CA SymDump® System

Administration Guide

Release 9.1.00

CA Technologies Product References

This document references the following CA products:

- CA SymDump® Batch
- CA SymDump® for CICS
- CA SymDump® System
- CA Chorus Software Manager™ (CA CSM)

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Documentation Changes

We made the following miscellaneous updates to this guide since the last release:

- Global changes to syntax sections and subsections—Changed the value v9.0 to V9.1.
- Dump Viewer Commands (see page 67)—Added the SELECTX (see page 84) command.

Contents

Chapter 1: Introduction 9

Who Should Use This Guide 9
Dump Capture 10
Dump Data Sets 10
The Dump Index 11
Capturing Reports 11
Viewing Captured Dumps 11
Options Table 12
Supported Environments 12

Chapter 2: Customizing Dump Capture 13

Selecting Dumps for Capture 13
Selecting a Dump Index File 14
Allocating Dump Data Sets 14
Selecting Diagnostic Reports 15
Initializing Dump Capture 16

Chapter 3: Viewing Dumps from TSO/ISPF 17

Starting the Viewer 17
- The Dump Index Display 18
- Display Levels 19

Managing the Dump Index 19
- Line Commands 20
- Commands 20

The Dump Tree 22
- Line Commands 25
- Commands 25
- Viewing Reports 27
- Viewing Programs 31
- Viewing Storage 34
- Viewing Control Blocks 37

The Profile 43

Chapter 4: Advanced Techniques 45

Using PF Keys 46

Mapping Dump Storage Location 48
Using Symbols 50
Built-in Symbols 50
Using the Keep Window 52
Removing a Data Line 53
Hiding the Keep Window 53
Using the Electronic Notepad 53
Display Levels 55

Chapter 5: Utilities 57

CADVIDXU 57
Sample JCL 57
Input Commands 58
DELETE 58
DSN 59
INIT 59
LIST 60
LOCK 60
STGINDEX 61
UNLOCK 61
Selection Criteria 62
CADVILDD 64
Sample JCL 65

Appendix A: Dump Viewer Commands 67

BOTTOM 68
CMSG 68
CTRACE 68
DISASSEM 69
DOWN 69
DROP 70
DUMP 71
EQUATE 74
FIND 75
HELP 76
HOME 76
KEEP 77
LEFT 77
LISTMAPS 78
LOADMAPS 78
MAP 79

NOTES 80
OPTIONS 80
PRINT 80
REFRESH 82
RFIND 82
RIGHT 82
SELECT 83
SELECTX 84
SETINDEX 84
STATUS 85
SORT 85
SYMBOLS 86
TOP 87
UP 87

Appendix B: CA SymDump System Reports 89

CICS Task Storage Summary 90
CICS Kernel Error Report 90
CICS Message Help Report 92
CICS Summary Report 93
CICS Trace Dialog 94
- Control Fields 95
- Filter Entries 95
- Trace Entries 97
- Help 97

Abend Summary Report 98

Appendix C: Report Categories 99

MVS Address Space 100
MVS Devices 100
MVS Data Sets 102
MVS History 103
MVS Storage 103
MVS System Information 104
CA Common Services 106
CAISMF 107
- CA RIM SMF intercepts 107

CICS Resources 107
CICS Status 108
CICS Storage 109
CICS System Definitions 109

DATACOM 109
DB2 110
IMS 110

Appendix D: User Exits 113

Customizing the User Exits 113
CADVUSR1 113
CADVUSR2 117

Appendix E: Special DD Statements 121

DD Statements 121
- CADVNOSD 121
- CADVOPT 122
- CADVSDMP 122
- CADVSTOP 122

Chapter 1: Introduction

CA SymDump System is a system dump capture and view facility for z/OS. It provides easy-to-use system dump diagnostic and management capabilities that helps systems programmers resolve system abends and manage dump captures and retentions.

CA SymDump System automatically captures system dumps and displays the dump information in an easy-to-read format, while adding comprehensive abend diagnostic information for system abends in both test and production environments.

CA SymDump System captures system dumps from any job, with specific environmental information for z/OS, CICS, MQSeries, JES2, DB2, IMS, CA Datacom, and CA Roscoe Interactive Environment. Detailed reports, formatted storage areas, and formatted control blocks help systems programmers quickly diagnose and correct problems.

Each installation can easily control which dumps are captured by including or excluding specific abend codes, userids, or job names. Dumps are compressed and stored individually in separate data sets, with a single dump index identifying where each dump has been written.

The dump viewer provides end users with easy dump identification, simplified dump selection, and a powerful viewing environment.

Comprehensive dump management capabilities allow sites to determine which dumps to display or delete, and when to suppress duplicate dumps. Additionally, sites can define dump purge defaults to control how long dumps are retained.

This section contains the following topics:

Who Should Use This Guide (see page 9)
Dump Capture (see page 10)
Dump Data Sets (see page 10)
The Dump Index (see page 11)
Capturing Reports (see page 11)
Viewing Captured Dumps (see page 11)
Options Table (see page 12)
Supported Environments (see page 12)

Who Should Use This Guide

This *Administration Guide* is intended for CA SymDump System administrators and users. It provides detailed conceptual information, supplemental installation information, and detailed descriptions of how to use the features and functions of the product.

Dump Capture

CA SymDump System provides an automated facility for capturing information during selected system dumps. When a system dump occurs that matches your selection criteria, CA SymDump System generates and saves diagnostic reports that can be viewed or printed later to assist in problem determination and resolution. A snapshot of the storage in the dumping address space is also captured. The captured reports and storage are written to separate dynamically created dump data sets, which are logged as a single dump capture in a dump index file for later retrieval.

Dump capture is initialized on any system using the Resource Initialization Manager (CAIRIM) component of CA Common Services. At any time after initialization, use CAIRIM to change or disable dump capture.

Dump Data Sets

CA SymDump System creates two dump data sets for each dump capture. The first contains diagnostic reports generated during the capture. The data set for this report is a variable-length sequential file in a compressed, proprietary format that can only be read by the CA SymDump System dump viewer. The second contains a standard IBM formatted system dump, compatible with IBM's Interactive Problem Control System (IPCS) and the CA SymDump System dump viewer.

The CA SymDump System options table controls data set naming conventions, space allocations, and DASD location. As each dump data set is created, it is automatically logged into a centralized dump index file, which can be used later for retrieving dumps for viewing.

Your security profiles must permit create, update and read access for the high-level qualifier selected for your dump data sets for all users on systems where dump capture is active.

The Dump Index

CA SymDump System uses an index file to maintain a record of all captured dumps. The dump index file is a VSAM fixed-length relative-record data set (RRDS). A single dump index file can simultaneously manage up to 4,000 dump data sets. You can keep a separate dump index file for each system or share a single dump index file across systems. You can change your active dump index file at any time on any system.

The dump index file is defined by IDCAMS and is initialized using the CA SymDump System index utility program, CADVIDXU. The utility also permits batch access to view or update the contents of any dump index file, and batch maintenance functions. You can use the index utility to delete dump data sets that have reached a certain age, or to produce a list of dumps captured for a specific job or user ID.

Your security profiles must permit both update and read access to the dump index file for all users on systems where the dump index file is used.

Capturing Reports

CA SymDump System uses the CA SYSVIEW (or Server) technology to generate diagnostic reports during dump capture. Output from any CA SYSVIEW (or Server) command can be captured and written to the dump data set for later viewing. Using report control statements in the CA SymDump System OPTLIB library, you can control exactly which reports are produced for each type of dump. For a complete description of all available report commands, see the *CA SYSVIEW* (or *Server*) *Administration Guide*. CA SymDump System communicates with CA SYSVIEW (or Server) using the GSS component of CA Common Services. You must install GSS before capturing or viewing dumps. For more information about using GSS, see *Installation Guide.*

Viewing Captured Dumps

Dumps can be viewed using the:

- CA SymDump System dump viewer for TSO/ISPF
- Eclipse-based Graphical User Interface

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

Regardless of which index file is currently active, you can select dumps from any dump index file. The content of the selected dump index file is displayed as a selection list that includes details about each captured dump. This enables you to locate the desired dump easily before selecting it for viewing.

Once you have selected a dump to view, the numerous diagnostic reports and the enhanced viewing of the address space simplify the path to diagnosis.

Options Table

The options table, CADVTABL, controls both dump capture and dump viewing. On systems where the capture component is installed, this table exists as a resident load module and is available to both the capture and view facilities. On systems where dump capture is not installed, the options table is loaded from the CA SymDump System executable library.

The options table enables you to control the following:

- Which system dumps are captured
- How many duplicate dumps are permitted
- Which dump index file is used
- Where to store the dump data sets
- What to name the dump data sets
- How much space is allocated for the dump data set
- Miscellaneous options

You can modify the options table at any time, but changes do not take effect for dump capture options until the dump capture facility is reinitialized. This is accomplished using the CAIRIM procedure as described in the *Installation Guide*.

Supported Environments

CA SymDump System supports the capture of any system dump on z/OS. Enhanced reporting is available for special environments such as CICS, DB2, IMS, MQSeries and CA Datacom.

Viewing is supported on TSO/ISPF or from your Eclipse-based GUI.

Chapter 2: Customizing Dump Capture

When dump capture is initialized on a system, a copy of the options table (CADVTABL) is loaded into resident storage in the common system area. These options remain in effect until dump capture is refreshed or until an IPL, both of which reload the options table. During dump capture, options are never retrieved from disk, only from the resident copy of CADVTABL.

You must customize your options table, CADVTABL, to control dump capture at your site before initializing dump capture. It is shipped with default settings that must be modified before initializing the dump captures facility. The following sections briefly describe each of the customizations you can perform. Before customizing your options table, see the *Installation Guide* for detailed instructions.

This section contains the following topics:

Selecting Dumps for Capture (see page 13)
Selecting a Dump Index File (see page 14)
Allocating Dump Data Sets (see page 14)
Selecting Diagnostic Reports (see page 15)
Initializing Dump Capture (see page 16)

Selecting Dumps for Capture

You add the inclusion and exclusion criteria to the options table (CADVTABL) to control which system dumps are captured. Every time a system dump occurs, CA SymDump System compares the dump capture inclusion and exclusion entries in the CADVTABL to the user ID, the jobname, and the abend or error code associated with the dump. Before a dump is captured, at least one of the defined inclusion criteria must be met. If any of the exclusion criteria are met, the capture is suppressed.

Even when a dump satisfies the selection criteria, you can exclude the dump from capture by including the following DD statement in the JCL for the abending step:

```
//CADVSTOP DD DUMMY
```

For more information, see the appendix “Special DD Statements.”

For details about specifying the inclusion and exclusion criteria, see the appendix “Customizing Options Using CADVTABL” in the *Installation Guide.*

User exit CADVUSR1 permits more complex determination to be controlled at your site. For more information about the user exit, see the appendix “User Exits (see page 113).” The options table also contains a duplication limit to prevent excessive captures for duplicate dumps.

Selecting a Dump Index File

The options table contains the name of your currently active dump index file. You can use one dump index file for your entire site or you can use multiple index files for multiple systems. Either way, dump viewers can access any existing dump index file at any time.

To use a single dump index for all of your systems, simply define that index in the options table. For multiple index data sets, you must maintain multiple copies of the options table.

Allocating Dump Data Sets

Each dump capture consists of two separate dump data sets. The smaller of the two, typically referred to as the reports data set, contains all of the reports produced during the dump capture. The reports data set also contains a storage index used to map the contents of the larger data set—the storage data set. The storage data set is populated by an SDUMP and is compatible with IBM's IPCS product. The storage data set is typically the same size as most SVC dumps.

The options table contains a single high-level qualifier that must be used when dynamically allocating both dump data sets during capture. The two lowest-level qualifiers of each data set name are constructed dynamically to maintain uniqueness.

The options table also contains two separate sets of values that control the space allocations and destination of each dump data set. Therefore, it is possible for the larger storage data sets to be cataloged on a different volume than the smaller reports data sets, if you want.

When defining the destination of the dump data sets, you can either use a specific UNIT and VOLUME name or allow the data set to be managed by SMS by specifying a management, storage or data class name.

Regardless of how your dump data sets are defined, it is never necessary for any end user to know the name or location of a dump data set. All captured dumps are logged in the dump index, and the dump viewer displays the list using dump attributes and data set names. For example, when selecting a dump for viewing, an end user might select the dump from a S0C4 in job PAYROLLA that occurred on June 23, 2009 at 11:33am.

Selecting Diagnostic Reports

When a dump is captured, the reports data set is populated with information about your system and the dumping address space as defined by your installation. CA SYSVIEW (or Server) produces most report information but some reports are provided exclusively for CA SymDump System users.

Report generation during dump capture is controlled using a list of commands located in the OPTLIB control file. The OPTLIB members are distributed with CA SymDump System, but are customized and maintained outside the control of SMP/E. Within each OPTLIB member is a list of commands used to control report generation during dump capture. Report production during a dump capture is determined primarily by which OPTLIB member is selected at the time of the dump.

