic notation: simple and extended.

1.2.2.1 *Simple Generic Notation*

Simple generic notation allows you to use the asterisk (*) as a wildcard to generically name LUs and modules by appending the asterisk to the end of a name, thus masking all names that begin with like characters. For example, using a generic LU name like TE* will mask to all LU names that begin with TE.

1.2.2.2 *Extended Generic Notation*

Extended generic notation allows you to use the asterisk (*) and percent sign (%) as wildcards anywhere in a string. This applies to every parameter (or input field) for which CICS OTTO supports generic notation.

When using the extend generic notation, follow IBM's conventions for RACF and OPC/ESA when using the asterisk (*) and percent sign (%). A percent sign matches any valid (non-blank) character in a name, whereas an asterisk matches any string of zero or more valid characters in a name.

There is one syntax restriction. Two or more consecutive asterisks are not allowed.

Wildcard notation is honored within every keyword for which CICS OTTO supports generic notation. Pay special attention to the SET command with keyword LU or MOD.

When a CICS OTTO command of this type is issued, two actions are performed :

1. All active terminals and modules are checked to see if they are matched by the LU/MOD specification. If so, the command is executed for these terminals and modules.

2. An entry is added to an internal CICS OTTO control block called "pending queue". This entry reflects the options set by the SET command.

   Actually, there are two pending queues, one for terminals and one for modules. Pending queue entries may be TEMPORARY (in-storage, only), or PERMANENT (written to the CMD file and read into storage during CICS OTTO initialization).

Every time a terminal or module is optimized by CICS OTTO for the first time, the appropriate pending queue is scanned for an entry whose name matches the terminal, or module name. The logic follows one of the following courses:

- If no entry is found, the terminal/module is optimized using the default settings of the component (3270, SCS, or 3600) to which the terminal or module belongs.
- If there are one or more pending queue entries matching the terminal/module, a set of rules is applied in order to select a pending queue entry whose settings are used for the terminal or module. Exactly one entry is selected, and there is no merge of settings of different matching pending queue entries.

The rules are governed by the goal to find the best-matching pending queue entry. In some respects, RACF methods are adopted to find the best-matching profile for a given resource.

Table 1: Wildcard Matching Rules and Examples for Generic Notation

Rule	Description
1	If there is a pending queue entry that exactly matches the name of the terminal/module, this entry is always selected. This would be the case if a SET command had been issued previously with the exact (i.e., non-generic) LU/MOD name. If there is no exact match and there is only one matching generic pending queue entry, this entry will be selected. If there is no exact match and at least two matching generic pending queue entries exist, Rules 2-4 are used to find the best-matching entry. CICS OTTO uses the name "pattern" for a string that contains one or more generic characters (i.e., asterisks and/or percent signs). Thus, the name of a generic pending queue entry is a pattern. Rules 2-4 explain how CICS OTTO compares patterns in order to find the best matching one.
2	Both patterns are compared from left to right. CICS OTTO assumes that no asterisk precedes the first position where they differ. Since both patterns match the terminal/module name, one of the characters at this position must be generic. In this case, a non-generic character wins against a generic character and a percent sign wins against an asterisk. *Example*: For the name ABC, pattern ABC* matches better than AB%, AB% matches better than AB*, and AB* matches better than A%C.

3	If Rule 2 does not apply, both patterns must be equal up to, and including, a position where both contain an asterisk. In this case, the pattern with the higher number of "hits" (no. of characters <> *) wins. If both patterns have the same number of hits, the pattern with the smaller number of asterisks wins. *Example*: For the name ABC, rule 1 does not decide between the matching patterns A*, A*C, A*B*, and A*C*. Rule 3 lets A*C win against each other of these patterns.
4	If Rules 2 and 3 do not apply the pattern that is higher in alphabetical order wins. This rule will apply in any case because both patterns are different. *Example :* For the name ABC, Rules 2 and 3 do not decide between the matching patterns A*B*, and A*C*. Rule 4 lets A*C* win.

1.3 The System Command File

All of the optimization features and definitions are maintained on a command file. At each TP system startup, the command file optimization settings are activated. All optimization settings can be permanent or temporary.

- Permanent optimization settings are updated to the command file. Permanent settings are activated at each system startup.

- Temporary changes affect only the current processing and are not updated to the command file. Therefore, the command file definitions are activated again at the next start up.

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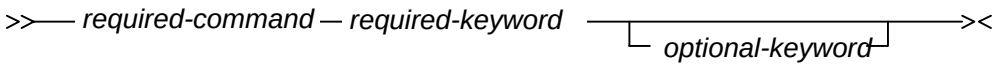
CHAPTER 2: OPTIMIZATION CONTROL COMMANDS

All of the optimization features can be controlled by the use of native commands. This book describes a command and each of the keyword parameters that can be used. Commands are listed alphabetically. For a quick reference to using these commands, online help is available (see section 2.4 "HELP Command" on page 12 for details on how to obtain online help).

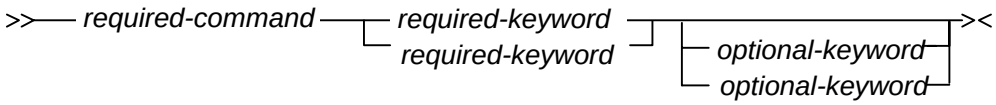
The general command format is:

```
COMMAND KEYWORD1 KEYWORD2 .. KEYWORDn-1 KEYWORDn
```

Required commands and keywords always appear on the main path (the horizontal line). Optional keywords appear below the main path.



If there are more than one required or optional keywords to choose from, they will appear stacked vertically. Optional keywords will be stacked below the main path.



Within the syntax diagram, default values are indicated with **bold** text. If a command or keyword has underlined letters, these letters indicate the abbreviations that can be used.

For example:

DISPLAY ACTIVE indicates that the default command is DISPLAY and the abbreviation for DISPLAY ACTIVE is D ACT.

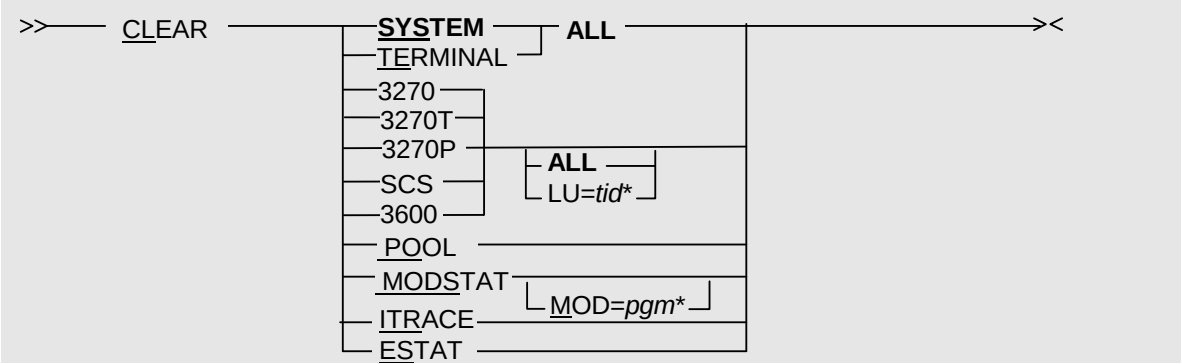
As a reminder:

- Generic notation may be allowed when entering LU names and program names. This is indicated by an asterisk within the keyword input, e.g., INCLUDE LU=*tid**. The value you replace for *tid** may be a generic name.

- Many command settings may be either *permanent* or *temporary*. When these keywords are allowed, the default keyword is always TEMPORARY, meaning the setting is active only during the current processing. Therefore, if you want to update the system command file, be sure to use the PERMANENT keyword.

2.1 CLEAR Command

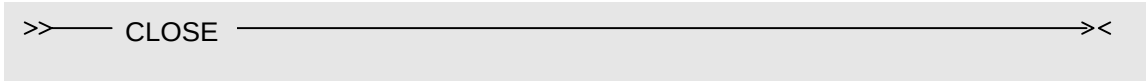
Use the CLEAR command to clear the statistics that have been gathered.



CLEAR keywords	Description
SYSTEM	Set the statistics for all components (3270, SCS, and 3600) as well as for the pool and module statistics to ZERO.
TERMINAL	Set the statistics for all components (3270, SCS and 3600) to ZERO.
3270, 3270T, 3270P	Set the statistics for component 3270, 3270-type terminals, or 3270-type printers to ZERO.
SCS	Set the statistics for component SCS to ZERO.
3600	Set the statistics for component 3600 to ZERO.
LU=*tid**	Set the statistics for terminal *tid* belonging to component 3270, 3600, or SCS (e.g., CLEAR 3270 LU=ABC*) to ZERO.
POOL	Set the image pool statistics to ZERO.
MODSTAT	Set all module statistics to ZERO.
MODSTAT MOD=*pgm**	Set the module statistics for module *pgm* to ZERO.
ITRACE	Set the CICS OTTO storage area used for tracing to hex ZERO.
ESTAT	Set the error statistics for inbound and outbound errors to ZERO.

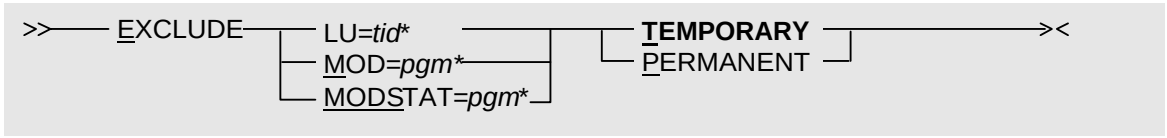
2.2 CLOSE Command

Use the CLOSE command to close CICS OTTO's VSAM control files.



2.3 EXCLUDE Command

Use the EXCLUDE command to exclude specific terminals or modules from optimization when CICS OTTO is fully started. This command can also be used to exclude modules from statistics.



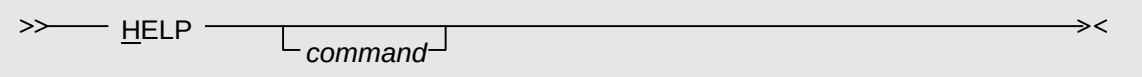
➔ **Note**: Once an LU or module has been excluded, the INCLUDE command detailed on page 12 will remove it from the exclusion list.

