CA SymDump® for CICS

User Guide

Release 9.1.00

Second Edition

CA Technologies Product References

This document references the following CA Technologies products:

- CA ACF2™
- CA InterTest™ for CICS
- CA Optimizer®/II
- CA SymDump® for CICS

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Contents

Documentation Changes

The following documentation changes have been made:

- Chapter "Printing Dumps (see page 101)" has been updated.
- Info Area (see page 85) was added
- Register Window (see page 86) was added
- Program Window (see page 87) was added

Chapter 1: Introduction

This guide is for CICS programmers and the CA SymDump for CICS administrator. It describes the CA SymDump for CICS tools, menus, displays, and customization parameters and how to use to resolve program abends and other problems in CICS regions. CA SymDump for CICS provides efficient, online dump capture and analysis tools and a powerful CICS trace capture and analysis facility.

You can use CA SymDump for CICS with or without CA InterTest for CICS. When used with CA InterTest for CICS, you have all of the CA InterTest for CICS facilities at your fingertips to help you resolve problems. When used together, these two solutions are tightly integrated and feature more functionality than using CA SymDump for CICS alone.

Product features that require CA InterTest for CICS are specifically noted throughout the document.

Whether using CA SymDump for CICS with or without CA InterTest for CICS, you will notice that CA SymDump for CICS uses parts of the CA InterTest for CICS functionality for symbolic file management and the core screens. These screens contain the name CA InterTest for CICS in the title line for display purposes only—it does not mean that CA InterTest for CICS is installed or required.

This section contains the following topics:

About the Product

CA SymDump for CICS is a powerful online tool that brings application dumps back to life. CA SymDump for CICS improves your ability to analyze and resolve application program problems.

Ideally, you could monitor every program and catch every error with a product like CA InterTest for CICS. Realistically, this is not possible either because of overhead or because you may not want to monitor security programs or programs using nonstandard code. As a result, dumps occur—especially in production where even a thoroughly debugged program abends because of bad data, scheduling errors, invalid parameters, and many other factors beyond programmer control.

With CA SymDump for CICS, you can do the following actions:

- Analyze dumps symbolically to resolve application dumps that occur in production and test systems. You can then solve these problems easily online using the Source Listing Dump Analysis screen. When examining a dump using this screen, your source listing displays at the instruction that triggered the abend. For more information on performing symbolic dump analysis and using the Source Listing Dump Analysis screen, see the chapter "Working with Dumps (see page 21)."
- Locate problems easily when you do not have a symbolic dump. Use the CA SymDump for CICS Abend Analysis display to avoid having to analyze hexadecimal dumps. This display pinpoints the instruction that caused the abend, explains the nature of the abend, and gives you simple and quick access to the instruction and its operands in main storage. For details, see the chapter "Working with Dumps (see page 21)."
- Immediately resolve CICS production problems from *any* region; for example, debug production abends from your test region. With CA SymDump for CICS you can analyze the dump online to resolve the problem promptly, *without* using a monitoring facility. For details, see the chapter "Production Strategies (see page 107)."
- Easily display a wide range of data about your dump through formatted and main storage displays. For more information, see the chapter "Working with Dumps."
- Manage your dump data set so you can selectively retain, view, and print the dumps you need, and discard the ones you do not. For instructions on managing dumps, see the chapter "Working with Dumps (see page 21)."

  Note: For information on how CA SymDump for CICS works with your CICS dump data set, see the *Installation Guide.*
- Reference your program's symbolic listing easily. CA SymDump for CICS lets you maintain multiple symbolic listings for a program and decide how much of the listing to keep on the symbolic file. CA SymDump for CICS symbolic file management saves valuable disk space since the listings are compressed. For information on managing your symbolic information, see the *Installation Guide.*
- Capture and review the CICS Internal Trace table. For details, see the chapter "Production Strategies (see page 107)."

  Note: The CA SymDump for CICS trace capture facility is very powerful. You can use it in place of the CICS Auxiliary Trace to analyze the CICS workload and quickly pinpoint any problems.

  Note: You must have CA InterTest for CICS installed to use this feature.

Because CA SymDump for CICS and CA InterTest for CICS are completely integrated, you can access any CA InterTest for CICS function from within CA SymDump for CICS. For example, while using CA SymDump for CICS to analyze a dump you can access CA InterTest for CICS to set breakpoints whenever the need arises.

Viewing Captured Dumps

Dumps can be viewed using the:

- CA SymDump for CICS SYMD Transaction
- Eclipse-based Graphical User Interface

Note: For more information on the Eclipse Interface see the *Release Notes* and *Installation Guide*.

CORE Keywords

CA SymDump for CICS supports the following CORE keywords:

ABND	DLP	PROG=*	TCT
BLL	DSA	REG	TERM
BLLS	EIB	REGS	TGT
BLX	EIS	RSA	TUAR
BLXS	EISTG	SCAB	TWA
BWD	FIND=	SCAN	USE=
CLOT	L=	SQLCA	WKAR
CMAR	LCL	SQLRCODE	USER
CSA	OPFL	SSCR	WHERE
CURR	PGM	STCA	
CWA	PGM=*	TCA	
CWK	PROG	TACB	

CA SymDump for CICS does not support the following CORE keywords, but CA InterTest for CICS does. To look at any of these CICS storage areas, access them through CA InterTest for CICS.

ARG	EMSG	JCA	PPT
BMSG	END	LLA	PREV
CHG	FAKE	LOAD	PROM
DCT	FCT	MAP=	SET=
DELETE	FILE	MOVEIN	SIT
DEST	FINDTRAN	MXR	SSCR

DLTE	HLST	MXS	TAL
DSA	IUSER	OPTS	TRAN
DUMP	IF=	PCT	TRUE
DWE	ITBE	PEAPX	VER

Menus

Menus let you access all CA SymDump for CICS functions easily.

To access the CA SymDump for CICS menus use one of the following methods:

- From CICS, enter the transaction ID **SYMD** from a clear CICS screen. The CA SymDump for CICS Primary Option menu appears.

- You can also access the CA SymDump for CICS Primary Option menu from the CA InterTest for CICS Primary Option menu by selecting option **5 Dump Analysis**.

The following sample screen is the CA SymDump for CICS Primary Option Menu:

```
----------------  CA SymDump for CICS v9.1  PRIMARY OPTION MENU -----------------
 OPTION  ===>
1 Analysis           - Display/select captured CICS dumps/traces
2 Tracing            - Capture CICS internal trace for analysis
3 Configuration      - Display/modify CA-SymDump initialization parameters
4 Start              - Start dump capture facility
5 Stop               - Stop dump capture facility
6 Source             - Display/select program source files/listings
7 Status/Maintenance - Product status and maintenance functions
8 What's new?        - Display information about CA-SymDump 6.x release
X Exit               - Terminate CA-SymDump menu processing
                       CA SymDump for CICS v9.1
             Copyright © 2014 CA.  All rights reserved.

 PF1 Help       2           3 End        4 Return     5           6
 PF7            8           9           10           11          12
```

From the Primary Option menu, you can access all CA SymDump for CICS functions. A brief summary of each option follows.

1 Analysis

Specifies selection criteria for the dumps and traces you want to access.

2 Tracing

Captures the CICS Internal Trace table and writes it to the PROTDMP file.

3 Configuration

Sets or updates parameters for capturing dumps.

4 Start

Starts the dump capture facility.

5 Stop

Stops the dump capture facility.

6 Source

Selects program source files and listings for display.

7 Status/Maintenance

Status

Provides online displays of CA SymDump for CICS product components, including the genlevel, global installation options, and what maintenance has been applied.

Maintenance

Allows a help administrator to maintain the optional user help file entries of user-defined abend codes and descriptions.

8 What's New

Displays online help topics listing the new features for this release.

X Exit

Exits menu processing.

You can bypass this menu and go directly to one of the CA SymDump for CICS options by entering **SYMD x**, where *x* is the option number listed on the Primary Option menu. For example, enter **SYMD 1** from a clear CICS screen to go directly to the Analysis screen.

Note: From CA InterTest for CICS menus**,** enter **5.x** from the CA InterTest for CICS Primary Option menu command line, where *x* is the option number listed on the CA SymDump for CICS Primary Option menu. You can also quickly exit any menu by using *=X*.

Standard PF Keys

PF key assignments are standard across all CA SymDump for CICS menus. The following is a list of the standard PF key assignments.

PF1 Help

Displays a Help menu relating to the current screen.

PF2

Unassigned.

PF3 End

(End or Clear) Terminates the current screen.

PF4 Profile

Displays the Source Listing Profile screen where you can set values for your current session.

PF6 Menu

Displays the Primary Option menu.

PF7 Backward

Scrolls backward one page unless the setting was changed on the Profile.

PF8 Forward

Scrolls forward one page unless the setting was changed on the Profile.

PF9, PF10, PF11

Unassigned.

How You Find Out What's New

To display a list of the new features for this version of CA SymDump for CICS, do one of the following actions:

- Select option **8 What's New** on the Primary Option menu
- Type **SYMD 8** from a clear CICS screen

Chapter 2: Capturing Dumps

This chapter explains how to do the following tasks:

- Configure CA SymDump for CICS for capturing dumps
- Start and stop the dump capture facility

Note: The dump capture facility runs under the CICS Global User Exit facility and must be started before it can begin capturing CICS Transaction abend.

This section contains the following topics:

Configure a Dump Capture

The CA SymDump for CICS Configuration menu lets the systems programmer set or update parameters for capturing dumps. Configuration parameter defaults are specified when you define the PROTDMP file using IN25INIT. For details, see the *Installation Guide*.

Note: Access to these functions may be restricted at your site.

Important! If you update the configuration parameter, you must restart CA SymDump for CICS for the new parameters to take effect. For instructions on starting and stopping the dump capture facility, see Start and Stop CA SymDump for CICS Dump Capture (see page 19).

Access the Configuration Menu

You can access the Configuration menu using one of the following methods:

- Select option **3 Configuration** on the CA SymDump for CICS Primary Option menu
- Type **SYMD 3** from a clear CICS screen

The Configuration menu appears.

```
          CA SymDump for CICS V9.1 - Configuration
COMMAND ===>
CASD6960  CA SymDump for CICS is active
Overtype the parameters you want to change, then press ENTER
Suppress AP0001 dumps:          Y (Y,N)    Messages to operator:       N (Y,N)
Suppress transaction dumps:     N (Y,N)    Capture EXEC CICS dumps:    Y (Y,N)
Automatic purge of dumps:       Y (Y,N)    Dump only current program:  N (Y,N)
Automatic purge hold days:      7 (0-99)   Dump select start date: 06/01/2000
Dynamic purge of oldest dump:   N (Y,N)               (CURRDATE or MM/DD/YYYY)
Suppress duplicate dumps:       Y (Y,N)
Duplicate dump limit:           3 (0-999)
Enter abend codes to be EXCLUDED:    '*' is generic character
____             ____             ____             ____           ____
____             ____             ____             ____           ____
____             ____             ____             ____           ____
____             ____             ____             ____           ____

PF1 Help       2           3 End        4           5           6
PF7            8           9           10          11          12
```

Note: A message at the top of the screen indicates whether CA SymDump for CICS dump capture is active.

After entering values for the configuration parameters, press Enter. CA SymDump for CICS prompts you to press Enter to confirm the parameter update request or to press PF3 to cancel the updates.

Configuration Parameters

The following configuration parameter descriptions contain the format and valid values for each entry.

Suppress AP0001 Dumps

Specifies whether to suppress full AP0001 SVC dumps for ASRA and ASRB abends.

Enter Y or N

Note: If you specify N, dumping conforms to the specifications defined for your CICS system.

Default: Y

Suppress Transaction Dumps

Specifies whether to write a transaction dump to the CICS dump data set.

Enter Y or N

Default: Y

Automatic Purge of Dump

Specifies whether to automatically purge dumps during CA SymDump for CICS startup. Purging qualification is determined by age as set in the field Automatic Purge Hold Days.

Note: Dumps with a HOLD indicator (set from the Dump/Trace Selection screen) are not purged.

Enter Y or N;

Default: Y

Automatic Purge Hold Days

If Automatic Purge of Dumps is set to Y, specify the number of days to retain nonheld dumps before they are purged.

Specify 0 days to purge all dumps without a HOLD indicator at CA SymDump for CICS startup.

Limits: Enter a number from 0 to 99, inclusive

Default: 1

Dynamic Purge of Oldest Dump

Specifies whether to allow CA SymDump for CICS to dynamically purge nonheld dumps during dump capture on a FIFO basis. Dynamic purging only occurs when there is insufficient space to hold the dump being captured, and deletes no more dumps than required to get space for the new dump. Automatic Purge Hold Days is ignored for dynamic purges.

Enter Y or N

Default: N

Suppress Duplicate Dumps

Specifies whether duplicate dump suppression is in effect. A dump is considered to be a duplicate when an abend has a matching program or offset with a previously captured dump.

Enter Y or N

If set to Y, dumps are suppressed after the Duplicate Dump Limit is reached.

Default: N

Note: If the dumps that are suppressed by this parameter match the criteria specified in the IN25CAPT Capture List then those dumps are captured. The status of the dump changes to Force/Capt.

Duplicate Dump Limit

Specifies the maximum number of duplicate dumps to capture for a given occurrence of program or offset.

Note: This parameter is recognized only when Suppress Duplicate Dumps is set to Y.

Enter a number from 0 to 999, inclusive

Default: 1

Note: If the dumps that are suppressed by this parameter match the criteria specified in the IN25CAPT Capture List then those dumps are captured. The status of the dump changes to Force/Capt.

Messages to Operator

Specifies whether to write CA SymDump for CICS informational messages to the console when dump or trace requests are intercepted by CA SymDump for CICS.

Enter Y or N

Default: Y

Capture EXEC CICS Dumps

Specifies whether CA SymDump for CICS should capture transaction dumps produced by EXEC CICS DUMP commands.

Enter Y or N

Default: Y

Dump Only Current Program

Specifies whether the dump should include just the active program or all linked and loaded programs.

Enter Y or N

Default: Y

Dump Select Start Date

Specifies the date dump selection starts.

Enter a date in the format mm/dd/yyyy or specify CURRDATE for the current date.

Default: CURRDATE (current date)

Enter Abend Codes to be Excluded

Enter the abend codes for which symbolic dumps should not be written to the CA SymDump for CICS data set or CICS dump data set.

Enter any CICS dump or abend code in the format xxxx. You can use an asterisk to represent a generic character; for example, USR* excludes all dump and abend codes beginning with USR.

Default: None

Note: If the dumps that are suppressed by this parameter match the criteria specified in the IN25CAPT Capture List then those dumps are captured. The status of the dump changes to Force/Capt.

Start and Stop a Dump Capture

Users can view dumps or traces online even if CA SymDump for CICS dump capture has not been started. However, CA SymDump for CICS cannot write or capture dumps or traces unless the dump capture facility is active.

Note: Access to these functions may be restricted at your site.

Start the Dump Capture Facility

To start the CA SymDump for CICS dump capture facility, do one of the following actions:

- Select option **4 Start** on the CA SymDump for CICS Primary Option menu
- Type **SYMD 4** from a clear CICS screen

Note: Sites can choose to initiate CA SymDump for CICS dump capture automatically at CICS startup. For instructions, see the *Installation Guide*.

Stop the Dump Capture Facility

To stop the CA SymDump for CICS dump capture facility, do one of the following actions:

- Select option **5 Stop** on the CA SymDump for CICS Primary Option menu
- Type **SYMD 5** from a clear CICS screen

Chapter 3: Working with Dumps

This chapter explains the process of how to select the dumps with which you want to work, use the Dump/Trace Selection List, view dumps and their information, and how to delete, hold, and release dumps.

This section contains the following topics:

Specify Selection Criteria

After the dumps are captured, you must specify the CA SymDump for CICS data set and other selection criteria to select the dumps and traces with which you want to work. You do so using the Dump/Trace Analysis screen.

Select Dumps and Traces

You can use the following procedure to select dumps and traces with which to work.

Follow these steps:

1. Access the Dump/Trace Analysis screen.
2. Select option **1 Analysis** on the Primary Option menu.

   The Dump/Trace Analysis screen appears.

```
--------- CA SymDump for CICS V9.1  DUMP/TRACE ANALYSIS  -----------
 COMMAND ===>
   Type captured dump/trace selection criteria, then press ENTER.
   Dump File ID PROTDMP_          (*+), Required
   CICS applid  ________  (*+)
   User ID  . . _                 (*+)_______
   Program  . .                   (*+)________
   Transaction                    (*+)____
   Dump code  .  (*+)                    ___
   Terminal . . ____
   Start date . 01/01/1998        mm/dd/yyyy
   Start time . 00                hh
   End date . . 04/23/2000        mm/dd/yyyy
   End time . . 24                hh
   (*+) Wildcard characters are allowed

 PF1 Help       2           3 End        4 Return     5           6
 PF7            8           9           10           11          12
```

3. Specify the information as necessary. Press Enter to continue, or press PF3 to exit this screen and return to the Primary Option menu without processing the specifications.

Dump and Trace Analysis Fields

Use the following fields or sections available on the Dump/Trace Analysis screen to select the dumps and traces with which you want to work:

Dump File ID

Enter an explicit or masked name for the CA SymDump for CICS dump data sets from which you want to select dumps.

A value for this field is required; all other fields are optional.

Limits: The Dump File ID name must be 1- to 7-alphanumeric characters in length. It must match the FILE name for the dump data set or include wildcard characters that broaden the search for the dump file FILE name.

Valid wildcard characters are * and +.

- Use * for a string of any length
- Use + for a single character
- **Example:** DU* searches all dump file names whose file name starts with DU, and DU++++P searches all dump file names whose file name starts with DU and whose seventh character is a P.

Default: The CA SymDump for CICS dump data set name for your CICS region.

CICS Applid

Specify the applid of the CICS region from which dumps are selected if the dump data set contains dumps from more than one region.

Enter any valid CICS applid from 1 to 8 alphanumeric characters in length Wildcard characters * and + are permitted.

Default: None

User ID

Specify the user ID to select dumps produced by a specific user ID.

Enter any valid user ID from 1- to 8-alphanumeric characters in length. Wildcard characters * and + are permitted.

Default: None

Program Name

Specify a program name to select dumps produced only by that program.

Enter a name from 1- to 8-alphanumeric characters in length. Wildcard characters * and + are permitted.

Default: None

Transaction

Specify a transaction ID to select dumps produced only by that transaction.

Enter a value in the format *xxxx*. Wildcard characters * and + are permitted.

Default: None

Dump Code

Specify the dump code to select dumps with a specific code.

Enter any CICS dump or abend code in the format *xxxx*. Wildcard characters * and + are permitted.

Default: None

Termid

Specify the terminal ID to select dumps for transactions running at a specific terminal.

Enter any valid terminal ID in the format *xxxx*. A generic character is *not* permitted.

Default: None

Start Date

Specify the month, day, and year from which CA SymDump for CICS should begin selecting dumps.

Enter a date in the format *mm/dd/yyyy*.

Default: Set by the configuration parameter Dump Select Start Date.

Start Time

Specify the hour from which CA SymDump for CICS should begin selecting dumps.

Enter a time in the format *hh*.

Limits: Valid values are 00 to 24 (a 24-hour clock is assumed).

Default: 0; set by the configuration parameter Dump Select Start Date.

End Date

Specify the month, day, and year at which CA SymDump for CICS should stop listing dumps.

Enter a date in the format *mm/dd/yyyy.*

Default: The current date.

End Time

Specify the hour at which CA SymDump for CICS should stop listing dumps.

Enter a time in the format *hh*.

Limits: Valid values are 00 to 24 (a 24-hour clock is assumed).

Default: 0

Important! Leave the default values for the Start Date, Start Time, End Date, and End Time parameters to list only those dumps generated on the **current** day. Use the EOF key to blank out the default values to list **all** dumps in the data set.

Specify Criteria for Dump Selection

The following sample shows how to specify criteria for dump selection. According to the specifications shown, CA SymDump for CICS lists only those dumps in file PROTDMP that were generated from 8 a.m. on March 22, 2000, through 5 p.m. on the same day.

```
--------------  CA SymDump for CICS V9.1  DUMP/TRACE ANALYSIS  -----------------
 COMMAND ===>

   Type captured dump/trace selection criteria, then press ENTER.

   Dump File ID PROTDMP_ (*+), required
   CICS applid  ________ (*+)
   User ID  . .                  (*+)________
   Program  . .                  (*+)________
   Transaction                   (*+)____
   Dump code  . __               (*+)__
   Terminal . . ____
   Start date . 03/22/2000       mm/dd/yyyy
   Start time . 08               hh
   End date . . 03/22/2000       mm/dd/yyyy
   End time . . 17               hh
   (*+) Wildcard characters are allowed
 PF1 Help       2           3 End        4 Return     5           6
 PF7            8           9           10           11          12
```

Select Dumps from Another CICS Region

If the region whose dumps you want to access has its own CA SymDump for CICS dump data set.

Access Dumps

To access dumps in a region that has separate dump data sets

1. Change the default dump file name on the Dump/Trace Analysis screen to the dump file name of the region for which you want to access dumps. Your CICS region must have an FCT entry and the necessary startup JCL for that file.
2. Set the CICS applid to the applid of the CICS region for which you want to access dumps or leave it blank.

   CA SymDump for CICS generates a list of only those dumps from the specified dump file that meet the other selection criteria you specified on the Dump/Trace Analysis screen. Files on the specified dump file that are not dumps are excluded from the generated selection list.

Access Shared Dump Data Sets

To access shared dump data sets (where two regions write dumps to the same data set)

1. On the Dump/Trace Analysis screen, do **not** change the default dump file name.
2. Change the CICS applid to the applid of the CICS region for which you want to access dumps.

Note: Two CICS regions can write dumps to the same data set *only* if they are not active at the same time.

Dump/Trace Selection List

After you specify the criteria for dump selection on the Dump/Trace Analysis screen, CA SymDump for CICS lists the dumps that meet your criteria on the Dump/Trace Selection screen. From this list, you can select dumps to view online, delete, hold for future use, or release from a previously specified hold.

Note: If the dump or trace you are looking for does not appear on the Dump/Trace Selection screen, check your selection criteria on the Dump/Trace Analysis screen. Since only dumps and traces that meet your selection criteria appear on the Dump/Trace Selection screen, you may need to change your selection criteria.

Collapse and Expand Branches

The selection list on the Dump/Trace Selection screen is an expandable, collapsible tree structure, similar to CA InterTest for CICS' Monitoring Status report. Each dump file that met your selection criteria is a branch on the tree. There are several ways to collapse and expand branches.

To collapse or expand branches use one of the following methods:

From the command line:

- Type collapse or expand on the command line to collapse or expand all of the branches in the display tree.
- Using PF keys:
  - Press PF5 to collapse all of the branches in the display tree.
  - Press PF6 to expand all of the branches in the display tree.

For individual dump files:

- Type a plus sign (+) next to a dump file name that has a + indicator next to it to expand that branch.
- Type a minus sign (-) next to a dump file name that has a - indicator next to it to collapse the branch.

  After typing the plus or minus sign, press Enter.

Example: Dump/Trace Selection List (Collapsed View)

The following sample screen shows that two dump files met the selection criteria entered with a mask of PROTD* on the Dump/Trace Analysis screen. Each dump file is a branch on the tree.

```
--------------- CA SymDump for CICS V9.1  DUMP/TRACE SELECTION ----------------
COMMAND ===>

  Type S select,  D delete, H hold, R release, I history

    Dumpfile  Tran  Program   Offset  Abend       Created        # Dups  Status
_ + PROTDMP   DEC2  COB2DEMO  001188  ASRA  07/22/2000 12:48:49       2
_ + PROTDM2   TCB   FINDTCB   0001FE  ASRA  07/15/2000 09:23:46
  *** End of data ***



PF1 Help       2            3 End        4 Return     5 Collapse   6 Expand
PF7 Backward   8 Forward    9           10           11           12
```

Example: Dump/Trace Selection List (Expanded View)

The expanded view follows. It lists all of the dumps that met the Dump/Trace Analysis screen selection criteria grouped by dump file name.

```
--------------- CA SymDump for CICS V9.1  DUMP/TRACE SELECTION  ----------------
COMMAND ===>

  Type S select,  D delete, H hold, R release, I history

   Dumpfile  Tran  Program   Offset  Abend       Created        # Dups  Status
_ - PROTDMP   DEMC  COBDEML   000812  ASRA  07/22/2000 12:50:20       2
_   |-        DEMC  COBDEML   000812  ASRA  07/22/2000 12:50:08       2
_   |-        DEC2  COB2DEMO  001188  ASRA  07/22/2000 12:48:49       2
_   |-        DEC2  COB2DEMO  001188  ASRA  07/22/2000 12:48:40       2
_   |-        DEMC  COBDEMO   001B86  ASRA  07/22/2000 12:48:16       5
_   |-        DEMC  COBDEMO   001B86  ASRA  07/22/2000 12:48:07       5
_   |-        DEMC  COBDEMO   001B86  ASRA  07/22/2000 12:47:47       5
_ + PROTDM2   TCB   FINDTCB   0001FE  ASRA  07/15/2000 09:23:46
  *** End of data ***
.
.
.
PF1 Help       2            3 End        4 Return     5 Collapse   6 Expand
PF7 Backward   8 Forward    9           10           11           12
```

The expanded listing shows the following information for each dump:

Dumpfile

Specifies the file ID of the dump data set.

Tran

Identifies the transaction that produced the dump, or *Duplicate* if the listing represents a duplicate abend of the prior listing.

Program

Identifies the program that produced the dump, or if SYMT was used to capture the CICS Interval Trace Table, the program that produced the trace.

Offset

Specifies the program offset that triggered the abend.

Abend

Identifies the abend code when the dump was produced.

Created

Specifies the d ate and time when the dump was produced.

 # Dups

Specifies the total number of duplicate dumps detected for this abend entry. This number can be greater than the duplicates listed on the dump file if duplicate dump suppression is set to yes.

Status

Specifies the status of the dump; for example, whether it has been selected, deleted, placed on hold, or released. This column is blank if you have not specified an option for the dump.

List Order and Navigation

Within a dump file, the dumps are sorted by creation date and time with the most recent dump listed first and the oldest dump listed last.

Press PF8 to page forward through the list; press PF7 to page backward.

To scroll up or down a specific number of lines, enter UP xx or DOWN xx from the Command line. For example, DOWN 10 scrolls to the tenth listing on the display.

You can resort the sequence of the dump tree or list by specifying the SORT command on the command line. The syntax of the SORT command is:

```
SORT {DUMPFILE|TRAN|PROGRAM|OFFSET|ABEND|CREATED} {A|D}
```

If you do not specify the third parameter, the default sequence is ascending. If you do not specify any parameters with the SORT command, the dump list is sorted by its default sort sequence, which is ascending by DUMPFILE and descending sequence by CREATED.

View Duplicate Abends

CA SymDump for CICS identifies duplicate abends on the selection list in the # Dups column. Duplicate dumps show the same entries on the selection list, except for the creation date and time. For duplicate dumps, the most recent dump is listed first and the oldest dump is listed last.

- The first dump listed on the PROTDMP dump file was produced by the DEC2 transaction. An abend occurred in program COB2DEMO at offset 001188, producing an ASRA abend code. The abend occurred on July 22, 2000 at 12:48:49. This dump is being held; in other words, it cannot be deleted until released.
- The second dump shows the same information as the first dump other than the creation time. The same transaction, program, and offset produced the ASRA, just eight seconds earlier on the same day, July 22, 2000.

The following selection list shows the information discussed previously.

```
Dumpfile  Tran  Program   Offset  Abend       Created        # Dups  Status

PROTDMP   DEC2  COB2DEMO  001188  ASRA  07/22/2000 12:48:49       2  *HOLD*
          DEC2  COB2DEMO  001188  ASRA  07/22/2000 12:40:40       2
```

Dump Options

You can specify the dump options from the Dump/Trace Selection screen to view, delete, hold, or release dumps or view the status.

Follow these steps:

1. Open the Dump/Trace Selection screen.
2. Specify one of the following options:

   Note: You can specify an option for more than one dump.

   S

   Displays the dump online. If you specify **S** next to more than one dump, CA SymDump for CICS displays the dumps in the order in which they are listed. After viewing the first dump, press PF3 to display the next selected dump.

   D

   Deletes the dump. If you specify D next to one or more dumps, the system asks you to press Enter to confirm the deletions. Only dumps on the CA SymDump for CICS PROTDMP data set can be deleted.

   H

   Holds the dump and prevents it from being deleted. A dump placed on Hold can be selected for viewing or released.

   Note: This command is equivalent to the Lock command in the IN25DMPU utility.

   R

   Releases a dump that is being held.

   Note: This command is equivalent to the Unlock command in the IN25DMPU utility.