During a dump capture, the OPTLIB member is selected as follows:

- If a CADVOPT DD is defined in the JCL, control statements for report generation are retrieved from the CADVOPT DD, which must allocate an OPTLIB member or any sequential file with LRECL=80 containing control statements for report generation. The use of in-stream commands in the CADVOPT DD is also permitted.
- If no CADVOPT DD exists in the JCL, control statements for report generation are retrieved from the library defined in the OPTLIB= option in CADVTABL. If a member exists in that library whose name exactly matches the abend or dump code (examples are S0C7, U1234, AP0001, or AICA), that member is selected. Otherwise, member CICS is used for CICS system dumps, and member DEFAULT is used for all others dumps.

Within each member, control statements must begin in position one with each statement having the following syntax:

```
<title>command
```

title is optional and, if present, defines the report title, as it appears in the dump viewer when the report is displayed. *title* must be enclosed in less than and greater than signs (< >) and must start in position one.

Note: Reports having a title starting with an exclamation point (!) appear in the Favorites folder during dump viewing. For more information about the Favorites folder, see the chapter "Viewing Dumps from TSO/ISPF. (see page 17)"

command refers to any CA SYSVIEW (or Server) command (or command list). These commands are described in the *CA SYSVIEW Administration Guide.*

Additionally, *command* can refer to any of the following CA SymDump System commands:

- #SUMMARY (Abend/Dump Summary)
- #CICSSUM (CICS Summary)
- #CICSKER (CICS Kernel Error Summary)
- #CICSAXS (CICS Task Storage Summary)
- #CICSTRC (CICS Trace)
- #CICSMSG (CICS Message Help)

These commands and the reports they produce are described in the appendix "CA SymDump System Reports (see page 89)."

An asterisk (*) in position one denotes a comment and is ignored during dump capture.

Initializing Dump Capture

Dump capture can be initialized or terminated on any system using the Resource Initialization Manager (CAIRIM), a component of CA Common Services for z/OS as described in the *Installation Guide*. This process should occur automatically at every IPL on systems where dumps are captured.

For more information on initializing and disabling dump capture, see the installation step Activate the Dump Capture Facility in the *Installation Guide*.

Chapter 3: Viewing Dumps from TSO/ISPF

This section discusses how to navigate through the dump index and the dump tree displays using the CA SymDump System viewer provided for TSO/ISPF.

This section contains the following topics:

Starting the Viewer (see page 17)
Managing the Dump Index (see page 19)
The Dump Tree (see page 22)
The Profile (see page 43)

Starting the Viewer

If CA SymDump System was added to your TSO/ISPF applications menu, select the corresponding menu item to launch the viewer interface.

If the menu item was not added, execute member DVSAMPL in the CA SymDump System CLIST library (*yourhlq*.CCPICLS0) to launch the viewer interface, as shown in this example:

```
====> ex 'yourhlq.ccpicls0(dvsampl)'
```

The Dump Index Display

The viewer interface begins with a display of the available dumps retrieved from your active dump index. If dump capture is initialized on the system you are viewing, then the active dump index name is retrieved from the resident options table (CADVTABL) that was loaded when dump capture was initialized. Otherwise the options table is loaded from disk, and the name of your dump index is retrieved from there.

Note: The number of index entries in the dump index menu always displays on the message line when you first enter the viewer.

The following is a dump index display:

```
CA SymDump System V9.1 --------- Dump Index  ---------------------- Line 1 of 9
Command ===>                                                  Scroll ===> CSR
CADV400I Dump index contains 9 entries
Index Dsname: CAI.DUMPIX
------------------------------------------------------------------------------ Lvl 1
Cmd  System    Asid  JobName   Program   Offset   Comp    Date        Time
 .   XE44      0155  DAVSC01T  TESTDRVR  0000D3C  S=0C4   2009/07/12  10.25.57
 .   XAE1      01FA  MIKED530  DFHSIP    00AC970  SM0103  2009/07/11  16.08.53
 .   XAE1      0045  MIKEDIVP  CADVIVP   0000196  S=0C7   2009/07/11  16.01.01
 .   XE44      0155  DAVSC01T  TESTDRVR  0000D3C  S=0C4   2009/07/11  11.15.05
 .   XE44      0155  DAVSC01T  TESTDRVR  0000D3C  S=0C4   2009/07/08  14.20.19
 .   XAD1      00A1  MIKED410  DFHSIP    0028EFA  MT0001  2009/07/08  07.32.55
 .   XAE1      0088  CARAC130  DFHSIP    00AB530  SM0102  2010/01/04  13.27.11
 .   XE44      007F  DAVSC01A  COB0C7    00002B4  S=0C7   2009/04/10  12.18.16
 .   XE44      009B  CARAC120  COBDEMO   0001B8C  AP0001  2009/03/31  16.40.52
------------------------------------------------------------------------------
 F1=HELP      F2=SPLIT     F3=END       F4=DUMP      F5=RFIND     F6=MAP
 F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

The fields on the dump index are as follows:

Cmd

Lets you enter commands in this field.

System

Displays the System ID of the system on which the dump was captured.

Asid

Displays the address space ID for the job that created the dump.

Jobname

Displays the name of the job that created the dump.

Program

Displays the name of the program in control at the time of the dump.

Offset

Displays the program offset of the last instruction executed.

Comp

Displays the completion code for the abended task.

Date

Displays the date on which the dump was captured.

Time

Displays the time at which the dump was captured.

Userid

Displays the ID of the owner of the job that created the dump.

Lock

Displays the ID that has locked the dump data set to prevent deletion.

Stx

Indicates whether or not the storage index has been built.

Reports

Displays the name of the reports data set for this dump capture.

Storage

Displays the name of the storage data set for this dump capture.

Display Levels

The level number shown in the upper right corner of the display indicates how many display levels are active. When you enter the END command, the display terminates and the active display at the previous level is redisplayed. The Dump Index display is always level one.

Managing the Dump Index

You can control the dump index display by entering line commands in the Cmd column at the left of the display and pressing ENTER. These line commands allow you to delete dumps, lock dumps to prevent deletions and unlock them to undo a lock. You can select a dump to view or you can view the electronic notepad provided with each dump.

Commands entered on the command line (or PF keys) allow you to scroll the display, find an entry, get help, sort the list, select a dump by data set name, or switch to a different dump index.

Line Commands

Use the following line commands in the Cmd fields at the left of the Dump Index display.

D

Deletes a dump and removes it from the dump index.

L

Locks a dump with your user ID to prevent deletion.

N

View or edit the Notepad for the selected dump.

S

Selects a dump for viewing.

U

Unlocks a previously locked dump.

X

Remove a dump index entry without deleting the data sets.

Commands

Use the following commands on the command line at the top of the Dump Index display. For detailed descriptions of these commands, see the appendix Dump Viewer Commands.

BOTTOM

Scroll display to the bottom.

CMSG

Request help for a CICS message or dump code.

DOWN

Scroll display down.

FIND

Find a string in the output display.

HELP

Request help for a command, message or topic.

LEFT

Scroll display to the left.

NOTES

Edit the electronic notepad for a dump by data set name.

OPTIONS

Display the options in effect.

PRINT

Print all or part of the Dump Index display.

RFIND

Repeat a previous find command.

RIGHT

Scroll display to the right.

SELECT

Select a dump for viewing by data set name.

SETINDEX

Select a different dump index file.

SORT

Sort the output display on any column header.

STATUS

Request the current product status.

TOP

Scroll display to the top.

UP

Scroll display up.

The Dump Tree

When a dump is selected, the dump data set is loaded and the dump tree is built. The *dump tree* is a hierarchical view of the information available for the selected dump. In this view, tree branches (called folders) can be expanded or collapsed to display only the desired data, enabling you to drill down into an area of interest while ignoring data that you consider less helpful.

The Dump Tree includes folders for formatted reports generated at capture time, programs that were loaded at the time of the dump, and various types of control blocks.

A *Viewed Storage Areas* folder is also provided. This folder initially contains no data, but is populated as you view the dump. It contains a list of other storage areas that you viewed using the various storage display commands. Storage areas already defined in the dump tree, such as known control blocks or loaded programs, are never added to this branch.

To provide access to dump storage for viewing, CA SymDump System requires access to CA SYSVIEW (or Server). This access is facilitated by the GSS component of the CA Common Services, and is referred to in this document as SYSVIEW Services. If the necessary GSS address space is not running, SYSVIEW Services will not be available, and only the reports formatted during the dump capture can be viewed. Similarly, if GSS is not running at the time of the dump, no reports can be formatted during the dump capture.

Use the STATUS command to determine whether or not SYSVIEW Services are available at any time. If SYSVIEW Services are not available when the dump viewer is started, a warning displays whenever you select a dump for viewing.

The following is a dump tree:

```
CA SymDump System V9.1 --------- Dump Tree  ---------------------- Line 1 of 12
Command ===>                                                        Scroll ===> CSR
-------------------------------------------------------------------------------
System    XAE1           Asid      01FA           UserId    MIKED
JobName   MIKED530       Date      2009/07/11     Time      16.08.53
Program   DFHSIP         Offset    000AC970       Code      SM0103
------------------------------------------------------------------------------ Lvl 2
Cmd  Address   Description
 .               Job=MIKED530
 .               |  Favorites
 .               | |  Abend Summary
 .               | |  CICS Message Help
 .               | |  CICS Summary
 .               | |  Task Storage Summary
 .               | |  Trace
 .             + |  Formatted Reports
 .             + |  Loaded Programs
 .               |  Viewed Storage Areas
 .             + |  OS Control Blocks
 .             + |  CICS Control Blocks
-------------------------------------------------------------------------------

 F1=HELP      F2=SPLIT     F3=END       F4=DUMP      F5=RFIND     F6=MAP
 F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Folders are tree entities that cannot be displayed but may contain displayable subordinate items.

These entries are:

Job=xxxxxx

Favorites

Formatted Reports

Loaded Programs

Viewed Storage Areas

Control Blocks

CICS Control Blocks

In the hierarchical view, a plus sign (+) next to an item in the tree indicates that the item owns one or more subordinate items and can be expanded to display the subordinate items. Enter a plus sign (+) in the Cmd column next to the entry to expand an item to expose its subordinate items in the tree. Enter an exclamation point (!) in the Cmd column to *explode* an item, that is, expand the item and its subordinate items recursively until none of the subordinate items are hidden.

A minus sign (-) next to an item indicates that the item is currently expanded and can be collapsed by entering a minus sign (-) in the Cmd column.

Use the forward slash (/) line command to toggle between expanded and collapsed views.

The *Favorites* folder is initially expanded to display its content consisting of a special group of reports created during the dump capture. Reports appear in this folder only if they were selected as favorites in the OPTLIB member used to control the report generation for the dump capture. A report is selected as a favorite only when its title starts with an exclamation point (!). In the previous sample, five reports were selected as favorites.

The *Formatted Reports* folder contains all of the reports created when the dump was captured, including those selected as favorites. For more information about this folder, see Viewing Reports (see page 27).

The *Loaded Programs* group folder contains an entry for each load module that was found in the captured dump. For further information about this folder, see Viewing Programs (see page 31).

The *Viewed Storage Areas* folder is a recall area for otherwise uncategorized storage areas that you have viewed since the dump was captured. For further information about this folder, see Viewing Storage (see page 34).

The *OS Control Blocks* folder contains all of the key z/OS control blocks that you may need to locate during your dump viewing session. For more information about this folder, see Viewing Control Blocks (see page 37).

The *CICS Control Blocks* folder contains all the key CICS control blocks you may need to locate during your dump viewing session, and only appears if the selected dump was produced by CICS. For more information about this folder, see Viewing Control Blocks (see page 37).

Line Commands

Use the following commands on the command line at the top of the Dump Tree display. For detailed descriptions of these commands, see the appendix Dump Viewer Commands.

D

Deletes an item from the dump tree.

This applies only to items in the Viewed Storage folder.

F

Format (either MAP or Disassemble) the selected item.

R

Rename an item in the dump tree.

This applies only to items in the Viewed Storage folder.

S

Select an item for viewing.

+

Expand an item to expose its subordinate items in the tree.

-

Collapse an item to hide its subordinate items from view.

/

Toggle between expanded and collapsed.

!

Explode an item, that is, expand the item and its subordinate items recursively.

Commands

Use the following commands on the command line at the top of the Dump Tree display. For detailed descriptions of these commands, see "Dump Viewer Commands (see page 67)".

BOTTOM

Scroll display to the bottom.

CMSG

Request help for a CICS message or dump code.

CTRACE

Format the CICS auxiliary trace.

DISASSEM

Format dump storage using the disassembler.

DOWN

Scroll display down.

DROP

Delete a previously equated symbol.

DUMP

Display dump storage.

EQUATE

Associate a symbol with a dump address.

FIND

Find a string in the output display.

HELP

Request help for a command, message or topic.

LEFT

Scroll display to the left.

LISTMAPS

Display a list of available maps.