The following keywords may be used with many commands. However, the definitions are listed here only once.

Keywords	**Description**
LU=*tid**	*tid** must be replaced by a specific terminal ID or a generic group of terminal IDs defined by generic notation, e.g. LU=TE*
MOD=*pgm**	*pgm** must be replaced by a specific module or a generic module group identified by generic notation, e.g. MOD=PRG*
MODSTAT=*pgm**	*pgm** when used with the MODSTAT keyword must be replaced by a specific or generic module name that should, in this case, be excluded from the statistics when module statistics are fully started.

2.4 HELP Command

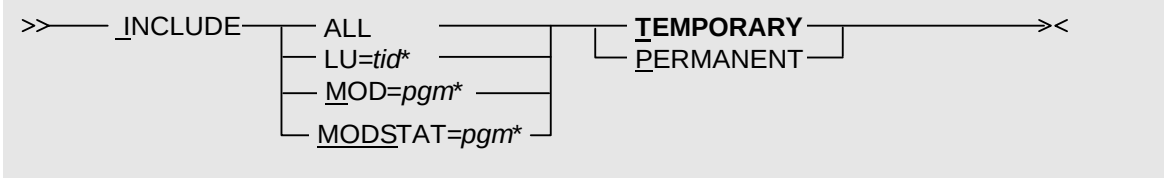
Use the HELP command to display information about commands.



HELP Keyword	Description
command	Displays a short explanation of a specific command. Otherwise, a short overview of all CICS OTTO commands is displayed.

2.5 INCLUDE Command

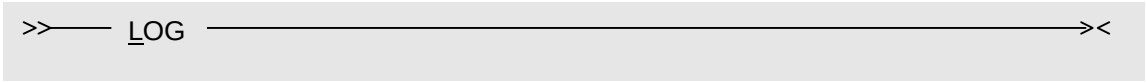
Use the INCLUDE command to remove entries from the exclusion list. In other words, this command includes terminals or modules in optimization that were previously excluded.



INCLUDE Keyword	Description
ALL	Deletes all entries from the LU, MOD and MODSTAT exclusion lists.
LU=tid*	Deletes specific terminal(s) from the exclusion list.
MOD=pgm*	Deletes specific module(s) from the exclusion list.
MODSTAT=pgm*	Deletes specific module(s) from the exclusion list valid for module statistics.

2.6 LOG Command

Use the LOG command to write optimization statistics to the OTTOSTAT file or to the console if OTTOSTAT DD statement is missing.



2.7 RELOAD Command

Use the RELOAD command to:

1. Load a new copy of the 3600/4700 interface module (RELOAD M=SNAI) into the main storage.

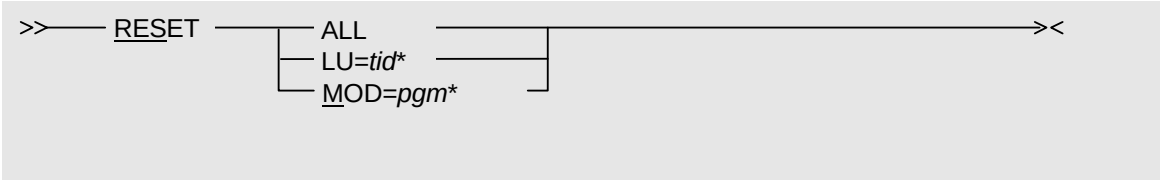
2. Load a new copy of the user exit (RELOAD M=EXIT) into the main storage.

3. Load a new copy of any optimization module after applying a PTF, where keyword *modid* is a 4 digit number corresponding to the module name (e.g., RELOAD M=3211 for ABL3211).

2.8 RESET Command

Use the RESET command to change all specific settings for the given LU or module to the optimization settings that have been set for component value, i.e., the specified entry (or all entries matching the generic pattern) will be deleted from the corresponding pending queue for LUs or modules.

Note: The RESET command affects the temporary settings as well as the permanent settings without the keyword PERMANENT.

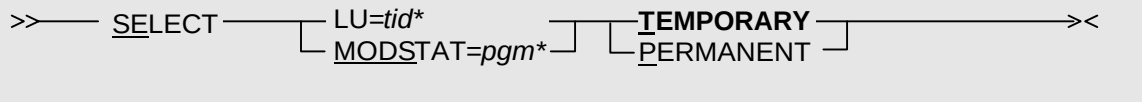


2.9 SELECT Command

Use the SELECT command to select:

1. Specific terminals for optimization if CICS OTTO is selectively started.

2. Specific module(s) for saving module statistics if the module statistics are selectively started.



➔ **Note:** Once an LU is selected, use the UNSELECT command detailed on page 27 to remove it from the selection list.

2.10 SET Command

The SET command defines all general system parameters and optimization characteristics.

2.10.1 SET APPLID

The SET APPLID command and keyword combination sets an application-ID. This ID will be displayed on the command screen instead of the original TP system application ID taken from the SIT (System Initialization Table). To reset an application-ID, enter the command SET APPLID=' ' (PERMANENT).

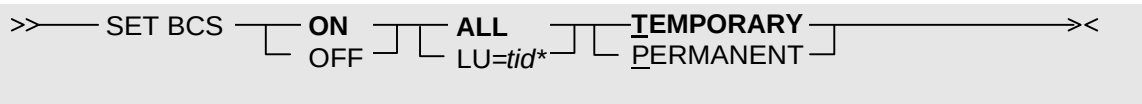
DISTRIBUTED DEFAULT: blank

2.10.2 SET BCS

The SET BCS command and keyword combination determines if there are terminals in your installation that have the BASE COLOR SWITCH set to ON. This may decrease the output optimization ratio and should be set to OFF whenever possible.

Note: The component value applies if not specifically set for terminals.

DISTRIBUTED COMPONENT DEFAULT: OFF

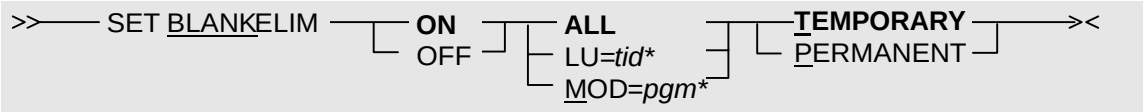


2.10.3 SET BLANKELIM

The SET BLANKELIM command and keyword combination sets the BLANK ELIMINATION feature on or off.

Note: The component value applies if not specifically set for terminals or modules.

DISTRIBUTED COMPONENT DEFAULT: OFF

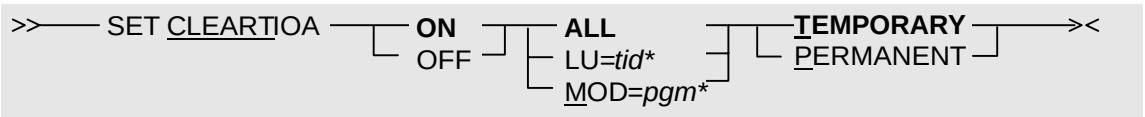


2.10.4 SET CLEARTIOA

The SET CLEARTIOA command and keyword combination determines if the CICS terminal input/output area (TIOA) should be cleared before moving the optimized message to it. This causes CPU overhead and should only be activated if there are transactions in your CICS system that do not use the length field of the TIOA (TIOATDL) to determine the length of the incoming data. Rather the whole I/O area is scanned for incoming data.

Note: The component value applies if it is not specifically set for terminals or modules.

DISTRIBUTED COMPONENT DEFAULT: OFF

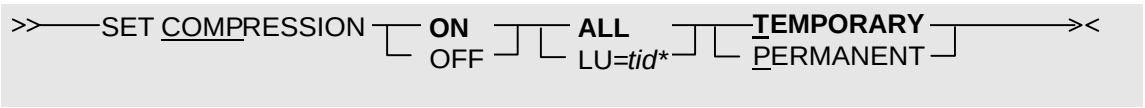


2.10.5 SET COMPRESSION

The SET COMPRESSION command and keyword combination keeps the image pool requirements low by compressing the saved screen images up to 50%. However, if the compression is set to ON, this requires some CPU overhead. Therefore, if sufficient main storage is available the compression should be set to OFF. This should always be the case in a z/OS environment.

Note: The component value applies if not specifically set for terminals.

DISTRIBUTED COMPONENT DEFAULT: OFF



2.10.6 SET DATE

The SET DATE= command and keyword combination sets the date formatting to one of the following:

- YYYY-DDD format (JULIAN keyword)
- MM-DD-YYYY format (AMERICAN keyword)
- DD-MM-YYYY format (EUROPEAN keyword)

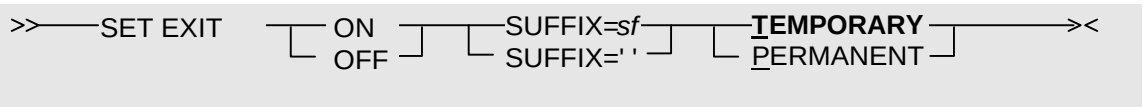
This format will apply to all dates, whether displayed online or printed.

DISTRIBUTED DEFAULT: JULIAN

2.10.7 SET EXIT

The SET EXIT command and keyword combination dynamically activates or deactivates a suffixed user exit program. The suffix must be numeric between 00 and 99.

DISTRIBUTED DEFAULT: none

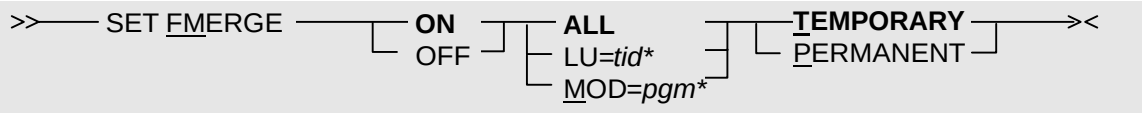


2.10.8 SET FMERGE

The SET FMERGE command and keyword combination sets the Field Merge feature on or off.

Note: The component value applies if not specifically set for terminals or modules.