   I

   Shows occurrences of that specific abend, along with the dumps that were captured, force captured, or suppressed. Selecting I for a dump with duplicates displays the Duplicate Suppression History panel.

3. Do one of the following tasks after specifying your options:
   - Press Enter to process the options. The Status column shows the options you specified.
   - Press PF3 to return to the Dump/Trace Analysis screen. The information you previously entered on that screen is retained.
   - Press PF4 to return to the Primary Option menu.

Example: Specify Options for Dumps

This example shows that:

- The two dumps from the DEMP transaction are being held for later use. These dumps will not be deleted even if the CA SymDump for CICS data set becomes full or they become eligible for deletion by the automatic purge option
- The latest dump for the ASRA produced by transaction DEMC, program COBDEMO, is viewed online
- The two duplicate dumps for the COBDEMO ASRA are deleted after the delete requests are confirmed

```
--------- CA SymDump for CICS V9.1  DUMP/TRACE SELECTION  --------------
 COMMAND ===>

   Type S select,  D delete, H hold, R release, I history

     Dumpfile Applid   Tran Program  Offset Abend  Created         Dups Status
_    |-        DEMC  COBDEMO   001B86  4544  07/25/2000 15:56:59
h    |-        DEMP  PL1DEMO   002CBC  AEIL  07/23/2000 11:46:34
h    |-        DEMP  PL1DEMO   001A6E  ASRA  07/22/2000 12:49:16       2
_    |-        DEMP  PL1DEMO   001A6E  ASRA  07/22/2000 12:49:01       2
s    |-        DEMC  COBDEMO   001B86  ASRA  07/22/2000 12:48:16       5
d    |-        DEMC  COBDEMO   001B86  ASRA  07/22/2000 12:48:07       5
d    |-        DEMC  COBDEMO   001B86  ASRA  07/22/2000 12:47:47       5
.
.
.
```

Example: Review the Status of Dumps in the Duplicate Suppression History Panel

You can specify option I from the Dump/Trace Selection screen to review the status of dumps on the Duplicate Suppression History panel. This panel indicates the status of duplicates for a selected dump, whether the duplicate dumps were suppressed or captured.

Follow these steps:

1. Open the Dump/Trace Selection screen.
2. Specify option I for any dump and press Enter.

   Note: You can specify the option for more than one dump.

```
                CA SymDump for CICS V9.1 DUMP/TRACE SELECTION
COMMAND ===>

  Type S select,  D delete, H hold, R release, I history

    Dumpfile Applid   Tran Program  Offset Abend  Created         Dups Status
_ - PROTDMP  A11ICICX SYMD *TRACE*         SYMT 12/07/12 13:49:32
_ - |-       A11ICICX DE39 C390DEMO 001196 APCT 12/07/12 09:05:40    3
_ - |-       A11ICICX DE39 C390DEMO 001196 APCT 12/07/12 09:05:37    3
_ - |-       A11ICICX DE39 C390DEMO 001196 APCT 12/07/12 09:05:30    3
_ - |-       A11ICICX DE37 C370DEMO 0010EC APCT 12/07/12 09:05:27    3
_ - |-       A11ICICX DE37 C370DEMO 0010EC APCT 12/07/12 09:05:24    3
_ - |-       A11ICICX DE37 C370DEMO 0010EC APCT 12/07/12 09:05:21    3
i - |-       A11ICICX DEMV CMVSDEMO 00118E APCT 12/07/12 09:05:10    3
_ - |-       A11ICICX DEMT ASMDEMO  0001BE ASRA 12/07/12 09:05:05    3
_ - |-       A11ICICX DEMT ASMDEMO  0001BE ASRA 12/07/12 09:05:00    3
_ - |-       A11ICICX DEMT ASMDEMO  0001BE ASRA 12/07/12 09:04:57    3
_ - |-       A11ICICX DEMC COBDEMO  001294 ASRA 12/07/12 09:04:35    4 * *SLCT*
_ - |-       A11ICICX DEMC COBDEMO  001294 ASRA 12/07/12 09:04:27    4
_ - |-       A11ICICX DEMC COBDEMO  001294 ASRA 12/07/12 09:04:22    4
_ - |-       A11ICICX DEMC COBDEMO  001294 ASRA 12/07/12 09:04:18    4

PF1 Help       2           3 End        4 Return     5 Collapse   6 Expand
PF7 Backward   8 Forward    9           10           11           12
```

The Duplicate Suppression History panel opens.

The following example shows that the selected dump has three duplicates but only a single entry is available from the list.

```
            CA SymDump for CICS V9.1 Duplicate Suppression History
COMMAND ===>

         Dumpfile   Tran  Program   Offset  Abend #Dups
         PROTDMP    DEMV  CMVSDEMO  00118E  APCT    3

         APPLID   USER     TASK  TERM      CREATED      STATUS
         A11ICICX CICSUSER 00067 U056 12/12/07 09:05:17 SUPPRESSED
         A11ICICX CICSUSER 00066 U056 12/12/07 09:05:15 SUPPRESSED
         A11ICICX CICSUSER 00065 U056 12/12/07 09:05:10 CAPTURED
         *** End of data ***









PF1 Help       2           3 End       4 Return    5           6
PF7 Backward   8 Forward   9          10          11          12
```

The previous example shows that dumps were suppressed after the first dump was captured, because the duplicate limit was set to 1.

3. Review the status column.

   Suppressed

   Indicates that the selected dump has been suppressed.

   Captured

   Indicates that the selected dump has been captured.

   Force Captured

   Indicates that the selected dump has been force captured due to Dump Suppression Override list.

4. Press PF3 to return to the Dump/Trace Analysis screen or press PF4 to return to the Primary Option menu.

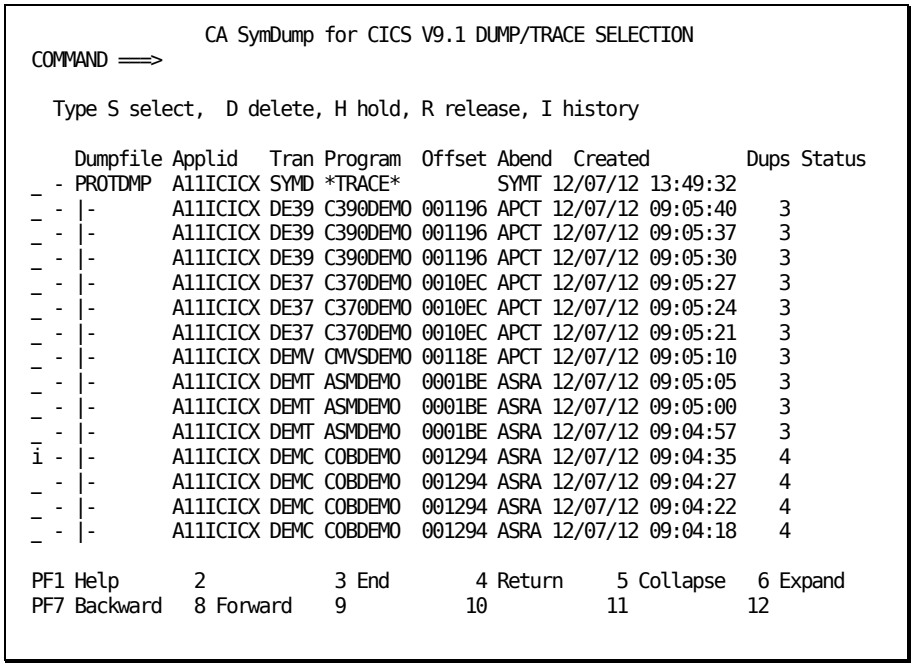
Review the Status of Forced/Captured Dumps

You can also review the status of dumps that were not suppressed on the Duplicate Suppression History panel.

Follow these steps:

1. Open the Dump/Trace Selection screen.
2. Specify option I for any dump and press Enter.

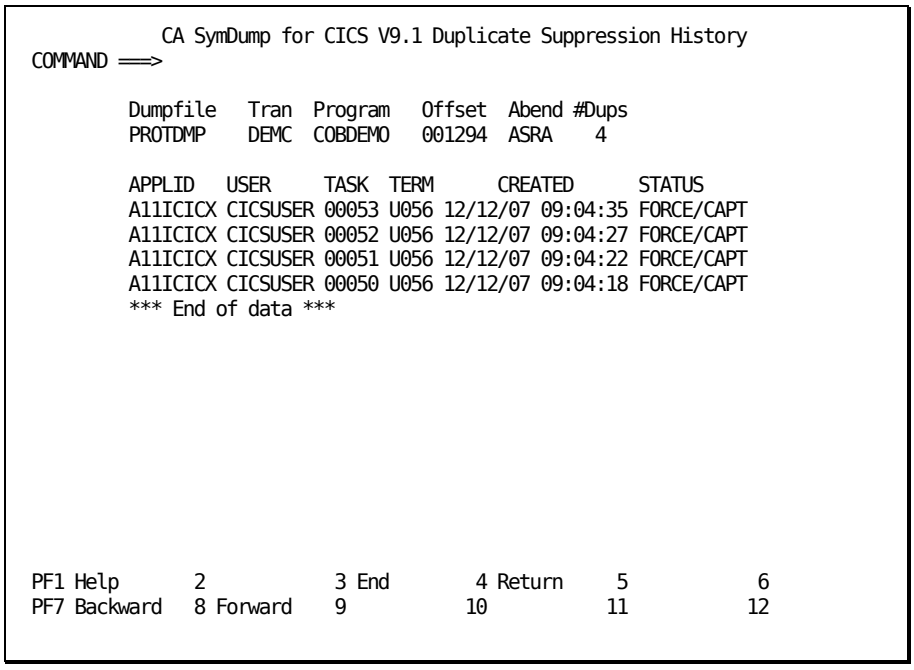
   Note: You can specify the option for more than one dump.



```
                CA SymDump for CICS V9.1 DUMP/TRACE SELECTION
COMMAND ===>

  Type S select,  D delete, H hold, R release, I history

    Dumpfile Applid   Tran Program  Offset Abend  Created         Dups Status
_ - PROTDMP  A11ICICX SYMD *TRACE*         SYMT 12/07/12 13:49:32
_ - |-       A11ICICX DE39 C390DEMO 001196 APCT 12/07/12 09:05:40    3
_ - |-       A11ICICX DE39 C390DEMO 001196 APCT 12/07/12 09:05:37    3
_ - |-       A11ICICX DE39 C390DEMO 001196 APCT 12/07/12 09:05:30    3
_ - |-       A11ICICX DE37 C370DEMO 0010EC APCT 12/07/12 09:05:27    3
_ - |-       A11ICICX DE37 C370DEMO 0010EC APCT 12/07/12 09:05:24    3
_ - |-       A11ICICX DE37 C370DEMO 0010EC APCT 12/07/12 09:05:21    3
_ - |-       A11ICICX DEMV CMVSDEMO 00118E APCT 12/07/12 09:05:10    3
_ - |-       A11ICICX DEMT ASMDEMO  0001BE ASRA 12/07/12 09:05:05    3
_ - |-       A11ICICX DEMT ASMDEMO  0001BE ASRA 12/07/12 09:05:00    3
_ - |-       A11ICICX DEMT ASMDEMO  0001BE ASRA 12/07/12 09:04:57    3
i - |-       A11ICICX DEMC COBDEMO  001294 ASRA 12/07/12 09:04:35    4
_ - |-       A11ICICX DEMC COBDEMO  001294 ASRA 12/07/12 09:04:27    4
_ - |-       A11ICICX DEMC COBDEMO  001294 ASRA 12/07/12 09:04:22    4
_ - |-       A11ICICX DEMC COBDEMO  001294 ASRA 12/07/12 09:04:18    4

PF1 Help       2           3 End        4 Return     5 Collapse   6 Expand
PF7 Backward   8 Forward    9           10           11           12
```

The Duplicate Suppression History panel opens.

In the following example, the selected dump has four entries in the list, because four duplicate dumps were captured for this abend.



3. Review the status column.

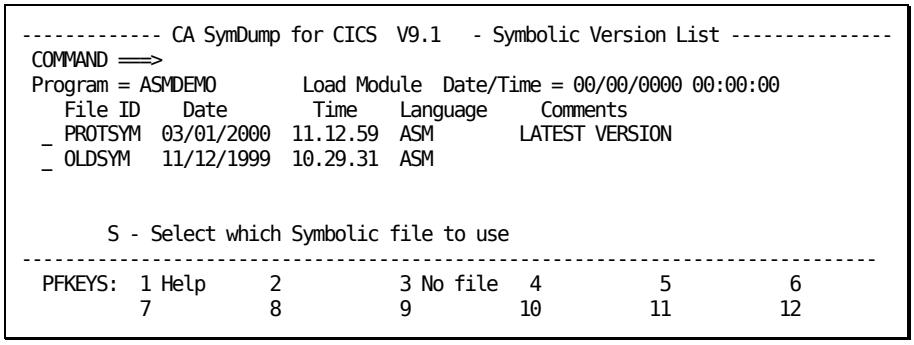
   Review the status column. The Duplicate Suppression History panel in the previous example shows dumps that were captured for all four occurrences of this abend. This is because the abend matches the criteria specified in the IN25CAPT Capture List. Only dumps captured and match the IN25CAPT Capture List are indicated by the status, Force/Capt.

4. Press PF3 to return to the Dump/Trace Analysis screen or press PF4 to return to the Primary Option menu.

Symbolic Listings

Multiple symbolic listings can exist for an abending program. It is important to use the symbolic listing that matches the program captured in the dump—get the correct symbolic listing.

- For COBOL and PL/I programs that are link-edited immediately after the command-level stub, CA SymDump for CICS *automatically* finds the matching symbolic listing, if one exists. CA SymDump for CICS searches through all of your symbolic files (defined in the IN25OPTS module) to find the program listing whose date and time match the date and time of the load module for which the dump was generated.
- For Assembler programs, and for those COBOL and PL/I programs for which CA SymDump for CICS cannot find a matching listing, CA SymDump for CICS displays the following Symbolic Version List.



The Symbolic Version List lists all symbolic files containing listings for the program you are debugging.

You can select a list using the following procedure.

Follow these steps:

1. Type S to the left of the symbolic file containing the listing you want to use and press Enter. CA SymDump for CICS displays the Display Selection menu using the listing you identified when you examined the program listing online.
2. Press PF3, if none of the versions are correct. CA SymDump for CICS displays the Display Selection menu and informs you that symbolic information is not available for this program.

Note: CA SymDump for CICS displays the Symbolic Version List even if it finds only one symbolic listing. If you know the listing does not match your program version, you can debug without symbolics.

You can also recompile or reassemble the program with the appropriate post-processor program to get an up-to-date symbolic listing before examining the dump.

View a Dump and Its Information

With CA SymDump for CICS, information about a dump is available quickly and easily.

View a Dump Online

To view a dump online

1. Locate the dump on the Dump/Trace Selection screen.

Note: If the dump does not appear in the list, you may need to specify different selection criteria on the Dump/Trace Analysis screen. For details, see Specifying Selection Criteria (see page 21).

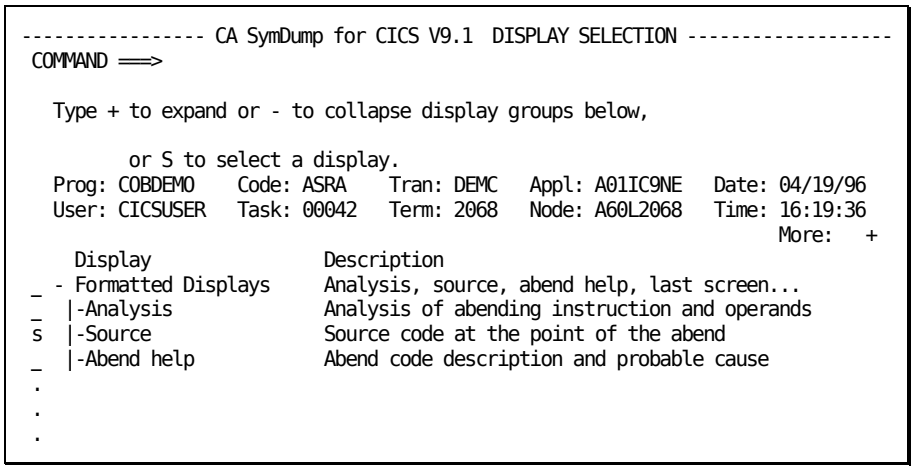
1. Type an **S** to the left of the dump you want to view.
2. Press Enter. The Display Selection menu displays for the dump you selected. A sample menu is shown next.

   Note: Occasionally you may need to locate the correct symbolic listing for the dump you selected. If this is necessary, see Symbolic Support (see page 107) for details.

```
----------------- CA SymDump for CICS V9.1  DISPLAY SELECTION -------------------
 COMMAND ===>
   Type + to expand or - to collapse display groups below,
          or S to select a display.
   Prog: COBDEMO    Code: ASRA    Tran: DEMC   Appl: A01IC9NE   Date: 04/19/00
   User: CICSUSER   Task: 00042   Term: 2068   Node: A60L2068   Time: 16:19:36
     Display               Description
_  - Formatted Displays     Analysis, source, abend help, last screen...
_    |-Analysis             Analysis of abending instruction and operands
_    |-Source               Source code at the point of the abend
_    |-Abend help           Abend code description and probable cause
_    |-Last screen          Last 3270 screen image sent to the terminal
_    |-Program call trace   Display program call sequence and registers
_    |-Trace                Complete or filtered CICS trace table entries
_    |-Register contents    Program register contents selection display
_    |-Programs referenced  List of programs referenced by the transaction
   * |-Files accessed       List of files referenced by the transaction
_    |-Transaction          Transaction definition attributes display

 PF1 Help       2            3 End        4 Return     5 Collapse   6 Expand
 PF7 Backward   8 Forward    9           10           11           12
```

3. Type an **S** to the left of the display name that you want to see on the Display Selection menu, as shown in the following sample screen.

   Note: Entering an S next to a display category name has no effect. In the following example, Formatted Displays is a display category name.



4. Press Enter. The screen that appears depends on the item you selected on the menu.

View Multiple Dumps

If you selected more than one dump for viewing on the Dump/Trace Selection screen, CA SymDump for CICS displays each dump, beginning with the most recent one.

To see all of the dumps you selected

1. Press PF3 from the Display Selection menu after you view all of the areas you want to see for the first dump.

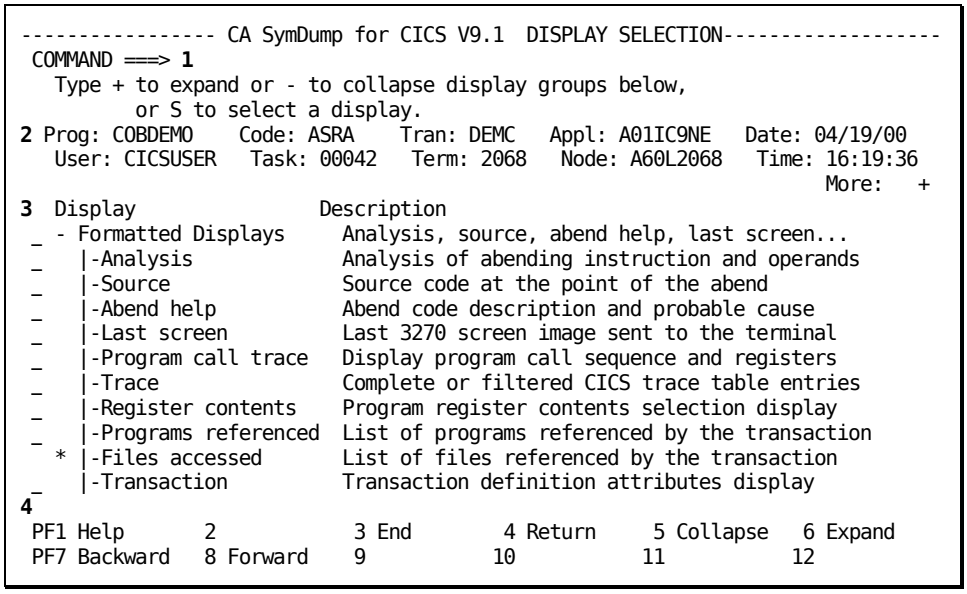
   CA SymDump for CICS redisplays the Display Selection menu with information for the second dump you specified on the Dump/Trace Selection screen.

2. Analyze the second dump.

Repeat these steps to view the rest of the dumps you selected on the Dump/Trace Selection screen.

Display Selection Menu

The Display Selection menu contains information about the dump you selected from the Dump/Trace Selection screen. The following is a sample Display Selection Menu.



```
----------------- CA SymDump for CICS V9.1  DISPLAY SELECTION-------------------
 COMMAND ===> 1
   Type + to expand or - to collapse display groups below,
         or S to select a display.
2 Prog: COBDEMO    Code: ASRA    Tran: DEMC   Appl: A01IC9NE   Date: 04/19/00
   User: CICSUSER   Task: 00042   Term: 2068   Node: A60L2068   Time: 16:19:36
                                                                    More:   +
3  Display               Description
 _ - Formatted Displays     Analysis, source, abend help, last screen...
 _   |-Analysis             Analysis of abending instruction and operands
 _   |-Source               Source code at the point of the abend
 _   |-Abend help           Abend code description and probable cause
 _   |-Last screen          Last 3270 screen image sent to the terminal
 _   |-Program call trace   Display program call sequence and registers
 _   |-Trace                Complete or filtered CICS trace table entries
 _   |-Register contents    Program register contents selection display
 _   |-Programs referenced  List of programs referenced by the transaction
   * |-Files accessed       List of files referenced by the transaction
 _   |-Transaction          Transaction definition attributes display
4
 PF1 Help       2            3 End        4 Return     5 Collapse   6 Expand
 PF7 Backward   8 Forward    9           10           11           12
```

The Display Selection menu is divided into four basic sections:

1 A command line supporting the commands assigned to PF keys.

2 An informational section containing details about the dump, from program name and abend code to the user ID, applid, terminal, and task. Field definitions are provided in online help (PF1).

3 A display tree from which you can access detailed informational displays that provides data about the dump and the error. The detailed informational displays are grouped into the following categories: Formatted Displays, Task Areas, Database Areas, Language Areas, and CICS System Areas.

Note: An asterisk (*) next to an item or a group name means that the particular display or group of displays is unavailable for the program. For instance, if the abended program does not reference any files, the Files Accessed display in the Formatted Displays group shows an asterisk to indicate its unavailability.

4 A section showing the PF key assignments for this screen.

Display Tree

The display tree in the Display Selection menu is an intuitive way to access all of the information you need to debug your problem. The display tree is a hierarchical list of available displays. The displays are arranged in the following categories:

Formatted Displays

Intelligently formatted displays of the dump contents. Displays include analysis, source, abend help, program call trace, registers, last CICS screen, files accessed, and programs, transactions, and terminals referenced.

Task Areas

CORE displays for areas like the Commarea, the EXEC Interface Block, and the Transaction Work Area.

Note: When using the integrated CICS translator of Enterprise COBOL for z/OS, the CORE=EIB command will not work unless the NOLINKAGE translator option or the ADATA compiler option is specified.

Language Areas

CORE displays for areas like COBOL working storage and COBOL BLL cells.

Database Areas

CORE displays for DB2 and DL/I.

CICS System Areas

CORE displays for areas like the Common System Area and the Common Work Area.

Each category contains a set of screens for displaying different types of information. The following is a list of the screens in each category. Each category and the screens it contains are explained later in this chapter.

Formatted Displays	Task Areas	Database Areas	Language Areas	CICS System Areas
Abend analysis	Commarea	CLOT	BLLs	CSA
Source listing dump analysis	EIB	N/A	BLXs	CWA
Abend help	Segmented storage	RDIIN	CWK	OPFL
Last screen	TWA	SQLCA	TGT	TCT
Program call trace	TUAR	SQLRCODE	EISTG	N/A
Formatted trace table	STCA	LASTSQL	DSA	N/A
Register contents	TCA	N/A	N/A	N/A
Programs referenced	TACB	DLP	N/A	N/A
Files accessed	TCTTE		N/A	N/A

Formatted Displays	Task Areas	Database Areas	Language Areas	CICS System Areas
Transaction summary	TIOA	CTA	N/A	N/A
Terminal summary	User storage	DGB	N/A	N/A
Task-Bridge-CBTS	Program	ISB	N/A	N/A
N/A	EIS	PCBL	N/A	N/A
N/A	CURR (abending instruction	PST	N/A	N/A
N/A	RIE	RSB	N/A	N/A
N/A	TIE	SCD	N/A	N/A
N/A	N/A	UIB	N/A	N/A

Scroll through the Tree

When the Display Selection menu initially appears, the Formatted Displays group is expanded while the other groups are collapsed. You must scroll down (PF8) to see the collapsed groups.

When *expanded*, the items beneath the group in the hierarchy are displayed. A group is expanded when there is a minus sign (-) to the left of the group name and a tree structure is displayed below the group.

If categories are expanded, there may be more information that can be displayed on one screen. If the word More appears in the upper-right corner of the display tree, there is more information than is shown. A plus sign next to the word More indicates that scrolling forward (PF8) shows additional items. A minus sign indicates that scrolling backward (PF7) shows additional items. If there is more information in both directions, both a plus and minus sign display. If there is no additional information in either direction, the word More does not appear.

When *collapsed*, the items beneath the group in the hierarchy are hidden. A group is collapsed when there is a plus sign (+) to the left of the group name.

For details on how to expand and collapse tree items, see Collapse and Expand Branches (see page 26).

All Display Selection menu items listed in uppercase (such as EIB, TACB, and CSA) identify CORE keywords. When you are viewing a CA InterTest for CICS Main Storage display for one area, you can bypass the CA SymDump for CICS menus and switch to another area using the following command syntax:

CORE=*keyword*

Overtype the keyword in the CORE=keyword command on the bottom of the CA InterTest for CICS Main Storage Display and press Enter. For additional details on using CORE commands, see the *CA InterTest for CICS User Guide.*

Note: You must have CA InterTest for CICS installed to use this feature.

Formatted Displays Category

The Formatted Displays category contains different formatted displays that you can access from the Display Selection menu. These displays include the following (each screen is described in the following sections):

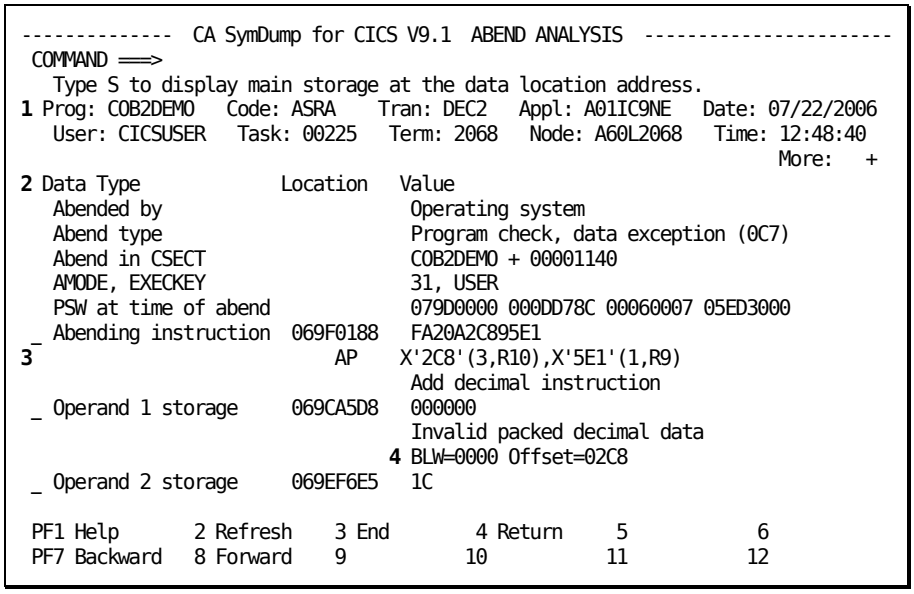
- Abend Analysis
- Source Listing Dump Analysis
- Abend Help
- Last Screen Image
- Program Call Trace
- Formatted Trace Table
- Register Contents
- Referenced Programs
- Files Accessed (by Abending Transaction)
- Transaction summary
- Terminal summary

Abend Analysis Screen

The Abend Analysis Screen provides additional information about the abending instruction and its operands.

To display the Abend Analysis screen

1. Select **Analysis** under the Formatted Display category on the Display Selection menu. The Abend Analysis screen appears.



The Abend Analysis screen is divided into the following major sections:

1. Identifies the dump you selected.
2. Indicates whether the program was abended by CICS, an application or the operating system, the abend type, and the addressing mode, execution key, and program status word (PSW) values at the time of the abend.
3. Provides details of the instruction and operands in the abending statement. Type an S next to the data type and press Enter to view that item in CORE. See the *CA InterTest for CICS User Guide* for a complete explanation of the Main Storage: CORE Facility.