LOADMAPS

Load a member from the map library.

MAP

Map dump storage using a loaded map.

NOTES

Edit an Electronic Notepad for the selected dump.

OPTIONS

Display the options in effect.

PRINT

Print all or part of the Dump Tree display.

RFIND

Repeat previous find command.

RIGHT

Scroll display to the right.

STATUS

Display the current product status.

SYMBOLS

Display all equated symbols.

TOP

Scroll display to the top.

UP

Scroll display up.

Viewing Reports

Both the *Favorites* and *Formatted Reports* folders contain reports that were produced during the dump capture. In *Formatted Reports*, reports are grouped in subfolders by type based on the command used to generate each report. These groups, which are predetermined and cannot be altered, are described in the appendix Report Categories in this guide. Within each subfolder, reports are listed alphabetically by title.

The following display shows the report categories for a CICS dump:

```
CA SymDump System V9.1 --------- Dump Tree --- ------------------- Line 8 of 22
Command ===>                                                    Scroll ===> CSR
-------------------------------------------------------------------------------
System    XAE1            Asid      01FA           UserId    MIKED
JobName   MIKED530        Date      2009/07/11     Time      16.08.53
Program   DFHSIP          Offset    000AC970       Code      SM0103
------------------------------------------------------------------------ Lvl 2
Cmd  Address   Description
 .               | -Formatted Reports
 .             + | | -CICS History
 .             + | | -CICS Resources
 .             + | | -CICS System Status
 .             + | | -CICS Storage
 .             + | | -CICS System Definitions
 .             + | | -MVS Address Space
 .             + | | -MVS Data sets
 .             + | | -MVS Devices
 .             + | | -MVS History
 .             + | | -MVS Storage
 .             + | | -MVS System Definitions
 .             + | -Loaded Programs
 .               | -Viewed Storage Areas
 .             + | -Control Blocks
-------------------------------------------------------------------------------
F1=HELP      F2=SPLIT     F3=END       F4=DUMP      F5=RFIND     F6=MAP
F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Use either the + or / line commands to expand the subfolders, thereby displaying the list of reports in that category as shown next:

```
CA SymDump System V9.1 --------- Dump Tree --- ------------------- Line 8 of 22
Command ===>                                                     Scroll ===> CSR
-------------------------------------------------------------------------------
System    XAE1           Asid      01FA           UserId    MIKED
JobName   MIKED530       Date      2009/07/11     Time      16.08.53
Program   DFHSIP         Offset    000AC970       Code      SM0103
-------------------------------------------------------------------------  Lvl 2
Cmd  Address    Description
 .                |  Formatted Reports
 .              + | |  CICS History
 .              + | |  CICS Resources

 .              + | |  CICS System Status
 .              + | |  CICS Storage
 .              + | |  CICS System Definitions
 .              - | |  MVS Address Space
 .                | | |  Abend Summary
 .                | | |  Allocated Data sets
 .                | | |  Allocated Data sets
 .                | | |  Enqueues
 .                | | |  Job Output
 .                | | |  Loaded Modules
 .                | | |  Symbols
 .                | | |  Task Library
 .                | | |  Task Summary
 .                | | |  Timers
 .              + | |  MVS History
 .              + | |  MVS System Definitions
-------------------------------------------------------------------------------
```

Select a report for display by placing an **S** in the Cmd column.

The Abend Summary report in the *MVS Address Space* folder contains a brief summary of the abend or dump, including the PSW and registers at the time of the error. For most batch abends or dumps, this report provides a good starting point, because it provides the basic information needed to start diagnosing the problem.

The following is an Abend Summary report:

```
CA SymDump System V9.1 --------- Abend Summary --- --------------- Line 1 of 19
Command ===>                                                    Scroll ===> CSR
-------------------------------------------------------------------------------
Job: MIKED530   System: XAE1       Asid: 01FA
-------------------------------------------------------------------------  Lvl 3
Abend Summary for SM0103

DFHSM0103 A04IC9N6 A storage violation (code X'0932') has been detected by the

PIDS/565501800 LVLS/530 MS/DFHSM0103 RIDS/DFHSMCK PTFS/ESA530 PRCS/00000932

PSW at time of error:        078D2000 95DEF5F0      DFHSIP  +AC970

TCB address:                 007D0598

Registers at time of error:

   Reg 0  = 000000B8  PSA+B8             Reg 8  = 15EB67D8  E  PVT
   Reg 1  = 16A42680  E  PVT             Reg 9  = 16A4270C  E  PVT
   Reg 2  = 15EB67D8  E  PVT             Reg 10 = 16A4270C  E  PVT
   Reg 3  = 95DEDDA8  DFHSIP+EDDA8       Reg 11 = 16A41D67  E  PVT
   Reg 4  = 16A42580  E  PVT             Reg 12 = 0005C680  PVT
   Reg 5  = 15DEEDA7  DFHSIP+EEDA7       Reg 13 = 16A42580  E  PVT
   Reg 6  = 15DEFDA6  DFHSIP+EFDA6       Reg 14 = 007E1540  JSTCB  2F8
   Reg 7  = 16A419E4  E  PVT             Reg 15 = 00000000  PSA

 F1=HELP      F2=SPLIT     F3=END       F4=DUMP      F5=RFIND     F6=MAP
 F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

For CICS dumps, a summary of the CICS environment is also provided in the CICS Summary report, located in the *CICS System Status* folder.

```
CA SymDump System V9.1 --------- CICS Summary --- --------------- Line 1 of 148
Command ===>                                                    Scroll ===> CSR
-------------------------------------------------------------------------------
CICS Summary Report for A04IC9N6
-------------------------------------------------------------------------  Lvl 3

******** CICS Areas *********
                                        +0       +4       +8       +C
CSA      at 0004DE20 for 0000204 bytes:  00000248 0000D0A0 1619B0C0 965C8A1E  .
COPFL    at 0004D648 for 0000588 bytes:  00000000 00000000 16294A00 00000000  .
SIT      at 95EC16B0 for 0000850 bytes:  E702E753 00000000 08500400 00000000  X
CWA      at 000C1000 for 0000400 bytes:  00000000 00000000 00000000 00000000  .
TCT      at 00051D80 for 0000600 bytes:  0006B73C 0006B810 00051D8C 8004DE20  .

Current TCA at 0005C680 for task #0037 (STGV).

**** Active Task Summary ****

-------------------------------------------------
| Task #0037  Tran STGV  Term G001  User CICSUSER |
| Date 07/11/2009 at 16.08.53                     |
-------------------------------------------------
 F1=HELP      F2=SPLIT     F3=END       F4=DUMP      F5=RFIND     F6=MAP
 F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Also available in the *CICS System Status* folder for CICS dumps is the CICS Message Help report, which documents the reason for the dump.

```
CA SymDump System V9.1 --------- CICS Message Help --------------- Line 1 of 43
Command ===>                                                    Scroll ===> CSR
-------------------------------------------------------------------------------
CICS Message Help for DFHSM0103
------------------------------------------------------------------------ Lvl 3

           DFHSM0103   APPLID  A STORAGE VIOLATION (CODE
                     X'CODE' ) HAS BEEN DETECTED BY THE STORAGE
                    VIOLATION TRAP. TRAP IS NOW INACTIVE.

          EXPLANATION:  A storage violation has been detected by the
          storage violation trap, which may be enabled via the CHKSTSK
          or the CHKSTRM system initialization parameters or via the
          CSFE transaction.  The code X' code ' is the exception
          trace point ID which uniquely identifies the type of storage
          violation detected.

          SYSTEM ACTION:  CICS disables the storage violation trap.
          An exception entry (X' code ' in the message) is made in
          the trace table.  A system dump is taken, unless you have
          specifically suppressed dumps in the dump table.

 F1=HELP      F2=SPLIT     F3=END       F4=DUMP      F5=RFIND     F6=MAP
 F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

While viewing any report, you can enter other dump viewer commands (see "Dump Viewer Commands (see page 67)") to view storage, add data to your keep window, update your electronic notepad, and so on. These commands create a new display level, leaving the report display active but not visible. When you end the new display level, you are returned to the report display.

Ending the report display (using the END command or PF key) returns you to the dump tree display.

Viewing Programs

The *Loaded Programs* folder appears next in the dump tree. This folder contains an entry for each load module found in the captured dump.

```
CA SymDump System V9.1 --------- Dump Tree  ---------------------- Line 9 of 112
Command ===>                                                        Scroll ===> CSR
-------------------------------------------------------------------------------
System    XAE1           Asid      01FA           UserId    MIKED
JobName   MIKED530       Date      2009/07/11     Time      16.08.53
Program   DFHSIP         Offset    000AC970       Code      SM0103
------------------------------------------------------------------------------- Lvl 2
Cmd  Address     Description
 .               |  Loaded Programs
 .   00A92FA8    | |  CADDSPAI
 .   00B63670    | |  CADSSVC
 .   0A771000    | |  CAIRIMC
 .   00B42178    | |  CAIXL232
 .   009D7368    | |  CAIXL722
 .   00B1D4A0    | |  CAJENJE0
 .   0A2C3FF0    | |  DFSRRC00
 .   000063AF    | |  DRIVER1
 .   000236A0    | |  IEFIIC
 .   00C2C328    | |  IEFSMFIE
 .   00C24388    | |  IEFUTL
F1=HELP      F2=SPLIT     F3=END       F4=DUMP      F5=RFIND     F6=MAP
F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

The programs are listed alphabetically by module name. The Address column contains the entry point address of the loaded program. You can view any program using a storage dump format, or format any program using the built-in disassembler.

Viewing a Program in Dump Format

Enter an **S** in the Cmd column next to any program entry to select the entry you want to view in dump format. This invokes the DUMP command for the entry point address.

The following is a dump view of a loaded program:

```
CA SymDump System V9.1 --------- Dump --- ------------------------ Line 1 of 96
Command ===>                                                    Scroll ===> CSR
-------------------------------------------------------------------------------
Jobname MIKED530  System XAE1      Asid 01FA  Userid MIKED
Start   00031020  Symbol CEECCICS
------------------------------------------------------------------------ Lvl 3
Address  Offset   +0       +4       +8       +C       *               *
00031020 +0000000 47F0F014 00C3C5C5 00000000 00000928 *.00..CEE........*
00031030 +0000010 47F0F001 90ECD00C 18BF41A0 BFFF4190 *.00...}.........*
00031040 +0000020 AFFF1851 58405000 58804000 41400021 *..... &... .. ..*
00031050 +0000030 19844780 B4884140 00201984 4780B42E *.d...h. ...d....*
00031060 +0000040 4140001E 19844780 B3A64140 001F1984 *. ...d...w. ...d*
00031070 +0000050 4780B3EA 41400022 19844780 B5A84140 *..... ...d...y. *
00031080 +0000060 00141984 4780B2AE 41400015 19844780 *...d..... ...d..*
00031090 +0000070 B3584140 00461984 4780B520 4140003C *... ...d..... ..*
000310A0 +0000080 19844780 B4CC4140 00321984 4780B26A *.d..... ...d...¦*
000310B0 +0000090 4140000A 19844780 B0C64140 000B1984 *. ...d...F. ...d*
000310C0 +00000A0 4780B1E4 41400050 19844780 B5645880 *...U. .&.d......*
000310D0 +00000B0 500441F0 0010D203 8000B8A8 58ED000C *&..0..K....y....*
000310E0 +00000C0 980CD014 07FE5840 500C50D0 40045880 *q.}.... &.&} ...*
000310F0 +00000D0 001058E0 800018D4 5840E004 58804144 *...\...M. \.....*
00031100 +00000E0 12884770 B11658E0 800012EE 4780B116 *.h.....\........*
 F1=HELP      F2=SPLIT     F3=END       F4=DUMP      F5=RFIND     F6=MAP
 F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Viewing a Program with the Disassembler

Place an **F** in the Cmd column next to any program entry to produce a formatted display of that program using the built-in disassembler.