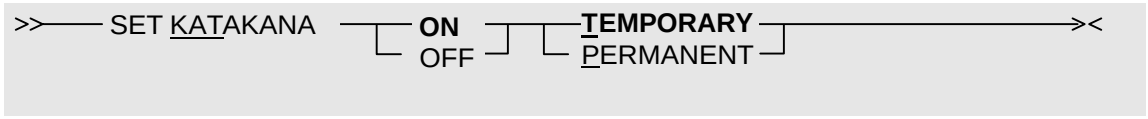
DISTRIBUTED COMPONENT DEFAULT: OFF



2.10.9 SET KATAKANA

The SET KATAKANA command and keyword combination sets the KATAKANA (DBCS-ASIA) support on or off.

DISTRIBUTED DEFAULT: OFF

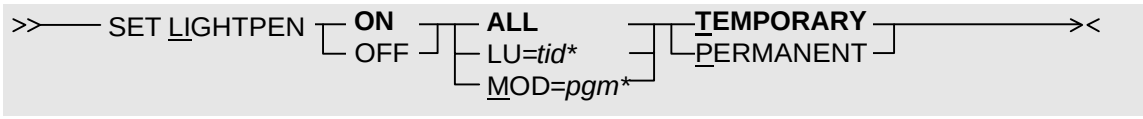


2.10.10 SET LIGHTPEN

The SET LIGHTPEN command and keyword combination determines if there are terminals in your installation that may work with a light pen. This may decrease the input optimization ratio and should be set to OFF whenever possible.

Note: The component value applies if not specifically set for terminals or modules.

DISTRIBUTED COMPONENT DEFAULT: OFF

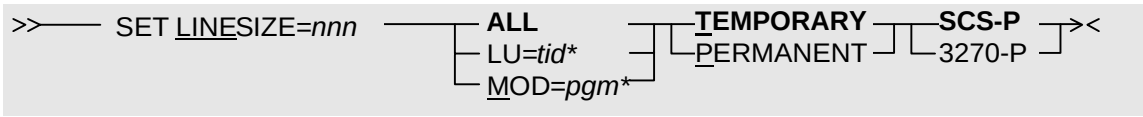


2.10.11 SET LINESIZE

The SET LINESIZE=*nnn* command and keyword combination sets the standard line size for SCS or 3270 printers.

Note: The component value applies if not specifically set for terminals or modules.

DISTRIBUTED COMPONENT DEFAULT: 132 for SCS, no default for 3270



2.10.12 SET MODSTAT

The SET MODSTAT command and keyword combination starts the module statistics fully (FULL keyword) or selectively (SELECTED keyword).

- FULL means that the statistics of all modules will be saved except for those modules that are in the exclusion list.
- SELECTED means that statistics will be saved only for those modules that are in the selection list.

The number of entries for the module statistics list may be restricted using the MAXNO keyword. One entry requires 44 bytes. If MAXNO is omitted, a default value of 100 is used and the list is dynamically increased whenever necessary. If no storage is available for this list, an informational message will be presented at startup time (on the console) or online after issuing the command.

DISTRIBUTED DEFAULT: OFF

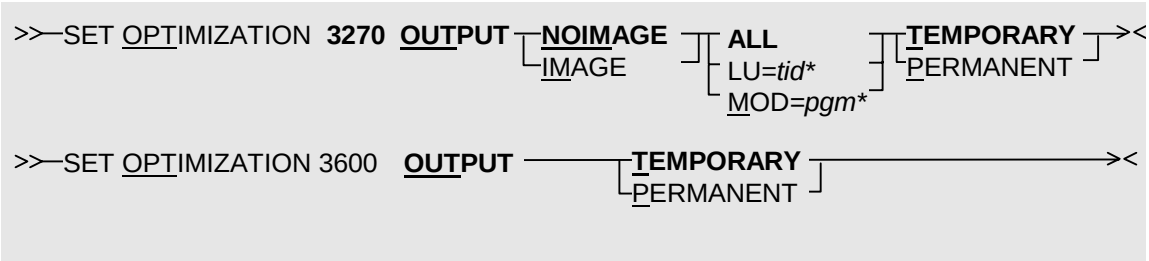
2.10.13 SET OPTIMIZATION

The SET OPTIMIZATION command and keyword combination sets the optimization level.

OUTPUT keyword: Output messages are optimized with imaging (IMAGE keyword/3270 type terminal only) or without imaging (NOIMAGE keyword).

Note: The component value applies if not specifically set for terminals or modules.

DISTRIBUTED COMPONENT DEFAULT: OUTPUT NOIMAGE



2.10.14 SET POOL

The SET POOL command and keyword combination specifies the size of the image pool. The minimum pool size is 16 KB and the maximum size is 99999 KB. The minimum slot size is 256 bytes and the maximum slot size is 9996 bytes. The optimum slot size is one using the least number of slots to save one image. Check your pool settings against the image pool statistics after the system has been running for a while. Whatever is specified here becomes active at the next startup of the TP system. CICS OTTO will try to get additional storage according to the SIZE specification and concatenate it to the existing pool with the old slot size specification. The changing of the slot size is the only command that cannot be serviced while the TP system is still up. If no more storage is available to increase the total pool size dynamically, an information message is issued.

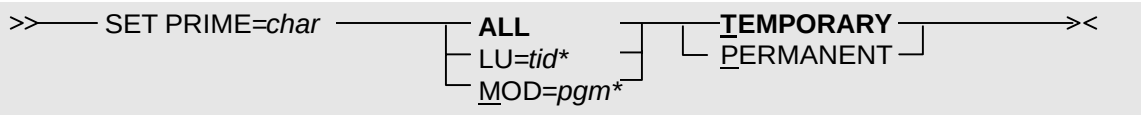
DISTRIBUTED DEFAULT: 16 KB with a slot size of 1024 bytes

2.10.15 SET PRIME

The SET PRIME= command and keyword combination defines the hexadecimal specification of the prime compression character for 3600/4700 type devices.

Note: The component value applies if not specifically set for terminals or modules.

DISTRIBUTED COMPONENT DEFAULT: BLANK (40)

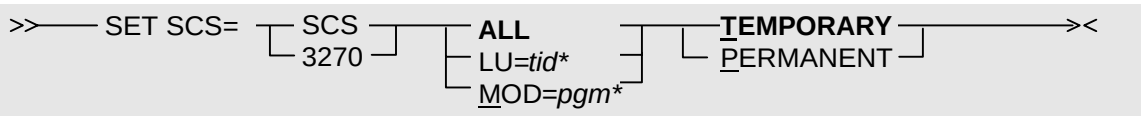


2.10.16 SET SCS

The SET SCS command and keyword combination sets the optimization technique for SCS printers (3270 or SCS).

Note: The component value applies if not specifically set for terminals or modules.

DISTRIBUTED COMPONENT DEFAULT: SCS



2.10.17 SET TERMID

The SET TERMID command and keyword combination defines whether the LU name will be taken from the TP-system terminal definition (CICS) or as VTAM node name.

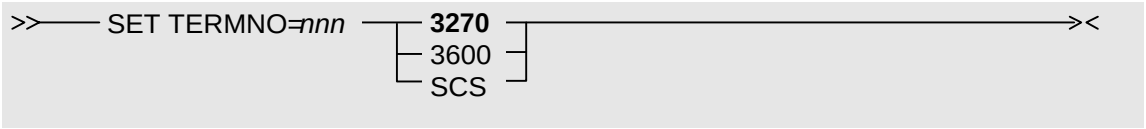
DISTRIBUTED COMPONENT DEFAULT: TP-system

Note: This command is available only in CICS OTTO's batch environment.

2.10.18 SET TERMNO

The SET TERMNO command and keyword combination sets an initialization value for the number of terminals. This number is used to allocate the terminal list at start up time. If this value is missing, CICS OTTO starts with 16 terminals and increases the list dynamically by GETMAIN/FREEMAIN. This leads to fragmented storage. To find out the correct start value, use the DISPLAY OPTIONS command to show the number of control blocks in use in a live system.

DISTRIBUTED COMPONENT DEFAULT: 16

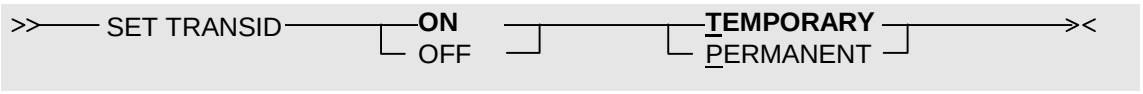


2.10.19 SET TRANSID

The SET TRANSID command and keyword combination indicate whether module names should be considered to specify CICS program names or CICS transaction IDs.

- When the ON keyword is used, exclusion/selection will be based on the transaction ID.
- When the OFF keyword is used, exclusion/selection will be based on the program name.

DISTRIBUTED DEFAULT: OFF



2.10.20 SET WCC-IGNORE

The SET WCC-IGNORE command and keyword combination determines whether the line length in the WCC (**W**rite **C**ontrol **C**haracter) of a data stream destined for a 3270 printer should be considered by CICS OTTO to be OFF or ON.

If ON, it should be ignored and defaulted to a line length of:

- 80 for a model 2.3 or 4 printer, or
- 132 for a model 5 printer.

Both will be optimized like a screen by RA-orders.

The printer line size can also be defined by the SET LINESIZE=*nn* 3270-P command. This value will be used if the WCC does not contain the line length and WCC-IGNORE is OFF.

Note: The component value applies if not specifically set for terminals or modules.

DISTRIBUTED COMPONENT DEFAULT: OFF

2.10.21 SET ZERO-MF-ALLOWED

The SET ZERO-MF-ALLOWED command and keyword combination determines if the MF-order (**M**odify **F**ield) may be generated with a zero number of pairs. This kind of order is allowed according to the 3270 data stream conventions but may lead to problems with some kinds of emulation or terminals that are not 100 % IBM compatible. It should be set to ON, whenever applicable, to increase the optimization effect.

Note: The component value applies if not specifically set for terminals.