4. For COBOL/II and IBM COBOL programs, gives Base Locator (BL) cell references to the operand. The following information identifies the BL cell references by type.

BL Type	Locator For
BLA	Alphanumeric temporaries
BLF	File entries
BLK	Local storage
BLL	Linkage Section
BLO	Object class data
BLV	Variably located data
BLW	Working Storage
BLX	External data name
IXD	DSA index values
IXT	TGT index values

2. Press PF3 to return to the Display Selection menu.

Source Listing Dump Analysis Screen

The Source Listing Dump Analysis screen allows you to view the abending statement in the context of the source code.

To display the Source Listing Dump Analysis screen

1. Select **Source** under the Formatted Display category on the Display Selection menu. The following sample screen shows that the ASRA abend that resulted from an improperly initialized field, TASKNUM.

```
     CA InterTest for CICS - PROTSYM FILE SOURCE LISTING DUMP ANALYSIS
COMMAND ===>
Program= COBDEMO  Option #       Stmt #        Displacement=        Margin= 01
                                          Search=
--------------------------------------------------------------------------------
 _ 00895 CONTINUE-TASK.
   00896**** TASKNUM *NOTE* FIELD MUST BE INITIALIZED
 A   ===>     ADD +1 TO TASKNUM.
     ===>
     ===> CODE: ASRA
     ===>
     ===>      Press PF1 for a detailed description.
     ===>
 _ 00898     IF TASKNUM = 1
 _ 00899         MOVE 'DMAPASR'  TO MAPNAME.
 _ 00900     IF TASKNUM = 2
 _ 00901         MOVE 'DMAPSUM'  TO MAPNAME.
 _ 00902     IF TASKNUM GREATER 2
 _ 00903         GO TO SEND-END-MSG.
 _ 00904     GO TO REWRITE-TSQ.
 _ 00905 REWRITE-TSQ.
   00906*EXEC CICS WRITEQ TS
   00907*          REWRITE
```

2. From the Source Listing Dump Analysis screen you can:

   - Press PF1 for more information about the cause of the abend.
   - Scroll through the source listing and compiler output using PF7 or PF8**.**
   - Display the value of data fields, using the line command **d** and moving the cursor under the data item.
   - Press PF3 to return to the Display Selection menu.
   - Enter one of the following commands on the command line:

Command	Description
HELP	Invoke the Help facility
END	Return to the previous display/menu screen
PROFILE	Display the source listing Profile screen
BWD	Scroll backward
FWD	Scroll forward
CORE	Display CORE menu
RESETBKP	Reposition breakpointed task at the breakpoint
BTRACE	Invoke the backtrace facility

If you have CA InterTest for CICS, you can also enter the following commands. These commands are valid only when CA InterTest for CICS is also installed at your site and the global installation option is defined as SYMDINT=YES. To check its value, use ITST Option 7.1.2 from CA InterTest for CICS.

- **Command** **Description**

  MONITOR Set monitoring for the listed program

  MENU Display the CA InterTest for CICS Primary Option menu

  CNTL Display CNTL Command menu

  =x.y.z Fast path to CA InterTest for CICS Primary Option menu X.Y.Z

  FILE Invoke the CA InterTest for CICS FILE facility

  ITST Display the CA InterTest for CICS Primary Option menu

  STATUS Display the status of the listed program

  STATUS ALL Display the status of all monitored programs

Note: For information on how to use CA InterTest for CICS to diagnose and correct program errors, see the *CA InterTest for CICS User Guide*.

Abend Help Screen

The Abend Help screen displays help for a specific abend code. In most cases, the help screen gives a probable cause and recommends what you can do to handle the error.

To invoke the online help facility, select **Abend Help** under the Formatted Display category on the Display Selection menu.

The following is a sample Abend Help Display for an ASRA abend.

```
   CA InterTest for CICS- INTERACTIVE HELP FACILITY -    (V9.1)
TUTORIAL: Automatic Breakpoint:  Error code 37.

 Error code 37:  ASRA (0C7)  - Data exception.

 A data exception is recognized when either the sign or digit codes of operands
 in the decimal machine instruction are invalid.

 WHAT YOU CAN DO:   Use CORE to display the fields in question and then modify
 them with the CORE facility. Then use the resume task facilities to re-execute
 the instruction.

 The usual cause is that a data field had not been initialized to a valid
 packed decimal (COBOL: COMP-3) value, or the value was not properly edited
 before the move into the field. This kind of error is also likely to happen if
 the same main storage location is defined as two or more fields, and not all
 of these are specified for packed-decimal (COMP-3) arithmetic.
                                                                          (end)
 ------------------------------------------------------------------------------
 ENTER N FOR NEXT PAGE, P FOR PRECEDING PAGE, F FOR FIRST PAGE, OR -
 M FOR RETURN TO PREVIOUS MENU,  CLEAR TO EXIT, OR MESSAGE NUMBER. ==> M
```

Note: The prompts on the bottom of the Help screen refer to navigating within the Help facility. For example, entering M returns you to the previous Help menu, not the previous CA SymDump for CICS menu.

Press **Clear** or **PF3** to exit the Help facility and return to the previous CA SymDump for CICS menu.

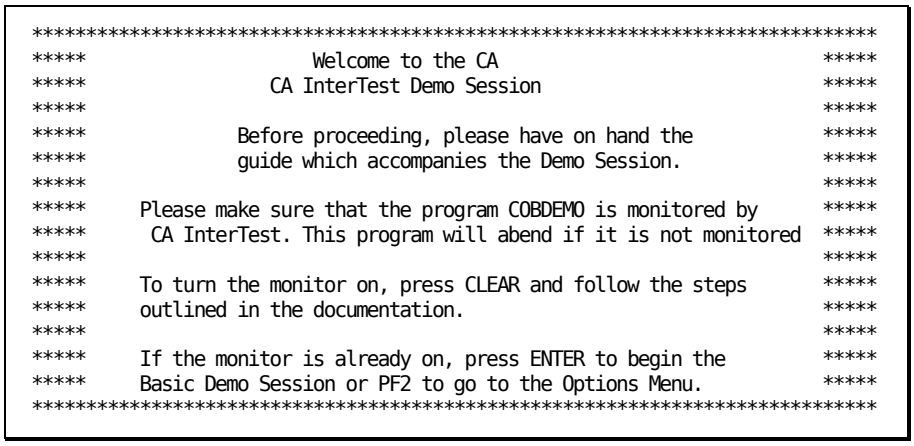
Note: A local systems administrator can create and maintain help file entries for user-defined abend codes. These user-provided help entries take precedence over system-provided help entries. The search hierarchy used for an Abend Help Display is as follows:

1. User-provided help for the abend code and program name.
2. User-provided help for the abend code.
3. System-provided help for the abend code.
4. If none of the above, a message indicates help is not available.

Last Screen Image

To display the last 3270 screen image sent to the terminal by the abended application

1. Select **Last Screen** under the Formatted Display category on the Display Selection menu. The following screen is the last screen sent by the program COBDEMO before it abended.



2. Press **PF3** to return to the Display Selection menu.

Program Call Trace

The Call Trace tells you how the transaction got to where the abend occurred. This is especially useful when troubleshooting an abend for a long-running transaction or a composite module. This screen contains a complete program call history of the transaction that abended.

To display the Program Call Trace Summary, Select **Program Call Trace** under the Formatted Display category on the Display Selection menu.

The summary provides the following information for each call:

Caller details

The program making the call. Details include the program name, CSECT of the call, return offset, and caller-program language.

Call type

Indicates the type of call. Types include a CICS link, a static call, a dynamic call, last command executed, or unknown.

Called details

The program being called. Details include the program name, CSECT, and offset.

The Call Trace Summary lists calls in chronological order:

- The top entry lists the first program in the call chain
- The bottom entry is the current program

A sample Program Call Trace Summary follows. Detailed field definitions are available from online help (PF1).

```
            CA SymDump for CICS V9.1 PROGRAM CALL TRACE SUMMARY      A11CIQA5
COMMAND ===>

  Type S for program source I for program details  R for registers at call
       C for Channel/Container display
  Prog: COB2DEML   Code: ASRA    Tran: DEC2   Appl: A11CIQA5   Date: 06/16/11
  User: CICSUSER   Task: 00120   Term: U005   Node: A55TU005   Time: 13:10:06

  ------- Caller (FIFO sequence) -------
  Program   Csect     Return  Language    Call Type
_ COB2DEMO  COB2DEMO  002AA8  COBOL       Linked to
_ COB2DEML  COB2DEML  0002B4  COBOL       Stat call
_ COB2DEML  ACO2IN25  0000E2  COBOL       CURR PGM
  *** End of data ***









PF1 Help       2            3 End        4 Return     5           6
PF7 Backward   8 Forward    9           10           11          12
```

Read the Program Call Trace

The previous example shows the call trace for an ASRA abend in the program COBDEML. Reading this trace from the bottom up gives us the call history of DEC2 leading up to the ASRA abend:

- The first line indicates CICS passed control to the COBOL program COB2DEMO for transaction DEC2. The first call was an EXEC CICS LINK to COB2DEML at the beginning of CSECT COB2DEML (offset 00000). The call return offset is 002BEC in COB2DEMO.
- The middle line indicates COB2DEML, also a COBOL program, executed a static call to a subroutine (ACO2IN25). The call return offset is 0002B4 in COB2DEML.

View Source and Data at Each Stage of the CALL

To view source and data at each stage of the CALL

1. Type an **S** to the left of a Caller Program entry from the Program Call Trace Summary display to view the caller program's source codes at the time of the call.

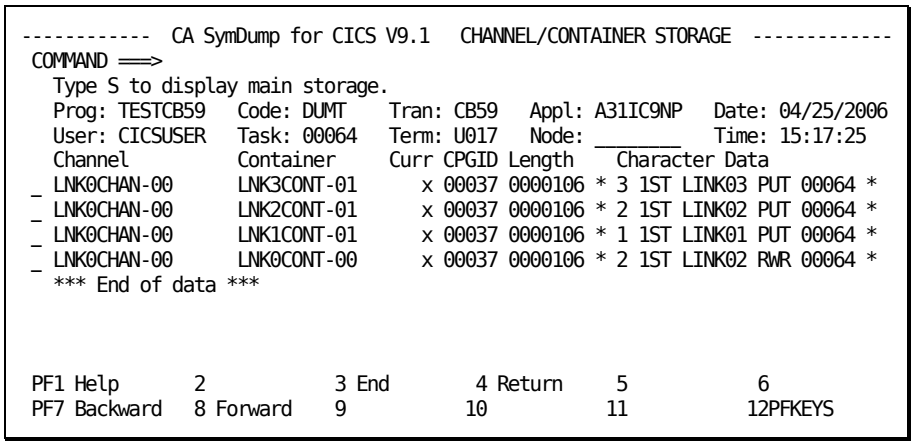
   If the source for the given program is available, a source listing appears. While in the source listing, display variables for the program may be displayed.

   If the source is not available, registers at the time of the call are displayed instead of source code.

2. Type an **I** to the left of a Caller Program entry to display details about the program such as the load library from which it came.

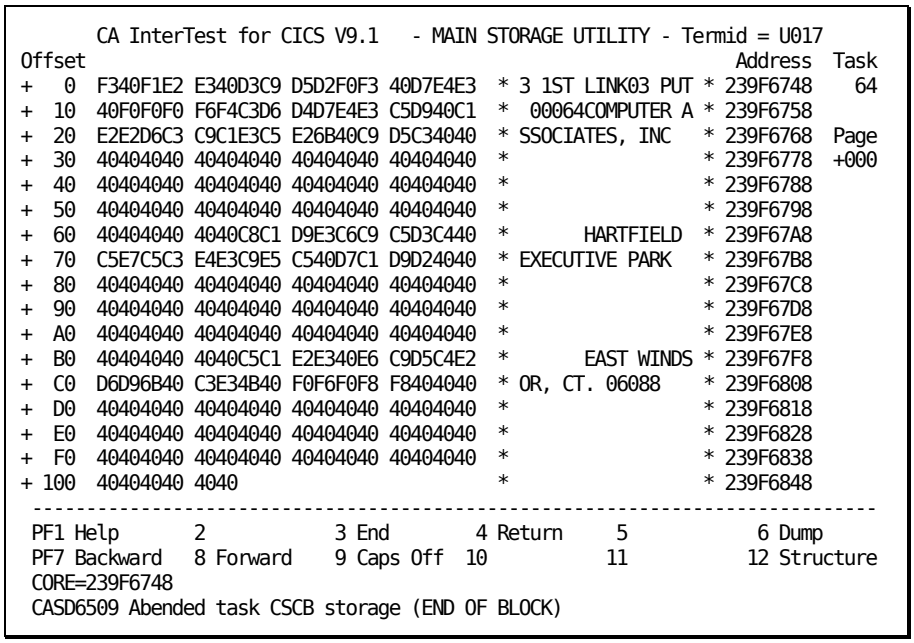
3. Type a **C** to the left of the Caller Program entry to display Channel and Container data for this program. (This option is valid only on CICS systems which support Channels and Containers).

   The following is a sample Channel/Container Storage screen:



```
------------  CA SymDump for CICS V9.1   CHANNEL/CONTAINER STORAGE  -------------
COMMAND ===>
  Type S to display main storage.
  Prog: TESTCB59   Code: DUMT    Tran: CB59   Appl: A31IC9NP   Date: 04/25/2006
  User: CICSUSER   Task: 00064   Term: U017   Node: ________   Time: 15:17:25
  Channel          Container     Curr CPGID Length    Character Data
_ LNK0CHAN-00      LNK3CONT-01      x 00037 0000106 * 3 1ST LINK03 PUT 00064 *
_ LNK0CHAN-00      LNK2CONT-01      x 00037 0000106 * 2 1ST LINK02 PUT 00064 *
_ LNK0CHAN-00      LNK1CONT-01      x 00037 0000106 * 1 1ST LINK01 PUT 00064 *
_ LNK0CHAN-00      LNK0CONT-00      x 00037 0000106 * 2 1ST LINK02 RWR 00064 *
  *** End of data ***



PF1 Help       2           3 End       4 Return     5           6
PF7 Backward   8 Forward   9           10           11          12PFKEYS
```

4. Type an **S** next to the channel you want to display. The MAIN STORAGE UTILITY screen appears.



```
      CA InterTest for CICS V9.1   - MAIN STORAGE UTILITY - Termid = U017
Offset                                                          Address  Task
+   0  F340F1E2 E340D3C9 D5D2F0F3 40D7E4E3  * 3 1ST LINK03 PUT * 239F6748    64
+  10  40F0F0F0 F6F4C3D6 D4D7E4E3 C5D940C1  *  00064COMPUTER A * 239F6758
+  20  E2E2D6C3 C9C1E3C5 E26B40C9 D5C34040  * SSOCIATES, INC   * 239F6768  Page
+  30  40404040 40404040 40404040 40404040  *                  * 239F6778  +000
+  40  40404040 40404040 40404040 40404040  *                  * 239F6788
+  50  40404040 40404040 40404040 40404040  *                  * 239F6798
+  60  40404040 4040C8C1 D9E3C6C9 C5D3C440  *       HARTFIELD  * 239F67A8
+  70  C5E7C5C3 E4E3C9E5 C540D7C1 D9D24040  * EXECUTIVE PARK   * 239F67B8
+  80  40404040 40404040 40404040 40404040  *                  * 239F67C8
+  90  40404040 40404040 40404040 40404040  *                  * 239F67D8
+  A0  40404040 40404040 40404040 40404040  *                  * 239F67E8
+  B0  40404040 4040C5C1 E2E340E6 C9D5C4E2  *       EAST WINDS * 239F67F8
+  C0  D6D96B40 C3E34B40 F0F6F0F8 F8404040  * OR, CT. 06088    * 239F6808
+  D0  40404040 40404040 40404040 40404040  *                  * 239F6818
+  E0  40404040 40404040 40404040 40404040  *                  * 239F6828
+  F0  40404040 40404040 40404040 40404040  *                  * 239F6838
+ 100  40404040 4040                       *                  * 239F6848
 ------------------------------------------------------------------------------
 PF1 Help       2           3 End        4 Return     5           6 Dump
 PF7 Backward   8 Forward   9 Caps Off  10           11          12 Structure
 CORE=239F6748
 CASD6509 Abended task CSCB storage (END OF BLOCK)
```

View Inactive Programs

You can view inactive programs in the Program Call Trace Summary screen.

Follow these steps:

1. Select an active program.

   The program listing for the active program is displayed.

2. Issue the CORE=CWK***** command, where ***** is the inactive program name, and press Enter.

   The working storage for the inactive program is displayed.

The following are the PFKEYS PF key assignments for this screen:

PF7 and PF8

Scrolls through the working storage variables

PF12

Toggles between hexadecimal format and characters

Formatted Trace Table

The Formatted Trace Table screen enables you to view complete or filtered CICS trace table entries for the dump. You can display trace entries in Abbreviated (default), Short, or Full mode. The presentation of the trace is identical for traces that are within a transaction dump, or those captured using the SYMT trace capture facility.

The trace display starts with the first line of the captured trace. You are able to quickly navigate to where you want to in the trace by using the filter and command line features.

To display the Formatted Trace Table, select **Trace** under the Formatted Display category on the Display Selection menu.

The trace entries are formatted using DFHTUXX0, for the corresponding release of CICS. For help in interpreting the trace entries, see the appropriate IBM documentation.

The following sample screen shows the CA SymDump for CICS Trace, in Abbreviated Mode:

```
--------------  CA SymDump for CICS V9.1   FORMATTED TRACE TABLE  --------------
COMMAND ===>                                          MODE: A SCROLL: PAGE
000047 00031 QR    PG 0901 PGPG  ENTRY INITIAL_LINK          ASMDEMO
000048 00031 QR    LD 0001 LDLD  ENTRY ACQUIRE_PROGRAM       200E0AF8
000049 00031 QR    LD 0002 LDLD  EXIT  ACQUIRE_PROGRAM/OK  A0D11230,20D11230,2C88,0,REUSABLE,ESDSA,OLD_COPY
000050 00031 QR    AP 1940 APLI  ENTRY START_PROGRAM         ASMDEMO,CEDF,FULLAPI,EXEC,NO,200431C0,00000000 , 00000000,1,NO
000051 00031 QR    SM 0C01 SMMG  ENTRY GETMAIN               367,YES,00,TASK
000052 00031 QR    SM 0C02 SMMG  EXIT  GETMAIN/OK            00140478
000053 00031 QR    AP 00E1 EIP   ENTRY HANDLE-CONDITION                              0004,00140488 ...h,08000204 ....
000054 00031 QR    PG 0700 PGHM  ENTRY SET_CONDITIONS        20D13BCD,20D13BCA,001404F4,00140488,ASSEMBLER,80,AMODE31
000055 00031 QR    PG 0701 PGHM  EXIT  SET_CONDITIONS/OK     0
000056 00031 QR    AP 00E1 EIP   EXIT  HANDLE-CONDITION      OK                          00F4,00000000 ....,00000204 ....
000057 00031 QR    AP 00E1 EIP   ENTRY READQ-TS                                      0004,00140488 ...h,08000A04 ....
000058 00031 QR    TS 0C01 TSMB  ENTRY MATCH                 DEMAU052
000059 00031 QR    TS 0C02 TSMB  EXIT  MATCH/OK              ,,,DEMAU052,,00000000,,ANY,NO,NO
000060 00031 QR    TS 0201 TSQR  ENTRY READ_INTO             DEMAU052,00140610 , 00000000 , 00000024,1,EXEC
000061 00031 QR    TS 0202 TSQR  EXIT  READ_INTO/OK          00140610 , 00000024 , 00000024,1,NO
000062 00031 QR    AP 00E1 EIP   EXIT  READQ-TS              OK                          00F4,00000000 ....,00000A04 ....
000063 00031 QR    AP 1942 APLI  *EXC* Program-Check         START_PROGRAM,ASMDEMO,CEDF,FULLAPI,EXEC,NO,200431C0,00000000 , 000000
000064 00031 QR    AP 0790 SRP   *EXC* PROGRAM_CHECK
000065 00031 QR    DS 0010 DSBR  ENTRY INQUIRE_TASK
000066 00031 QR    DS 0011 DSBR  EXIT  INQUIRE_TASK/OK       ESSENTIAL_YES
000067 00031 QR    DS 0002 DSAT  ENTRY CHANGE_MODE           QR

PF1 Help       2            3 End         4 Mask      5 Repeat     6 Return On
PF7 Backward   8 Forward    9 All Trace  10 Left     11 Right     12 Retrieve
```

PFKEYS PF key assignments for the trace display follow.

*** PF1/PF13**

Invoke CA SymDump for CICS HELP facility for this function

*** PF2/PF14**

No function.

*** PF3/PF15**

End the Formatted Trace Display. Of special note here, is that when selecting a trace from within a transaction dump, that all trace filters, highlights, and overrides will remain in effect until the dump selection is left completely. Merely leaving the trace selection does not reset these values. For traces captured via the SYMT trace capture facility, all filters, highlights, and overrides are reset when the trace is left.

*** PF4/PF16**

Display the current Filter Selection Mask.

*** PF5/PF17**

Repeat Find Command.

*** PF6/PF18**

Toggle to turn Return Entry display off or on.

*** PF7/PF19**

Page back by scroll amount.

*** PF8/PF20**

Page forward by scroll amount.

*** PF9/PF21**

Toggle to turn filtering on/off.

*** PF10/PF22**

Scroll left by scroll amount.

*** PF11/PF23**

Scroll right by scroll amount.

*** PF12/PF24**

Retrieve previously entered commands.

Command Line: (Top of screen)

M or MODE A

Display trace in abbreviated mode.

S

Display trace in short mode if available.

F

Display trace in full mode.

O

Display only trace entries that have line overrides.

H

Display only trace entries that are highlighted.

F or FIND string

Find the next occurrence of a string in the trace (string may be in single or double quotes).

First

Finds the first occurrence of the string.

Next

Finds the next occurrence.

Command Line: (Top of screen continued)

Last

Finds the last occurrence.

Prev

Finds the previous occurrence.

F or FIND HILITE

Find the next occurrence of a highlighted entry (sub operands first, next, and so on, same as normal find).

H or HIGHLIGHT string

Highlight all occurrences of a string.

TOP

Positions trace display to beginning of displayed entries.

BOT

Positions trace display to the end of the displayed entries.

L number

Positions trace to a specific line number.

R or Reset O

Reset all line overrides.

R or Reset H

Reset all highlighted entries to normal intensity.

N (number)

In conjunction with PF7, PF8, PF10, PF11 scrolling by the specified number of lines.

Line Entry Commands: (Left side of screen)

A

Entry always displays as abbreviated.

S

Entry always displays as short if available.

F

Entry always displays as full.

H

Entry always displays as highlighted.

RH

Highlight status of entry is reset to normal intensity.

RO

Mode override is reset to default mode.

Mode Setting: (Top of screen on right)

A

Display entire trace in Abbreviated Mode.

S

Display entire trace in Short Mode (if available).

F

Display entire trace in Full Mode.

H

Display only entries that are set to Highlight status.

O

Display only entries that are set to Override status.

Scroll Setting: (Top of screen on right)

P or Page

Scrolling is one page at a time.

Any valid numeric

Scrolling is for the specified number.

Filter Selection

Filter Selection provides the CA SymDump for CICS Formatted Trace Facility user with the ability to quickly display only selected entries within a trace, making an overwhelming array of entries manageable. Use the following PF keys to control the display:

- PF4 from the Trace display displays the mask display, and allows you to modify the mask to suit your specific needs. Trace entries that match your filter criteria are displayed for your review, all others are hidden! When displaying the Filter Selection Mask using PF4, you are still within the Trace display you were in when you pressed PF4.
- PF3 or PF9 returns to where you were. If Filter Selection is in effect the new Filter values are used.

The following sample screen shows the CA SymDump for CICS Trace, in Abbreviated Mode:

```
--------------  CA SymDump for CICS V9.1   FORMATTED TRACE TABLE  --------------
COMMAND ===>                                          MODE: A SCROLL: PAGE
000047 00031 QR    PG 0901 PGPG  ENTRY INITIAL_LINK          ASMDEMO
000048 00031 QR    LD 0001 LDLD  ENTRY ACQUIRE_PROGRAM       200E0AF8
000049 00031 QR    LD 0002 LDLD  EXIT  ACQUIRE_PROGRAM/OK    A0D11230,20D11230,2C88,0,REUSABLE,ESDSA,OLD_COPY
000050 00031 QR    AP 1940 APLI  ENTRY START_PROGRAM         ASMDEMO,CEDF,FULLAPI,EXEC,NO,200431C0,00000000 , 00000000,1,NO
000051 00031 QR    SM 0C01 SMMG  ENTRY GETMAIN               367,YES,00,TASK
000052 00031 QR    SM 0C02 SMMG  EXIT  GETMAIN/OK            00140478
000053 00031 QR    AP 00E1 EIP   ENTRY HANDLE-CONDITION                              0004,00140488 ...h,08000204 ....
000054 00031 QR    PG 0700 PGHM  ENTRY SET_CONDITIONS        20D13BCD,20D13BCA,001404F4,00140488,ASSEMBLER,80,AMODE31
000055 00031 QR    PG 0701 PGHM  EXIT  SET_CONDITIONS/OK     0
000056 00031 QR    AP 00E1 EIP   EXIT  HANDLE-CONDITION      OK                          00F4,00000000 ....,00000204 ....
000057 00031 QR    AP 00E1 EIP   ENTRY READQ-TS                                      0004,00140488 ...h,08000A04 ....
000058 00031 QR    TS 0C01 TSMB  ENTRY MATCH                 DEMAU052
000059 00031 QR    TS 0C02 TSMB  EXIT  MATCH/OK              ,,,DEMAU052,,00000000,,ANY,NO,NO
000060 00031 QR    TS 0201 TSQR  ENTRY READ_INTO             DEMAU052,00140610 , 00000000 , 00000024,1,EXEC
000061 00031 QR    TS 0202 TSQR  EXIT  READ_INTO/OK          00140610 , 00000024 , 00000024,1,NO
000062 00031 QR    AP 00E1 EIP   EXIT  READQ-TS              OK                          00F4,00000000 ....,00000A04 ....
000063 00031 QR    AP 1942 APLI  *EXC* Program-Check         START_PROGRAM,ASMDEMO,CEDF,FULLAPI,EXEC,NO,200431C0,00000000 , 000000
000064 00031 QR    AP 0790 SRP   *EXC* PROGRAM_CHECK
000065 00031 QR    DS 0010 DSBR  ENTRY INQUIRE_TASK
000066 00031 QR    DS 0011 DSBR  EXIT  INQUIRE_TASK/OK       ESSENTIAL_YES
000067 00031 QR    DS 0002 DSAT  ENTRY CHANGE_MODE           QR

PF1 Help       2            3 End         4 Mask      5 Repeat     6 Return On
PF7 Backward   8 Forward    9 All Trace  10 Left     11 Right     12 Retrieve
```

Important!

- If you enter a space on the first character of the task number, the filter entry is ignored. This allows you to quickly deactivate and activate entries.
- You can repeat any given filter entry by entering R(n) in column 1 of any given filter entry. Multiple filter entries are cumulative.

PFKEYS PF key assignments for the MASK display follow.

*** PF1/PF13**

Invoke CA SymDump for CICS HELP facility for this function.

*** PF2/PF14**

No function.

*** PF3/PF15**

Exit mask display.

*** PF4/PF16**

No function.

*** PF5/PF17**

No function.

*** PF6/PF18**

No function.

*** PF7/PF19**

No function.

*** PF8/PF20**

No function.

*** PF9/PF21**

Toggle to turn filtering on or off and exit mask display.

*** PF10/PF22**

No function.

*** PF11/PF23**

No function.

*** PF12/PF24**

No function.

In order to use the CA SymDump for CICS Trace effectively, it is essential that you understand the order in which the display screen is built. This is done as follows:

1. Format starts with the current line number the display is positioned on.
2. The Mode and Line overrides are applied.
3. The Filter Criteria are applied, if filtering (PF9) is turned on.
4. Any line commands such as the FIND, are then applied to the results of the previous steps.

The significance of this is that if you are trying to filter on a string that only shows up if the trace MODE is set to FULL, and you have the MODE set to ABBREVIATED, *your filter will fail* and no entries display. In a similar fashion, if you enter a FIND on a string that is contained only in entries that are excluded by your filter, *you will not get a hit on your find* even though you know that entries in the trace contain that string! Paying close attention to these issues help ensure your success with the trace.