The following is a formatted view of a loaded program:

```
CA SymDump System V9.1 --------- Disassem  ---------------------- Line 1 of 427
Command ===>                                                      Scroll ===> CSR
-------------------------------------------------------------------------------
Jobname MIKED530  System XAE1      Asid 01FA  Userid MIKED
Start   00031020  Symbol CEECCICS
------------------------------------------------------------------------ Lvl 3
Address  Offset   Label    Opcod Operands                      Hex
00031020 +0000000          B     20(,R15)                      47F0 F014
00031024 +0000004          DS    XL12                          00C3C5C500000000
0003102C +000000C                                              00000928
00031030 +0000010          B     1(,R15)                       47F0 F001
00031034 +0000014          STM   R14,R12,12(R13)               90EC D00C
00031038 +0000018          LR    R11,R15                       18BF
0003103A +000001A          LA    R10,4095(,R11)                41A0 BFFF
0003103E +000001E          LA    R9,4095(,R10)                 4190 AFFF
00031042 +0000022          LR    R5,R1                         1851
00031044 +0000024          L     R4,0(,R5)                     5840 5000
00031048 +0000028          L     R8,0(,R4)                     5880 4000
0003104C +000002C          LA    R4,33                         4140 0021
00031050 +0000030          CR    R8,R4                         1984
00031052 +0000032          BE    1160(,R11)                    4780 B488
00031056 +0000036          LA    R4,32                         4140 0020
 F1=HELP      F2=SPLIT     F3=END       F4=DUMP      F5=RFIND     F6=MAP
 F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

While viewing program storage, you can enter other dump viewer commands (see "Dump Viewer Commands (see page 67)") to view other storage, locate data in core, add data to your keep window, update your electronic notepad, and so on. These commands create a new display level, leaving the program display active but not visible. Ending the new display level returns you to the program display.

Ending the program display (using the END command or PF key) returns you to the dump tree display.

Viewing Storage

The *Viewed Storage* folder is next in the dump tree. Initially, this folder contains no data. Entries are added after executing one of the following commands:

- DISASSEM
- DUMP
- EQUATE
- FIND
- MAP
- RFIND

An entry is only added to the *Viewed Storage* folder when the storage address does not correspond to an existing item in the dump tree, including:

- OS or CICS control blocks
- Entry points for loaded programs
- Previously viewed storage areas

The purpose of the Viewed Storage folder is to allow easy recall of previously viewed dump storage, even across dump viewing sessions.

The following is an expanded dump tree showing viewed storage:

```
CA SymDump System  V9.1--------- Dump Tree  ---------------------- Line 1 of 10
Command ===>                                                       Scroll ===> CSR
--------------------------------------------------------------------------------
System    XAE1           Asid      01FA           UserId    MIKED
JobName   MIKED530       Date      2009/07/11     Time      16.08.53
Program   DFHSIP         Offset    000AC970       Code      SM0103
------------------------------------------------------------------------------ Lvl 2
Cmd  Address   Description
 .               Job=MIKED530
 .             + |  Favorites
 .             + |  Formatted Reports
 .             + |  Loaded Programs
 .               |  Viewed Storage Areas
 .   16A42680   | |  R1
 .   15D42E0C   | |  DFHSIP+18C
 .   000470D4   | |  EIB+4
 .             + |  OS Control Blocks
 .             + |  CICS Control Blocks
--------------------------------------------------------------------------------
F1=HELP      F2=SPLIT     F3=END       F4=DUMP      F5=RFIND     F6=MAP
F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

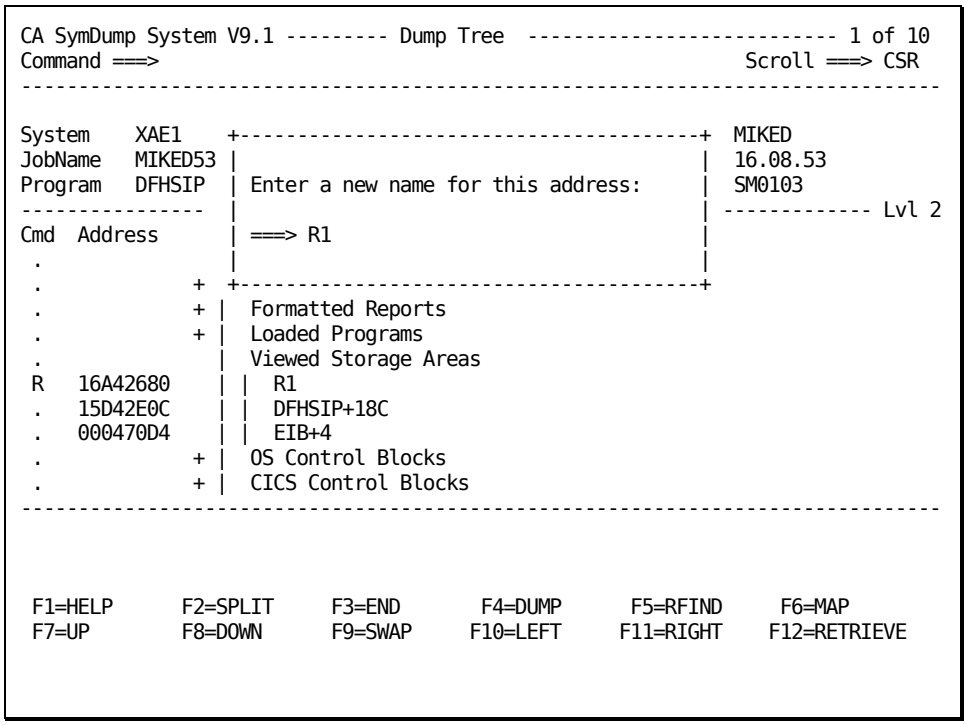
New storage entries are added to the top of the storage list so that they can be retrieved more easily. The Address field contains the address of the storage, and the Description field contains a comment that describes the storage.

If the storage location can be mapped to an offset within a known program, control block, or user-defined equate, the description field provides that entity name and offset.

Adding Your Own Description

If you prefer to enter your own description for a viewed storage item, enter an **R** in the Cmd column next to the storage entry in the dump tree. You are prompted for a new name, up to 32 characters, to describe that storage. Your new name replaces the existing description in the dump tree and is saved with that storage item in your profile.

The following screen shows a prompt for a rename:



Viewing the Storage

To view any storage item in the *Viewed Storage* folder, enter either **S** (for standard dump format) or **F** (to format using the mapper or built-in disassembler) in the Cmd column.

While viewing storage, you can enter other dump viewer commands to view other storage, locate data in-core, add data to your keep window, and update your electronic notepad. These commands will create a new display level, leaving the original storage display active but not visible. Ending the new display level returns you to the original storage display.

Note: For more information about the dump viewer commands, see "Dump Viewer Commands (see page 67)."

Ending the storage display (using the END command or PF key) returns you to the dump tree display.

Viewing Control Blocks

The control blocks are at the end of the dump tree. There may be two separate control block folders in the dump tree, one for OS Control Blocks and the other for CICS Control Blocks.

OS Control Blocks

The *OS Control Block* folder is built dynamically when the dump is selected for viewing. It contains many key OS control blocks that you might need to reference during your dump viewing session.

The control blocks in this folder are displayed in their own hierarchical tree structure, which shows the parent-child relationship between control blocks and identifies control block chains.

The following screen shows expanded *OS Control Blocks*:

```
CA SymDump System V9.1 --------- Dump Tree  ---------------------- Line 9 of 699
Command ===>                                                      Scroll ===> CSR
-------------------------------------------------------------------------------
System    XAE1            Asid      01FA           UserId    MIKED
JobName   MIKED530        Date      2009/07/11     Time      16.08.53
Program   DFHSIP          Offset    000AC970       Code      SM0103
------------------------------------------------------------------------ Lvl 2
Cmd  Address   Description
 .               |  OS Control Blocks
 .   00FA9D00    | | -ASCB
 .   00FAAFE0    | | -ASVT
 .   007FDE90    | | -ASXB
 .   00FCA2C0    | | -CVT
 .   0201D230    | | -GDA
 .   00FD2130    | | -IOCOM
 .   00FCAA38    | | -JESCT
 .   007FDD14    | | -JSCB
 .   00F8B5B8    | | -LCCA
 .   7FF16EA0  - | | -LDA
 .   00AFA008    | | -LPAQ Chain
 .   00AFA008    | | | -CDE Program=RTBETSMM
 .   009CDA08    | | | -CDE Program=IGGPOST0
 F1=HELP      F2=SPLIT     F3=END       F4=DUMP      F5=RFIND     F6=MAP
 F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

The Address column lists the base address for the control block. The Description field provides the name of the control block and possible additional information to help identify the structure.

Each control block is automatically associated with a map name that is used by default to map the structure. OS control block maps are provided with the standard installation and are loaded automatically when a dump is selected for viewing.

CICS Control Blocks

The *CICS Control Block* folder is also built dynamically when a CICS dump is selected for viewing. It contains many key CICS control blocks that you may need to reference during your dump viewing session.

The CICS control blocks identified during the dump load is dependent on the reports generated at dump capture time. Many of the CICS control blocks are identified by post-processing the formatted reports to consolidate the control block addresses in a single place.

CICS control blocks are categorized in subfolders as shown next:

```
CA SymDump System V9.1 --------- Dump Tree ---------------------- Line 1 of 96
Command ===>                                                      Scroll ===> CSR
-------------------------------------------------------------------------------
System    XAE1           Asid      01FA           UserId    MIKED            J
obName   MIKED530       Date      2009/07/11     Time      16.08.53
Program   DFHSIP         Offset    000AC970       Code      SM0103
------------------------------------------------------------------------------ Lvl 2
Cmd  Address   Description
 .               Job=MIKED530
 .             + |  Favorites
 .             + |  Formatted Reports
 .             + |  Loaded Programs
 .             + |  Viewed Storage Areas
 .             + |  Control Blocks
 .               |  CICS Control Blocks
 .             + | |  CICS System Areas
 .             + | |  Directory Elements
 .             + | |  Domain Anchors
 .             + | |  Files
 .             + | |  Programs
 .             + | |  Task Areas
 .             + | |  Transactions
 .             + | |  Transient Data Queues
F1=HELP      F2=SPLIT     F3=END       F4=DUMP      F5=RFIND     F6=MAP
F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Expand any of these subfolders to display the list of control blocks:

```
CA SymDump System V9.1 --------- Dump Tree ---------------------- Line 1 of 96
Command ===>                                                    Scroll ===> CSR
-------------------------------------------------------------------------------
System    XAE1           Asid      01FA           UserId    MIKED           J
obName   MIKED530       Date      2009/07/11     Time      16.08.53        Pr
ogram   DFHSIP         Offset    000AC970       Code      SM0103
------------------------------------------------------------------------ Lvl 2
 Cmd  Address  Description
.             + | |  CICS System Areas
.             + | |  Directory Elements
.             + | |  Domain Anchors
.             + | |  Files
.               | |  Kernel Errors
.   0C032D30    | | |  KERR=0C7/AKEA  Module=STGVIOLA+01A6
.   0C032ED8    | | |  KERR=      /ASRA  Module=DFHSRP+3E12

.   0C033080    | | |  KERR=0C7/AKEA  Module=DFHAPLI1+FFFF
.   0C033228    | | |  KERR=      /????  Module=DFHEPC+0596

.   0C0333D0    | | |  KERR=      /????  Module=DFHEPC+0596

.   0C033578    | | |  KERR=      /????  Module=DFHEPC+0596

.             + | |  Programs
.             + | |  Transactions
.             + | |  Transient Data Queues
F1=HELP      F2=SPLIT     F3=END       F4=DUMP      F5=RFIND     F6=MAP
F7=UP        F8=DOWN      F9=SWAP      F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

The Address column lists the base address for the control block. The Description field provides the name of the control block and possible additional information to help identify the structure.

Each control block is automatically associated with a map name that is used by default to map the structure. CICS control block maps are provided with the standard installation for all of the supported CICS releases. CICS maps are loaded automatically when a CICS dump is selected for viewing.

Displaying a Control Block

Both OS and CICS control blocks are displayed the same way, using either the F line command to format the storage with labels or the S line command for a standard dump display.

All control blocks identified in the dump tree are also *auto-mapped* which allows the storage area to be mapped automatically using the MAP command without specifying a map name. For more information about automatic control block mapping, see "Advanced Techniques (see page 45)".

Mapping a Control Block

To format a control block using its predefined map, enter an **F** in the Cmd column next to that control block.

The following screen shows a formatted control block:

```
CA SymDump System V9.1 --------- Map  -------------------------- Line 1 of 222
Command ===>                                                    Scroll ===> CSR
-------------------------------------------------------------------------------
Jobname MIKED530  System XAE1      Asid 01FA  Userid MIKED
Start   00FA9D00  Symbol ASCB
-------------------------------------------------------------------------------- Lvl 3
Address  Offset   Label    Opcod Operands              Hex              Char
00FA9D00 +0000000 ASCB     DSECT 0XL384
00FA9D00 +0000000 ASCBEGIN DS    0D
00FA9D00 +0000000 ASCBASCB DC    CL4'ASCB'           C1E2C3C2         ASCB
00FA9D04 +0000004 ASCBFWDP DS    A                   00FA9B80         ....
00FA9D08 +0000008 ASCBBWDP DS    A                   00FA9E80         ....
00FA9D0C +000000C ASCBLTCS DC    A(0)                00000000         ....
00FA9D10 +0000010 ASCBSUPC DS    0D
00FA9D10 +0000010 ASCBSVRB DS    A                   007FD5A0         ."N.
00FA9D14 +0000014 ASCBSYNC DC    F'81070'            00013CAE         ....
00FA9D18 +0000018 ASCBIOSP DC    A(0)                00000000         ....
00FA9D1C +000001C ASCBWQLK DS    0XL4
00FA9D1C +000001C ASCBR01C DC    XL2'0000'           0000             ..
00FA9D1E +000001E ASCBWQID DC    H'0'                0000             ..
00FA9D20 +0000020 ASCBSAWQ DS    A                   1171B088         ...h
                  ASCBURRQ EQU   X'80'
 F1=HELP      F2=SPLIT     F3=END       F4=DUMP      F5=RFIND     F6=MAP
 F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

The formatted display shows the control block with all of its individual fields separated.