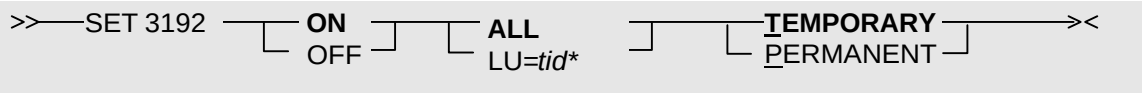
DISTRIBUTED COMPONENT DEFAULT: OFF

2.10.22 SET 3192

The SET 3192 command and keyword combination determines if there are any 3192 or 3179 type terminals in your installation. This may decrease the output optimization ratio and should be set to OFF whenever possible.

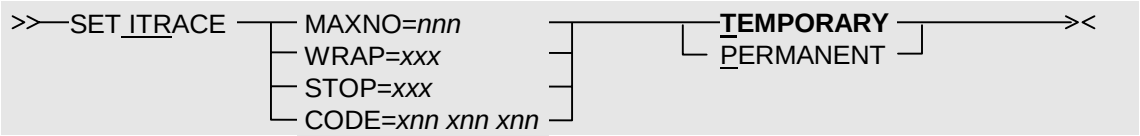
Note: The component value applies if not specifically set for terminals.

DISTRIBUTED COMPONENT DEFAULT: OFF



2.10.23 SET ITRACE

The SET ITRACE command and keyword combination defines the parameters to be used when running an instorage trace of inbound and outbound data streams.



SET ITRACE keywords	Description
MAXNO=*nnn*	*nnn* specifies a number from 1 to 999 to define the size of the CICS OTTO storage area reserved for an instorage trace. MAXNO multiplied by 2172 will give you the size of the area. At most, MAXNO trace entries can be saved. One entry uses 60 bytes plus a variable number of slots that are 256 bytes in size. At most, 8*MAXNO slots can be used. The area is allocated the first time an instorage trace is started and resides in private storage above 16MB. The area is reused unless it is released by the user or the MAXNO value is increased. The default value is 100 .
WRAP=*xxx*	Specifies whether the storage area used by the instorage trace should wrap around. Wrapping simply means that CICS OTTO will overwrite the trace file starting from the top. *xxx* can be either YES or NO as described below: **YES** Allow the trace information to wrap around the reserved storage area. **NO** Completely fill the allocated storage area. See MAXNO for details pertaining to the size.

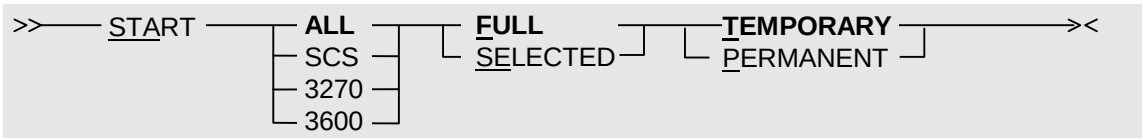
SET ITRACE keywords	Description
STOP=*nnn*	Controls whether the instorage trace should stop upon detection of a specific error code. *nnn* can be either YES or NO as described below: **YES** Stop the instorage trace when a predefined error code is found in a traced message. You can define up to 3 error codes using the CODE field. **NO** No error code detection will be used. The default value is NO.
CODE=*xnn xnn xnn*	Specifies from 1 to 3 error codes that will cause an instorage trace to stop. If one of these error codes is detected in a traced message, and keyword STOP has been set to YES, the trace will stop at that point. All previously defined error codes are removed and replaced by the new values. Error codes are not saved permanently. At CICS OTTO startup, there are no predefined or default error codes. Error codes are specified as I*nn* or O*nn*, where nn represents two numeric digits. Furthermore, generic specification is allowed, i. e., you may enter xn* or x* , where x represents I or O, and n is a numeric digit. Refer to the User's Guide for a detailed listing of all possible error codes.

2.11 START Command

CICS OTTO has two start options:

- The START FULL command and keyword combination will fully start all components (ALL keyword) or specific components (3270, SCS or 3600 keyword). This means that all messages are optimized if the terminal for which the message is designated or the program that generated the message is **not** in the exclusion list (see EXCLUDE command).

- The START SELECTED command and keyword combination will selectively start all components (ALL keyword) or specific components (3270, SCS or 3600 keyword). This means that the **only** messages optimized are those which are designated for terminals in the selection list (see SELECT command).



2.12 STOP Command

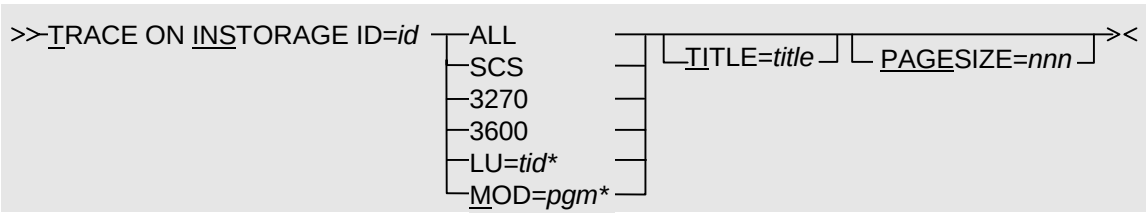
The STOP command stops the optimization for all components (ALL keyword) or a specific component (3270, SCS or 3600 keyword).

2.13 TRACE Command

The TRACE ON command and keyword combination traces messages before and after optimization. There are different types of traces: instorage, non-internal, and internal.

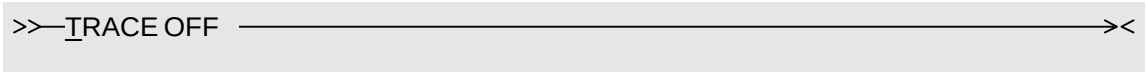
2.13.1 Instorage Trace

An **instorage** trace is for inbound and outbound data streams. This trace uses a CICS OTTO storage area in which the traced records are saved. The trace is available for online viewing using the CICS OTTO online interface. Refer to the SET ITRACE command for details on how to set parameters for the instorage trace.



The TRACE RELEASE command and keyword combination releases the storage area that was allocated for an instorage trace. Otherwise, the storage area is released at shutdown.

The TRACE OFF command and keyword combination stops the trace and makes it available for viewing online.

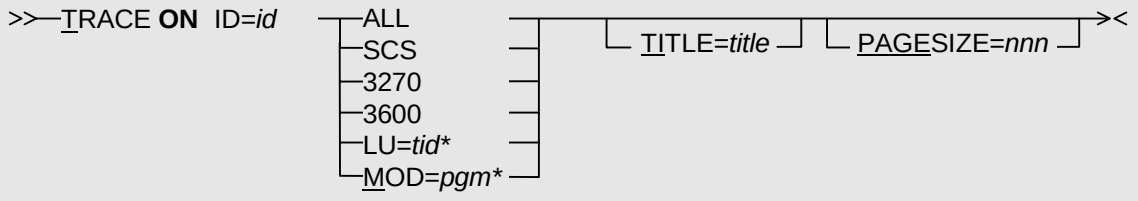


2.13.2 Non-internal and Internal Trace

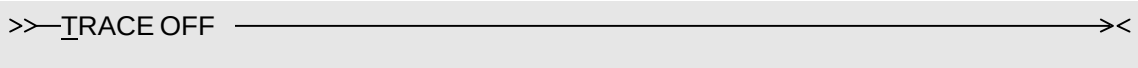
A **non-internal** trace is for inbound and outbound data streams. The trace information is written to the print file identified by DDNAME OTTOTRCS. Whenever the trace is activated it must be identified by a numeric 2-byte ID.

An **internal** trace is the same as a non-internal trace with an exception. Internal information about CICS control blocks and OTTO control blocks are additionally traced for trouble shooting purposes. An internal trace should only be activated when needed by technical support.

With any trace, a title may be entered to document the trace purpose. The lines per page may be specified using the PAGESIZE. The standard value is 60.



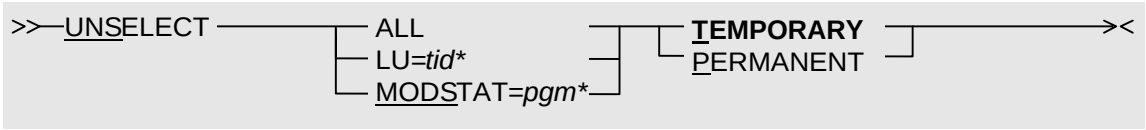
The TRACE OFF command and keyword combination closes the trace file and makes it available for printing.



2.14 UNSELECT Command

The UNSELECT ALL command and keyword combination deletes all terminals and modules from the LU and MODSTAT selection lists. In other words, UNSELECT LU= removes specific terminals from the LU selection list.

The UNSELECT MODSTAT= command and keyword combination deletes specific modules from the MODSTAT selection list (or removes modules from the MODSTAT selection list).



➔ **Note**: For details on how to place terminals and modules on the selection list, see the SELECT command on page 14.

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CHAPTER 3: DISPLAY COMMANDS

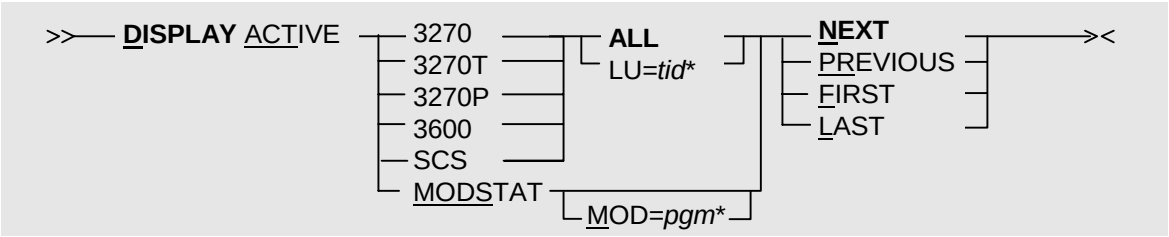
The DISPLAY command presents screens that contain all optimization information about CICS OTTO. Among the types of information you can view using this command are:

- All LU and module specific optimization information.
- Statistics.
- Trace information.

In this section, each of the DISPLAY command keywords and each of the related screens are described.

3.1 DISPLAY ACTIVE

Use the DISPLAY ACTIVE command and keyword combination to display all LUs and modules that are currently active in CICS OTTO's optimization process.