Register Contents

To display the contents of your program's registers

1. Select **Register Contents** under the Formatted Display category on the Display Selection menu. The following is a sample Register Contents screen.

```
------------------ CA SymDump for CICS V9.1 REGISTER CONTENTS  -----------------
 COMMAND ===>
   Type S to display main storage pointed to by the register.
   Prog: COBDEMO    Code: ASRA    Tran: DEMC   Appl: A01IC9NE   Date: 04/26/96
   User: CICSUSER   Task: 00082   Term: 2068   Node: A60L2068   Time: 09:50:13
                                                                 More:   +
   Register  Contents          Description
   *PR 0     00000002          Invalid address, not captured in dump
 _ GPR 1     00378786          Abending program's storage
 _ GPR 2     00378712          Abending program's storage
 _ GPR 3     00377C6C          Abending program's storage
 s GPR 4     00368050          Execute interface user area (EIUS) storage
   *PR 5     00004000          Invalid address, not captured in dump
 _ GPR 6     00368548          USER24 storage area
 _ GPR 7     003693DF          USER24 storage area
 _ GPR 8     003693E0          USER24 storage area
 _ GPR 9     00379C56          Abending program's storage
 _ GPR 10    00376C48          Abending program's storage
 _ GPR 11    00376C48          Abending program's storage

 PF1 Help       2           3 End       4 Return    5           6
 PF7 Backward   8 Forward    9          10          11          12
```

2. Type an **s** next to the register whose contents you want to view in main storage, and press Enter. A screen similar to the following appears.

```
            CA InterTest - MAIN STORAGE UTILITY - Termid = X508
Offset                                                          Address  Task
+   0  0018B0D0 00000000 00190C98 00000000  * ...}.......q.... *   18B050    82
+  10  00000000 00190C98 800848E0 000DA848  * .......q......y. *   18B060
+  20  80045570 0018B050 80045570 85C79C30  * .......&....eG.. *   18B070  Page
+  30  05BEE9F0 05C7AC2F 05C7BC2E 05C7CC2D  * ..Z0.G...G...G.. *   18B080  +000
+  40  00045980 00190008 000DBF0A 05EC006C  * ..............% *   18B090
+  50  00055680 00000000 00000000 0018B050  * ..............& *   18B0A0
+  60  0018B054 00000000 00000000           * ............    *   18B0B0



 ------------------------------------------------------------------------------
 PF1 Help       2           3 End       4 Return    5           6
 PF7 Backward   8 Forward    9 Caps Off  10          11          12 Structure
 CORE=0018B050
 CASD6509 ABENDED TASK EIUS STORAGE (END OF BLOCK)
```

Programs Referenced

To display a list of programs referenced by the abended transaction and various attributes of these programs, select **Programs Referenced** under the Formatted Display category on the Display Selection menu. The following sample Programs Referenced screen uses the Assembler demo program, ASMDEMO.

```
-------- CA SymDump for CICS V9.1 PROGRAMS REFERENCED  ----------------
 COMMAND ===>
   Type + to expand or - to collapse program entries below,
          or S to display the program's machine code.
  Prog: ASMDEMO    Code: ASRA    Tran: DEMA   Appl: A01IC9NE   Date: 06/12/2006
  User: CICSUSER   Task: 00046   Term: 2069   Node: A60L2069   Time: 13:01:50
                                                                 More:   +
     Program   Description               Attributes
 _ - ASMDEMO   DFHRPL DSNAME  . . : AD1DEV.INTERT.DEMO.LOAD
               DFHRPL data set volume . : OSI003
               Load point, entry point  : 00369000, 00369028
               Language, compile date . : Assembler
               Program length . . . . . : 11408    Bytes (decimal)
               Load from link pack  . . : NO
               Initial execution key  . : USER
               Initial AMODE, RMODE . . : 24, 24
               Data location  . . . . . : Below 16M line
               Status . . . . . . . . . : ENABLED
               Reload . . . . . . . . . : NO

 PF1 Help       2           3 End        4 Return     5 Collapse   6 Expand
 PF7 Backward   8 Forward   9           10           11           12
```

Collapse and Expanding Entries

Just as with the Display Selection menu's display tree, the program entries on this screen can be collapsed or expanded:

- Expanding a program entry displays the attributes of that program
- Collapsing an entry hides the attributes and displays only the program name

For instructions on collapsing and expanding entries, see Collapse and Expand Branches (see page 26).

Examine the Program in Main Storage

Type an **s** in the field to the left of a program name and press Enter to display the program in main storage.

Files Accessed

To see the files accessed by the abended transaction, select **Files Accessed** under the Formatted Display category on the Display Selection menu. The following is a Files Accessed sample screen.

```
---------------- CA SymDump for CICS V9.1 FILES ACCESSED  ---------------------
 COMMAND ===>
   Type + to expand or - to collapse file entries below,
         or S to display the last record accessed from file.
  Prog: IN25DATE   Code: FILS    Tran: SYMD   Appl: A01IC9NE   Date: 05/10/2006
  User: CICSUSER   Task: 00793   Term: 2069   Node: A60L2069   Time: 10:34:56
     File      Description               Attributes
 _ + PROTDMP   Access method, type  . . : VSAM, RRDS
 _ + PROTWSD   Access method, type  . . : VSAM, RRDS
 _ + PROTINT   Access method, type  . . : VSAM, RRDS
 _ + PROTSYM   Access method, type  . . : VSAM, RRDS
 _ + PROTTST   Access method, type  . . : VSAM, RRDS
 _ + PROTFS1   Access method, type  . . : VSAM
 _ + PROTDP2   Access method, type  . . : VSAM
   *** End of data ***

 PF1 Help       2           3 End        4 Return     5 Collapse   6 Expand
 PF7 Backward   8 Forward   9           10           11           12
```

Collapse and Expand Entries

Just like the branches on the Dump/Trace Selection List display tree, the file entries on this display can be collapsed or expanded:

- Expanding a file entry displays the attributes of that file
- Collapsing an entry hides the attributes and displays only the file name

For instructions on collapsing and expanding entries, see Collapse and Expand Branches (see page 26).

An expanded file shows more information than will fit on a single screen. Use PF7 and PF8 to scroll through the file information. The following Files Accessed screen is a composite showing all of the data available for a file.

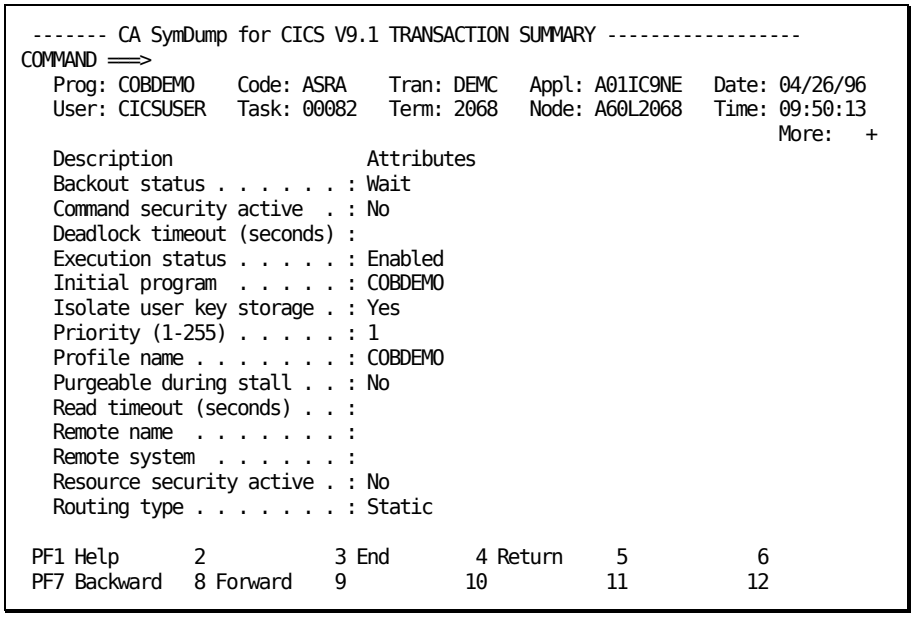
```
------------------ CA SymDump for CICS V9.1 FILES ACCESSED, --------------------
 COMMAND ===>
   Type + to expand or - to collapse file entries below,
          or S to display the last record accessed from file.
  Prog: IN25DATE   Code: FILS    Tran: SYMD   Appl: A01IC9NE   Date: 05/10/2006
  User: CICSUSER   Task: 00793   Term: 2069   Node: A60L2069   Time: 10:34:56
                                                                  More:   +
     File      Description                Attributes
 _ - PROTDMP   Access method, type  . . : VSAM, RRDS
               AD1DEV.C9NEC410.PROTDMP
               Disposition  . . . . . . : Share
               Status . . . . . . . . . : Open, Enabled
               Access options . . . . . : Add, Browse, Delete, Read, Update
               Object type  . . . . . . : Base cluster
               LSR pool ID  . . . . . . : 1
               Key length, offset . . . :
               Record format  . . . . . : Fixed, Blocked
               Remote name, system  . . :
               Recoverable  . . . . . . : NO
               Maximum record length  . : 4089
               Empty dataset  . . . . . : NO
               Number of strings  . . . : 3
               Fwd recoverable  . . . . : NO
               Journal number . . . . . :
               Add requests . . . . . . : 0
               Browse requests  . . . . : 332
               Delete requests  . . . . : 0
               Read update requests . . : 1
               Read only requests . . . : 14
               Remote delete requests . : 0
               Update requests  . . . . : 1
               Highest string waits . . : 0
               Total string waits . . . : 0
               Vsam EXCPs (data)  . . . : 348
               Vsam EXCPs (index) . . . : 0

 PF1 Help       2           3 End       4 Return     5 Collapse   6 Expand
 PF7 Backward   8 Forward   9          10           11           12
```

Transaction Summary

The Transaction Summary screen provides the attribute definitions for the abended transaction.

To display the Transaction Summary

1. Select **Transaction** under the Formatted Display category on the Display Selection menu. A sample Transaction Summary screen is shown next.



```
 ------- CA SymDump for CICS V9.1 TRANSACTION SUMMARY ------------------
COMMAND ===>
   Prog: COBDEMO    Code: ASRA    Tran: DEMC   Appl: A01IC9NE   Date: 04/26/96
   User: CICSUSER   Task: 00082   Term: 2068   Node: A60L2068   Time: 09:50:13
                                                                 More:   +
   Description                 Attributes
   Backout status . . . . . : Wait
   Command security active  . : No
   Deadlock timeout (seconds) :
   Execution status . . . . . : Enabled
   Initial program  . . . . . : COBDEMO
   Isolate user key storage . : Yes
   Priority (1-255) . . . . . : 1
   Profile name . . . . . : COBDEMO
   Purgeable during stall . . : No
   Read timeout (seconds) . . :
   Remote name  . . . . . :
   Remote system  . . . . . :
   Resource security active . : No
   Routing type . . . . . : Static

 PF1 Help       2           3 End        4 Return     5           6
 PF7 Backward   8 Forward    9           10           11          12
```

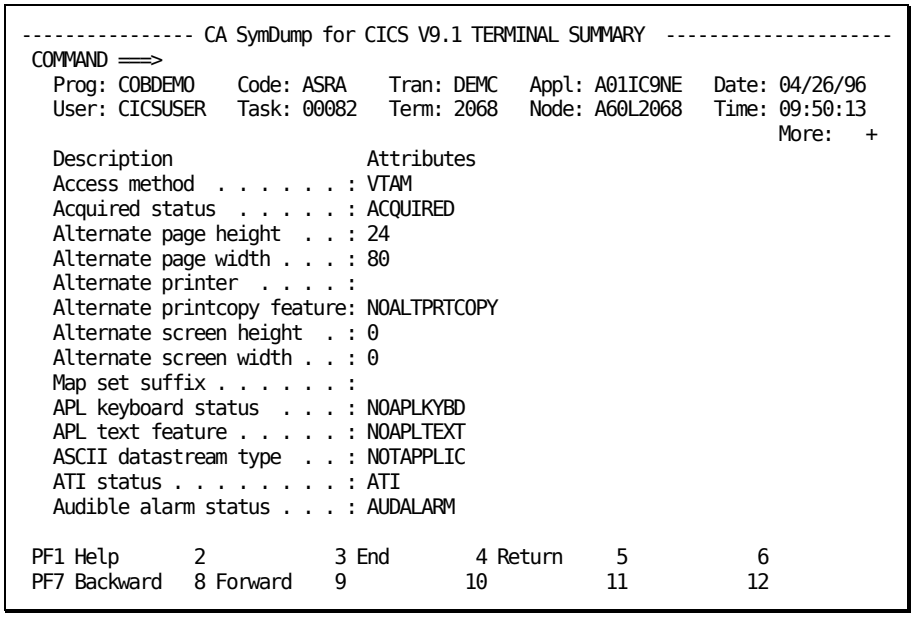
2. Use PF7 and PF8 to scroll through the list.

Terminal Summary

The Terminal Summary screen lists the attributes for the terminal on which the transaction was run.

To display the Terminal Summary

1. Select **Terminal** under the Formatted Display category on the Display Selection menu. The following is a sample Terminal Summary screen.



```
---------- CA SymDump for CICS V9.1 TERMINAL SUMMARY  ---------------------
 COMMAND ===>
   Prog: COBDEMO    Code: ASRA    Tran: DEMC   Appl: A01IC9NE   Date: 04/26/96
   User: CICSUSER   Task: 00082   Term: 2068   Node: A60L2068   Time: 09:50:13
                                                                 More:   +
   Description                  Attributes
   Access method  . . . . . . : VTAM
   Acquired status  . . . . . : ACQUIRED
   Alternate page height  . . : 24
   Alternate page width . . . : 80
   Alternate printer  . . . . :
   Alternate printcopy feature: NOALTPRTCOPY
   Alternate screen height  . : 0
   Alternate screen width . . : 0
   Map set suffix . . . . . . :
   APL keyboard status  . . . : NOAPLKYBD
   APL text feature . . . . . : NOAPLTEXT
   ASCII datastream type  . . : NOTAPPLIC
   ATI status . . . . . . . . : ATI
   Audible alarm status . . . : AUDALARM

 PF1 Help       2           3 End        4 Return     5           6
 PF7 Backward   8 Forward    9           10           11          12
```

2. Use PF7 and PF8 to scroll through the list.

Task Areas

The various task area displays show the respective task area in main storage. The following list briefly explains the contents of the task area displays.

Display	What It Shows
Commarea	Last CICS communications area
EIB	EXEC Interface Block
Segmented Storage	All the EXEC DUMP segmented storage areas
TWA	Transaction work area

TUAR	Terminal control table entry user area
STCA	Task control system area
TCA	Task control user area
TACB	Task abend control block
TCTTE	Terminal control table entry
User Storage	User storage areas
Program	Abending program's storage in dump format
EIS	EXEC interface structure
CURR	Instruction that caused the abend
RIE	Request Interface Element
TIE	DL/I Transaction Interface Element

Note: When using the integrated CICS translator of Enterprise COBOL for z/OS, the CORE=EIB command will not work unless the NOLINKAGE translator option or the ADATA compiler option is specified.

Language Areas

The various language area displays show the respective language area in main storage. The following list briefly explains the contents of the language area displays.

Display	What It Shows
BLLs	COBOL BLL cells
BLXs	COBOL BLX cells
CWK	COBOL working storage
TGT	COBOL task global table
LCL	COBOL local storage
DSA	COBOL or PL/I dynamic storage area
EISTG	Assembler EXEC interface storage area

Database Areas

The various database area displays show the respective database area in main storage. The following list briefly explains the contents of the database area displays.

Display	What It Shows
CLOT	DB2 CICS life-of-task block
RDIIN	DB2 RDS input parameter list
SQLCA	DB2 SQL communication area
SCLRCODE	DB2 SQL return code
DLP	DL/I interface parameter list
CTA	DL/I DBCTL Control Transaction Area
DGB	DL/I DBCLT Global Block
ISB	DL/I Interface Scheduling Block
PCBL	DL/I Program Communication Block List
PST	DL/I Program Specification Table
RSB	DL/I Remote Scheduling Block
SCD	DL/I System Content Directory
UIB	DL/I User Interface Block

CICS System Areas

The various CICS system area displays show the respective CICS system area in main storage. The following list briefly explains the contents of the CICS system area displays.

Display	What It Shows
CSA	Common system area
CWA	Common work area
OPFL	Optional features list
TCT	Terminal control table

Delete Dumps

To delete dumps follow these steps

Note: You can only delete dumps in the CA SymDump for CICS PROTDMP data set.

1. Generate a list of dumps by completing the Dump/Trace Analysis screen. For instructions on displaying and completing this screen, see Specifying Selection Criteria (see page 21).
2. Type a **D** next to the dumps that you want to delete on the Dump/Trace Selection screen and Press Enter. You will be asked to confirm that these are the dumps that you want to delete.
3. Press Enter to perform the deletion.

Hold and Release Dumps

Holding a dump prevents it from being deleted until you specifically release it. This section explains how to hold and release dumps.

Hold Dumps

To hold dumps

1. Generate a list of dumps by completing the Dump/Trace Analysis screen. For instructions on displaying and completing this screen, see Specifying Selection Criteria (see page 21).
2. Type an **H** next to the dumps you want to hold on the Dump/Trace Selection screen.
3. Press Enter to put the dumps on hold.

Release Dumps

To release dumps that are being held

1. Generate a list of dumps by completing the Dump/Trace Analysis screen. For instructions on displaying and completing this screen, see Specifying Selection Criteria (see page 21).
2. Type an **R** next to the dumps you want to release, on the Dump/Trace Selection screen.
3. Press Enter to release the dumps.

Chapter 4: The Source Listing Facility

The CA SymDump for CICS Source Listing facility allows you to view your program source and storage areas while analyzing a dump. Using the Source Listing facility, you can:

- Prepare your programs for further testing and debugging
- Display your source
- Search for data
- Adjust the display area and set the scrolling amount
- Display nested programs and search through them
- Display storage for our program or program data-names and variables.

To access CA InterTest for CICS functions, switch to CA InterTest for CICS to use the function, and then return to CA SymDump for CICS when you are finished.

This section contains the following topics:

Prepare Your Program for Symbolic Viewing

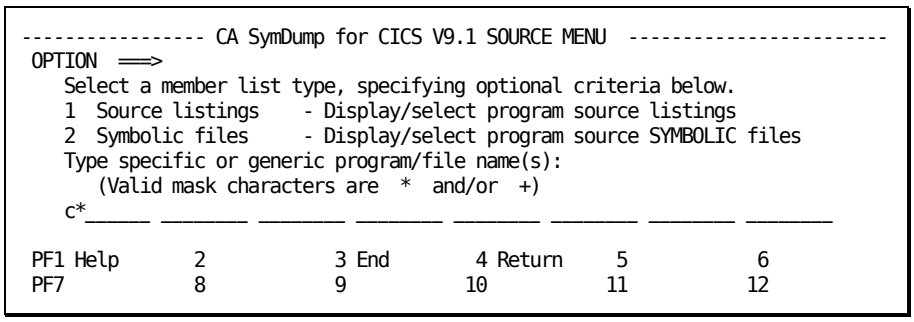
To prepare a program for viewing during dump analysis

1. Modify the compile or assemble JCL to include a post-processor step. For Source Listing viewing, the LISTER parameter of the post-processor is required. For detailed instructions on how to modify your JCL, see the *CA Application Quality and Testing Tools Symbolic Guide.*
2. Modify the JCL.
3. Recompile or reassemble the program. This puts the program's listing in the symbolic file.

Source Selection List

To display the Source menu

1. Select Option 6 Source from the CA SymDump for CICS Primary Option menu. The Source menu appears.



   From this menu you can display either a:

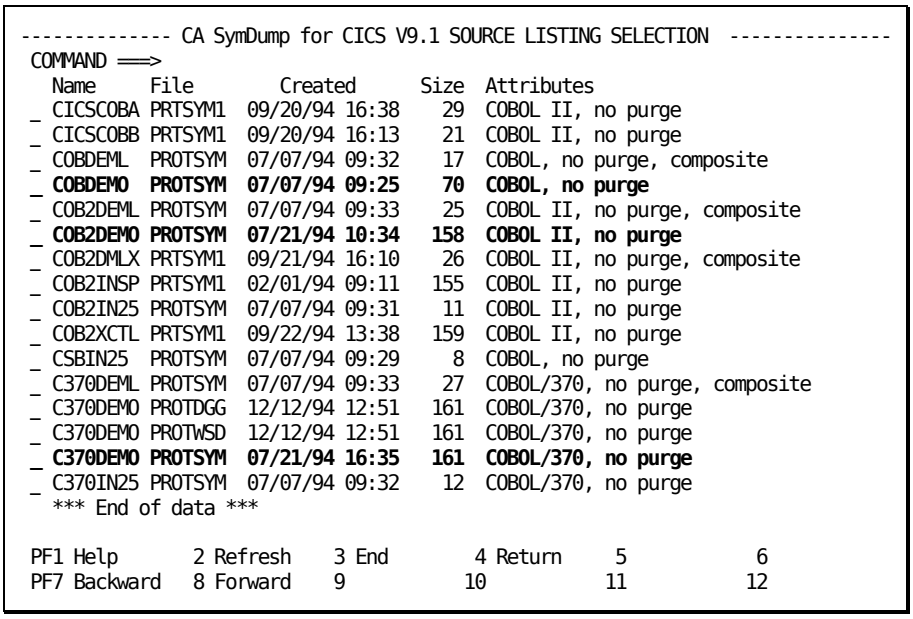
   - Listing or a list of listings by typing **1** on the Option line.
   - Symbolic file or a list of Symbolic files by typing **2** on the Option line. You can then select a Symbolic file to display the Program Listings for that file.

2. Specify either the listing name or the Symbolic File name in the unlabeled text fields to enter additional criteria. You can use masks to filter the selection list for items matching the filter criteria:

   - Use * in place of a string of any length. For example, c* filters for all listings beginning with the letter c.
   - Use + for a single character. For example, a mask of COBD++O filters for any seven-letter item that begins with the letters COBD, has an O in the last position, and has any valid character in the fifth and sixth positions. For instance, COBDEMO, COBDXXO, and COBDABO all meet the mask criteria, but COBDEML or COBDEM do not.
   - Leave the fields blank to display all symbolic files or listings.

3. Press Enter after you specify a listing, file, or mask. The Source Listing Selection menu appears.

   The Source Listing Selection menu shows all of the files or listings that meet the criteria you specified on the Source menu. The following is a sample Source Listing Selection menu screen.



```
-------------- CA SymDump for CICS V9.1 SOURCE LISTING SELECTION  --------------
COMMAND ===>
  Name     File        Created      Size  Attributes
_ CICSCOBA PRTSYM1  09/20/94 16:38    29  COBOL II, no purge
_ CICSCOBB PRTSYM1  09/20/94 16:13    21  COBOL II, no purge
_ COBDEML  PROTSYM  07/07/94 09:32    17  COBOL, no purge, composite
_ COBDEMO  PROTSYM  07/07/94 09:25    70  COBOL, no purge
_ COB2DEML PROTSYM  07/07/94 09:33    25  COBOL II, no purge, composite
_ COB2DEMO PROTSYM  07/21/94 10:34   158  COBOL II, no purge
_ COB2DMLX PRTSYM1  09/21/94 16:10    26  COBOL II, no purge, composite
_ COB2INSP PRTSYM1  02/01/94 09:11   155  COBOL II, no purge
_ COB2IN25 PROTSYM  07/07/94 09:31    11  COBOL II, no purge
_ COB2XCTL PRTSYM1  09/22/94 13:38   159  COBOL II, no purge
_ CSBIN25  PROTSYM  07/07/94 09:29     8  COBOL, no purge
_ C370DEML PROTSYM  07/07/94 09:33    27  COBOL/370, no purge, composite
_ C370DEMO PROTDGG  12/12/94 12:51   161  COBOL/370, no purge
_ C370DEMO PROTWSD  12/12/94 12:51   161  COBOL/370, no purge
_ C370DEMO PROTSYM  07/21/94 16:35   161  COBOL/370, no purge
_ C370IN25 PROTSYM  07/07/94 09:32    12  COBOL/370, no purge
  *** End of data ***

PF1 Help       2 Refresh    3 End        4 Return     5           6
PF7 Backward   8 Forward    9           10           11          12
```

4. Type an **S** next to the file or listing you want and press Enter to display that file or listing in the Source Listing Display.

   The following is a sample Source Listing Display screen containing a COBOL source listing.

```
        CA InterTest - PROTDEM FILE SOURCE LISTING DISPLAY
1 COMMAND ==>
 Program= COBDEMO  Option #       Stmt #                            Margin= 01
 Nested=                                Search=
2 OPTS 1 Proc div  2 Work-stor 3 Link sect 4 D-map      5 Clst/Pmap More:   +
       6 Data xref 7 Proc xref 8 Err msgs  9 Srch fwd  10 Srch bwd
3 PFKS 1 Help      2           3 End       4 Profile    5            6 Menu
       7 Backward  8 Forward   9 Next Wnd  10          11           12
 ------------------------------------------------------------------------------
       _ 00001 ID DIVISION.
       _ 00002 PROGRAM-ID. COBDEMO.
       _ 00003 ENVIRONMENT DIVISION.
      4  00004 DATA DIVISION.
       _ 00005 WORKING-STORAGE SECTION.
       _ 00006 77  S999-FIELD1            PIC S9(3).
5      _ 00007 77  S999-FIELD2            PIC S9(3)       VALUE +50.
       _ 00008 77  999-FIELD1             PIC 9(3).
       _ 00009 77  999-FIELD2             PIC 9(3)        VALUE 50.
       _ 00010 77  FIRST-SCREEN-LEN       PIC S9(4) COMP  VALUE +1696.
       _ 00011 77  MSG-SCREEN-LEN         PIC S9(4) COMP  VALUE +1040.
       _ 00012 77  THIRD-SCREEN-LEN       PIC S9(4) COMP  VALUE +960.
       _ 00013 77  FOURTH-SCREEN-LEN      PIC S9(4) COMP  VALUE +1761.
       _ 00014 77  ERROR-SCREEN-LEN       PIC S9(4) COMP  VALUE +960.
         00015*77  COMMAREA-LEN           PIC S9(4) COMP  VALUE +39.
```

The Source Listing Display screen is divided into five major sections. The sections and the fields they contain are explained next:

- **1**—This section contains fields in which you can enter commands and information. The following list describes each field in this section.

  COMMAND ===>

  Enter a transaction, transaction-based command, or a Source Listing Display command.

  Program=

  Changes the program whose code is displayed.

  Option #

  Enter an option listed on OPTS lines by number.

Stmt #

Displays a specific statement.

Nested=

Indicates the displayed COBOL nested program or the program to be searched. This field is empty if the program does not contain any nested programs.

Margin=

Adjusts the display margins to view code past column 80.

Search=

Searches for a data name or string.

- **2**—The OPTS section lists entries for the Option # field. The numbers in the following table are used in the Option # field to display specific sections of the source listing or to search for data. Using these options makes it easy to locate specific sections of your program.

  For COBOL and PL/I programs, all of the OPTS labels cannot display at once.

  a. Tab to More + and

  b. Press Enter to view OPTS 5 to the end.

  c. Tab to More - and

  d. Press Enter to view OPTS 1 to 10.

Option	COBOL	PL/I	Assembler
1	* Procedure Division	Data Cross Reference	First CSECT
2	* Working-Storage	Aggregate Length Table	–
3	* Linkage Section	Storage Requirements	–
4	Data Division Map	Static Storage Map	–
5	CLIST/Pmap	Variable Storage Map	Macro and Copy Source Catalog for high level output
6	Data Cross Reference	Table of Offsets	Data Cross Reference
7	Procedure Cross Reference	Generated Code (Assembler-like)	Literals Cross Reference
8	Error Messages	Error Messages	Error Messages
9	Search Forward	Search Forward	Search Forward
10	Search Backward	Search Backward	Search Backward
13	Local-Storage	Procedure Cross Reference	–
14	–	Labels Cross Reference	–

***** These options can be used with NESTED= entries to request a display of these sections for a specific nested program.

If you have CA InterTest for CICS, you can also use the following options:

Option	COBOL	PL/I	Assembler
11	Indirect Commands	Indirect Commands	
12	Conditional Breakpoint Options	Unconditional/Conditional Breakpoint	Unconditional/Conditional Breakpoint Options

Note: The sections available for display depend on which version of the post-processor LISTER parameter was used to compile or assemble the program. For more information, see the CA Application Quality and Testing Tools Symbolic Guide.

- **3**—The PFKS section lists the PF key functions that are available for this screen.
- **4**—Column 1 (represented by the underscore _) of each line is reserved for entering single-letter commands.

  If you have CA InterTest for CICS, this column is also reserved for breakpoint-related functions. When a breakpoint takes effect during execution, it is identified in column 1 with one of the following letters:

  A

  Automatic (CA InterTest for CICS generated)

  U

  Unconditional

  C

  Conditional

  V

  Variable-change (COBOL and Assembler)

  R

  Request

- **5**—This section displays the source code from the program named in the Program= field. The numbers at the left side of each line are the COBOL or PL/I statement numbers from the compiled listing or the Assembler hexadecimal location number from the assembled listing.