Dumping a Control Block

You can display a control block using a standard dump view by placing an **S** in the Cmd column next to the control block item.

The following screen shows an unformatted control block:

```
CA SymDump System V9.1 --------- Dump --------------------------- Line 1 of 96
Command ===>                                                    Scroll ===> CSR
-------------------------------------------------------------------------------
Jobname MIKED530  System XAE1      Asid 01FA  Userid MIKED
Start   00FA9D00  Symbol ASCB
------------------------------------------------------------------------ Lvl 3
Address  Offset   +0       +4       +8       +C       *                *
00FA9D00 +0000000 C1E2C3C2 00FA9B80 00FA9E80 00000000 *ASCB............*
00FA9D10 +0000010 007FD5A0 00013CAE 00000000 00000000 *."N.............*
00FA9D20 +0000020 1171B088 00050000 000300FF 00000000 *...h............*
00FA9D30 +0000030 7FF16EA0 C0000000 15C3F100 00000000 *"1>.{....C1.....*
00FA9D40 +0000040 000000C2 0D1B1F40 B7E95C9A 65DE9781 *...B... .Z*...pa*
00FA9D50 +0000050 000141DE 807FDC88 B7E35351 00000000 *.....".h.T......*
00FA9D60 +0000060 007FFE88 FFFF0100 00000000 007FDE90 *.".h.........".."*
00FA9D70 +0000070 D9B900C0 00000010 1194E1F0 007FE0A8 *R..{.....m~0."\y*
00FA9D80 +0000080 00000042 1171B088 00000000 40000000 *.......h.... ...*
00FA9D90 +0000090 02716180 026FEA08 00000300 00000000 *../..?..........*
00FA9DA0 +00000A0 00000000 00000000 00000000 00000000 *................*
00FA9DB0 +00000B0 00FA113C 00000000 00000000 00000000 *................*
00FA9DC0 +00000C0 00000007 0000141D 000000E7 1BD26980 *...........X.K..*
00FA9DD0 +00000D0 00000000 00000000 00000000 00000000 *................*
00FA9DE0 +00000E0 007FE950 FFFFFFFF 00000000 00000000 *."Z&............*
 F1=HELP      F2=SPLIT     F3=END       F4=DUMP      F5=RFIND     F6=MAP
 F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

While viewing a control block, you can enter other dump viewer commands (see "Dump Viewer Commands (see page 67)") to view other storage, locate data in core, add data to your keep window, update your electronic notepad, and so on. These commands create a new display level, leaving the control block display active but not visible. Ending the new display level returns you to the control block display.

Ending the control block display (using the END command or PF key) returns you to the dump tree display.

The Profile

Each individual user of the dump viewer on TSO/ISPF gets a unique profile member in the ISPF profile data set. The profile member contains general options for the user, such as PF key settings. The profile member also contains up to twenty entries (called slots) used to store state information about dump data sets that were viewed. Each slot is associated with a dump by the name of the reports data set.

When a user selects a dump data set for viewing for the first time, a new slot is allocated for that dump data set in the user's profile. Each user can keep profile information for up to 20 dumps concurrently. If all of the slots are used, the one with the oldest date of last reference is recycled.

A dump slot in the profile contains information required to restore the viewing environment to its most recent state. The state information includes:

- All user-defined equates
- All viewed storage areas
- All data in the Keep Window
- The current status of the Keep Window

When a viewing session is ended, information is stored in the appropriate profile slot. When the same dump is selected again for viewing, the last viewing state is restored automatically.

The profile member also contains up to 20 slots for electronic notepad data. These slots are separate from the state information but are managed in exactly the same way. Each individual user can keep notes for up to 20 dumps, and the slots are associated with the dump by the dsname of the reports data set.

Both state data and notes data for a dump are limited to a maximum length of 32 KB. Once this limit is reached, no additional data can be stored in the profile slot.

Chapter 4: Advanced Techniques

Several easy-to-master techniques will make your dump viewing sessions more productive. It is recommended that you set your PF keys to some of the CA SymDump System commands to facilitate their use.

The *Keep Window* and the *Electronic Notepad* can help with your diagnostic procedure. Learn to use the *KEEP* command to copy any data line from any display into your *Keep Window*. The *NOTES* command enables you to maintain notes for each dump as you view.

Use the *Auto-Mapping* to view any storage location with labels retrieved from the appropriate OS or CICS control block. Learn how the *EQUATE* command can be used to create symbols and assign maps to storage locations, and how the *HOME* command can help you to control your movement through the display levels.

Details of these advanced techniques are described in this chapter.

This section contains the following topics:

Using PF Keys (see page 46)
Mapping Dump Storage Location (see page 48)
Using Symbols (see page 50)
Using the Keep Window (see page 52)
Using the Electronic Notepad (see page 53)
Display Levels (see page 55)

Using PF Keys

Using PF keys to execute some of the more common commands helps save time and reduce keystroke errors when entering commands.

To set your PF keys, type **KEYS** on any CA SymDump System command line and press ENTER. A standard PF keys dialog appears, enabling you to change your PF key settings for the product.

The KEYS dialog is shown here:

```
                PF Key Definitions and Labels - Primary Keys
Command ===>
                                                                    More:     +
Number of PF Keys . . . 24                        Terminal type  . . 3278
Enter "/" to select . .           (Enable EURO sign)

PF1 . . . HELP
PF2 . . . SPLIT
PF3 . . . END
PF4 . . . DUMP
PF5 . . . RFIND
PF6 . . . MAP
PF7 . . . UP
PF8 . . . DOWN
PF9 . . . SWAP
PF10  . . LEFT
PF11  . . RIGHT
PF12  . . RETRIEVE

PF1  Label  . .           PF2  Label  . .           PF3  Label  . .
PF4  Label  . .           PF5  Label  . .           PF6  Label  . .
PF7  Label  . .           PF8  Label  . .           PF9  Label  . .
PF10 Label  . .           PF11 Label  . .           PF12 Label  . .
```

Using the Keys dialog, you can assign any PF key to any dump viewer command. It is probably best to only reassign those keys whose functions are not used by the dump viewer.

For example, some of your PF keys may already be assigned to some of these functions, which are used by the dump viewer:

- DOWN
- HELP
- RFIND
- RETRIEVE
- SWAP
- END
- LEFT
- RIGHT
- SPLIT
- UP

However, you can replace the following keys, which are not used by CA SymDump System, without interfering with other functions:

- RCHANGE
- RETURN

The TSO/ISPF dump viewer executes under its own unique application ID, so each user maintains separate key settings that affect only the use of dump viewer.

Using PF keys to execute cursor-sensitive commands also gives you *point-and-shoot* access to dump information. The CA SymDump System dump viewer for TSO/ISPF offers the following cursor-sensitive commands:

CMSG

Request CICS Message Help

DUMP

Display dump storage

DISASSEM

Disassemble program storage

KEEP

Copy data to the Keep Window

MAP

Map control blocks

For any of these commands, the cursor position can be used to select the command argument required to complete the command. Simply place the cursor on any token in the data portion of any display and press the PF key assigned to the command!

You can also enter any of these commands manually on the command line without operands. The data at the current cursor location is used as the command argument.

Example

Select any dump for viewing. Then select the *Abend Summary* report from the *Favorites* folder. Place your cursor on the current TCB address shown in the report and press the PF key that you have assigned to the **DUMP** command. The storage for the current TCB displays.

You get the same result by typing **DUMP** on the command line, placing your cursor on the current TCB address and pressing ENTER.

Because the current TCB address is also a known control block, try the same example using the **MAP** command instead of **DUMP**. The same storage is displayed, but this time it is mapped using the appropriate mapping DSECT for the TCB control block.

The ability to map control blocks without specifying a MAP name on the command is called *Auto-Mapping* and is available for all of the known OS and CICS control blocks listed in the dump tree.

Mapping Dump Storage Location

A map is a dummy section (or DSECT) that can be used with the **MAP** command to format an area of virtual storage within a dump. CA SymDump System provides built-in maps for many of the OS and CICS control blocks. After loading any dump, use the **LISTMAPS** command to display the names of the loaded maps. Use the **LOADMAPS** command to load maps from a member in a map library. Use the **MAP** command to format the contents of virtual storage using one of the loaded maps.

The ability to map control blocks without specifying a MAP name on the command is called *Auto-Mapping* and is available for all of the known OS and CICS control blocks listed in the dump tree.

Use Auto-Mapping to map any storage location to the appropriate OS or CICS control block automatically. You do not need to know in advance the name of the mapping DSECT or even the type of control block being mapped. For all known control blocks in the dump, this is handled automatically for you.

You can use Auto-Mapping from any display that supports the MAP command. Here are some typical uses:

- Map the currently displayed storage location.

  To reformat the current storage location using the appropriate control block map, type **MAP *** on the command line.

- Map the storage at any address in the current display.

  To map storage at an address in the current display, first type **MAP** on the command line, place your cursor over the desired address in the display, and press ENTER.

  If you have a PF key set for **MAP**, place the cursor over the address and press the PF key instead.

- Map the storage at an address that is not currently displayed.

  To map any storage location automatically, type **MAP address** on the command line and press ENTER.

- Map a control block that is listed in the Dump Tree.

  If a control block is listed in the dump tree, place an **F** in the Cmd column next to that control block and press ENTER.

Note: If the storage address does not correspond to a known OS or CICS control block, it cannot be mapped automatically. Only those control blocks listed in the dump tree are known. However, you can always use the **MAP** command to map any storage location using a specified map name.

For more information about the commands related to mapping storage, see "Dump Viewer Commands (see page 67)".

Using Symbols

A symbol is simply a label used to identify a storage address within a dump. Some symbols are built-in for every dump, and others can be user-defined.

Once defined, a symbol may be used as part (or all) of the address argument for any **DUMP**, **MAP**, **DISASSEM**, or **EQUATE** command. The symbol is automatically replaced by its assigned value during address resolution.

Use the **EQUATE** command to define a symbol, assign it to a storage location, and optionally identify a map name for Auto-Mapping. Whenever a dump is loaded, built-in symbols are provided for the PSW, registers, and current TCB address. All of the built-in and user-defined symbols are stored in your profile and are preserved across viewing sessions.

Use the **SYMBOLS** command to list the currently defined symbols, and use the **DROP** command to remove a previously defined symbol.

Built-in Symbols

CA SymDump System provides the following built-in symbols for each dump:

PSW

The PSW at the time the dump was captured.

CURRTCB

The address of the TCB which requested the dump.

R0 thru R15

The general purpose registers at the time of the dump.

Examples

Symbols are used in the following examples:

To disassemble the instruction at the PSW address at the time of the dump:

```
DISASSEM PSW
```

or

```
DISASSEM PSW-2
```

To map the TCB at the time of the dump:

```
MAP CURRTCB
```

Note: Most OS control blocks can be mapped using Auto-Mapping and therefore do not require a map name.

To dump the register savearea at the time of the dump:

```
DUMP R13
```

To dump the previous register savearea:

```
DUMP R13+4?
```

To map the previous register savearea:

```
MAP R13+4?,SAVEAREA
```

Using the Keep Window

The *Keep Window* is a dynamic area located just above the highlighted header line on any display. You can copy any data line from any display into this area, causing that data line to remain in view even after you exit the display.

To add a data line to your *Keep Window*, first type **KEEP** on the command line, then place your cursor on the data line and press ENTER. Alternatively, if you have set a PF key for **KEEP**, place your cursor on any data line and press that key. The data line is added automatically to your Keep Window.

This is the Keep Window:

```
CA SymDump System V9.1 --------- Dump Tree ---------------------- Line 1 of 12
Command ===>                                                      Scroll ===> CSR
-------------------------------------------------------------------------------
System    XAE1            Asid      01FA           UserId    MIKED
JobName   MIKED530        Date      2009/07/11     Time      16.08.53
Program   DFHSIP          Offset    000AC970       Code      SM0103
------------------------------ (Keep) -----------------------------------
PSW at time of error:        078D2000 95DEF5F0      DFHSIP  +AC970
   Reg 0  = 000000B8  PSA+B8             Reg 8  = 15EB67D8  E-PVT
   Reg 1  = 16A42680  E-PVT              Reg 9  = 16A4270C  E-PVT
   Reg 2  = 15EB67D8  E-PVT              Reg 10 = 16A4270C  E-PVT
   Reg 3  = 95DEDDA8  DFHSIP+EDDA8       Reg 11 = 16A41D67  E-PVT
   Reg 4  = 16A42580  E-PVT              Reg 12 = 0005C680  PVT
   Reg 5  = 15DEEDA7  DFHSIP+EEDA7       Reg 13 = 16A42580  E-PVT
   Reg 6  = 15DEFDA6  DFHSIP+EFDA6       Reg 14 = 007E1540  JSTCB-2F8
   Reg 7  = 16A419E4  E-PVT              Reg 15 = 00000000  PSA
------------------------------------------------------------------------- Lvl 2
Cmd  Address     Description
 .             - Job=MIKED530
 .             - |-Favorites
 .               | |-Abend Summary
 .               | |-CICS Message Help
 F1=HELP      F2=SPLIT     F3=END       F4=DUMP      F5=RFIND     F6=MAP
 F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

The size of the window is dynamic depending on the number of data lines added.