DISPLAY ACTIVE keywords	Description
3270, 3270T, 3270P, 3600 or SCS	Identifies the specific terminal type currently optimized. If no specific or generic LU name is provided, all of the LUs will be listed. Note: 3270T = 3270 type terminals and 3270P = 3270 type printers.
MODSTAT	Displays all modules that are currently in the module statistics list. If the module statistics are started with the MAXNO keyword, listed are only those modules optimized by CICS OTTO for which statistics have been saved.
ALL	Displays all terminals. This is the default.
LU=*tid**	Specifies a specific or generic LU name. If used, you must replace *tid* with a valid or generic terminal ID.

DISPLAY ACTIVE keywords	Description
MOD=*pgm**	If using MODSTAT, you can also specify a specific or a generic program name. Replace *pgm* with a valid or generic program name.
NEXT	Displays the next screen of a list. This is the default.
PREVIOUS	Displays the previous screen of a list.
FIRST	Displays the first screen of a list.
LAST	Displays the last screen of a list.

DISPLAY ACTIVE component

When the DISPLAY ACTIVE command and keyword combination is used for a component, the following screen is displayed.

```
CICS1                Online Transmission Time Optimizer V1R2        vvmm/ptflv
               Copyright Software Engineering GmbH, 1987 - 2006

---LU--- --DATE-- --TIME-- INEX POOL EXIT CTR TRACE  --3270-- --SCS--- --3600--
0113       074    17-01-54 LU-Y   3% -NA- VSM  SEQ     FULL     FULL      FULL
           2006             MO-Y                OFF   OUTIMAGE   OUT       OUT
                            SE-Y

                   ACTIVE 3270 Terminals (Except Printers)

TERMINAL  TERMINAL  TERMINAL  TERMINAL  TERMINAL  TERMINAL  TERMINAL  TERMINAL

id
**LAST**









ABL5001I COMMAND SUCCESSFULLY PROCESSED
OTTO COMMAND ===> D ACT 3270T_____________________________________________ F3=END
```

Figure 2: DISPLAY ACTIVE Screen

Screen Description

vvmm/ptflv Is replaced by the actual version, release, and PTF level.

id Is replaced by the name of the terminal type active in the list.

DISPLAY ACTIVE component

When the DISPLAY ACTIVE command and keyword combination is used for a component, the following screen is displayed.

```
CICS1                Online Transmission Time Optimizer V1R2        vvmm/ptflv
               Copyright Software Engineering GmbH, 1987 - 2006

---LU--- --DATE-- --TIME-- INEX POOL EXIT CTR TRACE  --3270-- --SCS--- --3600--
0113        074    17-01-54 LU-Y   3% -NA- VSM  SEQ     FULL     FULL      FULL
            2006             MO-Y                OFF   OUTIMAGE   OUT       OUT
                             SE-Y

                               ACTIVE 3270 LUs

LU         LU         LU         LU         LU         LU         LU         LU

luname
**LAST**




ABL5001I COMMAND SUCCESSFULLY PROCESSED
OTTO COMMAND ===> D ACT 3270T                                          F3=END
```

Figure 3: DISPLAY ACTIVE Screen

Screen Description

luname Is replaced by the name of the LU in the active list.

DISPLAY ACTIVE MODSTAT

When the DISPLAY ACTIVE command and keyword combination is used with the MODSTAT keyword, the following screen is displayed.

```
CICS1                Online Transmission Time Optimizer V1R2        vvmm/ptflv
               Copyright Software Engineering GmbH, 1987 - 2006

---LU--- --DATE-- --TIME-- INEX POOL EXIT CTR TRACE  --3270-- --SCS--- --3600--
0113        074    17-01-54 LU-Y   3% -NA- VSM  SEQ     FULL     FULL      FULL
            2006             MO-Y                OFF   OUTIMAGE   OUT       OUT
                             SE-Y

                                Active Modules

MODULE    MODULE    MODULE    MODULE    MODULE    MODULE    MODULE    MODULE

mod
mod
mod
**LAST**




ABL5001I COMMAND SUCCESSFULLY PROCESSED
OTTO COMMAND ===> D ACT MODS_____________________________________________ F3=END
```

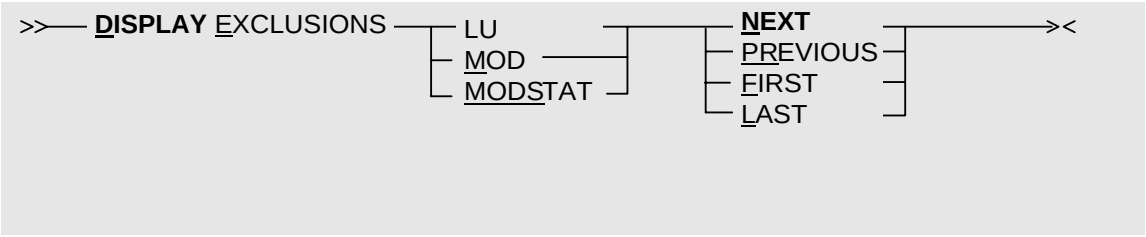
Figure 4: DISPLAY ACTIVE MODSTAT Screen

Screen Description

mod	Name of module(s) included in the active module statistics list.

3.2 DISPLAY EXCLUSIONS

When CICS OTTO is fully started, all terminals and modules are included in the optimization process unless they are specifically excluded. Use the EXCLUSIONS keyword to display all LUs and modules that are to be excluded from the optimization process. This command can also be used to display all modules that are excluded from saving module statistics.



DISPLAY EXCLUSIONS keywords	Description
LU	Displays the LU exclusion list.
MOD	Displays the module exclusion list.
MODSTAT	Displays the module statistics exclusion list.
NEXT	Displays the next screen of LUs, modules, or module statistics exclusion list. This is the default.
PREVIOUS	Displays the previous screen of LUs, modules, or module statistics exclusion list.
FIRST	Displays the first screen of LUs, modules, or module statistics exclusion list.
LAST	Displays the last screen of LUs, modules, or module statistics exclusion list.

DISPLAY EXCLUSIONS LU

```
CICS1               Online Transmission Time Optimizer V1R2        vvmm/ptflv
              Copyright Software Engineering GmbH, 1987 - 2006

---LU--- --DATE-- --TIME-- INEX POOL EXIT CTR TRACE  --3270-- --SCS--- --3600--
0113       074    17-01-54 LU-Y   3% -NA- VSM  SEQ     FULL     FULL     FULL
           2006            MO-Y                OFF   OUTIMAGE   OUT      OUT
                           SE-Y

                             LU Exclusion List

   LU       CURRENT  PERM.   LU       CURRENT  PERM.   LU       CURRENT  PERM.

   tid      pt       pt
   *********LAST*********









ABL5001I COMMAND SUCCESSFULLY PROCESSED
OTTO COMMAND ===> D E LU _____________________________________________ F3=END
```

Figure 5: DISPLAY EXCLUSIONS LU Screen

Screen Description

tid	LU name that is excluded from optimization
pt	YES if this is a permanent exclusion NO if this is a temporary exclusion

DISPLAY EXCLUSIONS MOD

```
CICS1               Online Transmission Time Optimizer V1R2        vvmm/ptflv
              Copyright Software Engineering GmbH, 1987 - 2006

---LU--- --DATE-- --TIME-- INEX POOL EXIT CTR TRACE  --3270-- --SCS--- --3600--
0113       074    17-01-54 LU-Y   3% -NA- VSM  SEQ     FULL     FULL      FULL
           2006            MO-Y                OFF   OUTIMAGE   OUT       OUT
                           SE-Y

                              Module Exclusion List

   MODULE  CURRENT  PERM.   MODULE  CURRENT  PERM.     MODULE  CURRENT PERM.

   mod     pt       pt
   ********LAST**********









ABL5001I COMMAND SUCCESSFULLY PROCESSED
OTTO COMMAND ===> D E M _____________________________________________________ F3=END
```

Figure 6: DISPLAY EXCLUSIONS MOD Screen

Screen Description

mod	Module name that is excluded from optimization
pt	YES if this is a permanent exclusion NO if this is a temporary exclusion

DISPLAY EXCLUSIONS MODSTAT

```
CICS1               Online Transmission Time Optimizer V1R2        vvmm/ptflv
              Copyright Software Engineering GmbH, 1987 - 2006

---LU--- --DATE-- --TIME-- INEX POOL EXIT CTR TRACE  --3270-- --SCS--- --3600--
0113       074    17-01-54 LU-Y   3% -NA- VSM  SEQ     FULL     FULL     FULL
           2006            MO-Y                OFF   OUTIMAGE   OUT      OUT
                           SE-Y

                        Module Statistics Exclusion List

   MODULE  CURRENT  PERM.   MODULE  CURRENT  PERM.     MODULE  CURRENT PERM.

   mods    pt       pt
   ********LAST*********









ABL5001I COMMAND SUCCESSFULLY PROCESSED
OTTO COMMAND ===> D E MODS_____________________________________________ F3=END
```

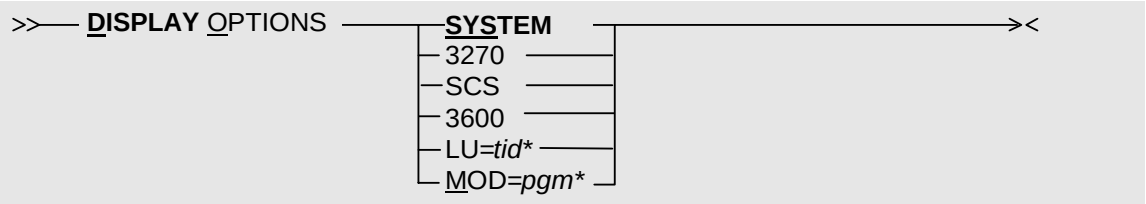
Figure 7: DISPLAY EXCLUSIONS MODSTAT Screen

Screen Description

mods	Module name that is excluded from statistics
pt	YES if this is a permanent exclusion NO if this is a temporary exclusion

3.3 DISPLAY OPTIONS

Use the DISPLAY OPTIONS command and keyword combination to display all optimization options that are applicable to the system or individual components. Such options include start option, date format, exclusions, etc.