  Note: The display screen's format varies by terminal type. For 132-column terminals, lines of code display as is and can be viewed in full. For 80-column terminals, the compiler output is automatically reformatted so that most of the code is viewed in columns 1 to 80. To view code beyond column 80, change the display margins.

How You Adjust the Margins

Because certain compiler output (particularly Assembler and CA Optimizer/II output) extends beyond 80 columns, you may need to adjust the display margins to view more of your program's Source Listing.

When you adjust the margins, the statement or location numbers stay on the screen as the rest of the display shifts left or right. A plus sign (+) in the line above the display area indicates the column where shifting begins.

To adjust the output display to view portions of the listing to the right of column 80:

1. Enter the position number of the desired left margin in the Margin= field. Valid entries are 1 through 50.
2. Press Enter. The screen displays the output beginning at the position specified.

   Note: If there is no output beyond column 80, CA SymDump for CICS redisplays columns 1 through 80 regardless of the position number you specified.

LIST Command—Position the Display

When you initiate the Source Listing facility, you can easily name the program and position the display at any statement number with a single command:

`LIST=progname,#nnnnn`

progname is the name of the program you want to view.

is required.

nnnnn is the statement number from 1 to 99999.

Note: If the requested statement number is greater than the number of statements in the listing, the greatest number is displayed.

Assembler Programs

When you initiate the Source Listing facility you can position the Assembler display at a specific offset location in a CSECT. Use the command form:

`LIST=progname,offset`

progname: is the name of the program you want to view.

offset is a one- to six-hexadecimal number from 0 to FFFFFF.

For example, to position the Source Listing display of program COBDEMO with statement 99 highlighted near the top of the display area enter:

```
LIST=COBDEMO,#99
```

To position the Source Listing display of program ASMDEMO with offset 0007E8 highlighted near the top of the display area enter:

```
LIST=ASMDEMO,7E8
```

You can position the display area to include more data, source listing, or storage items using the following options:

Option #

Displays a specific section, choose an Option # from the OPTS.

Statement #

Displays a particular statement, enter the statement number from 1 to 9999 in the Statement # field and press Enter.

Nested=

Display a particular nested program, enter the program name in the Nested = field and press Enter.

Search=

Displays the code defining a particular data item in Working-storage, Local-Storage, or the Linkage section, enter the data name in the Search = field and press Enter. To display the code surrounding a particular paragraph or label, enter the paragraph name or label name in the Search = field and press Enter**.**

Displacement=

Display the listing at a specific displacement in an Assembler program, enter the displacement from 0 to FFFFFF in the Displacement= field.

Issue Commands

The Command line on the Source Listing Display is always available regardless of what view options are currently in use. You can use the Command line to enter a transaction, a transaction-based line command (such as a CORE command), and the Source Listing Display commands.

ABI Command

Turns interception of CICS abends on and off.

BOTTOM Command

Positions the listing at the end of the source code within the complete online listing.

The short form is BOT; no PF key is assigned

BPO Command

Jumps to the Breakpoint Options build screen when setting a breakpoint.

Note: You must have CA InterTest for CICS installed to use this feature.

BTRACE Command

Displays the CICS Command Back Trace Table. This table is built from the EXEC CICS Trace entries found in the CICS Trace Table when the dump is captured.

BWD Command

Scrolls backward. The scroll amount is set on the Source Listing Profile.

The assigned PF key is PF7.

CNTL Command

Displays the CNTL Command menu. CNTL is only valid if the CA InterTest for CICS global installation option SYMDINT is set to YES. To check the value of SYMDINT, use ITST Option 7.1.2 from CA InterTest for CICS.

No PF key is assigned.

CS Command

Resets the Source Listing display to Abending (Current) Statement.

CORE Command

Displays the Main Storage menu. Select an option to view a main storage (CORE) display.

No PF key is assigned.

DOWN Command

Shifts the listing down a specific number of lines.

END Command

Returns to the prior display or menu.

The assigned PF key is PF3.

FILE Command

Displays the Auxiliary Storage menu. Select an option to view a file or queue. FILE is only valid if the CA InterTest for CICS global installation option SYMDINT is set to YES. To check the value of SYMDINT, use ITST Option 7.1.2 from CA InterTest for CICS.

No PF key is assigned.

FIND Command

Locates the specified string. Use the syntax shown next.

```
FIND string  [NEXT | PREV]
```

string

Replace with any group of letters or numbers up to 31 characters long. If *string* contains a blank, you must enclose *string* in apostrophes. If *string* contains an apostrophe ('), you must enclose *string* in quotes (").

NEXT

Locates the next occurrence of *string*. (Pressing Enter performs the same action.)

PREV

Locates the previous occurrence of *string*.

The short form is F; no PF key is assigned.

FS Command

Positions listing at a specific line number. Use the syntax shown next.

```
FS line-number
```

line-number

Replace with any line number.

No PF key is assigned.

FO Command

Positions listing at a specific hexadecimal offset. Use the syntax shown next.

```
F0 hex-offset
```

hex-offset

Replace with any offset within an Assembler program.

No PF key is assigned.

FP Command

Positions listing at a specific paragraph, procedure, or label. Use the syntax shown following.

FP *label*

label

Replace with any valid label up to 31 characters long. Valid labels include data names, CSECTs, procedures, and paragraph names.

No PF key is assigned.

FWD Command

Scrolls forward the amount indicated on the Source Listing Profile.

The assigned PF key is PF8.

HELP Command

Displays help for the Source Listing facility.

The assigned PF key is PF1.

ITST Command

Displays the ITST Primary Option menu. ITST is only valid if the CA InterTest for CICS global installation option SYMDINT is set to YES. To check the value of SYMDINT, use ITST Option 7.1.2 from CA InterTest for CICS.

PF Key: See MENU

IC Command

Displays the Indirect Commands Build screen.

Note: You must have CA InterTest for CICS installed to use this feature.

LEFT Command

Shifts the listing left a specific number of characters

LOCATE Command

Finds a label, line number, offset, or special area. Use the syntax shown next; select one operand from the list.

```
LOCATE label
       line-number
       hex-offset
       .xx
```

label

Replace with any valid label up to 31 characters long. Valid labels include data names, CSECTs, procedures, and paragraph names. A COBOL paragraph name consisting of all numbers is not a valid label.

line-number

Replace with any line number.

hex-offset

Replace with an offset from an assembler program. Offsets are indicated by a leading + character.

.xx

Replace with the appropriate special indicator. Special indicators are language-dependent. Select one from the appropriate list.

For COBOL, select an indicator from the following list:

Special Indicator	Meaning
.PD	Procedure Division
.WS	Working Storage Section
.LC	Local-Storage Section
.LS	Linkage Section
.DM	DMPA
.PM	COBOL/VS PMAP/CLIST

.CL	COBOL/VS PMAP/CLIST
.OF	COBOL II OFFSET/LIST
.LI	COBOL II OFFSET/LIST
.DX	Data Cross-Reference
.PX	Procedure Cross-Reference
.EM	Error Messages

For PL/I, select an indicator from the following table:

Special Indicator	**Meaning**
.AG	Aggregate List
.SR	Storage Registers
.SS	Status Storage
.VS	Variable Storage
.OF	Offsets
.GC	Generated Code
.PX	Procedure Cross-Reference
.LX	Label Cross-Reference
.DX	Data Cross-Reference
.EM	Error Messages

For Assembler, select an indicator from the following table:

Special Indicator	Meaning
.C1	First CSECT
.1C	First CSECT
.MC	Macro Catalog
.XR	Cross-Reference
.LI	Literals
.EM	Error Messages

The short form is LOC or L; no PF key is assigned.

MARGIN Command

Shifts the listing to a specific margin position

MENU Command

Displays the high-level menu. When not at a breakpoint, it is the ITST Primary Option Menu; when at a breakpoint, it is the Breakpoint Primary Option Menu. MENU is only valid if the CA InterTest for CICS global installation option SYMDINT is set to YES. To check the value of SYMDINT, use ITST Option 7.1.2 from CA InterTest for CICS.

The assigned PF key is PF6.

MONITOR Command

Sets monitoring for the current program using the CICS user ID displayed on the Profile. MONITOR is only valid if the CA InterTest for CICS global installation option SYMDINT is set to YES. To check the value of SYMDINT, use ITST Option 7.1.2 from CA InterTest for CICS.

The assigned PF key is PF5.

OFFALL Command

Turns off *all* breakpoints set by Userid or Terminal.

Note: You must have CA InterTest for CICS installed to use this feature.

PROFILE Command

Displays the Source Listing Profile, where you can change settings for the current session.

The assigned PF key is PF4.

RIGHT Command

Shifts the listing right a specific number of characters

STATUS Command

Display the Monitoring Status report (Option 2.4 on the CA InterTest Primary Option menu) for the current program. You can remove monitoring, breakpoints, and options directly from the Status display. STATUS is only valid if the CA InterTest for CICS global installation option SYMDINT is set to YES. To check the value of SYMDINT, use ITST Option 7.1.2 from CA InterTest for CICS.

The assigned PF key is PF12.

STATUS ALL Command

Displays the Monitoring Status report for all programs, transactions, and terminals CA InterTest for CICS is monitoring in the region. STATUS ALL is only valid if the CA InterTest for CICS global installation option SYMDINT is set to YES. To check the value of SYMDINT, use ITST Option 7.1.2 from CA InterTest for CICS.

There is no assigned PF key.

TOP Command

Positions the listing at the beginning of the source code in the complete online listing.

There is no assigned PF key.

UP Command

Shifts the listing up a specific number of lines.

=.x.y.z Command

Fastpath to CA InterTest for CICS Primary Menu Option x.y.z.

Note: You must have CA InterTest for CICS installed to use this feature.

Action-Characters Supported from a Source Listing Display

Entering a single character on your source listing can perform the following function:

d

Displays program or variable storage at a breakpoint.

Enter the d function next to a statement that references or defines the variable you want to display. If the statement references the variable, you must also position the cursor under the variable name before pressing Enter.

How You Search for Data

From the Source Listing Display screen, you can define, search for, and display any character string (such as a data item, label, or paragraph name). This is a quick way to go to different areas in a listing.

Display a Data Item Definition

To display a data item definition

1. Enter a data item name up to 31 characters in the Search= field.
2. Press Enter to begin the search. The data item and its definition are highlighted when found.

Search for a Data Item

To search for a data item

1. Enter up to 31 characters in the Search= field.
2. Specify the search direction in the Option # field. (Option # 9 is Search Forward; Option # 10 is Search Backward.)
3. Press Enter to begin the search.

For COBOL nested programs, the current nested program (indicated in the NESTED= field) is searched first for the specified data item. If the data item is not found in the indicated program, then the main program and other nested programs for the item are searched.

Note: It is not necessary to enter the entire data item, label, or paragraph name. You can enter the first few characters to begin your search. For example, if you wanted to search for TASKNUM, you could enter TASK, TASKN, and so on, in the Search= field.

Scroll Forward and Backward

PF7 and PF8 scroll the compiler output backward and forward, respectively. The default scroll amount is one page. However, you can change the scroll amount on the Source Listing Profile screen. For instructions, see Set the Scroll Amount (see page 88).

Change the Program

At any time during testing, you can change the program with which you are working.

To change the program displayed

1. Enter the desired program name in the Program= field.
2. Press Enter to display the listing from the beginning of the program, or use the Option #, Statement #, or Search= fields to select another point of initial display before pressing Enter.

Info Area

The info area is located at the top of the Source Listing Display screen under the Search field. The info area displays various windows depending on the value in the Display window field in the Source Listing Profile.

To change the information displayed in the info area, change the value in the Display window field.

Follow these steps:

1. On the Source Listing screen, either type **profile** in the command line and press **Enter**, or press **PF4**.

   The Profile screen appears.

2. Specify the desired value in the Display window field, and press **Enter**.

   The info area displays the information that you requested.

   Notes:

   - Alternatively, type 20-24 in the Option # field to display the required window.
   - Press **PF9** to switch between the windows in order. **PF9** does not switch between the windows when the Backtrace Facility is active.

The Display window field has the following values:

N (None)

Disables the info area so that you are able to see more of the source code.

T (Titles)

Displays the Title window in the info area. The Title window shows the title and header lines of your Source Listing Display, including the option and PF key descriptions. **T** is the default value for the Display window field unless changed during the product installation.

R (Registers)

Displays the Register window in the info area. The Register window shows the registers and attributes of your program.

K (Keep)

Displays the Keep window in the info area. The Keep window shows your program data items.

P (Program)

Displays the Program window in the info area. The Program window displays the load module name and the symbolic file information.

Register Window

The Register window allows you to display and modify the contents of registers, and view an area where a register points to.

The following screen shows the Register window:

```
   CA InterTest for CICS V9.1 - PROTSYM FILE  ABEND DETECTED BREAKPOINT
COMMAND ===>
Program= COBDEMO  Option #       Stmt #
                                        Search=
--------------------------------------------------------------------------------
----
 R0-R7  3520A424 35209220 00100100 3520B5C8 3520A540 350F79E0 350F7998 B5200108
 R8-R15 3520A5C8 3520A2C0 3651B15C 3651B904 3651B11C 352090D0 B651C242 00000000
 Cond. Code = 0   Amode = 31   ExecKey = USER   TransIsolate = YES
--------------------------------------------------------------------------------
----
 _ 000412 CONTINUE-TASK.
   000413**** TASKNUM *NOTE* FIELD MUST BE INITIALIZED
 A    ==>     ADD +1 TO TASKNUM.
...
```

The Register window contains the following fields:

R0-R7

R8-R15

Displays the contents of registers at the current statement of the program.

Cond. Code

Indicates the current condition code.

Amode

Displays the current addressing mode of the program.

ExecKey

Displays the ExecKey for the current program if the CICS Storage Protection Option is active, depending on the option specified in the program definition.

TransIsolate

Displays the transaction isolation option of the current task if the CICS Transaction Isolation Option is active.

- To modify the program registers, overtype the displayed contents with the desired value, and press **Enter**.
- To view the area pointed to by a register, overtype the first displayed character of the register with either an at sign (@) for a 24-bit address, or with a percent sign (%) for a 31-bit address, and press **Enter**.

Program Window

The Program window displays the name of the load module that you analyze.

The following screen shows the Program window:

```
   CA InterTest for CICS V9.1 - PROTSYM FILE  SOURCE LISTING DISPLAY
COMMAND ===>
Program= CSBIN25  Option #       Stmt #
                                        Search=
 Load module= COBDEML
 Symbolic file: PROTSYM  Timestamp: 2014-05-27 05:05 Language: IBMCOB 4.2
---------+---------------------------------------------------------------------
----
 _ 000023 PROCEDURE DIVISION USING COMM-TEXT.
 _ 000024     MOVE ZERO TO DIVCT.
...
```

The Symbolic file, Timestamp and Language fields provide information about the subprogram specified in the Program field, not the load composite module in the Load module field.

Set the Scroll Amount

The scroll amount determines how much more of your source listing displays each time you press PF7 or PF8.

To set the scroll amount for scrolling backward and forward (PF7 and PF8)

1. Type **profile** on the command line and press Enter, or press PF4 from a Source Listing screen to display the Profile screen.
2. Overtype the current PF7/8 Amount= entry with one of the following:

   PAGE

   The size (number of lines) of the display area on the Source Listing Display.

   HALF

   Half the size of the display area.

   nnnn

   Any number of lines from 1 to 9999.

   STOP

   Go to the next or previous breakpoint in the program.

   Note: Setting the Scroll Amount to STOP is an excellent way to review all breakpoints set in your program if you have CA InterTest for CICS installed.
3. Press Enter. The change takes effect immediately and returns to the Source Listing Display screen.

Display and Search Through Nested Programs

CA SymDump for CICS provides support for COBOL II nested programs when the COBOL nested programs are recompiled with the COBOL II post-compiler provided with CA SymDump for CICS.

COBOL II nested programs allow non-unique paragraph and data names to be defined across nested programs. Therefore, CA SymDump for CICS can support *qualified names* for COBOL programs. A qualified name consists of a one- to 30-byte COBOL program name, a colon, and a one- to 30-byte paragraph or data name. For example, program1:datanam1 is a qualified name. Qualified names ensuring that the correct version of datanam1 (which can be defined in multiple programs) displays.

When CA SymDump for CICS displays the source code for a nested program, the Nested= field displays below the Program= field. The Nested= field is 30 bytes long and indicates the name of the nested program for the currently displayed source code. If you are using the Source Listing facility to display a COBOL nested program and you press PF8 to scroll through the entire source code of the program, the Nested= field changes each time the source code for a different nested program displays.

The names of all nested programs within a specific COBOL program are listed at the end of the Procedure Name Cross Reference section (Option # 7).

```
              CA InterTest - PROTDEM FILE SOURCE LISTING DISPLAY
COMMAND ===>
Program= ACME2000 Option #       Stmt #                              Margin= 01
 Nested=                                  Search=
OPTS 1 Proc div  2 Work-stor 3 Link sect 4 D-map      5 Clst/Pmap More:   +
     6 Data xref 7 Proc xref 8 Err msgs  9 Srch fwd  10 Srch bwd
PFKS 1 Help      2           3 End       4 Profile    5 Monitor    6 Menu
     7 Backward  8 Forward   9 Next Wnd 10           11           12 Status
---------+--------------------------------------------------------------------
 _ DEFINED      PROCEDURE NAMES         REFERENCES
 _    122 3000-REGISTER-HANDLER         P107
 _    131 4000-FORCE-ABEND              P108
 _    139 5000-HANDLE-ROUTINE           D129
 _    152 9000-RETURN                   P109
 _    168 9999-GOBACK
 _    227 9999-GOBACK                   P221
 DEFINED   CROSS-REFERENCE OF PROGRAMS     REFERENCES
EXTERNAL   ACME200A . . . . . . . . . . . 120
     171   ACME200N . . . . . . . . . . . 229 114
       2   ACME2000 . . . . . . . . . . . 230
EXTERNAL   ACME2001 . . . . . . . . . . . 117
EXTERNAL   DFHEI1 . . . . . . . . . . . . 127 137 147 160 166
NESTED PROGRAM MAP
PROGRAM ATTRIBUTE CODES (RIGHTMOST COLUMN) HAVE THE FOLLOWING MEANINGS:
```

The Nested= field also indicates the nested program that Option # 1, 2, and 3 apply to, and the nested program that CA SymDump for CICS searches first for any data name or paragraph name that you specify in the Search= field. If a paragraph name or data name is not found in the specified nested program, CA SymDump for CICS then searches the main program.

For example, if Option # 2 and Nested=program2 are specified, the Working Storage section for nested program program2 is displayed. Also, if Nested=program3 and Search=datanam1 are specified, nested program program3 is searched first for datanam1; if datanam1 is *not* found, the main program is searched for datanam1.

How You Exit the Source Listing Facility

To exit the Source Listing facility, type **END** on the Command line and press Enter.

CA InterTest for CICS users can exit the menus using **=X**.

Chapter 5: Batch Utility

Batch utility IN25DMPU provides maintenance and reporting functions for your CA SymDump for CICS VSAM repository (PROTDMP file).

This chapter details the required JCL and command syntax used to execute the batch utility.

This section contains the following topics:

Command Syntax

You enter commands one per line in the SYSIN file using the command syntax described in this section.

A valid command consists of a keyword followed by an argument or expression generally specified in the following format:

```
keyword argument operator value
```

Notes:

1. *operator* and *value* are not always required.
2. The OPT command keyword requires a slightly different syntax that is described later in this section.

The following are examples of valid commands:

```
DSN TEST.SYMDUMP.PROTDMP
LIST ALL
DELETE AGE GT 30
OPT PURGE Y
```

Supported Keywords

The supported command keywords follow:

COPY

Copies selected dumps from the secondary repository (ODSN) to the primary repository (DSN). You must specify both DSN and ODSN keywords prior to using the COPY keyword.

DELETE

Deletes selected dumps from the primary repository (DSN). You must specify the DSN keyword before using the DELETE keyword.

DSN

Defines the dsname for the primary repository. You must specify this prior to using any other commands.

LIST

Provides a list of dumps contained within the primary repository that fulfill required selection criteria; this keyword also provides PROTDMP file statistics.

LOCK

Locks the selected dumps in the primary repository (DSN) to prevent deletion. You must specify a DSN keyword prior to using the LOCK keyword.

Note: This command is equivalent to the H line command on the Dump/Trace Selection screen.

ODSN

Defines the dsname for the secondary repository. You must specify this keyword prior to using the COPY command.

OPT

Overrides an option value in the primary repository (DSN). Valid options and their values are described later in this section.

UNLOCK

Unlocks selected dumps in the primary repository (DSN) that lets you delete or modify them. You must specify the DSN keyword prior to using the LOCK keyword.

Note: This command is equivalent to the R line command on the Dump/Trace Selection screen.

Arguments

All of the valid arguments are described following.

Note: Some command keywords only accept a subset of these arguments.

AGE

Selects dumps by the number of days since they were created.

For example:

```
LIST AGE EQ 10
DELETE AGE GT 35
```

ALL

Selects all dumps.

For example:

```
LIST ALL
UNLOCK ALL
```

CODE

Selects dumps by the abend code.

For example:

```
LOCK CODE EQ ATNI
DELETE CODE EQ ASRA
```

DATE

Selects dumps by their created date in the format of MM/DD/YYYY.

For example:

```
LIST DATE EQ 11/20/2007
DELETE DATE GT 11/18/2007
```

LOCK

Selects dumps that are locked in *hold* status that prevents them from being deleted.

For example:

```
LIST LOCK
```

PGM

Selects dumps by the name of the abending program.

For example:

```
LIST PGM EQ ASMDEMO
DELETE PGM EQ COB2DEMO
```

TERM

Selects dumps by the name of the terminal where the abending transaction began.

For example:

```
LIST TERM EQ U008
DELETE TERM GE U010
```

TRAN

Selects dumps by the name of the abending transaction.

For example:

```
LIST TRAN RANGE DEMA DEMP
DELETE TRAN EQ DEMC
```

Operators

The valid operators are as follows:

EQ

Selects dumps if the value of the argument is equal to the value specified.

NE

Selects dumps if the value of the argument is not equal to the value specified.

GE

Selects dumps if the value of the argument is greater than or equal to the value specified.

GT

Selects dumps if the value of the argument is greater than the value specified.

LE

Selects dumps if the value of the argument is less than or equal to the value specified.

LT

Selects dumps if the value of the argument is less than the value specified.

RANGE

Selects dumps if the value of the argument is between the two values specified.

Option Arguments for the OPT Command Keyword

The valid arguments for the OPT command are as follows:

ALL

Displays the current settings of all options from SymDump for CICS.

For example:

```
OPT ALL
```

SUPPRESSA

Suppresses AP0001 dumps. Specify whether full AP0001 SVC dumps should be suppressed for the ASRA and ASRB abends. If you specify N, dumps conform to the specifications defined for your CICS system.

For example:

```
OPT SUPPRESSA Y
OPT SUPPRESSA N
```

SUPPRESSC

Suppresses CICS transaction dumps. Specify if a transaction dump should be written to the CICS dump data set.

For example:

```
OPT SUPPRESSC Y
OPT SUPPRESSC N
```

PURGE

Purges dumps automatically. Specify if automatic purging of dumps should occur during startup of CA SymDump for CICS. Qualification for purging is determined by age (number of days to hold dumps), or the HOLD indicator set on the Selection List menu.

For example:

```
OPT PURGE Y
OPT PURGE N
```

MESSAGES

Messages to the operator. Specify if informational messages should be written to the console when CA SymDump for CICS intercepts dump or trace requests.

For example:

```
OPT MESSAGES Y
OPT MESSAGES N
```

CAPTUREX

Captures EXEC CICS dumps. Specify if transaction dumps produced by EXEC CICS DUMP commands should be captured by CA SymDump.

For example:

```
OPT CAPTUREX Y
OPT CAPTUREX N
```

DUMPCURR

Dumps only the current program. Specify if the dump should include just the active program or all linked and loaded programs.

For example:

```
OPT DUMPCURR Y
OPT DUMPCURR N
```

DYNAPURGE

Dynamic purge of dumps. Specify if dynamic purging of dumps should occur during dump capture for non-held dumps on a FIFO basis. Dynamic purging occurs only when space to hold the dump being captured is inadequate; dynamic purging deletes only enough dumps to make space for the new dump. HOLD days are ignored for dynamic purge.

For example:

```
OPT DYNAPURGE Y
OPT DYNAPURGE N
```

PREVABEND

Use Prev Abend code. Specify if the original abend code is presented when a Handle Abend command is issued. The Handle Abend routine usually issues an EXEC CICS Abend or Dump command which masks the original problem. A 'Y' in this option causes the original dump to be formatted. In order to set PREVABEND to 'Y', the CAPTUREX parameter must also be set to 'Y'.

For example:

```
OPT PREVABEND Y
OPT PREVABEND N
```

HOLD

Number of days to hold dumps. Specify the number of days non-held dumps are retained.

For example:

```
OPT HOLD 20
```

SELECT

Dumps select start date. Specify the date that dump selection starts.

For example:

```
OPT SELECT CURRDATE
OPT SELECT 01/01/2007
```

SUPPRESSD

Suppresses duplicate transaction dumps. Specify if duplicate dump suppression is in effect. A dump is considered a duplicate when an abend has a matching program/offset with a previously captured dump.

For example:

```
OPT SUPPRESSD Y
OPT SUPPRESSD N
```

SUPPRESSL

Duplicates dump suppression limit. Specify the maximum number of duplicate dumps captured for a given occurrence of program/offset. This parameter is recognized only when SUPPRESSD=Y is also specified.

For example:

```
OPT SUPPRESSL 158
```

EXCLUDE ADD

Causes the specified abend code to be added to the exclusion list to prevent dumps from being created for this type of abend.

For example:

OPT EXCLUDE ADD ASRA

EXCLUDE DEL

Causes the specified abend code to be removed from the exclusion list to allow dumps to be created for this type of abend.

For example:

OPT EXCLUDE DEL ASRA

JCL

This section describes the JCL used to run batch utility and DD statements.

SYSIN

Contains commands for batch utility, specified one per line. Blank lines are ignored. Any line containing an asterisk "*" as the first non-blank character is treated as a comment.

SYSPRINT

Contains the output report from the batch utility.

PARM='TEST'

If specified, the batch utility only validates input commands.

Example JCL:

```
//UTIL EXEC PGM=IN25DMPU,PARM='TEST'
//STEPLIB DD DISP=SHR,DSN=CAI.CABALOAD
//SYSPRINT DD SYSOUT=*
//SYSIN  DD *
    DSN CA.TEST.PROTDMP
    LIST ALL
* --- COMMENT ---
    LIST DATE EQ 11/20/2007
    OPT ALL
/*
```

```
Example output in SYSPRINT:
 DSN CA.TEST.PROTDMP

 LIST ALL

 File Statistics for CA.TEST.PROTDMP


 265 total records, 199 records used, 66 records free in 2 blocks
 63 continuous records in largest block
 Record size is 8,185

 CICS       DATE         TIME      ABEND   PROGRAM   TRANSID TERMID  STATUS
-------------------------------------------------------------------------------
 A31IC9N8   11/19/2007   10.00.23   ASRA   ASMDEMO    DEMA   U035

 A31IC9N8   11/19/2007   10.00.30   ASRA   PL1DEMO    DEMP   U035
 A31IC9N8   11/19/2007   10.00.40   ASRA   COBDEMO    DEMC   U035
 A31IC9N8   11/19/2007   10.00.44   ASRA   ASMDEMO    DEMA   U035
 A31IC9N8   11/19/2007   10.01.00   ASRA   ASMDEMO    DEMA   U035
 A31IC9N8   11/20/2007   09.12.04   ASRA   COBDEMO    DEMC   U032
 A31IC9N8   11/20/2007   09.12.14   ASRA   PL1DEMO    DEMP   U032

 LIST DATE EQ 11202007


 File Statistics for CA.TEST.PROTDMP

 265 total records, 199 records used, 66 records free in 2 blocks
 63 continuous records in largest block
 Record size is 8,185

 CICS       DATE         TIME      ABEND   PROGRAM   TRANSID TERMID  STATUS
-------------------------------------------------------------------------------
 A31IC9N8   11/20/2007   09.12.04   ASRA   COBDEMO    DEMC   U032
 A31IC9N8   11/20/2007   09.12.14   ASRA   PL1DEMO    DEMP   U032
```

```
OPT ALL
Suppress AP0001 dumps:        Y (Y,N)  Messages to operator:      Y (Y,N)
Suppress transaction dumps:   Y (Y,N)  Capture exec cics dumps:   Y (Y,N)
Automatic purge of dumps:     N (Y,N)  Use previous abend code:   Y (Y,N)
Automatic purge hold days:   39 (0-99) Dump only current program: Y (Y,N)
Dynamic purge of oldest dump: N (Y,N)  Dump select start date: 13/06/2005)
Suppress duplicate dumps:     Y (Y,N)  (CURRDATE or MM/DD/YYYY)
Duplicate dump limit:       016 (1-999)

Enter abend codes to be excluded:  '*' is generic character
....       ATNI       ASRA       ATND       ....
....       AZTQ       AZCT       ATCV       ....
```

Chapter 6: Printing Dumps

The CA SymDump for CICS batch print facility (IN##PDMP where ## indicates a two digit number that represents the CICS release) lets you specify criteria to determine which dumps to print, just as you specify criteria to select dumps for the CA SymDump for CICS Selection List. Dumps printed using IN##PDMP contain most of the storage areas and summary information that appears when an actual CICS transaction dump is printed using the CICS DFHDUP utility program.