Note: When the window contains no data, it does not appear.

Each user has a separate Keep Window for each dump they view. The contents of each is saved in their user profile when a dump viewing session is ended, and is restored to the same state the next time they select the same dump for viewing. You can also use the **KEEP** command from the Dump Index display, which is maintained separately, it is not preserved across sessions, and cannot be viewed while a dump is loaded.

Removing a Data Line

To remove a data line from the keep window:

1. Type **KEEP** on the command line.
2. Place your cursor on the line being removed.
3. Press ENTER.

Note: If you have a PF key set for **KEEP**, you can use that key instead of typing the command.

Use **REMOVE** as a synonym for **KEEP** to remove a line of data when the cursor is inside the window area.

Hiding the Keep Window

To prevent your Keep Window from displaying, type **KEEP OFF** on the command line and press ENTER.

To restore the display, type **KEEP ON**. The status of your window display (ON or OFF) is also saved in the user profile for each dump you view.

When **KEEP OFF** is specified, the data in your Keep Window is not lost; it is simply not displayed until the window display is reactivated. While **KEEP OFF** is in effect, data cannot be added or removed from the window.

Using the Electronic Notepad

The *Electronic Notepad* allows each user to maintain notes for each dump they view. The notepad is free-format and dynamically sized, allowing you to enter comments while viewing the dump.

Notepad records are 126 bytes wide to fill a 132-column screen format, and are horizontally scrollable for 80-column displays. You can enter any kind of data in the notepad because there is no syntax checking.

To open a notepad from the Dump Index display, place an **N** in the Cmd column next to the dump entry and press ENTER. You can also type **NOTES** on the command line and press ENTER. Then, when prompted enter the name of the reports data set for the dump.

To open a notepad for an open dump while viewing, type **NOTES** on the command line and press ENTER.

The first time you open the notepad for a new dump, the following message appears:

```
CA SymDump System V9.1 --------- Dump Index ---------------------- Line 1 of 9
Command ===>                                                    Scroll ===> CSR
-------------------------------------------------------------------------------
Index Dsna +-----------------------------------------------------+
---------- |                                                     | ----- Lvl 1
Cmd  Syste | No notes were found for the dump you selected.      |   Time
 .   E100  |                                                     |   10.25.57
 N   XAE1  | Press ENTER to start a new notepad for dump data set |   16.08.53
 .   XAE1  |                                                     |   16.01.01
 .   E100  | ===> PUBLIC.DUMPVIEW.CB7E95E2.A30A0CE3              |   11.15.05
 .   E100  |                                                     |   14.20.19
 .   TEST  | Press END to cancel the notes request.              |   07.32.55
 .   XAE1  |                                                     |   13.27.11
 .   XE44  +-----------------------------------------------------+   12.18.16
 .   XE44      009B  CARAC120  COBDEMO   0001B8C  AP0001  2009/03/31  16.40.52
-------------------------------------------------------------------------------
```

Press Enter to create a new notepad for the dump.

The Electronic Notepad is shown here:

```
CA SymDump System V9.1 --------- Notes -------------------------- Line 1 of 13
Command ===>                                                    Scroll ===> CSR
-------------------------------------------------------------------------------
Dump Dsname: PUBLIC.DUMPVIEW.CB7E95E2.A30A0CE3
Last Update: 2009/07/18 @ 16:09:15
------------------------------------------------------------------------ Lvl 4
Cmd  ....+....1....+....2....+....3....+....4....+....5....+....6....+....7....
 .
 .   Active Task:      Task #0037  Tran STGV  Term G001  User CICSUSER
 .                     Date 07/11/2009 at 16.08.53
 .
 .   Storage Overlay:  UDSA at 001C0440 for 0000380 bytes.
 .
 .   EXPLANATION:  A storage violation has been detected by the
 .   storage violation trap, which may be enabled via the CHKSTSK
 .   or the CHKSTRM system initialization parameters or via the
 .   CSFE transaction.  The code X' code ' is the exception
 .   trace point ID which uniquely identifies the type of storage
 .   violation detected.
 .
-------------------------------------------------------------------------------

 F1=HELP      F2=SPLIT     F3=END       F4=DUMP      F5=RFIND     F6=MAP
 F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Use the Cmd column to insert or delete lines from notepad using the **I** or **D** line commands, respectively.

The content of the notepad is stored in your user profile when you close the notepad, and is restored from the profile whenever you open the notepad.

Display Levels

The level number shown in the upper right corner of the display indicates how many display levels are active. When you enter the END command, the display terminates and the active display at the previous level reappears.

A *home* state is a display that remains active (that is, it continues to occupy a display level) until you explicitly terminate the display with an END command. Therefore, entering a command or requesting a new display from a home state level always creates a new level, incrementing the level number by one. The same action from a non-home state results in a new report replacing the existing report without adding a new level.

A home state is automatically created for the Dump Index display, the Dump Tree display, and any display created by entering a command (or a line command) from either of those displays. The Dump Index display is always level one. When you select a dump from the index, the Dump Tree for the selected dump appears as the level two display. Selecting any item from the tree or entering any command on the command line from the tree results in a level three display. These are automatic home state levels.

Use the **HOME** command to create a home state level for any other display.

Examples

From the Dump Tree display (home state level two)

1. Select the *Abend Summary* report from the *Favorites* folder.

   The report appears as level three, also a home state because it was selected from Dump Tree display.

2. Type **SYMBOLS** to display the currently defined symbols. A new level (four) is created for this display because it was created from a home state.

   Level four is not a home state because it was not created from either the Dump Tree or the Dump Index display.

3. Type **STATUS** to display the product status. Notice that the STATUS report *replaces* the SYMBOLS report in level four.

Note: Pressing the END key returns you to the previous level (three), which contains the Abend Summary report. The SYMBOLS report is no longer active, having been replaced in level four by the STATUS report.

In this example, to force the SYMBOLS report to be a home state:

1. Type **HOME** while viewing the report.
2. The STATUS report now occupies a new level (five).

Note: Pressing the END key from the STATUS report returns you to the SYMBOLS report.

Chapter 5: Utilities

CA SymDump System provides two programs that perform basic maintenance and utility functions in batch.

The dump index utility CADVIDXU provides batch access to view or update the contents of any dump index. It can also be used to initialize a new dump for viewing by building the storage index in batch.

The dump loading utility CADVILDD can be used to convert a SVC dump into a format that can be loaded by the CA SymDump System dump viewers.

A sample JCL member is provided for each of the utilities in the sample JCL library, each with a member name matching the utility name.

This section contains the following topics:

CADVIDXU (see page 57)
CADVILDD (see page 64)

CADVIDXU

Use CADVIDXU to display or modify the contents of the dump index, or to initialize a dump for viewing.

Sample JCL

Sample JCL for CADVIDXU is shown here:

```
//         JOB
//STEP1    EXEC PGM=CADVIDXU
//STEPLIB  DD   DISP=SHR,DSN=yourhlq.CCPILINK
//SYSPRINT DD   SYSOUT=*
//SYSIN    DD   *
  (input commands go here)
/*
```

No STEPLIB DD statement is required if CA SymDump System is available through the linklist.

Input commands can start in any column but each command must be fully contained on a single line.

Input Commands

The following input commands are supported:

- DELETE
- DSN
- INIT
- LOCK
- STGINDEX
- UNLOCK

Each command is described in detail in this chapter.

DELETE

Deletes one or more dumps and removes the corresponding index entries from the dump index. Dumps that have been locked (see the LOCK command later in this section) cannot be deleted.

Syntax

```
DELETE <selection-criteria>
```

Where selection-criteria refer to an expression used to select one or more dumps to delete. See Selection Criteria later in this section for information.

```
DELETE AGE GT 5
```

Example

This statement deletes all dumps in the dump index older than five days, provided that they were not locked to prevent deletion.

DSN

Identifies the name of the dump index. The DSN command must precede any other commands.

Syntax

```
DSN dump-index-dsname
```

Where dump-index-dsname refers to the fully qualified data set name for your dump index.

Note: Do not enclose the dsname in quotes.

Example

```
DSN CAI.DUMPIX
```

This statement initiates access to the dump index named CAI.DUMPIX.

INIT

Initializes a new dump index for capture. You must initialize a new dump index before using it for dump capture. You cannot reinitialize an existing dump index. To create a new dump index you must allocate a new data set using IDCAMS prior to initialization.

Syntax

```
INIT ENTRIES EQ nnnn
```

Where nnnn identifies the maximum number of dump index entries that can be allowed to occupy the dump index at any time. For more information about initializing a dump index, see the *Installation Guide*.

Example

```
INIT ENTRIES EQ 250
```

This statement initializes a new dump index and sets the maximum number of entries to 250.

LIST

Displays the attributes for one or more dumps from the dump index.

Syntax

```
LIST <selection-criteria>
```

Where selection-criteria refer to an expression used to select one or more dumps to list. For information, see "Selection Criteria (see page 62)".

Example

```
LIST COMP EQ S0C7
```

This statement displays the attributes for all dumps in the dump index whose completion code was S0C7.

LOCK

Locks a dump to prevent accidental deletion and places your own user ID in the Lock Userid attribute in the dump index.

Syntax

```
LOCK <selection-criteria>
```

Where selection-criteria is an expression used to select one or more dumps to lock. For information, see "Selection Criteria (see page 62)".

Example

```
LOCK ASID EQ 012C
```

This statement locks all dumps created for the address space whose ASID is equal to 012C.

STGINDEX

Builds the storage index to prepare a dump for loading into the viewer.

Syntax

```
STGINDEX <selection-criteria>
```

Where *selection-criteria* is an expression used to select one or more dumps whose storage indexes must be built. For information, see Selection Criteria (see page 62).

Example

```
STGINDEX ALL
```

This statement builds the storage index for all dumps for which the index has not already been built.

UNLOCK

Unlocks a previously locked dump to allow deletion and removes the Lock Userid attribute from the dump index entry.

Syntax

```
UNLOCK <selection-criteria>
```

Where *selection-criteria* is an expression used to select one or more dumps to be unlocked. For information, see "Selection Criteria (see page 62)".

Example

```
UNLOCK DATE LT 2010/01/21
```

This statement unlocks all dumps created before January 21, 2010.

Selection Criteria

Some of the input commands for CADVIDXU require selection criteria to determine which dumps must be targeted by the command.

To target all dumps in the index, specify:

ALL

Otherwise, specify a selection criteria expression as follows:

<attribute operator value>

Where:

attribute refers to one of the following:

AGE

Age of a dump.

Value must specify a number of days.

ASID

Address space ID for the captured dump.

Value must specify a four-digit hexadecimal address space ID.

CODE

Completion code from the captured dump.

Value must specify a completion code such as Sxxx or Uxxxx.

DATE

Date that the dump was captured.

Value must specify a date yyyy/mm/dd.

RDSN

Reports data set name for the dump.

Value must specify a fully qualified dsname, no quotes.

SDSN

Storage data set name for the dump.

Value must specify a fully qualified dsname, no quotes.

JOB

Job name for the captured dump.

Value must specify a job name.

LUSER

User ID owning a no delete lock for the dump.

Value must specify a user ID.

PGM

Executing program name from the captured dump.

Value must specify a program name.

SYS

System ID for the system on which the dump was captured.

Value must specify a system id.

USER

User ID from the captured dump.

Value must specify a user id.

operator Is the type of comparison that is made between specified attribute of each dump and the specified value. If the comparison is successful, the dump is selected for processing.

EQ

Attribute is equal to the value specified.

NE

Attribute is not equal to the value specified.

GT

Attribute is greater than the value specified.

LT

Attribute is less than the value specified.

GE

Attribute is greater than or equal to the value specified.

LE

Attribute is less than or equal to the value specified.

Value Is a target for the comparison, and has different formats depending on the attribute specified. The specific meaning and format of each value is described with the attributes discussed previously.

Examples