DISPLAY OPTIONS keywords	Description
SYSTEM	Displays system-wide options like KATAKANA support, date formatting, etc. This is the default.
3270, SCS, or 3600	Displays the various options for these components.
LU=*tid** MOD=*pgm**	Displays the options for a specific terminal identified by *tid* or a specific module identified by *pgm*. If no specific option is set for a given terminal or module all equivalent component options apply to the terminal/module.

DISPLAY OPTIONS SYSTEM

```
CICS1               Online Transmission Time Optimizer V1R2        vvmm/ptflv
              Copyright Software Engineering GmbH, 1987 - 2006

---LU--- --DATE-- --TIME-- INEX POOL EXIT CTR TRACE  --3270-- --SCS--- --3600--
0113       074    17-01-54 LU-Y   3% -NA- VSM  SEQ     FULL     FULL      FULL
           2006            MO-Y                OFF   OUTIMAGE   OUT       OUT
                           SE-Y

                                System Options
                                                      CURRENT       **     PERM.
Katakana support . . . . . . . . . . . . . . . . :  conoff         **    fonoff
Date formatting. . . . . . . . . . . . . . . . . :  cdform         **    fdform
User exit. . . . . . . . . . . . . . . . . . . . :  conoff/cnam    **    onoff/fnam
Module statistics. . . . . . . . . . . . . . . . :  cstat          **    fstat
Max number entries for module statistics . . . . :  cmaxno         **    fmaxno
LU exclusions. . . . . . . . . . . . . . . . . . :  cact          **    fact
Module exclusions. . . . . . . . . . . . . . . . :  cact          **    fact
LU selections. . . . . . . . . . . . . . . . . . :  cact          **    fact
Exclusions from module statistics. . . . . . . . :  cact          **    fact
Selections for module statistics . . . . . . . . :  cact          **    fact
Terminal ID / Transaction ID . . . . . . . . . . :  cterm/ctran   **    fterm/ftran

ABL5001I COMMAND SUCCESSFULLY PROCESSED
OTTO COMMAND ===> D O SYS_____________________________________________________ F3=END
```

Figure 8: DISPLAY OPTION SYSTEM Screen

Screen Description

conoff	currently ON or OFF
fonoff	ON or OFF on file
cnam	name of current active user exit module
fnam	name of user exit module on file
cdform	current date formatting: JULIAN or EUROPEAN or AMERICAN
fdform	date formatting on file: JULIAN or EUROPEAN or AMERICAN
cstat	current status: FULL STARTED if fully started SELECTIVE STARTED if selectively started
fstat	status on file: FULL STARTED if fully started SELECTIVE STARTED if selectively started
cmaxno	max. number of modules for which statistics are currently saved; asterisks if not explicitly set
fmaxno	permanent max. value of modules for which statistics are to be saved; asterisks if not explicitly set.
cact	entries currently ACTIVE or INACTIVE

fact	entries permanently ACTIVE or INACTIVE
cterm/fterm	In the event SET TERMID=CICS was used, CICS will appear. In the event SET TERMID=VTAM, VTAM will appear.
ctran/ftran	Indicates whether TRANSID ON or OFF was used.

DISPLAY OPTIONS 3270

```
CICS1               Online Transmission Time Optimizer V1R2        vvmm/ptflv
              Copyright Software Engineering GmbH, 1987 - 2006

---LU--- --DATE-- --TIME-- INEX POOL EXIT CTR TRACE  --3270-- --SCS--- --3600--
0113       074    17-01-54 LU-Y   3% -NA- VSM  SEQ     FULL     FULL      FULL
           2006            MO-Y                OFF   OUTIMAGE   OUT       OUT
                           SE-Y

                        Options for Component 3270

                    CURRENT ** PERM.                          CURRENT ** PERM.

Start status . . :  cstat      fstat    Trace  . . . . . :  conoff     *******
Opt. level . . . :  colev      folev    Zero-MF-allowed  :  conoff     fonoff
Compress images  :  conoff     fonoff   Blank elimination:  conoff     fonoff
Field merge  . . :  conoff     fonoff   Printer linesize :  clsize     plsize
Lightpen . . . . :  conoff     fonoff   Init-value LUs . :  *******          16
                                        LU CBs in use  . :       16    ********
3192 . . . . . . :  conoff     fonoff
WCC-ignore . . . :  conoff     fonoff
Base color switch:  conoff     fonoff   Clear TIOA . . . :  conoff     fonoff

ABL5001I COMMAND SUCCESSFULLY PROCESSED
OTTO COMMAND ===> d o 3270_____________________________________________    F3=END
```

Figure 9: DISPLAY OPTION 3270 Screen

Screen Description

cstat	current status: FULL if fully started SELECTIVE if selectively started
fstat	permanent status on file: FULL if fully started SELECTIVE if selectively started
colev	current optimization level for component
folev	permanent optimization level for component
conoff	currently ON or OFF
fonoff	ON or OFF on file
clsize	current line size for printers
plsize	permanent line size for printers (on file)

DISPLAY OPTIONS 3600

```
CICS1               Online Transmission Time Optimizer V1R2        vvmm/ptfl
              Copyright Software Engineering GmbH, 1987 - 2006

---LU--- --DATE-- --TIME-- INEX POOL EXIT CTR TRACE  --3270-- --SCS--- --3600--
0113       074    17-30-50 LU-Y   3% -NA- VSM  SEQ     FULL     FULL      FULL
           2006            MO-Y                OFF   OUTIMAGE   OUT       OUT
                           SE-Y

                         options for component 3600

                                     CURRENT        **   PERM.

Start status . . . . . :             cstat          **   fstat
Trace. . . . . :                     conoff         **   fonoff
Prime compr. character . . :         cpc            **   fpc
Optimization level . . . . :         colev          **   folev
Init-value number LU's . . :         *******        **   fnnn
LU control blocks in use . :         cnnn           **   *******
Clear TIOA . . . . . :               conoff         **   fonoff



ABL5001I COMMAND SUCCESSFULLY PROCESSED
OTTO COMMAND ===> D O 3600_____________________________________________ F3=END
```

Figure 10: DISPLAY OPTION 3600 Screen

Screen Description

cstat	current status: FULL STARTED if fully started SELECTIVE STARTED if selectively started
fstat	permanent status on file: FULL STARTED if fully started SELECTIVE STARTED if selectively started
conoff	currently ON or OFF
fonoff	ON or OFF on file
cpc	current prime compression character
fpc	permanent prime compression character
colev	current optimization level for component
folev	permanent optimization level for component
cnnn	number of control blocks currently in use
fnnn	initialized number of LUs for system startup that are defined on file

DISPLAY OPTIONS SCS

```
CICS1               Online Transmission Time Optimizer V1R2        vvmm/ptfl
              Copyright Software Engineering GmbH, 1987 - 2006

---LU--- --DATE-- --TIME-- INEX POOL EXIT CTR TRACE  --3270-- --SCS--- --3600--
0113       074    17-30-50 LU-Y   3% -NA- VSM  SEQ     FULL     FULL     FULL
           2006            MO-Y                OFF   OUTIMAGE   OUT      OUT
                           SE-Y

                         Options for Component SCS

                                     CURRENT        **   PERM.

Start status . . . . . . . . :       cstat          **   fstat
Trace. . . . . . . . . . . . :       conoff         **   fonoff
Linesize . . . . . . . . . . :       clnsz          **   flnsz
SCS optimization . . . . . . :       cscso          **   fscso
Init-value number LU's . . . :       *******        **   fnnn
LU control blocks in use . . :       cnnn           **   ******
Clear TIOA . . . . . . . . . :       conoff         **   fonoff



ABL5001I COMMAND SUCCESSFULLY PROCESSED
OTTO COMMAND ===> D O SCS_____________________________________________ F3=END
```

Figure 11: DISPLAY OPTION SCS Screen

Screen Description

cstat current status:
FULL if fully started
SELECTIVE if selectively started

fstat permanent status on file:
FULL if fully started
SELECTIVE if selectively started

conoff currently ON or OFF

fonoff ON or OFF on file

clnsz current line size for SCS-printer

flnsz permanent line size for SCS-printer

cscso current optimization method:
SCS if standard SCS optimization is performed
3270 if 3270 printer optimization is performed

fscso optimization method on file:
SCS if standard SCS optimization is performed
3270 if 3270 printer optimization is performed

cnnn number of control blocks currently in use

fnnn initialized number of LUs for system startup that are defined on file

DISPLAY OPTIONS LU=*tid*

```
CICS1               Online Transmission Time Optimizer V1R2        vvmm/ptfl
              Copyright Software Engineering GmbH, 1987 - 2006

---LU--- --DATE-- --TIME-- INEX POOL EXIT CTR TRACE  --3270-- --SCS--- --3600--
0113       074    17-30-50 LU-Y   3% -NA- VSM  SEQ     FULL     FULL      FULL
           2006            MO-Y                OFF   OUTIMAGE   OUT       OUT
                           SE-Y

                 Options for Terminal tid      Component comp

CURRENT ** PERM.                          CURRENT ** PERM.

Start status . . :  cstat      fst        Trace  . . . . . :  conoff     *******
Opt. level . . . :  colev      folev      Zero-MF-allowed  :  conoff     fonoff
Compress images  :  conoff     fonoff     Prime compr.char :  cpc        fpc
Field merge  . . :  conoff     fonoff     Printer linesize :  clnsz      flnsz
Lightpen . . . . :  conoff     fonoff     SCS optimization :  csco       fscso
                                          Excluded . . . . :  cact       fact
3192 . . . . . . :  conoff     fonoff     Selected . . . . :  cact       fact
WCC-ignore . . . :  conoff     fonoff     Blank elimination:  conoff     fonoff
Base color switch:  conoff     fonoff     Clear TIOA . . . :  conoff     fonoff

ABL5001I COMMAND SUCCESSFULLY PROCESSED
OTTO COMMAND ===> d o LU=0113_____________________________________     F3=END
```

Figure 12: DISPLAY OPTION LU=tid Screen

Screen Description

Tid	entered LU name
Comp	component to which the LU belongs; asterisks if not yet known
Cstat	current status: ACTIVE STOPPED
fstat	permanent status on file: ACTIVE STOPPED
conoff	currently ON or OFF
fonoff	ON or OFF on file
cact / fact	terminal relates to current / permanent list entry
colev / folev	current / permanent optimization level for terminal
clnsz / flnsz	current / permanent line size for SCS/3270 type printer
cpc / fpc	current / permanent prime compression character