Sample JCL for program IN##PDMP can be found in CAI.CABAJCL member SYMPDMP. Customize this member using the instructions provided at the top.

Note: In an exceptional situation when IN##PDMP does not provide the information you require, take a CICS transaction dump and format it using the CICS DFHDUP utility program.

This section contains the following topics:

PRINT and INDEX Commands

Use the following format to specify the PRINT command in the SYSIN data set to request printouts of the dumps that meet the criteria specified by the parameters:

```
PRINT parameters
```

Use the following format to specify the INDEX command in the SYSIN data set to request a list of the dumps that meet the criteria specified by the parameters:

```
INDEX parameters
```

Observe the following rules:

- Specify the PRINT or INDEX command in any column.
- You can specify multiple PRINT and INDEX commands; however, enter each specification on a new line.
- Specify at least one parameter for the PRINT command. Specify the INDEX command without parameters to print the complete index of the CA SymDump for CICS data set.

- Separate parameters with commas.
- You can enter parameters on multiple lines. To continue a command specification, end the line with a comma and begin the continuation in any column on the next line.
- To include a comment, leave one blank space after the last parameter on a line, and then specify the comment.

  Note: If the INDEX command is specified without parameters, a comment is not allowed.
- A JCL DD statement must identify the CA SymDump for CICS data set from which the dumps are to be selected.

Note: A sample job stream follows the description of the command parameters.

The following list defines the parameters for the PRINT and INDEX commands.

Parameter	Description	Format	Default
FROMDATE=	The beginning date from which dumps are selected; if omitted, all dates used	mmddyyyy	None
FROMTIME=	The beginning time from which dumps are selected	hhmmss	000000
TODATE=	The ending date up to which dumps are selected	mmddyyyy	Current system date
TOTIME=	The ending time up to which dumps are selected	hhmmss	235959
CICS=	The applid of the CICS region from which dumps are selected	applid	None
DUMP=	The dump code for which dumps are selected	xxxx	None
PROGRAM=	The program name for which dumps are selected	xxxxxxxx	Nnoe
TRANSID=	The transaction ID for which dumps are selected	xxxx	None
TERMID	The terminal ID for which dumps are selected	xxxx	None
USERID	The CICS userid for which dumps are selected	xxxxxxxx	None
ALL	All dumps are printed	ALL	None

Note: Be aware of these considerations when specifying parameters:

- You *cannot* specify the ALL parameter with any other parameter.
- For the FROMTIME and TOTIME parameters to limit the dumps that are printed, they must be specified with the FROMDATE parameter. If the TODATE parameter is omitted, it defaults to the current day.

Job Stream to Print Dumps and Source Listing

The following sample job stream prints selected dumps for program COBDEMO and uses CA InterTest for CICS to print the program's source listing. The first step prints the requested dumps and the index of the dump data set; the second step prints the saved listing for program COBDEMO.

Note: The CA SymDump for CICS load library must be the *first* library in STEPLIB.

```
//YOURNAME      JOB YOURJOBINFO
//*Step 1 prints dumps for COBDEMO and lists all dumps in the data set
//STEP1    EXEC PGM=IN##PDMP,REGION=4M          ## = CICS release eg. 64,65...
//STEPLIB  DD  DSN=CAI.CABALOAD,DISP=SHR        CA SymDump for CICS load library
//         DD  DSN=CAI.CAVHLOAD,DISP=SHR        CA Testing and Fault Management
library
//         DD  DSN=your.CICS.LOADLIB,DISP=SHR   CICS load library
//PROTDMP  DD  DSN=SYMDUMP.PROTDMP,DISP=SHR     CA SymDump for CICS data set
//DFHDMPDS DD  DSN=&SYMDFILE,DISP=(,PASS),UNIT=SYSDA,
//             DCB=(RECFM=VB,LRECL=4092,BLKSIZE=4096),
//             SPACE=(CYL,(3,1))
//DFHPRINT DD  SYSOUT=*
//SYSPRINT DD  SYSOUT=*
//REPORT   DD  SYSOUT=*                         Output data set
//SYSIN    DD  DUMMY,DCB=BLKSIZE=80
//DFHTINDX DD  SYSOUT=*
//SYMSYSIN DD  *
PRINT FROMDATE=03012014,TODATE=03042014,PROGRAM=COBDEMO   Print specifications
INDEX                                                     Index specifications
/*
//*Step 2 prints the program listing for COBDEMO
//STEP2    EXEC    PGM=IN25UTIL
//STEPLIB  DD  DSN=CAI.CAVHLOAD,DISP=SHR      CA InterTest load library
//SYSUDUMP DD  SYSOUT=*
//MESSAGE  DD  SYSOUT=*
//OUTPUT   DD  SYSOUT=*,                        Output data set
//             DCB=(RECFM=FBA,LRECL=121,BLKSIZE=2420)
//PROTSYM  DD  DSN=INTRTST.PROTSYM,DISP=SHR
//CARDS    DD  *
PRINT=COBDEMO
/*
//
```

In the previous example:

- The PROTDMP DD statement names the CA SymDump for CICS data set
- The REPORT DD statement names the data set to which the dumps are to be written
- The PRINT parameters specify that all dumps be printed that were generated from 3/1/2014 to 3/4/2014 for program COBDEMO
- The INDEX command specifies that a complete index of the dump data set be printed because there are no parameters to limit the listing
- The OUTPUT DD statement identifies the data set to which the COBDEMO listing will be written

Sample Index of a CICS Data Set

The following example shows a sample index of all of the dumps in the PROTDMP dump data set.

```
REPORT IN64PDMP            C A   S Y M D U M P                  DATE:03/05/2014
                                                                 TIME:  14:57:18
                         D U M P   F I L E   I N D E X           PAGE:         1
  FILE      CICS     DATE       TIME      ABEND    PROGRAM    TRANSID    TERMID
-------------------------------------------------------------------------------
 PROTDMP     C2AG   03/05/2014  16:29:03    ATCH     INVNTRY     INVT       E066
 PROTDMP     C2AG   03/05/2014  14:54:16    ASRA     COBDEMO     DEMC       E058
 PROTDMP     C2AG   03/05/2014  13:55:28    ASRA     COBDEMO     DEMC       E098
 PROTDMP     C2AG   03/05/2014  13:05:23    AEIL     COBDEMO     DEMC       E058
 PROTDMP     C2AG   03/05/2014  12:07:44    USR1     PAYROLL     PYRL       E125
 PROTDMP     C2AG   03/05/2014  10:14:21    USR2     PL1DEMO     DEMP       E008
 PROTDMP     C2AG   03/05/2014  09:29:08    ASRA     ASMDEMO     DEMA       E139
 PROTDMP     C2AG   03/03/2014  18:13:12    AEIL     FEDTAX      FTAX       E127
 PROTDMP     C2AG   03/03/2014  16:04:02    ASRA     SALESTOT    SLST       E244
```

For each dump, CA SymDump for CICS provides the following information:

CICS

CICS region where the dump was produced.

Date

Date the dump was produced.

Time

Time the dump was produced.

Abend

Code identifying the type of dump.

Program

Program that produced the dump.

Transid

Transaction that produced the dump.

Termid

Terminal ID that produced the dump.

Chapter 7: Production Strategies

This chapter examines several different strategies for using CA SymDump for CICS to resolve production problems. You will learn how to debug production dumps in:

- Your *production* region with symbolic support
- Your *test* region with symbolic support
- Your production or test region without symbolic support

You will also learn how to capture the CICS Internal Trace to analyze program flow and performance problems in either test or production regions.

All of these scenarios assume that there is only one production region and one test region. However, you can expand the examples to include multiple production and test regions.

This section contains the following topics:

Symbolic Support

To take full advantage of CA SymDump for CICS, you need an up-to-date symbolic listing of the application programs that execute in your test or production CICS regions. When you are ready to move a program from test to production, ensure you save its symbolic listing so it is available if the program needs further debugging.

To get an up-to-date symbolic listing of the application programs that execute in your test or production CICS regions:

1. Move the listing to a separate production symbolic file.
2. Use the IN25UTIL batch program to unload the listing from the test symbolic file to an intermediate data se
3. Reload it to the production symbolic file. For more information, see the *CA Application Quality and Testing Tools Symbolic Guide*.

The examples in the following sections detail transaction dump analysis with symbolic support and assume that there are:

- Multiple symbolic files (for information on defining and maintaining multiple files, see the *Installation Guide*)
- Up-to-date symbolic listings of production programs

You may have several different versions of a program and, consequently, several different symbolic listings on various symbolic files.

- For COBOL and COBOL II programs, CA SymDump for CICS automatically finds the right symbolic listing for the program version you are debugging, if it exists
- For PL/I and Assembler programs, and for COBOL and COBOL II programs that do not have matching listings, CA SymDump for CICS displays all of the symbolic files containing listings for the program so you can select the one you want

If you do not have an up-to-date symbolic listing for the program, you can get symbolics by recompiling or reassembling the program with the appropriate post-processor program after the dump is generated, but before you examine it online. For more information, see the *CA Application Quality and Testing Tools Symbolic Guide.*

How You Analyze Production Transaction Dumps

This example assumes that you want to analyze production transaction dumps in your production region with symbolic support. We recommend this method because you can take advantage of the full power of CA SymDump for CICS by using the symbolic program feature to quickly analyze and resolve abends.

When a production program abends, you can use all of the CA SymDump for CICS options to examine the dump. Because the current symbolic listing is available, you can inspect the instruction that triggered the abend, examine the contents of data items, and scroll through the abending program listing.

With CA InterTest for CICS available in production, you can also set:

- Monitoring from CA SymDump for CICS and re-execute the program
- Breakpoints or other CA InterTest for CICS options before re-executing the program

Now when the program abends, you can inspect the statement backtrace table to determine the program's logic flow. After CA InterTest for CICS halts the program at a breakpoint, you can:

- More easily determine the cause of the error
- Fix it dynamically
- Continue program execution to make sure the program completes as expected

Having the full power of both CA SymDump for CICS and CA InterTest for CICS in production gives you all the tools you need to resolve production problems quickly and easily.

How You Analyze Production Dumps from Your Test Regions

This scenario assumes that you want to analyze production dumps in your test region with symbolic support. You may prefer this method if you want to take advantage of the combined symbolic capabilities of CA SymDump for CICS without running the CA SymDump for CICS dump analysis component in production.

To analyze production dumps from your test regions, you need

- To read access to the production symbolic file and CA SymDump for the CICS dump data set from a test region
- To install and have running the complete version of CA SymDump for CICS in test region

  The CA SymDump for CICS application that executes in production only captures the transaction dumps in the production region

  CA SymDump for CICS in the test region captures its own transaction dumps, but can display the dumps captured by both production and test regions
- To have loaded the CICS file definitions in the test region that reference the production symbolic file and the CA SymDump for CICS dump data set (see Define CICS File Entries (see page 109)).

Define CICS File Entries

Each region for which you want CA SymDump for CICS to capture dumps needs its own CA SymDump for CICS dump data set. Regions can share a dump data set only if they are not active at the same time.

Each region must have a FILE definition for its own CA SymDump for CICS dump data set. If you want to analyze production dumps in test regions, your test region requires extra FILE definitions for any production symbolic files and dump data sets you want to access. The following lists detail how these entries can be defined.

Production Region	**FCT name**	**DSNAME**
Production Dump Data Set:	PROTDMP	SYMDUMP.PROD.FILE
Production Symbolic File:	PROTSYM	.PROD.SYMBOLIC

Test Region	**FCT name**	**DSNAME**
Test Dump Data Set:	PROTDMP	SYMDUMP.TEST.FILE
Test Symbolic File:	PROTSYM	TEST.SYMBOLIC
Additional FILE Definitions	DMPPROD	SYMDUMP.PROD.FILE
	SYMPROD	.PROD.SYMBOLIC

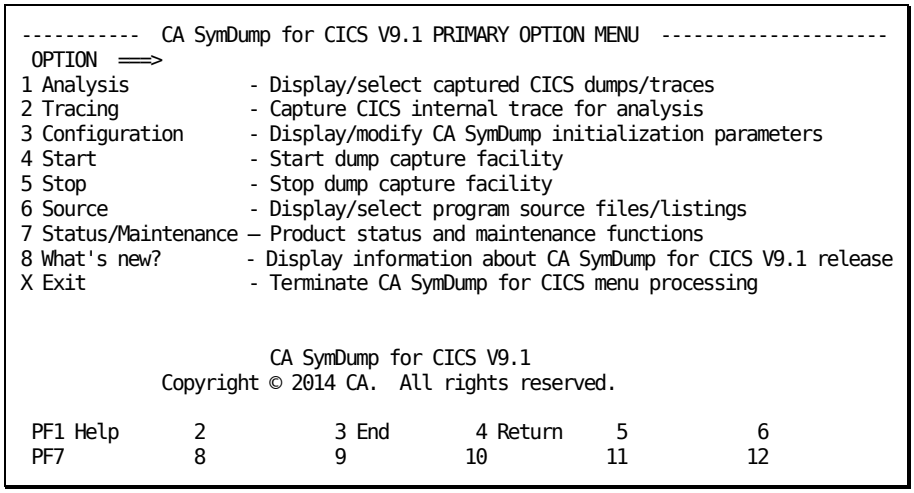
- The DMPPROD FILE definition in test references the CA SymDump for CICS production dump data set.
- The SYMPROD FILE definition in test references the production symbolic file.

Note: The symbolic file ddnames must also be defined in the IN25OPTS module of the CICS region that references them.

Access Production Dumps

To access production dumps

1. Enter **SYMD** from your test region. CA SymDump for CICS displays the Primary Option menu.
2. Select option 1 Analysis on the Primary Option menu to display the CA SymDump for CICS Dump/Trace Analysis screen. The Dump/Trace Analysis screen lets you select dumps from the CA SymDump for CICS data set.



Note: The Dump File ID parameter, by default, references the CA SymDump for CICS dump data set for the current CICS region.

```
------------  CA SymDump for CICS V9.1 DUMP/TRACE ANALYSIS  --------------------
COMMAND ===>
  Type captured dump/trace selection criteria, then press ENTER.
  Dump File ID PROTDMP_          (Required, mask characters '*' and/or '+'
  CICS applid  ________          VTAM specific application ID
  User ID  . . ________
  Program  . . ________
  Transaction  ____
  Dump code  . ____
  Terminal . . ____
  Start date . 01/01/1999        mm/dd/yyyy
  Start time . 00                he
  End date . . 04/23/2006        mm/dd/yyyy
  End time . . 24                he

 PF1 Help       2           3 End        4 Return     5           6
 PF7            8           9           10           11          12
```

3. To access dumps from the production dump data set, overtype the Dump File ID name with the test region's FILE definition for the production dump data set. For example, overtype PROTDMP with DMPPROD as shown in the following screen.

```
-----------  CA SymDump for CICS V9.1 DUMP/TRACE ANALYSIS  ---------------------
COMMAND ===>
  Type captured dump/trace selection criteria, then press ENTER.
  Dump File ID DMPPROD_          Required, mask characters '*' and/or '+'
  CICS applid  ________          VTAM specific application ID
  User ID  . . ________
  Program  . . ________
  Transaction  ____
  Dump code  . ____
  Terminal . . ____
  Start date . 01/01/2003        mm/dd/yyyy
  Start time . 00                he
  End date . . 04/23/2006        mm/dd/yyyy
  End time . . 24                he

 PF1 Help       2           3 End        4 Return     5           6
 PF7            8           9           10           11          12
```

CA SymDump for CICS lists all the dumps from DMPPROD (the production dump data set) meeting the other selection criteria specified on this menu.

Now you can analyze the production dump in your test region using all of the symbolic capabilities of CA SymDump for CICS.

If you determine that you need to do further debugging on the abending program and you also have CA InterTest for CICS installed, you can go back to the production region and set appropriate breakpoints.

Analyze Dumps Without Symbolic Support

This scenario assumes that you want to analyze production dumps *without* symbolic support. You may prefer this method if you do not want to maintain symbolic listings of production programs, but want to use the powerful CA SymDump for CICS non-symbolic online capabilities.

To debug in production, you need the following:

- The complete version of CA SymDump for CICS
- An up-to-date hardcopy program listing

To analyze the dump in your test region, see How You Analyze Production Dumps from Your Test Regions (see page 109). You will need all of the requirements outlined there except the symbolic listings of your production programs. Follow the steps for defining FILE definitions and accessing production dumps described in that scenario.

Analyze the Problem

When a production program abends, all of the CA SymDump for CICS options except the ability to examine the abending programs source listing are available to help you resolve the problem. Using CA SymDump for CICS is much easier than deciphering a hexadecimal dump because you can:

- Display all formatted dump areas except for the source listing entry to identify where the abend occurred. The displays identify the instruction, displacement, register contents, and storage values at the abend. Most of the time, the dump analysis also identifies the cause of the abend. Use your hardcopy listing to determine how to fix the problem.
- Examine formatted CICS areas; for example, system and user TCA, CSA, TCTTE, and so on. You do not have to compute offsets because these areas are formatted by data name.

- Display the formatted trace table, beginning with the first entry for the abended task. CA SymDump for CICS trace table options let you list:
  - Entries for all tasks or just the abended task
  - All entries or just EIP entries
  - Entries in text or hexadecimal format

If you need more help, you can move the program back to the test region and monitor it there with CA InterTest for CICS.

Capture the CICS Internal Trace Table

With CA SymDump for CICS, you can capture and review the CICS Internal Trace Table at any time. The CA SymDump for CICS online formatted trace utility captures an image of the CICS Internal Trace Table, and can replace the AUX TRACE facility for debugging system performance problems in many cases.

Before you capture and review your trace, complete the following:

1. Ensure that you have sufficient space on your PROTDMP file. The larger the CICS Internal Trace Table, the more space you need.
2. Expand your extended DSA allocation to accommodate the size of the trace you will review. You will need additional DSA of approximately twice the size of the CICS Internal Trace Table for each trace being viewed.
3. Expand the size of your CICS Internal Trace Table so you will not lose entries you may be trying to capture when the table wraps. To do this, use the CICS CETR transaction or modify the size of the CICS Internal Trace Table using the SIT TRTABSZ parameter.

Once you complete these steps, execute the transaction you want to trace. When you reach a point where enough trace entries exist, you have two methods available for capturing the trace with CA SymDump for CICS.

Capture the CICS Internal Trace Table from the Primary Option Menu

To capture the CICS Internal Trace table from the Primary Option menu

1. Display the CA SymDump for CICS Primary Option menu by entering the SYMD transaction identifier from CICS.

You can also select option **5 Dump Analysis** from the CA InterTest for CICS Primary Option menu.

```
-----------  CA SymDump for CICS V9.1 PRIMARY OPTION MENU  ---------------------
 OPTION  ===>
1 Analysis           - Display/select captured CICS dumps/traces
2 Tracing            - Capture CICS internal trace for analysis
3 Configuration      - Display/modify CA SymDump initialization parameters
4 Start              - Start dump capture facility
5 Stop               - Stop dump capture facility
6 Source             - Display/select program source files/listings
7 Status/Maintenance – Product status and maintenance functions
8 What's new?       - Display information about CA SymDump for CICS V9.1 release
X Exit               - Terminate CA SymDump for CICS menu processing


                        CA SymDump for CICS V9.1
              Copyright © 2014 CA.  All rights reserved.

 PF1 Help       2           3 End        4 Return     5           6
 PF7            8           9           10           11          12
```

2. Select option **4** Start to start the CA SymDump for CICS dump capture facility.
3. Select option **2** Tracing to capture the trace table and write it to the PROTDMP file.
4. Select option **1** Analysis to select the captured trace for display.
5. On the Dump/Trace Analysis screen, enter ***trace*** in the Program field to limit your selection criteria to traces.

   All traces appear on the Dump/Selection List screen with the keyword *TRACE* in the Program field.
6. Select your trace by creation time and CA SymDump for CICS displays the Formatted Trace Table display.

Capture the CICS Internal Trace Table from CICS

To capture the CICS Internal Trace table from CICS

1. Execute the **SYMT** transaction from CICS. CA SymDump for CICS writes the complete CICS Internal Trace out to the PROTDMP file.
2. To select your trace for analysis, execute the **SYMD** transaction.

   You can invoke CA SymDump for CICS from the CA InterTest for CICS Primary Option menu.
3. Select option **1** Analysis to select the captured trace for display.
4. On the Dump/Trace Analysis screen, enter ***trace*** in the Program field to limit your selection criteria to traces.

   All traces display on the Dump/Selection List screen with the keyword *TRACE* in the Program field.
5. Select your trace by creation time and CA SymDump for CICS displays the Formatted Trace Table display.

Example: How to Use the Trace Capturing Option

The following is an example of how to use the trace capturing option.

To use the trace capturing option

1. Use the CETR transaction to ensure that the trace table is large enough and will not wrap. 1000 KB should be enough for this example. On heavily used systems, higher values may be appropriate.
2. Execute the Assembler demo program, **DEMA**. You should see a Welcome to the CA InterTest Demo Session welcome screen.
   - If you see this screen, proceed to Step 3.
   - If you do not, then the DEMA test transaction abended on a previous step, and you need to clean out the temp storage record left over from this abend by using the CECI transaction.
     - Type **CECI DELETEQ TS QUEUE(Demotte)** to replace the value with your current terminal ID.
     - Run the DEMA transaction again.
3. Allow the DEMA transaction to abend.
4. Type **SYMT** from CICS or select option **2** Tracing from the CA SymDump for CICS Primary Option menu. The following message appears:

CASD6375 CICS internal trace has been captured by CA SymDump for CICS.

Note: If you receive the following message, start the CA SymDump for CICS dump capture facility by selecting option **4 Start** from the CA SymDump for CICS Primary Option menu.

```
CASD6377 CA SymDump for CICS not started, trace capture not performed
```

5. Press **Clear**, type **SYMD**, and press Enter to display the Primary Option menu, if you captured the table with the SYMT transaction.
6. Select option **1 Analysis**. CA SymDump for CICS displays the Dump/Trace Analysis menu.
7. Specify appropriate options on the Dump/Trace Analysis menu, as shown in the following sample screen, and press Enter.
8. Use the Program entry ***trace*** to limit the selection to traces only. The other information shown on the following screen is for illustration only. You need to substitute your specific dump file name and date and time information.

```
-----------  CA SymDump for CICS V9.1 DUMP/TRACE ANALYSIS  ---------------------
 COMMAND ===>

   Type captured dump/trace selection criteria, then press ENTER.

   Dump File ID PROTDMP_          Required, mask characters '*' and/or '+'
   CICS applid  ________          VTAM specific application ID
   User ID  . . ________
   Program  . . *trace*_
   Transaction  ____
   Dump code  . ____
   Terminal . . ____
   Start date . 07/24/2006        mm/dd/yyyy
   Start time . 00                he
   End date . . 07/24/2006        mm/dd/yyyy
   End time . . 24                he
 .
 .
 .
```

9. Select the trace entry. Notice traces are captured under the SYMD transaction with the program name *TRACE* and an abend code of SYMT.

```
-----------  CA SymDump for CICS V9.1 DUMP/TRACE SELECTION  --------------------
 COMMAND ===>

   Type S select,  D delete, H hold, R release, I history

     Dumpfile  Tran  Program   Offset  Abend       Created        # Dups  Status
s - PROTDMP   SYMD  *TRACE*           SYMT  07/24/2006 11:00:10
   *** End of data ***
 .
 .
 .
```

Before selecting and viewing a TRACE captured with CA SymDump for CICS, the TRACE FORMAT REGION must have been started.

CA SymDump for CICS displays the trace in a Formatted Trace Table.

```
--------------  CA SymDump for CICS V9.1   FORMATTED TRACE TABLE  --------------
COMMAND ===>                                          MODE: A SCROLL: PAGE
000001 00028 QR    TR 0202 TRSR  EXIT  SET_INTERNAL_TABLE_SIZE/OK
000002 00028 QR    AP 00E1 EIP   EXIT  SET-TRACEDEST         OK                        00F4,00000000 ....,00007804 ....
000003 00028 QR    AP 00E1 EIP   ENTRY HANDLE-CONDITION                                 0004,2004E018 ..\.,08000204 ....
000004 00028 QR    PG 0700 PGHM  ENTRY SET_CONDITIONS        1FEFE789,1FEFE786
000005 00028 QR    PG 0701 PGHM  EXIT  SET_CONDITIONS/OK     0
000006 00028 QR    AP 00E1 EIP   EXIT  HANDLE-CONDITION      OK                        00F4,00000000 ....,00000204 ....
000007 00028 QR    AP 00E1 EIP   ENTRY INQUIRE-TRACEDEST                               0004,2004E018 ..\.,08007802 ....
000008 00028 QR    TR 0201 TRSR  ENTRY INQUIRE_INTERNAL_TRACE
000009 00028 QR    TR 0202 TRSR  EXIT  INQUIRE_INTERNAL_TRACE/OK STARTED,1F4
000010 00028 QR    AP 00E1 EIP   EXIT  INQUIRE-TRACEDEST     OK                        00F4,00000000 ....,00007802 ....   000011
00028 QR    AP 00E1 EIP   ENTRY INQUIRE-TRACEFLAG                               0004,2004E018 ..\.,08007812 ....
000012 00028 QR    KE 0201 KEDD  ENTRY INQUIRE_GLOBAL_TRACE
000013 00028 QR    KE 0202 KEDD  EXIT  INQUIRE_GLOBAL_TRACE/OK ON
000014 00028 QR    AP 00E1 EIP   EXIT  INQUIRE-TRACEFLAG     OK                        00F4,00000000 ....,00007812 ....
000015 00028 QR    AP 00E1 EIP   ENTRY INQUIRE-TRACEFLAG                               0004,2004E018 ..\.,08007812 ....
000016 00028 QR    AP 00E1 EIP   EXIT  INQUIRE-TRACEFLAG     OK                        00F4,00000000 ....,00007812 ....
000017 00028 QR    AP 00E1 EIP   ENTRY INQUIRE-TRACEDEST                               0004,2004E018 ..\.,08007802 ....
000018 00028 QR    TR 0201 TRSR  ENTRY INQUIRE_INTERNAL_TRACE

000020 00028 QR    AP 00E1 EIP   EXIT  INQUIRE-TRACEDEST     OK                        00F4,00000000 ....,00007802 ....
000021 00028 QR    AP 00E1 EIP   ENTRY INQUIRE-TRACEDEST                               0004,2004E018 ..\.,08007802 ....

PF1 Help       2            3 End         4 Mask      5 Repeat     6 Return On
PF7 Backward   8 Forward    9 All Trace  10 Left     11 Right     12 Retrieve
```