```
AGE  GT  5

USER  EQ  DUBMI01

COMP  EQ  S0C4

SYS  EQ  TEST
```

CADVILDD

Use CADVILDD to convert an SVC dump into a format that can be loaded by the CA SymDump System dump viewer.

This utility enables you to use the CA SymDump System dump viewer to browse the storage for a dump that was not captured by the product. It does not modify the input dump data set in any way, so that data set can still be used with IBM's IPCS product to format dump information and execute verb exits. The utility simply provides an alternate viewing environment for dump storage, one that allows control block mapping, point-and-shoot access, and other dump viewer features for dumps not captured by the product.

Since CA SymDump System did not capture the input dump, *Favorites*, *Formatted Reports* and *CICS Control Blocks* are not available in the resulting dump tree. *OS Control Blocks* and *Loaded Programs* are included in the dump tree.

This utility:

- Creates two dump data sets similar to a normal dump capture using the allocation parameters defined in the options table CADVTABL
- Adds the dump to the currently active dump index
- Builds the storage index to prepare the dump for viewing

This utility can only be used on a system on which dump capture is active.

Sample JCL

Sample JCL for CADVILDD is show here:

```
//         JOB
//STEP1    EXEC PGM=CADVILDD
//STEPLIB  DD   DISP=SHR,DSN=yourhlq.CCPILINK
//CADVSYSD DD   DISP=SHR,DSN=input.dump.dsname
//SYSPRINT DD   SYSOUT=*
```

Note:

- No STEPLIB DD statement is required if CA SymDump System is available through the linklist
- The CADVSYSD DD statement allocates the SVC dump being converted.

Appendix A: Dump Viewer Commands

This section describes the commands available in the dump viewer.

Some commands are only available on Dump Index display, while others are only available when a dump is loaded. For a list of valid commands for each of these environments, see the chapter Viewing Dumps on TSO/ISPF.

This section contains the following topics:

BOTTOM (see page 68)
CMSG (see page 68)
CTRACE (see page 68)
DISASSEM (see page 69)
DOWN (see page 69)
DROP (see page 70)
DUMP (see page 71)
EQUATE (see page 74)
FIND (see page 75)
HELP (see page 76)
HOME (see page 76)
KEEP (see page 77)
LEFT (see page 77)
LISTMAPS (see page 78)
LOADMAPS (see page 78)
MAP (see page 79)
NOTES (see page 80)
OPTIONS (see page 80)
PRINT (see page 80)
REFRESH (see page 82)
RFIND (see page 82)
RIGHT (see page 82)
SELECT (see page 83)
SELECTX (see page 84)
SETINDEX (see page 84)
STATUS (see page 85)
SORT (see page 85)
SYMBOLS (see page 86)
TOP (see page 87)
UP (see page 87)

BOTTOM

Scrolls the display to the last line.

Abbreviation

None

Syntax

```
BOTTOM
```

CMSG

Displays a CICS Message Help report for any CICS message, CICS dump code or CICS transaction abend code.

Abbreviation

CM

Syntax

```
CMSG arg
```

Where:

arg specifies the CICS message, CICS dump code or CICS transaction code for which the help report is being requested.

Examples:

- CMSG DFHAP0001
- CMSG SM0103
- CMSG ASRA

CTRACE

Displays the CICS Auxiliary Trace dialog.

Abbreviation

CT

Syntax

```
CTRACE
```

DISASSEM

Formats the contents of virtual storage using the built-in disassembler.

Abbreviation

DI

Syntax

```
DISASSEM address length
```

Where:

address

Specifies the virtual storage location to be disassembled.

Note: For more information about address specification, see the description of the DUMP command in this appendix.

length

Identifies the length of storage to be disassembled.

Examples:

- To convert a MAP display or DUMP display format to a DISASSEM display format:
  `DISASSEM *`
- To disassemble the storage pointed to by general register 14 using the predefined symbol R14:
  `DISASSEM R14`
- To disassemble the instruction at the PSW address:
  `DISASSEM PSW`
- To disassemble the return address passed to the currently executing subroutine:
  `DISASSEM R13?+4?+C?`

DOWN

Use the DOWN command to scroll the current display forward.

Abbreviation

None

Syntax

```
DOWN {number-of-lines|MAX|CSR|PAGE|HALF}
```

Where:

number-of-lines

Specifies the number of lines to scroll the display

MAX

Scrolls the display to the bottom.

CSR

Scrolls the display to the current cursor position, or one page if the cursor is not located within the display area.

PAGE

Scrolls the display by the number of lines in the display area.

HALF

Scrolls the display by one half the number of lines in the display area.

If no argument is specified, the scroll amount is determined by the default scroll value that appears in the upper right corner of the display.

DROP

Deletes a previously defined symbol.

Abbreviation

None

Syntax

```
DROP <symbol-name|ALL>
```

Where:

symbol-name

Specifies the name of the symbol to delete.

ALL

Specifies that all symbols must be deleted.

Examples:

- DROP CURRTCB
- DROP ALL

DUMP

Displays the contents of virtual storage from the selected dump.

Abbreviation

D

Syntax

`DUMP address`

Where:

address

Specifies the virtual storage location to be dumped, address can include a symbol and can specify an indirect address. Enter address using the following syntax. The base variable is required; the *prefix*, *suffix* and *offset* variables are optional:

`[prefix]base[suffix][+|-offset[suffix]…]`

A symbol can be used as part or all of the address operand. The symbol is automatically replaced by its assigned value during address resolution. For more information, see "Using Symbols (see page 50)". The built-in symbols are as follows:

PSW

The PSW at the time the dump was captured.

CURRTCB

The address of the TCB at the time the dump was captured.

R0 to R15

The general purpose registers at the time the dump was captured.

Valid values for **prefix** are:

@

Treats the address as a 31-bit indirect address.

%

Treats the address as a 24-bit indirect address.

Valid values for **base** are:

*****

Current location reference. Valid only when the Command is entered from a DUMP, MAP, or DISASSEM display. The asterisk (*) is replaced by the starting address of the current display.

hex value

A one- to eight-digit hexadecimal address.

decimal value

A one to 10 decimal digit followed by a decimal point.

symbol

A symbol previously defined by an EQUATE command or one of the predefined symbols.

Valid values for **suffix** are:

?

Treats the address as a 31-bit indirect address.

%

Treats the address as a 24-bit indirect address.

Valid values for **offset** are:

hex value

A one to eight digit hexadecimal address.

decimal value

A one to ten decimal digit followed by a decimal point.

L'symbol

The length of a previously defined symbol.

L'map

The length of a previously loaded map.

L'map label

The length of a previously loaded label within a loaded map.

nnnnnnnnK

Any number of kilobytes (KB). The value *nnnnnnnn* is multiplied by 1024 for kilobytes.

nnnnnnnnP

Any number of pages (P). The value *nnnnnnnn* is multiplied by 4096 for pages.

nnnnnnnnM

Any number of megabytes (MB). The value *nnnnnnnn* is multiplied by 1048576 for megabytes.

map.label

The offset of a label defined within a loaded map (that is, psa.psaaold).

symbol

The value of a symbol previously defined by an EQUATE command or the value of a predefined symbol.

Indirect Addresses

An indirect address identifies the address of an address. Suffix characters used to specify indirect address references are processed as they are encountered from left to right. Prefix characters used to specify indirect address references are processed once after the remainder of the address parameter has been completely resolved.

Examples:

- From an existing dump display, to display the previous x'100' bytes of virtual storage:

  ```
  DUMP *-100
  ```

- To convert a MAP or DISASSEM display to DUMP format:

  ```
  DUMP *
  ```

- To display in dump format the contents of the virtual storage pointed to by general register 1 using the predefined symbol R1:

  ```
  DUMP R1
  ```

- To display in dump format the contents of the virtual storage pointed to by the first full word located at the address in general register 1, enter one of the following:

  ```
  DUMP R1?+0?
  DUMP R1??
  ```

- To display in dump format the contents of the current TCB, enter one of the following:

  ```
  DUMP CURRTCB
  DUMP PSA.PSATOLD%
  ```

EQUATE

Defines a symbol to represent a virtual storage address or any other numeric value. For more information, see "Using Symbols (see page 50)".

Abbreviation

EQ

Syntax

```
EQUATE symbol address {length|USE mapname}
```

Where:

symbol

Specifies a one to eight character symbol name beginning with a letter (a to z) and containing any alphanumeric characters including the national symbols @, #, and $.

address

Specifies the virtual storage location to be equated with a symbol.

Note: See the description of the DUMP command in this appendix for more information about address specification.

length

Specifies the length of the area to be equated with a symbol.

Mapname

Specifies the name of a loaded map that is used to Auto-Map the specified address.

Examples:

- To equate the symbol X with the storage location currently being displayed:
  ```
  EQUATE X *
  ```
- To equate the symbol LTCB with the length of the map being used for Task Control Blocks:
  ```
  EQUATE LTCB  L'TCBFIX
  ```
- To equate the symbol EP with the start of the program last in control before the dump, using an arbitrary length of 4096 bytes:
  ```
  EQUATE EP R13?+4?+10? 4K
  ```

FIND

Locates:

- A data string in dump storage from a DUMP display
- A text string in any other display

Abbreviation

F

Syntax

From a DUMP display:

```
FIND data start-address {length}
```

From any other display:

```
FIND string {PREV}
```

Where:

data

Specifies the EBCDIC or hexadecimal data to be located. Specify hexadecimal data as an even number of digits enclosed by x' '.

start-address

Specifies the storage address where the search must begin.

Note: For more information about address specification, see the description of the DUMP command in this appendix.

length

Specifies the length, as a hexadecimal value, of storage to be searched. If not specified, a default length of 10000 bytes is searched.

string

Specifies 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 quotation marks (").

PREV

Locates the previous occurrence of string.

Examples:

- FIND X'47F0' * 1000
- FIND COPYRIGHT 2CB00

HELP

Requests help for the current display, the current message, or the specified topic or message.

Abbreviation

H

Syntax

HELP {topic|COMMANDS|TOPICS|MESSAGE}

Where:

topic

Specifies any command, message number, or topic for which help is being requested.

COMMANDS

Displays a selection list of all dump viewer commands.

TOPICS

Displays a selection list of help topics.

MESSAGE

Displays a selection list of all product messages.

Examples:

- HELP DUMPTREE
- HELP CADV400
- HELP COMMANDS

HOME

Gives the current display home state status.

Abbreviation

None

Syntax

```
HOME
```

KEEP

Adds a data record from the display to the *Keep Window;* enables, or disables the window display. The KEEP command can also be used as a synonym for REMOVE.

Abbreviation

None

Syntax

```
KEEP {ON|OFF}
```

Where:

ON

Enables the window display.

OFF

Disables the window display.

If the *Keep Window* display is enabled and no argument is specified on the KEEP command, the line of data identified by the cursor position is added or removed from the window.

LEFT

Scrolls the current display to the left.

Abbreviation

None

Syntax

```
LEFT {number-of-columns|MAX|CSR|PAGE|HALF}
```

Where:

number-of-columns

Specifies the number of columns to scroll the display

MAX

Scrolls the display to the first column.

CSR

Scrolls the display to the current cursor position, or the width of one page if the cursor is not located within the display area.

PAGE

Scrolls the display by the number of columns in the display area.

HALF

Scrolls the display by one half the number of columns in the display area.

If no argument is specified, the scroll amount is determined by the default scroll value that appears in the upper right corner of the display.

LISTMAPS

Displays the names of the currently loaded maps.

Abbreviation

None

Syntax

```
LISTMAPS
```

LOADMAPS

Loads maps from a member in a map library.

Abbreviation

None

Syntax

```
LOADMAPS mapname [maplib]
```

Where:

mapname

Specifies the name of a map library member to be loaded.

maplib

Specifies the name of the map library.

Example:

```
LOADMAPS CADVMMVS CAI.MAPLIB
```

MAP

Formats the contents of virtual storage using one of the loaded maps. For more information about the use of maps, see "Advanced Techniques (see page 45)."

Abbreviation

None

Syntax

```
MAP address mapname
```

address

Specifies the virtual storage location to be mapped.

Note: For more information about address specification, see the description of the DUMP (see page 71) command.

mapname

Specifies the name of the map to use. When mapping a known control block, you do not need to specify the name of the map to use for formatting. The location and map name for most OS control blocks and many CICS control blocks are already known to the dump viewer.

Note: For more information about listing available maps, see the description of the LISTMAPS (see page 78) command.

Examples:

- To convert a DUMP display of the current TCB to a MAP display format:
  ```
  MAP * TCB
  ```
- To map the storage pointed to by general register 13 using the DFHCSADS map:
  ```
  MAP R13 DFHCSADS
  ```

NOTES

Edits the *Electronic Notepad*.

Abbreviation

None

Syntax

```
NOTES {dsname}
```

Where:

dsname

The dsname of the reports dataset for an existing dump. If you specify a fully-qualified dsname, it must be enclosed in apostrophes. If no apostrophes are used, your ZPREFIX value will be appended as the high-level qualifier. This argument is only permitted when using the NOTES command on the command line from the Dump Index display. Once a dump is selected for viewing, only the notepad for that dump may be edited.

OPTIONS

Displays the options in effect.

Abbreviation

OPT

Syntax

```
OPTIONS
```

PRINT

Use the PRINT command from any display to print all or part of the display to any print destination. You are always prompted for a printer destination.

Abbreviation

PR

Syntax