DISPLAY OPTIONS MOD=*mod*

```
CICS1               Online Transmission Time Optimizer V1R2        vvmm/ptflv
              Copyright Software Engineering GmbH, 1987 - 2006

---LU--- --DATE-- --TIME-- INEX POOL EXIT CTR TRACE  --3270-- --SCS--- --3600--
0113       074    17-01-54 LU-Y   3% -NA- VSM  SEQ     FULL     FULL      FULL
           2006            MO-Y                OFF   OUTIMAGE   OUT       OUT
                           SE-Y

                  OPTIONS FOR MODULE   mod

                    CURRENT ** PERM.                          CURRENT ** PERM.

Start status . . :  cstat      fstat
Opt. level . . . :  colev      folev    Trace. . . . . :  conoff     fonoff
Compress images. :  ******     ******   Zero-MF-allowed. :  *******    *******
                                        Prime compr.char :  cpc        fpc
Lightpen . . . . :  conoff     fonoff   Printer linesize :  clnsz      flnsz
                                        SCS optimization :  cscso      fscso
3192 . . . . . . :  ******     ******   Excluded . . . . :  cact       fact
WCC-ignore . . . :  conoff     fonoff   Blank elimination:  conoff     fonoff
Base color switch:  ******     ******   Clear TIOA . . . :  conoff     fonoff

ABL5001I COMMAND SUCCESSFULLY PROCESSED
OTTO COMMAND ===> D O MOD=OTTOMC00_____________________________________ F3=END
```

Figure 13: DISPLAY OPTION MOD=mod Screen

Screen Description

mod	entered module name
cstat	current status (for module always asterisks)
fstat	permanent status on file (for module always asterisks)
conoff	currently ON or OFF
fonoff	ON or OFF on file
cact	module relates to current list entry
fact	module relates to permanent list entry
colev	current optimization level for module
folev	permanent optimization level for module
clnsz	current line size for SCS/3270 type printer
flnsz	permanent line size for SCS/3270 type printer
cpc / fpc	current / permanent prime compression character
******	not available for module

3.4 DISPLAY SELECTED

When CICS OTTO is selectively started, only selected LUs will be included in the optimization process. Use the SELECTED keyword to display all LUs and modules that are selectively included. This command also displays the module statistics selection list for all modules that will be included in the statistics process if the statistics are selectively started.

DISPLAY SELECTED keywords	Description
LU	Displays the LU selection list for all LUs that will be included in the optimization process when optimization is selectively started.
MODSTAT	Displays the module statistics selection list for all modules that will be included in the statistics process when statistics are selectively started.
NEXT	Displays the next screen or module statistics selection. This is the default.
PREVIOUS	Displays the previous screen or module statistics selection.
FIRST	Displays the first screen or module statistics selection.
LAST	Displays the last screen or module statistics selection.

DISPLAY SELECTED LU

```
CICS1               Online Transmission Time Optimizer V1R2        vvmm/ptflv
              Copyright Software Engineering GmbH, 1987 - 2006

---LU--- --DATE-- --TIME-- INEX POOL EXIT CTR TRACE  --3270-- --SCS--- --3600--
0113       074    17-01-54 LU-Y   3% -NA- VSM  SEQ     FULL     FULL      FULL
           2006            MO-Y                OFF   OUTIMAGE   OUT      OUT
                           SE-Y

                               LU Selection List

   LU       CURRENT PERM.    LU      CURRENT PERM.     LU      CURRENT PERM.

   luid     pt      pt
   *********LAST**********









ABL5001I COMMAND SUCCESSFULLY PROCESSED
OTTO COMMAND ===> D SEL LU_____________________________________________ F3=END
```

Figure 14: DISPLAY SELECTED LU Screen

Screen Description

luid — LU name(s) on the selection list to be optimized when optimization is selectively started.

pt — YES if this is a permanent entry
NO if this is a temporary entry

DISPLAY SELECTED MODSTAT

```
CICS1               Online Transmission Time Optimizer V1R2        vvmm/ptflv
              Copyright Software Engineering GmbH, 1987 - 2006

---LU--- --DATE-- --TIME-- INEX POOL EXIT CTR TRACE  --3270-- --SCS--- --3600--
0113       074    17-01-54 LU-Y   3% -NA- VSM  SEQ     FULL     FULL      FULL
           2006            MO-Y                OFF   OUTIMAGE   OUT       OUT
                           SE-Y

                       Module Statistics Selection List

   MODULE  CURRENT PERM.     MODULE  CURRENT PERM.      MODULE  CURRENT PERM.

   mod      pt      pt
   *********LAST********




ABL5001I COMMAND SUCCESSFULLY PROCESSED
OTTO COMMAND ===> D SEL MODS_____________________________________________ F3=END
```

Figure 15: DISPLAY SELECTED MODSTAT Screen

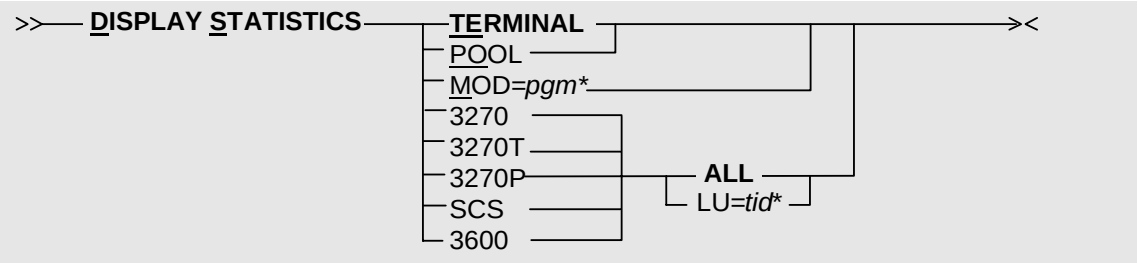
Screen Description

mod Module name(s) on the selection list for statistics gathering when optimization is selectively started.

pt
YES if this is a permanent entry
NO if this is a temporary entry

3.5 DISPLAY STATISTICS

CICS OTTO will gather statistics regarding its optimization process. Use the STATISTICS keyword to display these statistics.



DISPLAY STATISTICS keywords	Description
TERMINAL	Displays the statistics summary for the 3270, SCS, and 3600 components. This is the default.
3270, 3270T, 3270P, SCS, or 3600	Displays the detailed statistics for the specific component. At first, components are explained. A 3270 split to terminals (3270T) and printers (3270P) is possible for special setup, display, etc.
LU=*tid**	If a component specific keyword is used, displays detailed statistics for a specific terminal ID or generic group.
POOL	Displays image pool statistics.
MOD=*pgm**	Displays statistics for a specific module or generic group of modules.

DISPLAY STATISTICS TERMINAL

When the DISPLAY STATISTICS command and keyword combination is used with the TERMINAL keyword, the following screen is displayed.

```
CICS1                Online Transmission Time Optimizer V1R2        vvmm/ptflv
               Copyright Software Engineering GmbH, 1987 - 2006

---LU--- --DATE-- --TIME-- INEX POOL EXIT CTR TRACE  --3270-- --SCS--- --3600--
0113        074    17-01-54 LU-Y   3% -NA- VSM  SEQ     FULL     FULL      FULL
            2006             MO-Y                OFF   OUTIMAGE   OUT       OUT
                             SE-Y

                               LU Statistics Summary

COMPONENT REDUCTION 0   10   20   30   40   50   60   70   80   90  100
                    +----+----+----+----+----+----+----+----+----+----+

 T3270-O    nn%     ******************************

 P3270-T    nn%     ********
  SCS       nn%     ************
  3600-O    nn%     **********************************
      -I    nn%     ***********************
      -T    nn%     ***************************



ABL5001I COMMAND SUCCESSFULLY PROCESSED
OTTO COMMAND ===> D S TE_____________________________________________________ F3=END
```

Figure 16: DISPLAY STATISTICS TERMINAL Screen

Screen Description

This screen shows the summary of the optimization effect for the 3 components 3270, SCS and 3600. The 3270-component is split into 2 parts: terminal output (T3270-O) and 3270 printer total (P3270-T). The 3600-component is split in 3 parts: terminal output (3600-O), terminal input (-I), and terminal total (-T). *nn* gives the reduction percentage per component. The asterisks are a graphical display of the percentages.

DISPLAY STATISTICS *component*

When the DISPLAY STATISTICS command and keyword combination is used with a specific component keyword (3270, 3270T, 3270P, SCS or 3600) or a specific module keyword, the following screen is displayed.

```
CICS1                Online Transmission Time Optimizer V1R2        vvmm/ptflv
               Copyright Software Engineering GmbH, 1987 - 2006

---LU--- --DATE-- --TIME-- INEX POOL EXIT CTR TRACE  --3270-- --SCS--- --3600--
0113       074    17-01-54 LU-Y   3% -NA- VSM  SEQ     FULL     FULL      FULL
           2006            MO-Y                OFF   OUTIMAGE   OUT       OUT
                           SE-Y

                               LU Statistics Component

Component  component         From      fromdate   fromtime to todate     totime

                                  ------COUNT------  ----OPTIMIZED----  PERCENTAGE
Number of output messages  . :               omsg              omsgo    omsgp


                                  --COUNT BEFORE---  ---COUNT AFTER---  REDUCTION
Number of output bytes . . . :              ocntb              ocnta    ocntp




ABL5001I COMMAND SUCCESSFULLY PROCESSED
OTTO COMMAND ===> d s 3270t_____________________________________     F3=END
```

Figure 17: DISPLAY STATISTICS component Screen

Screen Description

component	3270, 3270T, 3270P, SCS, 3600 or module name
fromdate	component start date
fromtime	component start time
to-date	component stop date (the field will contain asterisks if still active)
to-time	component stop time (the field will contain asterisks if still active)
omsg	output message count
omsgo	optimized output message count
omsgp	percentage (*omsgo*/*omsg* * 100)
ocntb	total number of output bytes before optimization
ocnta	total number of output bytes after optimization
ocntp	output reduction percentage ((1 - (*ocnta*/*ocntb*)) * 100)