10. Type the **FIND DEMA** on the Command line, and then press Enter. CA SymDump for CICS displays the following screen.

```
--------------  CA SymDump for CICS V9.1   FORMATTED TRACE TABLE  --------------
COMMAND ===>                                          MODE: A SCROLL: PAGE
CASD6247 DEMA found in entry 001396
001396 TCP   QR    XM 1101 XMAT  ENTRY ATTACH               DEMA,0,T,NO,YES,TERMINAL,2005F930 , 02400000
001397 TCP   QR    XM 0401 XMLD  ENTRY LOCATE_AND_LOCK_TRANDEF DEMA,YES
001398 TCP   QR    DD 0301 DDLO  ENTRY LOCATE               1F500040,2153A38C,TXD,DEMA
001399 TCP   QR    DD 0302 DDLO  EXIT  LOCATE/OK            200F9AB0 , D7000000
001400 TCP   QR    XM 0402 XMLD  EXIT  LOCATE_AND_LOCK_TRANDEF/OK 200FBAC0 , 000000B9,DEMA
001401 TCP   QR    DS 0002 DSAT  ENTRY ATTACH               1F509DF8,0,1,NON_SYSTEM,1F509DF8 , 0000030C
001402 TCP   QR    DS 0003 DSAT  EXIT  ATTACH/OK            03840009
001403 TCP   QR    XM 1102 XMAT  EXIT  ATTACH/OK            1F509DF8 , 0000030C,0000030C
001404 TCP   QR    AP FD91 ZATT  EXIT  ATTACH
001405 TCP   QR    AP 4D00 CQCQ  ENTRY MERGE_CIB_QUEUES
001406 TCP   QR    AP 4D01 CQCQ  EXIT  MERGE_CIB_QUEUES/OK
001407 TCP   QR    AP 4D00 CQCQ  ENTRY GET_CIB
001408 TCP   QR    AP 4D01 CQCQ  EXIT  GET_CIB/EXCEPTION    CIB_QUEUE_EMPTY,00000000,00000000
001409 TCP   QR    DS 0004 DSSR  ENTRY WAIT_OLDW            TCP_NORM,00059DD0,CSTP,NO,IDLE,DFHZDSP
001410 XM    QR    DS 0012 DSKE  ENTRY TASK_REPLY           1FFEC780,1F4BF380
001411 XM    QR    XM 1305 XMTA  ENTRY TASK_REPLY           1F509DF8,03840009,03840009
001412 XM    QR    SM 0F01 SMAR  ENTRY ALLOCATE_TRANSACTION_STG BELOW,USER,YES,NO,NO
001413 XM    QR    SM 0F02 SMAR  EXIT  ALLOCATE_TRANSACTION_STG/OK
001414 XM    QR    PG 0801 PGXM  ENTRY INITIALIZE_TRANSACTION
001415 XM    QR    PG 0802 PGXM  EXIT  INITIALIZE_TRANSACTION/OK
001416 XM    QR    AP 0590 APXM  ENTRY INIT_XM_CLIENT       YES

PF1 Help       2            3 End         4 Mask      5 Repeat     6 Return On
PF7 Backward   8 Forward    9 All Trace  10 Left     11 Right     12 Retrieve
```

11. Press **PF4,** and specify a filter mask to display entries for task 00031 only.

```
--------------  CA SymDump for CICS V9.1   FORMATTED TRACE TABLE  --
 TASK  TCB   DM ID   MOD   TYPE OR DATA
 00031 *     *  *    *     *




 PF1 Help       2           3 End         4           5           6
 PF7            8           9 All Trace  10          11          12
```

12. Press **PF3** to activate the filter. The following screen appears.

```
--------------  CA SymDump for CICS V9.1   FORMATTED TRACE TABLE  -------------
 COMMAND ===>                                          MODE: A SCROLL: PAGE
 001698 00031 QR    AP EA00 TMP   ENTRY LOCATE               PFT,DFHCICST
 001699 00031 QR    AP EA01 TMP   EXIT  LOCATE               PFT,DFHCICST,1F5ACB20,NORMAL
 001700 00031 QR    AP 0591 APXM  EXIT  INIT_XM_CLIENT/OK
 001701 00031 QR    AP 1790 TFXM  ENTRY INIT_XM_CLIENT       2005F930 , 02400000
 001702 00031 QR    XM 1001 XMIQ  ENTRY SET_TRANSACTION      TERMINAL,2005F930
 001703 00031 QR    XM 1002 XMIQ  EXIT  SET_TRANSACTION/OK
 001704 00031 QR    AP 1791 TFXM  EXIT  INIT_XM_CLIENT/OK    00000000,00000000,YES,NO
 001705 00031 QR    US 0401 USXM  ENTRY INIT_TRANSACTION_USER 00000000,YES
 001706 00031 QR    XS 0401 XSXM  ENTRY ADD_TRANSACTION_SECURITY 00000000 , 00000000
 001707 00031 QR    XS 0402 XSXM  EXIT  ADD_TRANSACTION_SECURITY/OK
 001708 00031 QR    US 0402 USXM  EXIT  INIT_TRANSACTION_USER/OK 1F52409F , 1F526090,0
 001709 00031 QR    DS 0002 DSAT  ENTRY SET_PRIORITY         1
 001710 00031 QR    DS 0003 DSAT  EXIT  SET_PRIORITY/OK
 001711 00031 QR    KE 0201 KEDD  ENTRY INQUIRE_ANCHOR       0000002C
 001712 00031 QR    KE 0202 KEDD  EXIT  INQUIRE_ANCHOR/OK    1F58A000
 001713 00031 QR    KE 0201 KEDD  ENTRY INQUIRE_ANCHOR       00000010
 001714 00031 QR    KE 0202 KEDD  EXIT  INQUIRE_ANCHOR/OK    800513B0                  001715 00031 QR    DP 0900 DPXM  ENTRY
INIT_XM_CLIENT
 001716 00031 QR    SM 0301 SMGF  ENTRY GETMAIN              2156950C , 00000060,NO,00,DPTA
 001717 00031 QR    SM 0302 SMGF  EXIT  GETMAIN/OK           2002C0F0
 001718 00031 QR    DP 0901 DPXM  EXIT  INIT_XM_CLIENT/OK

 PF1 Help       2           3 End         4 Mask      5 Repeat     6 Return On
 PF7 Backward   8 Forward   9 All Trace  10 Left     11 Right     12 Retrieve
```

13. Type the FIND command **f *exc** to identify the first exception record as shown in Step 13.

14. Press Enter to find the first exception record. CA SymDump for CICS displays the following.

```
--------------  CA SymDump for CICS V9.1   FORMATTED TRACE TABLE  --------
 COMMAND ===>                                        MODE: A SCROLL: PAGE
 CASD6247 *EXC found in entry 001760
 001760 00031 QR    AP 1942 APLI  *EXC* Program-Check         START_PROGRAM,ASMDEMO,CEDF,FULLAPI,EXEC,NO,200C70D0,00000000 , 000000
 001761 00031 QR    AP 0790 SRP   *EXC* PROGRAM_CHECK
 001762 00031 QR    DS 0010 DSBR  ENTRY INQUIRE_TASK
 001763 00031 QR    DS 0011 DSBR  EXIT  INQUIRE_TASK/OK       ESSENTIAL_YES
 001764 00031 QR    DS 0002 DSAT  ENTRY CHANGE_MODE           QR
 001765 00031 QR    DS 0003 DSAT  EXIT  CHANGE_MODE/OK        1F503030 , 00000001
 001766 00031 QR    PG 0500 PGIS  ENTRY INQUIRE_CURRENT_PROGRAM
 001767 00031 QR    PG 0501 PGIS  EXIT  INQUIRE_CURRENT_PROGRAM/OK 2C88,20D00A20,ASMDEMO
 001768 00031 QR    AP 0781 SRP   *EXC* ABEND_ASRA            ASMDEMO,0000019C,CICS
 001769 00031 QR    ME 0301 MEME  ENTRY SEND_MESSAGE          1,AP0001,0005D370 , 00000008,0005D378 , 00000004,0005D368 , 00000008
 001770 00031 QR    SM 0301 SMGF  ENTRY GETMAIN               1F44A0D4 , 00000018,1000,YES,KESTACKS
 001771 00031 QR    SM 0302 SMGF  EXIT  GETMAIN/OK            0004A000
 001772 00031 QR    KE 0101 KETI  ENTRY INQ_LOCAL_DATETIME_DECIMAL
 001773 00031 QR    KE 0102 KETI  EXIT  INQ_LOCAL_DATETIME_DECIMAL/OK 11172004,143250,063745,MMDDYYYY
 001774 00031 QR    KE 0401 KEGD  ENTRY INQUIRE_KERNEL
 001775 00031 QR    KE 0402 KEGD  EXIT  INQUIRE_KERNEL/OK     A11IC9N3,CICS
 001776 00031 QR    ME 0312 MEME  EVENT ISSUE-MVS-GETMAIN
 001777 00031 QR    ME 0313 MEME  EVENT MVS-GETMAIN-COMPLETE
 001778 00031 QR    ME FF45 MEWS  *EXC* SYMREC-ERROR
 001779 00031 QR    ME FF00 SUWT  ENTRY SEND_DIRECT           2000292B , 00000002,20002B0C , 00000001,DFHAP0001 A11IC9N3
 001780 00031 QR    ME FF02 SUWT  EVENT BEFORE-MVS-WTO

 PF1 Help       2            3 End         4 Mask      5 Repeat     6 Return On
 PF7 Backward   8 Forward    9 All Trace  10 Left     11 Right     12 Retrieve
```

15. Specify **TOP** in the command line, as shown in Step 15, and press Enter to position the display at the beginning of the trace.

16. Press **PF4** and specify a filter selection mask to show only EIP entries for task 00031 as shown next.

```
--------------  CA SymDump for CICS V9.1   FORMATTED TRACE TABLE
 TASK  TCB   DM ID   MOD   TYPE OR DATA
 00031 *     *  *    EIP   *




 PF1 Help       2            3 End         4           5           6
 PF7            8            9 All Trace  10          11          12
```

17. Press **PF3** to activate the filter selection mask.

```
--------------  CA SymDump for CICS V9.1   FORMATTED TRACE TABLE  --------------
 COMMAND ===>                                          MODE: A SCROLL: PAGE
 001750 00031 QR    AP 00E1 EIP   ENTRY HANDLE-CONDITION                                  0004,00140488 ...h,08000204 ....
 001753 00031 QR    AP 00E1 EIP   EXIT  HANDLE-CONDITION      OK                        00F4,00000000 ....,00000204 ....
 001754 00031 QR    AP 00E1 EIP   ENTRY READQ-TS                                        0004,00140488 ...h,08000A04 ....
 001759 00031 QR    AP 00E1 EIP   EXIT  READQ-TS             OK                        00F4,00000000 ....,00000A04 ....
 001824 00031 QR    AP 00E1 EIP   ENTRY ADDRESS                                        0004,1F264270 ....,08000202 ...      *
 001825 00031 QR    AP 00E1 EIP   EXIT  ADDRESS              OK                        00F4,00000000 ....,00000202 ....
 001826 00031 QR    AP 00E1 EIP   ENTRY INQUIRE-SYSTEM                                 0004,1F264270 ....,08005402 ....
 001833 00031 QR    AP 00E1 EIP   EXIT  INQUIRE-SYSTEM       OK                        00F4,00000000 ....,00005402 ....
 001834 00031 QR    AP 00E1 EIP   ENTRY LOAD                                           0004,1F264270 ....,08000E06 ....
 001864 00031 QR    AP 00E1 EIP   ENTRY RETURN                                         0004,20100018 ....,08000E08 ....
 001952 00031 QR    AP 00E1 EIP   EXIT  LOAD                 OK                        00F4,00000000 ....,00000E06 ....
 001953 00031 QR    AP 00E1 EIP   ENTRY GETMAIN                                        0004,1F264270 ....,08000C02 ....
 001956 00031 QR    AP 00E1 EIP   EXIT  GETMAIN              OK                        00F4,00000000 ....,00000C02 ....
 001957 00031 QR    AP 00E1 EIP   ENTRY LOAD                                           0004,1F264270 ....,08000E06 ....
 001964 00031 QR    AP 00E1 EIP   EXIT  LOAD                 OK                        00F4,00000000 ....,00000E06 ....
 001965 00031 QR    AP 00E1 EIP   ENTRY GETMAIN                                        0004,1F264270 ....,08000C02 ....
 001968 00031 QR    AP 00E1 EIP   EXIT  GETMAIN              OK                        00F4,00000000 ....,00000C02 ....
 001969 00031 QR    AP 00E1 EIP   ENTRY GETMAIN                                        0004,1F264270 ....,08000C02 ....
 001972 00031 QR    AP 00E1 EIP   EXIT  GETMAIN              OK                        00F4,00000000 ....,00000C02 ....
 001973 00031 QR    AP 00E1 EIP   ENTRY PUSH                                           0004,1F264270 ....,0800020C ....
 001978 00031 QR    AP 00E1 EIP   EXIT  PUSH                 OK                        00F4,00000000 ....,0000020C ....

 PF1 Help       2            3 End         4 Mask      5 Repeat     6 Return On
 PF7 Backward   8 Forward    9 All Trace  10 Left     11 Right     12 Retrieve
```

18. Press **PF9** to turn off filtering and to display all the entries at this point. As shown in the following screen, there was a READQ for QID DEMAG001 followed by a Program Check in program ASMDEMO.

19. Press **PF6** to show the Program name for all programs that made trace entries. You can see that ASMDEMO issued the READQ request.

```
--------------  CA SymDump for CICS V9.1   FORMATTED TRACE TABLE  --------------

 COMMAND ===>                                          MODE: A SCROLL: PAGE
 001750 00031 QR    AP 00E1 EIP   ENTRY HANDLE-CONDITION                                  0004,00140488 ...h,08000 ASMDEMO +000000A0
 001751 00031 QR    PG 0700 PGHM  ENTRY SET_CONDITIONS       20D033BD,20D033BA,001404F4,00140488,ASSEMBLER,80,AMO DFHEEI  +00000328
 001752 00031 QR    PG 0701 PGHM  EXIT  SET_CONDITIONS/OK    0                                                    DFHEEI  +00000328
 001753 00031 QR    AP 00E1 EIP   EXIT  HANDLE-CONDITION     OK                        00F4,00000000 ....,00000 DFHEEI  +00000328
 001754 00031 QR    AP 00E1 EIP   ENTRY READQ-TS                                       0004,00140488 ...h,08000 ASMDEMO +000000CC
 001755 00031 QR    TS 0C01 TSMB  ENTRY MATCH                DEMAU010                                             DFHEITS +00000292
 001756 00031 QR    TS 0C02 TSMB  EXIT  MATCH/OK             ,,,DEMAU010,,00000000,,ANY,NO,NO                     DFHEITS +00000292
 001757 00031 QR    TS 0201 TSQR  ENTRY READ_INTO            DEMAU010,00140610 , 00000000 , 00000024,1,EXEC       DFHEITS +0000097A
 001758 00031 QR    TS 0202 TSQR  EXIT  READ_INTO/OK         00140610 , 00000024 , 00000024,1,NO                  DFHEITS +0000097A
 001759 00031 QR    AP 00E1 EIP   EXIT  READQ-TS             OK                        00F4,00000000 ....,00000 DFHAIP  +000008C2
 001760 00031 QR    AP 1942 APLI  *EXC* Program-Check        START_PROGRAM,ASMDEMO,CEDF,FULLAPI,EXEC,NO,200C70D0, DFHPGDM +0000C618
 001761 00031 QR    AP 0790 SRP   *EXC* PROGRAM_CHECK                                                             DFHSRP  +0000050E
 001762 00031 QR    DS 0010 DSBR  ENTRY INQUIRE_TASK                                                              DFHSRP  +00002F08
 001763 00031 QR    DS 0011 DSBR  EXIT  INQUIRE_TASK/OK      ESSENTIAL_YES                                        DFHSRP  +00002F08
 001764 00031 QR    DS 0002 DSAT  ENTRY CHANGE_MODE          QR                                                   DFHSRP  +00002F54
 001765 00031 QR    DS 0003 DSAT  EXIT  CHANGE_MODE/OK       1F503030 , 00000001                                  DFHSRP  +00002F54
 001766 00031 QR    PG 0500 PGIS  ENTRY INQUIRE_CURRENT_PROGRAM                                                   DFHSRP  +000026DA
 001767 00031 QR    PG 0501 PGIS  EXIT  INQUIRE_CURRENT_PROGRAM/OK 2C88,20D00A20,ASMDEMO                          DFHSRP  +000026DA
 001768 00031 QR    AP 0781 SRP   *EXC* ABEND_ASRA           ASMDEMO,0000019C,CICS                                DFHSRP  +0000050E
 001769 00031 QR    ME 0301 MEME  ENTRY SEND_MESSAGE         1,AP0001,0005D370 , 00000008,0005D378 , 00000004,000 DFHSRP  +00003C72
 001770 00031 QR    SM 0301 SMGF  ENTRY GETMAIN              1F44A0D4 , 00000018,1000,YES,KESTACKS                DFHSIP  +00054454

 PF1 Help       2            3 End         4 Mask      5 Repeat     6 Return Off
 PF7 Backward   8 Forward    9 Filter     10 Left     11 Right     12 Retrieve
```

20. Type **HILITE ASMDEMO** to highlight all entries containing ASMDEMO.

21. Type **F HILITE FIRST** to locate the first HIGHLIGHTED entry in the trace.

```
--------------  CA SymDump for CICS V9.1   FORMATTED TRACE TABLE  --------------
 COMMAND ===>                                          MODE: A SCROLL: PAGE
 CASD6247 HILITE found in entry 001456
 001456 00030 QR    AP 1791 TFXM  EXIT  BIND_XM_CLIENT/OK     YES,ASMDEMO,YES                                  DFHSIP  +0003F7A6
 001457 00030 QR    AP 0590 APXM  ENTRY RMI_START_OF_TASK                                                       DFHSIP  +0003F83E
 001458 00030 QR    AP 2520 ERM   ENTRY CALL-TRUES-FOR-TASK-START                                               DFHAPXM +00000BAA
 001459 00030 QR    SM 0301 SMGF  ENTRY GETMAIN               1F44A0D4 , 00000018,1000,YES,KESTACKS            DFHCSA  +00001894
 001460 00030 QR    SM 0302 SMGF  EXIT  GETMAIN/OK            0004A000                                         DFHCSA  +00001894
 001461 00030 QR    AP F000 XCP   ENTRY ENQ                                                                     DFHERM  +00004B3A
 001462 00030 QR    NQ 0301 NQED  ENTRY ENQUEUE               1F551200,0005D094 , 00000004,YES,UOW,..-.        DFHKCP  +000003D0
 001463 00030 QR    NQ 0302 NQED  EXIT  ENQUEUE/OK            NO                                               DFHKCP  +000003D0
 001464 00030 QR    AP F001 XCP   EXIT  ENQ                                                                     DFHERM  +00004B3A
 001465 00030 QR    SM 0201 SMAD  ENTRY ADD_SUBPOOL           80,8,0,IN25STRU,DOMAIN,FIXED,NO,BELOW,YES        DFHERM  +00004C4E
 001466 00030 QR    CC 2010 CCCC  ENTRY GET                   20001851 , 00000000 , 00000010,SMSUBPOL,IN25STRU DFHSIP  +000E8922
 001467 00030 QR    DS 0004 DSSR  ENTRY WAIT_MVS              CCVSAMWT,1F2C14C0,NO,IO,ASYNRESP                 DFHSIP  +0006C760
 001468 00030 QR    DS 0005 DSSR  EXIT  WAIT_MVS/OK                                                             DFHSIP  +0006C760
 001469 00030 QR    CC 2050 CCCC  EXIT  GET/EXCEPTION         RECORD_NOT_FOUND,20001851 , 00000000 , 00000010  DFHSIP  +000E8922
 001470 00030 QR    LM 0003 LMLM  ENTRY ADD_LOCK              SUBPOOL                                          DFHSIP  +000E9C06
 001471 00030 QR    LM 0004 LMLM  EXIT  ADD_LOCK/OK           1F495448                                         DFHSIP  +000E9C06
 001472 00030 QR    LM 0003 LMLM  ENTRY UNLOCK                1F495448,EXCLUSIVE                               DFHSIP  +000E9C52
 001473 00030 QR    LM 0004 LMLM  EXIT  UNLOCK/OK                                                               DFHSIP  +000E9C52
 001474 00030 QR    SM 0202 SMAD  EXIT  ADD_SUBPOOL/OK        1F484C14 , 0000013D                              DFHERM  +00004C4E
 001475 00030 QR    AP F000 XCP   ENTRY DEQ                                                                     DFHERM  +00004C96
 001476 00030 QR    NQ 0301 NQED  ENTRY DEQUEUE               1F551200,0005D094 , 00000004,UOW,..-.            DFHKCP  +00000546

 PF1 Help       2            3 End         4 Mask      5 Repeat     6 Return Off
 PF7 Backward   8 Forward    9 Filter     10 Left     11 Right     12 Retrieve
```

22. Type **TOP** on the command line and press Enter to reposition the trace.

23. Press **PF4** and specify a filter selection mask to show only READQ entries for task 00031as shown next.

```
--------------  CA SymDump for CICS V9.1   FORMATTED TRACE TABLE  -
 TASK  TCB    DM ID   MOD   TYPE OR DATA
 00031 *      *  *    EIP   READQ




 PF1 Help       2            3 End         4           5           6
 PF7            8            9 All Trace  10          11          12
```

24. Press **PF9** to activate the filter.

```
--------------  CA SymDump for CICS V9.1   FORMATTED TRACE TABLE  --------------
 COMMAND ===>                                                  MODE: A SCROLL: PAGE
 CASD6229 Bottom of data
 001754 00031 QR    AP 00E1 EIP   ENTRY READQ-TS
0004,00140488 ...h,08000 ASMDEMO +000000CC
 001759 00031 QR    AP 00E1 EIP   EXIT  READQ-TS              OK
00F4,00000000 ....,00000 DFHAIP  +000008C2




 PF1 Help       2            3 End         4 Mask      5 Repeat     6 Return Off
 PF7 Backward   8 Forward    9 All Trace  10 Left     11 Right     12 Retrieve
```

25. Press **PF9** to turn off the filter.

```
--------------  CA SymDump for CICS V9.1   FORMATTED TRACE TABLE  --------------
COMMAND ===>                                          MODE: A SCROLL: PAGE
001754 00031 QR    AP 00E1 EIP   ENTRY READQ-TS                                  0004,00140488 ...h,08000 ASMDEMO +000000CC
001755 00031 QR    TS 0C01 TSMB  ENTRY MATCH               DEMAU010                                        DFHEITS +00000292
001756 00031 QR    TS 0C02 TSMB  EXIT  MATCH/OK            ,,,DEMAU010,,00000000,,ANY,NO,NO                DFHEITS +00000292
001757 00031 QR    TS 0201 TSQR  ENTRY READ_INTO           DEMAU010,00140610 , 00000000 , 00000024,1,EXEC  DFHEITS +0000097A
001758 00031 QR    TS 0202 TSQR  EXIT  READ_INTO/OK        00140610 , 00000024 , 00000024,1,NO             DFHEITS +0000097A
001759 00031 QR    AP 00E1 EIP   EXIT  READQ-TS            OK                          00F4,00000000 ....,00000 DFHAIP  +000008C2
001760 00031 QR    AP 1942 APLI  *EXC* Program-Check       START_PROGRAM,ASMDEMO,CEDF,FULLAPI,EXEC,NO,200C70D0, DFHPGDM +0000C618
001761 00031 QR    AP 0790 SRP   *EXC* PROGRAM_CHECK                                                       DFHSRP  +0000050E
001762 00031 QR    DS 0010 DSBR  ENTRY INQUIRE_TASK                                                        DFHSRP  +00002F08
001763 00031 QR    DS 0011 DSBR  EXIT  INQUIRE_TASK/OK     ESSENTIAL_YES                                   DFHSRP  +00002F08
001764 00031 QR    DS 0002 DSAT  ENTRY CHANGE_MODE         QR                                              DFHSRP  +00002F54
001765 00031 QR    DS 0003 DSAT  EXIT  CHANGE_MODE/OK      1F503030 , 00000001                             DFHSRP  +00002F54
001766 00031 QR    PG 0500 PGIS  ENTRY INQUIRE_CURRENT_PROGRAM                                             DFHSRP  +000026DA
001767 00031 QR    PG 0501 PGIS  EXIT  INQUIRE_CURRENT_PROGRAM/OK 2C88,20D00A20,ASMDEMO                    DFHSRP  +000026DA
001768 00031 QR    AP 0781 SRP   *EXC* ABEND_ASRA          ASMDEMO,0000019C,CICS                           DFHSRP  +0000050E
001769 00031 QR    ME 0301 MEME  ENTRY SEND_MESSAGE        1,AP0001,0005D370 , 00000008,0005D378 , 00000004,000 DFHSRP  +00003C72
001770 00031 QR    SM 0301 SMGF  ENTRY GETMAIN             1F44A0D4 , 00000018,1000,YES,KESTACKS           DFHSIP  +00054454
001771 00031 QR    SM 0302 SMGF  EXIT  GETMAIN/OK          0004A000                                        DFHSIP  +00054454
001772 00031 QR    KE 0101 KETI  ENTRY INQ_LOCAL_DATETIME_DECIMAL                                          DFHSIP  +000821F4
001773 00031 QR    KE 0102 KETI  EXIT  INQ_LOCAL_DATETIME_DECIMAL/OK 11172004,143250,063745,MMDDYYYY      DFHSIP  +000821F4
001774 00031 QR    KE 0401 KEGD  ENTRY INQUIRE_KERNEL                                                      DFHSIP  +000822D6

PF1 Help       2            3 End         4 Mask      5 Repeat     6 Return Off
PF7 Backward   8 Forward    9 Filter     10 Left     11 Right     12 Retrieve
```

26. Type **L 1750** to position the trace to line 1750 and press Enter.

```
--------------  CA SymDump for CICS V9.1   FORMATTED TRACE TABLE  --------------
 COMMAND ===>                                          MODE: A SCROLL: PAGE
 001750 00031 QR    AP 00E1 EIP   ENTRY HANDLE-CONDITION                                0004,00140488 ...h,08000 ASMDEMO +000000A0
 001751 00031 QR    PG 0700 PGHM  ENTRY SET_CONDITIONS        20D033BD,20D033BA,001404F4,00140488,ASSEMBLER,80,AMO DFHEEI  +00000328
 001752 00031 QR    PG 0701 PGHM  EXIT  SET_CONDITIONS/OK     0                                                    DFHEEI  +00000328
 001753 00031 QR    AP 00E1 EIP   EXIT  HANDLE-CONDITION      OK                          00F4,00000000 ....,00000 DFHEEI  +00000328
 001754 00031 QR    AP 00E1 EIP   ENTRY READQ-TS                                       0004,00140488 ...h,08000 ASMDEMO +000000CC
 001755 00031 QR    TS 0C01 TSMB  ENTRY MATCH                 DEMAU010                                             DFHEITS +00000292
 001756 00031 QR    TS 0C02 TSMB  EXIT  MATCH/OK              ,,,DEMAU010,,00000000,,ANY,NO,NO                     DFHEITS +00000292
 001757 00031 QR    TS 0201 TSQR  ENTRY READ_INTO             DEMAU010,00140610 , 00000000 , 00000024,1,EXEC       DFHEITS +0000097A
 001758 00031 QR    TS 0202 TSQR  EXIT  READ_INTO/OK          00140610 , 00000024 , 00000024,1,NO                  DFHEITS +0000097A
 001759 00031 QR    AP 00E1 EIP   EXIT  READQ-TS              OK                          00F4,00000000 ....,00000 DFHAIP  +000008C2
 001760 00031 QR    AP 1942 APLI  *EXC* Program-Check         START_PROGRAM,ASMDEMO,CEDF,FULLAPI,EXEC,NO,200C70D0, DFHPGDM +0000C618
 001761 00031 QR    AP 0790 SRP   *EXC* PROGRAM_CHECK                                                              DFHSRP  +0000050E
 001762 00031 QR    DS 0010 DSBR  ENTRY INQUIRE_TASK                                                               DFHSRP  +00002F08
 001763 00031 QR    DS 0011 DSBR  EXIT  INQUIRE_TASK/OK       ESSENTIAL_YES                                        DFHSRP  +00002F08
 001764 00031 QR    DS 0002 DSAT  ENTRY CHANGE_MODE           QR                                                   DFHSRP  +00002F54
 001765 00031 QR    DS 0003 DSAT  EXIT  CHANGE_MODE/OK        1F503030 , 00000001                                  DFHSRP  +00002F54
 001766 00031 QR    PG 0500 PGIS  ENTRY INQUIRE_CURRENT_PROGRAM                                                    DFHSRP  +000026DA
 001767 00031 QR    PG 0501 PGIS  EXIT  INQUIRE_CURRENT_PROGRAM/OK 2C88,20D00A20,ASMDEMO                           DFHSRP  +000026DA
 001768 00031 QR    AP 0781 SRP   *EXC* ABEND_ASRA            ASMDEMO,0000019C,CICS                                DFHSRP  +0000050E
 001769 00031 QR    ME 0301 MEME  ENTRY SEND_MESSAGE          1,AP0001,0005D370 , 00000008,0005D378 , 00000004,000 DFHSRP  +00003C72
 001770 00031 QR    SM 0301 SMGF  ENTRY GETMAIN               1F44A0D4 , 00000018,1000,YES,KESTACKS                DFHSIP  +00054454

 PF1 Help       2            3 End         4 Mask      5 Repeat     6 Return Off
 PF7 Backward   8 Forward    9 Filter     10 Left     11 Right     12 Retrieve
```

27. Type **MODE S** on the command line to change the mode of the trace to short. Now you can see the times that entries were made.

```
--------------  CA SymDump for CICS V9.1   FORMATTED TRACE TABLE  --------------
 COMMAND ===>                                          MODE: S SCROLL: PAGE
 001750 00031 QR    AP 00E1 EIP   ENTRY HANDLE-CONDITION                    REQ(0004) FIELD-A(00140488 ...h) FIEL ASMDEMO +000000A0
                                                                                RET-A0D00AE8 14:32:50.8825789560 00.0000021406 =
 001751 00031 QR    PG 0700 PGHM  ENTRY SET_CONDITIONS IDENTIFIERS(20D033BD) LABELS_FLAGS(20D033BA) LABELS(001404F DFHEEI  +00000328
                                        (00140488) LANGUAGE(ASSEMBLER) CURRENT_EXECUTION_KEY(80) AMODE(AMODE31)
                                                                                RET-9FC19028 14:32:50.8825832685 00.0000043125 =
 001752 00031 QR    PG 0701 PGHM  EXIT  SET_CONDITIONS/OK FASTPATH_FLAGS(0)     RET-9FC19028 14:32:50.88258664 DFHEEI  +00000328
 001753 00031 QR    AP 00E1 EIP   EXIT  HANDLE-CONDITION OK                   REQ(00F4) FIELD-A(00000000 ....) FIEL DFHEEI  +00000328
                                                                                RET-9FC19028 14:32:50.8825877060 00.0000010625 =
 001754 00031 QR    AP 00E1 EIP   ENTRY READQ-TS                             REQ(0004) FIELD-A(00140488 ...h) FIEL ASMDEMO +000000CC
                                                                                RET-A0D00B14 14:32:50.8825885185 00.0000008125 =
 001755 00031 QR    TS 0C01 TSMB  ENTRY MATCH QUEUE_NAME(DEMAU010)             RET-9F92D9E2 14:32:50.88259261 DFHEITS +00000292
 001756 00031 QR    TS 0C02 TSMB  EXIT  MATCH/OK TSMODEL_NAME() PREFIX() REMOTE_PREFIX() REMOTE_NAME(DEMAU010) POO DFHEITS +00000292
                                        (00000000) SYSID() MAIN(ANY) RECOVERABLE(NO) SECURITY(NO)
                                                                                RET-9F92D9E2 14:32:50.8825972685 00.0000046562 =
 001757 00031 QR    TS 0201 TSQR  ENTRY READ_INTO QUEUE_NAME(DEMAU010) ITEM_BUFFER(00140610 , 00000000 , 00000024) DFHEITS +0000097A
                                        (EXEC)                                  RET-9F92E0CA 14:32:50.8825997373 00.0000024687 =
 001758 00031 QR    TS 0202 TSQR  EXIT  READ_INTO/OK ITEM_BUFFER(00140610 , 00000024 , 00000024) TOTAL_ITEMS(1) FM DFHEITS +0000097A
                                                                                RET-9F92E0CA 14:32:50.8826042685 00.0000045312 =
 001759 00031 QR    AP 00E1 EIP   EXIT  READQ-TS OK                           REQ(00F4) FIELD-A(00000000 ....) FIEL DFHAIP  +000008C2
                                                                                RET-800828C2 14:32:50.8826051904 00.0000009218 =
 001760 00031 QR    AP 1942 APLI  *EXC* Program-Check   FUNCTION(START_PROGRAM) PROGRAM(ASMDEMO) CEDF_STATUS(CEDF) DFHPGDM +0000C618

 PF1 Help       2            3 End         4 Mask      5 Repeat     6 Return Off
 PF7 Backward   8 Forward    9 Filter     10 Left     11 Right     12 Retrieve
```

28. Tab to the MODE field to the right of the command line. Type **F** to place the trace into FULL mode and press Enter.

```
--------------  CA SymDump for CICS V9.1   FORMATTED TRACE TABLE  --------------
 COMMAND ===>                                          MODE: F SCROLL: PAGE
 001750 AP 00E1 EIP ENTRY HANDLE-CONDITION                REQ(0004) FIELD-A(00140488 ...h) FIELD-B(08000204 .. ASMDEMO +000000A0
        TASK-00031 KE_NUM-0039 TCB-QR   /007AAD08 RET-A0D00AE8 TIME-14:32:50.8825789560 INTERVAL-00.0000021406        =001750=
 001751 PG 0700 PGHM  ENTRY - FUNCTION(SET_CONDITIONS) IDENTIFIERS(20D033BD) LABELS_FLAGS(20D033BA) LABELS(001404F DFHEEI  +00000328
             (00140488) LANGUAGE(ASSEMBLER) CURRENT_EXECUTION_KEY(80) AMODE(AMODE31)
        TASK-00031 KE_NUM-0039 TCB-QR   /007AAD08 RET-9FC19028 TIME-14:32:50.8825832685 INTERVAL-00.0000043125        =001751=
          1-0000  00500000 0000009A 00000000 00000000  BC782200 00000000 01000100 20D033BD  *.&.........................}..*
            0020  20D033BA 00E10478 0005D3A0 00000012  001404F4 00140488 01807F30 0005D5A4  *.}........L........4...h.."...Nu*
            0040  20D033B8 001404F0 20000F02 01404040                                      *.}.....0.....                  *
 001752 PG 0701 PGHM  EXIT  - FUNCTION(SET_CONDITIONS) RESPONSE(OK) FASTPATH_FLAGS(0)                                DFHEEI  +00000328
        TASK-00031 KE_NUM-0039 TCB-QR   /007AAD08 RET-9FC19028 TIME-14:32:50.8825866435 INTERVAL-00.0000033750        =001752=
          1-0000  00500000 0000009A 00000000 00000000  BC782200 00000000 01000100 20D033BD  *.&.........................}..*
            0020  20D033BA 00E10478 0005D3A0 00000012  001404F4 00140488 01807F30 0005D5A4  *.}........L........4...h.."...Nu*
            0040  20D033B8 00140000 20000F02 01404040                                      *.}...........                  *

        TASK-00031 KE_NUM-0039 TCB-QR   /007AAD08 RET-9FC19028 TIME-14:32:50.8825877060 INTERVAL-00.0000010625        =001753=
 001754 AP 00E1 EIP ENTRY READQ-TS                        REQ(0004) FIELD-A(00140488 ...h) FIELD-B(08000A04 .. ASMDEMO +000000CC
        TASK-00031 KE_NUM-0039 TCB-QR   /007AAD08 RET-A0D00B14 TIME-14:32:50.8825885185 INTERVAL-00.0000008125        =001754=
 001755 TS 0C01 TSMB  ENTRY - FUNCTION(MATCH) QUEUE_NAME(DEMAU010)                                                   DFHEITS +00000292
        TASK-00031 KE_NUM-0039 TCB-QR   /007AAD08 RET-9F92D9E2 TIME-14:32:50.8825926123 INTERVAL-00.0000040937        =001755=
          1-0000  00800000 0000016F 00000000 00000000  BFF70000 00000000 05000000 00000000  *.......?.........7.............*
            0020  00000000 C4C5D4C1 E4F0F1F0 40404040  40404040 00000000 00000000 00000000  *....DEMAU010        ............*

 PF1 Help       2            3 End         4 Mask      5 Repeat     6 Return Off
 PF7 Backward   8 Forward    9 Filter     10 Left     11 Right     12 Retrieve
```

29. Tab to the Mode field and type **A** to place the trace back into ABBREVIATED mode and press Enter.

```
--------------  CA SymDump for CICS V9.1   FORMATTED TRACE TABLE  --------------
 COMMAND ===>                                          MODE: A SCROLL: PAGE
 001750 00031 QR    AP 00E1 EIP   ENTRY HANDLE-CONDITION                                0004,00140488 ...h,08000 ASMDEMO +000000A0
 001751 00031 QR    PG 0700 PGHM  ENTRY SET_CONDITIONS        20D033BD,20D033BA,001404F4,00140488,ASSEMBLER,80,AMO DFHEEI  +00000328
 001752 00031 QR    PG 0701 PGHM  EXIT  SET_CONDITIONS/OK     0                                                    DFHEEI  +00000328
 001753 00031 QR    AP 00E1 EIP   EXIT  HANDLE-CONDITION      OK                          00F4,00000000 ....,00000 DFHEEI  +00000328
 001754 00031 QR    AP 00E1 EIP   ENTRY READQ-TS                                        0004,00140488 ...h,08000 ASMDEMO +000000CC
 001755 00031 QR    TS 0C01 TSMB  ENTRY MATCH                 DEMAU010                                             DFHEITS +00000292
 001756 00031 QR    TS 0C02 TSMB  EXIT  MATCH/OK              ,,,DEMAU010,,00000000,,ANY,NO,NO                     DFHEITS +00000292
 001757 00031 QR    TS 0201 TSQR  ENTRY READ_INTO             DEMAU010,00140610 , 00000000 , 00000024,1,EXEC       DFHEITS +0000097A
 001758 00031 QR    TS 0202 TSQR  EXIT  READ_INTO/OK          00140610 , 00000024 , 00000024,1,NO                  DFHEITS +0000097A
 001759 00031 QR    AP 00E1 EIP   EXIT  READQ-TS              OK                          00F4,00000000 ....,00000 DFHAIP  +000008C2
 001760 00031 QR    AP 1942 APLI  *EXC* Program-Check         START_PROGRAM,ASMDEMO,CEDF,FULLAPI,EXEC,NO,200C70D0, DFHPGDM +0000C618
 001761 00031 QR    AP 0790 SRP   *EXC* PROGRAM_CHECK                                                              DFHSRP  +0000050E
 001762 00031 QR    DS 0010 DSBR  ENTRY INQUIRE_TASK                                                               DFHSRP  +00002F08
 001763 00031 QR    DS 0011 DSBR  EXIT  INQUIRE_TASK/OK       ESSENTIAL_YES                                        DFHSRP  +00002F08
 001764 00031 QR    DS 0002 DSAT  ENTRY CHANGE_MODE           QR                                                   DFHSRP  +00002F54
 001765 00031 QR    DS 0003 DSAT  EXIT  CHANGE_MODE/OK        1F503030 , 00000001                                  DFHSRP  +00002F54
 001766 00031 QR    PG 0500 PGIS  ENTRY INQUIRE_CURRENT_PROGRAM                                                    DFHSRP  +000026DA
 001767 00031 QR    PG 0501 PGIS  EXIT  INQUIRE_CURRENT_PROGRAM/OK 2C88,20D00A20,ASMDEMO                           DFHSRP  +000026DA
 001768 00031 QR    AP 0781 SRP   *EXC* ABEND_ASRA            ASMDEMO,0000019C,CICS                                DFHSRP  +0000050E
 001769 00031 QR    ME 0301 MEME  ENTRY SEND_MESSAGE          1,AP0001,0005D370 , 00000008,0005D378 , 00000004,000 DFHSRP  +00003C72
 001770 00031 QR    SM 0301 SMGF  ENTRY GETMAIN               1F44A0D4 , 00000018,1000,YES,KESTACKS                DFHSIP  +00054454

 PF1 Help       2            3 End         4 Mask      5 Repeat     6 Return Off
 PF7 Backward   8 Forward    9 Filter     10 Left     11 Right     12 Retrieve
```

30. Type **L 1760** on the command line to position the trace to line 1760 and press Enter.

```
--------------  CA SymDump for CICS V9.1   FORMATTED TRACE TABLE  --------------
 COMMAND ===>                                          MODE: A SCROLL: PAGE
 001760 00031 QR    AP 1942 APLI  *EXC* Program-Check         START_PROGRAM,ASMDEMO,CEDF,FULLAPI,EXEC,NO,200C70D0, DFHPGDM +0000C618
 001761 00031 QR    AP 0790 SRP   *EXC* PROGRAM_CHECK                                                              DFHSRP  +0000050E
 001762 00031 QR    DS 0010 DSBR  ENTRY INQUIRE_TASK                                                              DFHSRP  +00002F08
 001763 00031 QR    DS 0011 DSBR  EXIT  INQUIRE_TASK/OK       ESSENTIAL_YES                                       DFHSRP  +00002F08
 001764 00031 QR    DS 0002 DSAT  ENTRY CHANGE_MODE           QR                                                  DFHSRP  +00002F54
 001765 00031 QR    DS 0003 DSAT  EXIT  CHANGE_MODE/OK        1F503030 , 00000001                                 DFHSRP  +00002F54
 001766 00031 QR    PG 0500 PGIS  ENTRY INQUIRE_CURRENT_PROGRAM                                                   DFHSRP  +000026DA
 001767 00031 QR    PG 0501 PGIS  EXIT  INQUIRE_CURRENT_PROGRAM/OK 2C88,20D00A20,ASMDEMO                          DFHSRP  +000026DA
 001768 00031 QR    AP 0781 SRP   *EXC* ABEND_ASRA            ASMDEMO,0000019C,CICS                               DFHSRP  +0000050E
 001769 00031 QR    ME 0301 MEME  ENTRY SEND_MESSAGE          1,AP0001,0005D370 , 00000008,0005D378 , 00000004,000 DFHSRP  +00003C72
 001770 00031 QR    SM 0301 SMGF  ENTRY GETMAIN               1F44A0D4 , 00000018,1000,YES,KESTACKS               DFHSIP  +00054454
 001771 00031 QR    SM 0302 SMGF  EXIT  GETMAIN/OK            0004A000                                            DFHSIP  +00054454
 001772 00031 QR    KE 0101 KETI  ENTRY INQ_LOCAL_DATETIME_DECIMAL                                                DFHSIP  +000821F4
 001773 00031 QR    KE 0102 KETI  EXIT  INQ_LOCAL_DATETIME_DECIMAL/OK 11172004,143250,063745,MMDDYYYY            DFHSIP  +000821F4
 001774 00031 QR    KE 0401 KEGD  ENTRY INQUIRE_KERNEL                                                            DFHSIP  +000822D6
 001775 00031 QR    KE 0402 KEGD  EXIT  INQUIRE_KERNEL/OK     A11IC9N3,CICS                                       DFHSIP  +000822D6
 001776 00031 QR    ME 0312 MEME  EVENT ISSUE-MVS-GETMAIN                                                         DFHSRP  +00003C72
 001777 00031 QR    ME 0313 MEME  EVENT MVS-GETMAIN-COMPLETE                                                      DFHSRP  +00003C72
 001778 00031 QR    ME FF45 MEWS  *EXC* SYMREC-ERROR                                                              DFHSIP  +0007D68C
 001779 00031 QR    ME FF00 SUWT  ENTRY SEND_DIRECT           2000292B , 00000002,20002B0C , 00000001,DFHAP0001 A1 DFHSIP  +000875C8
 001780 00031 QR    ME FF02 SUWT  EVENT BEFORE-MVS-WTO                                                            DFHSIP  +000875C8

 PF1 Help       2            3 End         4 Mask      5 Repeat     6 Return Off
 PF7 Backward   8 Forward    9 Filter     10 Left     11 Right     12 Retrieve
```

31. Tab to line 001760 on the left of the screen, and type **F** to override this line only to FULL mode, and press Enter.

```
--------------  CA SymDump for CICS V9.1   FORMATTED TRACE TABLE  --------------
 COMMAND ===>                                          MODE: A SCROLL: PAGE
 001760 AP 1942 APLI  *EXC* - Program-Check   FUNCTION(START_PROGRAM) PROGRAM(ASMDEMO) CEDF_STATUS(CEDF) EXECUTION DFHPGDM +0000C618
            ENVIRONMENT_TYPE(EXEC) SYNCONRETURN(NO) LANGUAGE_BLOCK(200C70D0) COMMAREA(00000000 , 00000000) LINK_LEVEL(1)
            SYSEIB_REQUEST(NO)
        TASK-00031 KE_NUM-0039 TCB-QR   /007AAD08 RET-9F794B08 TIME-14:32:50.8915181123 INTERVAL-00.0089289218        =001760=
          1-0000  01A00000 000000DA 00000000 00000000  B81B4EA0 00000000 02000100 C1E2D4C4  *.................+.........ASMD*
            0020  C5D4D640 200E0AF8 0000007C 200E0AF8  9F13A501 01D00202 20D00A20 200C70D0  *EMO ...8...@...8..v..}...}.....}*
            0040  00002C88 00000000 00000000 00000000  00000000 00013202 00029620 80095E5A  *...h.....................o...;!*
            0060  0005D388 00000000 20020E00 00000400  02FEC780 00007000 00008258 92FF7EC4  *..Lh.............G.......b.k.=D*
            0080  20001678 00095D68 20000990 00000000  E100C5D9 00000000 00000000 00000000  *.....).....ER............*
            00A0  80000000 0004D030 20000C60 0014005C  80096778 A0051850 0009677E 0004D030  *.....}....-...*.......&...=..}.*
            00C0  1FFEC780 00095B72 00000000 00000000  000888C2 20000C60 000888D4 00000000  *..G...$...........hB...-..hM....*
            00E0  00099620 00000000 800513B0 00000001  1F4BF380 80097464 00000000 20001308  *..o.............3.............*
            0100  000888C2 0014005C 1F5460A0 20000C60  20000E00 0004C030 00083284 00099620  *..hB...*..-....-......{....d..o.*
            0120  80095E5A 0005D388 0005D080 0004C030  800513B0 00000048 200FBAC0 000000B9  *..;!..Lh..}...{...........{....*
            0140  BC229A0D C4377F4C 1A11E4E2 C9D3C4C1  F0F14BC1 F5F5E3E4 F0F1F022 9A0DC437  *....D."<..USILDA01.A55TU010...D.*
            0160  7F000100 20000F28 00000000 00000000  D8D9D8D9 00000000 00000000 00000000  *".............QRQR............*
            0180  00000001 00000001 00000000 00000000  00000000 00000000 00000000 01800080  *................................*
          2-0000  F0C3F761 C1D2C5C1 018400C7 0000FFFF  C4C6C8C1 D7D3C9F1 1F8C43C0 1F4BF380  *0C7/AKEA.d.G....DFHAPLI1...{..3.*
            0020  0005D080 1FFEC780 00000001 00000000  FF850007 00000000 078D0000 A0D00BBC  *..}...G..........e...........}..*
            0040  00060007 00000000 A0D00BBC 80000000  20D00B36 001404F0 A0D00A48 A0D01A48  *.........}.......}.....0.}...}..*
            0060  A0D02A48 000001D5 00000232 A0D03A48  00000000 00000000 20001760 001400D0  *.}.....N.....}.............-...}*

 PF1 Help       2            3 End         4 Mask      5 Repeat     6 Return Off
 PF7 Backward   8 Forward    9 Filter     10 Left     11 Right     12 Retrieve
```

32. Type **RESET OVERRIDES** to reset all overrides.

```
--------------  CA SymDump for CICS V9.1   FORMATTED TRACE TABLE  --------------
 COMMAND ===>                                          MODE: A SCROLL: PAGE
 001760 00031 QR    AP 1942 APLI  *EXC* Program-Check         START_PROGRAM,ASMDEMO,CEDF,FULLAPI,EXEC,NO,200C70D0, DFHPGDM +0000C618
 001761 00031 QR    AP 0790 SRP   *EXC* PROGRAM_CHECK                                                              DFHSRP  +0000050E
 001762 00031 QR    DS 0010 DSBR  ENTRY INQUIRE_TASK                                                              DFHSRP  +00002F08
 001763 00031 QR    DS 0011 DSBR  EXIT  INQUIRE_TASK/OK       ESSENTIAL_YES                                       DFHSRP  +00002F08
 001764 00031 QR    DS 0002 DSAT  ENTRY CHANGE_MODE           QR                                                  DFHSRP  +00002F54
 001765 00031 QR    DS 0003 DSAT  EXIT  CHANGE_MODE/OK        1F503030 , 00000001                                 DFHSRP  +00002F54
 001766 00031 QR    PG 0500 PGIS  ENTRY INQUIRE_CURRENT_PROGRAM                                                   DFHSRP  +000026DA
 001767 00031 QR    PG 0501 PGIS  EXIT  INQUIRE_CURRENT_PROGRAM/OK 2C88,20D00A20,ASMDEMO                          DFHSRP  +000026DA
 001768 00031 QR    AP 0781 SRP   *EXC* ABEND_ASRA            ASMDEMO,0000019C,CICS                               DFHSRP  +0000050E
 001769 00031 QR    ME 0301 MEME  ENTRY SEND_MESSAGE          1,AP0001,0005D370 , 00000008,0005D378 , 00000004,000 DFHSRP  +00003C72
 001770 00031 QR    SM 0301 SMGF  ENTRY GETMAIN               1F44A0D4 , 00000018,1000,YES,KESTACKS               DFHSIP  +00054454
 001771 00031 QR    SM 0302 SMGF  EXIT  GETMAIN/OK            0004A000                                            DFHSIP  +00054454
 001772 00031 QR    KE 0101 KETI  ENTRY INQ_LOCAL_DATETIME_DECIMAL                                                DFHSIP  +000821F4
 001773 00031 QR    KE 0102 KETI  EXIT  INQ_LOCAL_DATETIME_DECIMAL/OK 11172004,143250,063745,MMDDYYYY            DFHSIP  +000821F4
 001774 00031 QR    KE 0401 KEGD  ENTRY INQUIRE_KERNEL                                                            DFHSIP  +000822D6
 001775 00031 QR    KE 0402 KEGD  EXIT  INQUIRE_KERNEL/OK     A11IC9N3,CICS                                       DFHSIP  +000822D6
 001776 00031 QR    ME 0312 MEME  EVENT ISSUE-MVS-GETMAIN                                                         DFHSRP  +00003C72
 001777 00031 QR    ME 0313 MEME  EVENT MVS-GETMAIN-COMPLETE                                                      DFHSRP  +00003C72
 001778 00031 QR    ME FF45 MEWS  *EXC* SYMREC-ERROR                                                              DFHSIP  +0007D68C
 001779 00031 QR    ME FF00 SUWT  ENTRY SEND_DIRECT           2000292B , 00000002,20002B0C , 00000001,DFHAP0001 A1 DFHSIP  +000875C8
 001780 00031 QR    ME FF02 SUWT  EVENT BEFORE-MVS-WTO                                                            DFHSIP  +000875C8

 PF1 Help       2            3 End         4 Mask      5 Repeat     6 Return Off
 PF7 Backward   8 Forward    9 Filter     10 Left     11 Right     12 Retrieve
```

33. Type **RESET HILITE** to reset all HILIGHTS.

34. Press **PF3** End Trace to exit the Formatted Trace Table facility. Use **PF3** again to exit the menus.

Chapter 8: Using CA InterTest for CICS to Find Errors

If you also have CA InterTest for CICS, you can use it to locate errors. This chapter explains how to locate errors using CA InterTest for CICS.

The example in this chapter lets you find and correct the error without re-executing the program. However, sometimes you will want to monitor the program with CA InterTest for CICS to learn more about what caused the error. You can turn monitoring on directly from the Source Listing Dump Analysis screen by entering MONITOR in the command line or pressing PF5. You can also set breakpoints or other monitoring options from this display, and then all you have to do is exit from CA SymDump for CICS and re-execute the transaction.

When CA InterTest for CICS halts the program at an automatic breakpoint or at a breakpoint you set, you can use the full power of CA InterTest for CICS to debug the program. For example, you can:

- Examine the backtrace to determine the logic flow up to that point
- Dynamically correct the problem and resume execution

With both CA SymDump for CICS and CA InterTest for CICS, you have all the tools you need to find and correct a problem.

This section contains the following topics:

View the Breakpoint at the Triggering Source Statement

CA InterTest for CICS makes it easy to find the error that caused the abend. This example shows you how to use CA InterTest for CICS facilities while viewing a dump.

To see the CA InterTest for CICS breakpoint at the source statement that triggered the abend, select the Source display from the Display Selection screen (see View a Dump and Its Information (see page 37)). The following screen appears:

```
                    CA InterTest - SOURCE LISTING DUMP ANALYSIS
COMMAND ===>
Program= COBDEMO  Option #       Stmt #                            Margin= 01
                                        Search=
------------------------------------------------------------------------------
 _ 00880 CONTINUE-TASK.
   00881**** TASKNUM *NOTE* FIELD MUST BE INITIALIZED
 A   ==>     ADD +1 TO TASKNUM.
     ==>
     ==> ABEND/DUMP CODE: ASRA
     ==>
     ==>      Press PF1 for a detailed description.
     ==>
 _ 00883     IF TASKNUM = 1
 .
 .
 .
```

The A to the left of statement 882 indicates that the abend occurred at this statement. The ASRA was caused by improperly formatted data. Since the statement *ADD +1 TO TASKNUM* triggered the abend, it is likely that TASKNUM contains invalid data.

Redisplay the Abend

Even though a task abended, CA SymDump for CICS lets you redisplay the abend that caused the dump at a breakpoint so you can use CA InterTest for CICS to discover the reason for the abend.

To redisplay the abend that caused the dump at a breakpoint

1. Display the contents of TASKNUM by entering a **d** to the left of statement 882.
2. Place the cursor under any character in TASKNUM, and press Enter. The following CA InterTest for CICS screen appears.

The structured CORE display reveals that TASKNUM contains binary zeros instead of a valid packed decimal value.

```
              CA InterTest - MAIN STORAGE UTILITY - Termid = E024
Starting at Address =  1461A4               Hexadecimal            Character

 02 TASKNUM                          000000                      ...
 02 TASK-TEXT
  03 TASK-ID-NO                      000F                        ..
  03 FILLER                          40
  03 TASK-MESG                       E3C8C9E2 40C9E240 C140D4C5  THIS IS A ME
                                     E2E2C1C7 C5404040           SSAGE
  03 FILLER                          40
  03 TASK-DATE
   04 TASK-MM                        F0F9                        09
   04 TASK-SL1                       61                          /
   04 TASK-DD                        F1F5                        15
   04 TASK-SL2                       61                          /
   04 TASK-YY                        F9F3                        93
_____________________________________________________________________________
 PF1 Help       2            3 End       4 Return     5            6
 PF7 Backward   8 Forward    9 Caps Off  10           11 Redisplay 12 Structure
CORE='TASKNUM'
CORE052 FIELD DOES NOT CONTAIN A VALID PACKED DECIMAL (COMP-3) VALUE
```

You can go one step further and see where TASKNUM was defined in your program.

3. Press **Clear** to return to the Source Listing Dump Analysis screen.

Locate Where TASKNUM Was Initialized

To see where TASKNUM was initialized, enter **TASKNUM** in the Search= field and press Enter. This instructs CA InterTest for CICS to display the source statement defining TASKNUM. The following screen appears.

```
                    CA InterTest - SOURCE LISTING DUMP ANALYSIS
COMMAND ===>
Program= COBDEMO  Option #       Stmt #                              Margin= 01
                                        Search=
------------------------------------------------------------------------------
   00445     03 TASK-SWITCH2          PIC 99.
   00446     03 TASK-SWITCH3          PIC X.
   00447     03 TASKNUM               PIC S9(5)  COMP-3.
   00448     03 TASK-TEXT.
  .
  .
  .
```

CA InterTest for CICS highlights statement number 447 in Working Storage, which defines TASKNUM as a COMP-3 field. Notice that the VALUE clause needed to initialize TASKNUM is missing. Because TASKNUM never initialized, it does not contain a valid packed decimal value. When the program tries to add one to this field, a data exception occurs.

Using CA InterTest for CICS to determine the cause of the abend makes it easy to correct the error. For example, in this case you could initialize TASKNUM either by adding VALUE +0 to statement 447 or by coding the statement MOVE ZEROS TO TASKNUM in the Procedure Division. Then recompile the program.

Appendix A: Printing the Help File

The CA SymDump for CICS Help file contains extensive tutorial information that can display online by entering HELP or by pressing PF1 from any CA SymDump for CICS screen. It has a browse capability from any point of access.

This section contains the following topics:

Help File Printout

You can print the Help file once it is loaded from the distribution tape using the JCL shown in this section. The following list contains some Help file facts and tips:

- The input to the program is the VSAM KSDS file that was loaded from the distribution tape.
- The program prints one screen image per page. The output is over 1000 pages.
- The printout is formatted as 81-byte fixed length records; the first byte contains the ANSI print control character, such as 1 for new page or a plus sign, **+**, to overprint the same line.
- It is produced in uppercase and lowercase to enhance readability.
- If your printer cannot handle lowercase characters specify PARM=UPPER in the EXEC statement of the JCL as shown in the following example.

```
//PRINHELP JOB....
//STEP1 EXEC PGM=IN25PRIH,REGION=256K
//STEPLIB DD DSN=YOUR.INTRTST.LOADLIB,DISP=SHR
//PROTHLF DD DSN=INTRTSTV.PROTHLF,DISP=SHR
//OUTPUT DD SYSOUT=A
//
```

JCL

The following is sample JCL for printing the Help file.

```
//PRINHELP JOB....
//STEP1 EXEC PGM=IN25PRIH,REGION=256K
//STEPLIB DD DSN=YOUR.SYMDUMP.LOADLIB,DISP=SHR
//PROTHLF DD DSN=SYMDUMPV.PROTHLF,DISP=SHR
//OUTPUT DD SYSOUT=A
/
```

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