DISPLAY STATISTICS POOL

When the DISPLAY STATISTICS command and keyword combination is used with the POOL keyword, the following screen is displayed.

```
CICS1                Online Transmission Time Optimizer V1R2        vvmm/ptflv
               Copyright Software Engineering GmbH, 1987 - 2006

---LU--- --DATE-- --TIME-- INEX POOL EXIT CTR TRACE  --3270-- --SCS--- --3600--
0113       074    17-01-54 LU-Y   3% -NA- VSM  SEQ     FULL     FULL     FULL
           2006             MO-Y                OFF   OUTIMAGE   OUT      OUT
                            SE-Y

                              Image Pool Statistics

Total pool size . :     ps KB
Number of slots . :     ns
Slot size . . . . :     sl bytes
Slots in use. . . :     su

Average image len :     il bytes
Shortage deletions:     sd
Delete requests . :     dr
Image not saved . :    ins
Image not found . :    inf
Largest image . . :    lil


ABL5001I COMMAND SUCCESSFULLY PROCESSED
OTTO COMMAND ===> D S PO_____________________________________________________ F3=END
```

Figure 18: DISPLAY STATISTICS POOL Screen

Screen Description

ps	total image pool size in K-bytes
ns	number of generated slots
sl	size of one slot in bytes
su	number of slots currently in use
il	average image length in bytes
sd	image deletions because of pool full conditions
dr	specific image delete requests
ins	number of times image could not be saved
inf	number of times image was not found
lil	length of largest saved image

3.6 DISPLAY TRACE

Use the TRACE keyword to display current trace control information.

DISPLAY TRACE

```
CICS1                Online Transmission Time Optimizer V1R2        vvmm/ptflv
               Copyright Software Engineering GmbH, 1987 - 2006

---LU--- --DATE-- --TIME-- INEX POOL EXIT CTR TRACE  --3270-- --SCS--- --3600--
0113       074    17-01-54 LU-Y   3% -NA- VSM  SEQ     FULL     FULL     FULL
           2006            MO-Y                OFF   OUTIMAGE   OUT      OUT
                           SE-Y

                             Trace Information

 Active since . :  date     time     ID=id   status
 Title. . . . . :  title
 Active for  . . : TERMINAL(S)  listed below

                  tcomp

 (C/P) WRAP cyn/fyn   MAXNO   cmx/  fmx   STOP cyn/fyn   CODE(S) ec1 ec2 ec3
 Line count:        lc Entry count:       ec



ABL5001I COMMAND SUCCESSFULLY PROCESSED
OTTO COMMAND ===> d t_____________________________________________     F3=END
```

Figure 19: DISPLAY TRACE Screen

Screen Description

date	trace start date	
time	trace start time	
id	trace-ID	
status	where: STOPPED	indicates no trace is active
	blank	indicates a non-internal trace is active
	INTERNAL	indicates an internal trace is active
	INSTORAGE	indicates an instorage trace is active
title	trace title	
tcomp	trace active for these components or modules or terminals.	
cyn	current WRAP status is either yes or no	

fyn	permanent WRAP status is either yes or no
cmx	Current value used for the maximum size of the CICS OTTO storage area used for an instorage trace
fmx	permanent value used for the maximum size of the CICS OTTO storage area used for an instorage trace
cyn	current STOP ON ERROR status is either yes or no
fyn	permanent STOP ON ERROR status is either yes or no
ec1, ec2, ec3	from 1 to 3 error codes for which the STOP ON ERROR YES applies to
lc	number of trace lines written
ec	number of trace entries

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CHAPTER 4: PRINT COMMAND

The PRINT command lists all permanent settings made to CICS OTTO's command file.

PRINT keywords	**Description**
SETTINGS	Prints all options as well as the exclusion and selection lists.
OPTIONS	Prints various options depending on the 2nd keyword: ALL : system, component and LU based options SYSTEM : system-wide valid options like APPLID, date formatting, user exit, pool size, etc. 3270 : component based options like optimization level, start option, request unit size, etc. SCS : component based options like start option, line size, etc. 3600 : component based options like start option, prime character, etc. LU : LU based options like optimization level, start option, line size, prime character, etc. for all LUs with settings different from the component value. MOD : module based options like optimization level, line size, prime character, etc. for all modules with settings different from the component value.
EXCLUSION	ALL : prints module and LU exclusions as well as exclusions from module statistics LU : prints LU exclusions MOD : prints module exclusions MODSTAT : prints exclusions from module statistics
SELECTION	ALL : prints LU selections as well as selections for module statistics LU : prints LU selections MODSTAT : prints selections for module statistics

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APPENDIX A: TROUBLESHOOTING

Invalid Optimization

If a problem occurs, make sure that it is an optimization problem by switching off the optimization for the LU where the error occurred. If the problem persists, the following information is needed for technical support to solve the problem:

1. What kind of terminal or printer is used?
2. Does the error also occur on other terminal types?
3. Trace of the error situation on tape (see the following section).
4. Output of the Print Utility at the time of the error, to see all permanent settings.
5. A list of all PTFs that were applied.
6. Hard copy of the screen or printout where the error occurred and a hard copy for the same correct screen or printout.

Trace Control

CICS OTTO will trace all input and output messages before and after optimization for those components for which the trace facility was activated using the TRACE ON command. The trace file is opened when a TRACE ON command is issued and closed when a TRACE OFF command is issued.

➔ **Note**: The trace file should be printed before another TRACE ON command is issued. If this is not done, the trace information previously written may be lost.

In the case of an output message, the TRACE BEFORE OPTIMIZATION entry is the original message layout as sent by the application and the TRACE AFTER OPTIMIZATION entry shows the message after the optimization process. In the case of an input message, the TRACE BEFORE OPTIMIZATION shows the message as received from the terminal and the TRACE AFTER OPTIMIZATION shows the message as passed to the application. See Appendix A for an example and explanation of an optimization trace.

In some cases, it will be necessary to take an internal trace that will additionally print some control blocks as well as relevant control blocks of the TP system. This kind of trace is invoked by adding the keyword INT to the TRACE command. Contact IBM Support before activating the trace to decide whether an internal trace is necessary to solve the problem.

System Abends

In the event of a system abend, make sure that the problem is an optimization problem by examining the PSW and registers at the time of abend.

If a CICS OTTO module is involved, register 12 will point to the entry point of the module; on displacement 5 you will find an eye catcher identifying the abending module. The following information is needed for technical support to solve the problem:

1. What changes have been made to the TP system?
2. What changes have been made to CICS OTTO?
3. A tape with the original copied dump data set created by IEBGENER.
4. The Job Control of the dump tape creation.
5. Output of the CICS OTTO Print Utility at the time of abend.
6. A list of all PTFs that were applied.
7. Number of terminals connected to the TP system.
8. If the error can be reproduced, a CICS OTTO trace of the error situation on tape.

x37 Abends

B37 abends on the trace file and the statistics file can be handled automatically. During the installation process, parameter WRAP=YES/NO in macro ABLGEN specifies whether the output of these files should be halted in a B37 condition or if it should be wrapped around. Wrapping simply means that CICS OTTO will overwrite the trace file starting from the top, thus avoiding any B37 abend.

If the WRAP option was chosen, the installation guide warned against using a DISP=MOD in the DD statements for these files to avoid D37 abends. Therefore, in the event of a D37 abend, verify that the DD statement does not contain a DISP=MOD.

FAQs About the Image Pool

This section includes some commonly asked questions about the image pool.

How is the image pool allocated?

The image pool is allocated with a pre-defined size at the startup of CICS OTTO. This pool is a GETMAIN area and cannot be decreased while the TP system is up. The whole pool is used to keep screen images.

How do I calculate the pool size?

The pool should be big enough to capture all images of all terminals. It can be calculated by the following formula:

number of terminals * average image length

How do I know the pool is full?

The value in the "Shortage deletions" field of the pool statistics will indicate whether the pool is full. This value shows how many times CICS OTTO must delete an old image to be able to keep a new one -- this value should be zero or small.

The image pool should be enlarged only if the Image Shortage Deletion Count in the pool statistics is high, measured for at least one day. Keep in mind that the first message for a terminal always results in an image not found condition and thus increments this count.

What does the average image length have to do with slot size?

The average image length may be used to set the value for the SLOT size so that optimum usage of the image pool can be achieved. It is also recommended to use a part of the average image length -- because if there is a message of only 100 bytes also a full slot is used to keep it.

The number of generated slots represents the total pool size divided by the slot size.

What happens if the pool is full?

If the image pool is full, CICS OTTO will try to get space to save a new image. This is done by deleting images without transparent screen modifications (this means that CICS OTTO does not modify the bits on the screen). If possible, images that were not modified are deleted.

There are no messages issued in this case (100% full). CICS OTTO tries to free slots of other terminals (referred to as 'shortage deletions' in the image pool statistics). If enough slots cannot be freed, the new image cannot be saved and optimization for that message is performed as if the optimization level is 'OUT-NOIMAGE'.

When are images released?

Existing images are released when:

1. CICS OTTO tries to save a new image and there is no space in the image pool. CICS OTTO deletes the oldest image and increments the shortage deletions.

2. The CLEAR key is pressed.

3. An OPT OUT NOIMAGE is temporarily set for some reason.

4. A module is excluded.

5. For whatever reason, a message for a given terminal should not be optimized.

APPENDIX B: TECHNICAL SUPPORT CHECKLIST

If you encounter a problem that you cannot solve, please contact IBM Support. To help us to provide the best possible service to you, please consider the following checklist before you contact our office. Our contact information was provided on page v.

Contact name: _____

Contact telephone: _____

CICS OTTO version and release number: _____

CICS version and release number: _____

Model of computer on which CICS OTTO is being used: _____

Operating system release number: _____

Other non-IBM proprietary software on your system: _____

_____

Is your problem an optimization problem or a system abend? _____

In addition to the general information shown on the checklist, we also need specific information about the problem you are having. The "Troubleshooting" appendix provides a list of information that is needed in order to resolve your problem. Before you contact us, please try to have this information available.

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