```
PRINT
```

No parameters are required. However, you are prompted for the following information:

Title

A 1-32 character title that appears at the top of every printed page.

Printer

The destination to which the printed output will be routed. This can be specified as a printer name, *node.userid*, or left blank to spool the printed output to your TSO user ID.

Print Lines

The starting and ending lines to print. By default, the starting line is set to one and the ending line is set to the number of lines in the report.

Copies

Number of copies to print.

Class

The sysout class that will be used to allocate the print data set.

Lines/Page

Number of logical lines per page, including the title and header lines.

Record Size

Logical record length to use for the print data set. This is the maximum width of the data being printed. You can increase or decrease this value to fit your printer. However, decreasing the record size can result in truncation of data.

Page Def

Name of the library member that PSF uses to define the page layout for printing on a 3800 Printing Subsystem Model 3.

Form Def

Name of the library member that PSF uses to define the form layout for printing on a 3800 Printing Subsystem Model 3.

Chars

Name of the character arrangement tables for printing on a 3800 Printing Subsystem Model 3.

REFRESH

Refreshes the contents of the Dump Index display.

Abbreviation

REF

Syntax

```
REFRESH
```

RFIND

Repeats the previous FIND command.

Abbreviation

RF

Syntax

```
RFIND
```

RIGHT

Scrolls the current display to the right.

Abbreviation

None

Syntax

```
RIGHT {number-of-columns|MAX|CSR|PAGE|HALF}
```

Where:

number-of-columns

The number of columns to scroll the display

MAX

Scrolls the display to the last column.

CSR

Scrolls the display to the current cursor position, or the width of one page if the cursor is not located within the display area.

PAGE

Scrolls the display by the number of columns in the display area.

HALF

Scrolls the display by one half the number of columns in the display area.

If no argument is specified, the scroll amount is determined by the default scroll value that appears in the upper right corner of the display.

SELECT

Selects a dump data set for viewing. This command is only valid from the Dump Index display.

Abbreviation

S

Syntax

```
SELECT
```

No parameters are required; however, you are prompted for the following information:

reports dsname

The data set name of a reports data set for the captured dump.

storage dsname

The data set name of a storage data set for the captured dump.

SELECTX

Selects a dump data set for viewing and adds the related data set names to the current dump index. This command is only valid from the Dump Index display.

Abbreviation

SX

Syntax

```
SELECTX
```

No parameters are required; however, you are prompted for the following information:

reports dsname

The data set name of a reports data set for the captured dump.

storage dsname

The data set name of a storage data set for the captured dump.

SETINDEX

Selects a new dump index file for the Dump Index display.

Abbreviation

SET

Syntax

SETINDEX *dsname*

Where:

Dsname

The data set name of dump index. If the *dsname* parameter is omitted, you are prompted for it.

STATUS

Displays the current status of the dump capture facility, the availability of SYSVIEW/E Services, the product genlevel, and the system ID. STATUS also displays the core address for each resident module associated with the dump capture facility.

Abbreviation

ST

Syntax

```
STATUS
```

SORT

Sorts the current output display on any column by name. Column names appear in the highlighted header line at the top of the display. By default, the display is sorted in ascending alphabetical order.

Once sorted, specify an asterisk in place of the column name to return the display to its initial order.

Abbreviation

None

Syntax

```
SORT <column-name|*> {D|H}
```

Where:

column-name

The name of the column as it appears on the highlighted header line in the display.

*****

Specifies that the display must be returned to its original sort order.

D

Sorts in descending order.

H

Indicates that the column being sorted contains hexadecimal data in EBCDIC display format and must be sorted with the characters A-F considered greater than 0-9.

Examples:

- SORT *
- SORT DATE D
- SORT OFFSET H

SYMBOLS

Displays the currently defined symbols. Symbols are created by the EQUATE command. For more information, see "Using Symbols (see page 50)".

Abbreviation

None

Syntax

```
SYMBOLS
```

Built-in Symbols

Each time a dump is loaded, CA SymDump System provides the following built-in symbols:

PSW

The PSW at the time the dump was captured.

CURRTCB

The address of the TCB which requested the dump.

R0 thru R15

The general purpose registers at the time the dump was captured.

TOP

Scrolls the display to the top line.

Abbreviation

None

Syntax

```
TOP
```

UP

Scrolls the current display backward.

Abbreviation

None

Syntax

```
UP {number-of-lines|MAX|CSR|PAGE|HALF}
```

Where:

number-of-lines

Specifies the number of lines to scroll the display.

MAX

Scrolls the display to the top.

CSR

Scrolls the display to the current cursor position, or one page if the cursor is not located within the display area.

PAGE

Scrolls the display by the number of lines in the display area.

HALF

Scrolls the display by one half the number of lines in the display area.

If no argument is specified, the scroll amount is determined by the default scroll value in the upper right corner of the display.

Appendix B: CA SymDump System Reports

During dump capture, CA SymDump System communicates with CA SYSVIEW (or Server) to collect information about the dumping address space. This information is stored in the reports data set, the smaller of the two data sets created for each dump. When the dump is loaded, the reports are displayed in the dump tree in the *Formatted Reports* folder, grouped by the type of information they provide and listed alphabetically within each group by report title.

Using the OPTLIB, you can customize your dump captures to include any of the reports available from CA SYSVIEW. Most of these reports are listed in the appendix Report Categories which lists the reports by group with a brief description of each. For a detailed description of the contents of these reports, including field-by-field explanations, refer to the *CA SYSVIEW* (or *Server*) *User Guide.*

In addition to these reports, CA SymDump System offers the following additional reports:

- #CICSAXS CICS Auxiliary Storage Summary
- #CICSKER CICS Kernel Error Summary
- #CICSMSG CICS Message Help
- #CICSSUM CICS Summary
- #CICSTRA CICS Trace (Interactive Dialog)
- #SUMMARY Abend Summary

By default, each of these reports also appears in the *Favorites* folder. These reports are only available to CA SymDump System users and are documented in this appendix.

This section contains the following topics:

CICS Task Storage Summary (see page 90)
CICS Kernel Error Report (see page 90)
CICS Message Help Report (see page 92)
CICS Summary Report (see page 93)
CICS Trace Dialog (see page 94)
Abend Summary Report (see page 98)

CICS Task Storage Summary

The CICS Task Storage Summary is generated for CICS dumps when the #CICSAXS command appears in the OPTLIB member during dump capture. This report summarizes all of the storage allocated for each active task at the time of the dump. The summary shows the storage address and length, the subpool name and DSA type, and the first sixteen bytes of data at the storage address. Additionally, if the leading or trailing crumple zone has been overlaid, a “storage violation” indicator is displayed (in the StgV column) to show this.

This is a sample Task Storage Summary:

```
CA SymDump System V9.1 --------- Task Storage Summary ----------- Line 1 of 14
Command ===>                                                    Scroll ===> CSR
-------------------------------------------------------------------------------
CICS Task Storage Summary
------------------------------------------------------------------------ Lvl 3
TaskNo  Address   Length    DSANm  StgV  Subpool   +8       +C       +10      +
000004  00046000  00000440  CDSA         M0000004  00B46EC4 C6C8C5C9 E4E24040 4
000005  00049000  00000440  CDSA         M0000005  00B46EC4 C6C8C5C9 E4E24040 4
000007  1CC85000  000005D0  ECDSA        C0000007  00B46EC4 C6C8C5C9 E4E24040 4
000019  1C436840  00000620  ECDSA        C0000019  06086EE9 D5C1C3F2 00000000 0
000019  1C436440  00000400  ECDSA        C0000019  00006EE9 D5C1C3F1 C7F0F0F1 9
000019  1C436000  00000440  ECDSA        C0000019  00B46EC4 C6C8C5C9 E4E24040 4
000018  1C438000  00000440  ECDSA        C0000018  00B46EC4 C6C8C5C9 E4E24040 4
000028  001C4000  00000440  UDSA         B0000028  00B46EC4 C6C8C5C9 E4E24040 4
000028  1CD20330  000000A0  EUDSA        U0000028  0000021C 0000025C 0000028C F
000028  1CD20300  00000030  EUDSA        U0000028  6EE3E2C9 D6C14040 00100000 C
000028  1CD20000  00000300  EUDSA        U0000028  000002E8 00000000 00000000 0
000028  1CC84000  000001B0  ECDSA        C0000028  FFFFFFFF FFFFFFFF FFFFFFFF F
000039  001C0440  00000380  UDSA   StgV  B0000039  00000367 00000000 00000000 0
000039  001C0000  00000440  UDSA         B0000039  00B46EC4 C6C8C5C9 E4E24040 4
```

CICS Kernel Error Report

The CICS Kernel Error Summary is generated for CICS dumps when the #CICSKER command appears in the OPTLIB member during dump capture. This report summarizes the last CICS kernel errors that occurred in the CICS region. The summary shows the system and CICS error code, the program and the offset where the error occurred, the pointer to the DFHKERRD control block, and the date and time of the error.

When this report is generated, the DFHKERRD address for each kernel error is also listed in the *CICS Control Blocks* folder under the subfolder *Kernel Errors*. These control blocks are also auto-mapped for your convenience.

The following is a sample CICS Kernel Error Summary:

```
CA SymDump System V9.1 ------- Kernel Errors ------------------- Line 1 of 13
Command ===>                                                    Scroll ===> CSR
--------------------------------------------------------------------------------
CICS Kernel Error Summary
------------------------------------------------------------------------ Lvl 3
Error     Module    Offset  Type                        DFHKERRD  Error#  Date
0C7/AKEA  ASMDEMO   019C    Program Check        0C61E110  000013  2009/03/21
---/ASRA  DFHSRP    03C2    Abend Percolate      0C61DF68  000012  2009/03/20
0C7/AKEA  COBDEMO   1B8C    Program Check        0C61DDC0  000011  2009/03/20
---/ASRA  DFHSRP    03C2    Abend Percolate      0C61DC18  000010  2009/03/20
0C7/AKEA  ASMDEMO   019C    Program Check        0C61DA70  000009  2009/03/20
---/ASRA  DFHSRP    03C2    Abend Percolate      0C61D8C8  000008  2009/03/20
0C7/AKEA  COBDEMO   1B8C    Program Check        0C61D720  000007  2009/03/20
---/ASRA  DFHSRP    03C2    Abend Percolate      0C61D578  000006  2009/03/20
0C7/AKEA  ASMDEMO   019C    Program Check        0C61D3D0  000005  2009/03/20
---/ASRA  DFHSRP    03C2    Abend Percolate      0C61D228  000004  2009/03/20
0C7/AKEA  PL1DEMO   1A74    Program Check        0C61D080  000003  2009/03/20
---/ASRA  DFHSRP    03C2    Abend Percolate      0C61CED8  000002  2009/03/20
0C7/AKEA  COBDEMO   1B8C    Program Check        0C61CD30  000001  2009/03/20
--------------------------------------------------------------------------------
```

CICS Message Help Report

The CICS Message Help report is generated for CICS dumps when the #CICSMSG command appears in the OPTLIB member during dump capture. You can also create this report dynamically from the dump viewer using the CMSG command. This report describes the reason for the CICS message, dump code or transaction abend code and in many cases recommends an action.

To view this report, the CADVCMSG DD must allocate the DFHCMACD member of the SDFHMSGS library for CICS when the viewer is started.

The following is a sample CICS Message Help report:

```
CA SymDump System V9.1 --------- CICS Message Help -------------- Line 1 of 43
Command ===>                                                    Scroll ===> CSR
--------------------------------------------------------------------------------
CICS Message Help for DFHSM0103
------------------------------------------------------------------------ Lvl 2

           DFHSM0103   APPLID  A STORAGE VIOLATION (CODE
                     X'CODE' ) HAS BEEN DETECTED BY THE STORAGE
                    VIOLATION TRAP. TRAP IS NOW INACTIVE.

          EXPLANATION:  A storage violation has been detected by the
          storage violation trap, which may be enabled via the CHKSTSK
          or the CHKSTRM system initialization parameters or via the
          CSFE transaction.  The code X' code ' is the exception
          trace point ID which uniquely identifies the type of storage
          violation detected.

          SYSTEM ACTION:  CICS disables the storage violation trap.
          An exception entry (X' code ' in the message) is made in
          the trace table.  A system dump is taken, unless you have
          specifically suppressed dumps in the dump table.

 F1=HELP      F2=SPLIT     F3=END       F4=DUMP      F5=RFIND     F6=MAP
 F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

CICS Summary Report

The CICS Summary report is generated for CICS dumps when the #CICSSUM command appears in the OPTLIB member during dump capture. This report identifies the CICS system data areas, the currently dispatched task, and displays all of the storage areas owned by each of the active tasks.

When this report is generated, each of the task-level control blocks is added to the *CICS Control Blocks* folder under the subfolder *Task Control Areas*. These control blocks are also auto-mapped for your convenience.

The following is a sample CICS Summary report:

```
CA SymDump System V9.1 --------- CICS Summary ------------------ Line 1 of 148
Command ===>                                                    Scroll ===> CSR
-------------------------------------------------------------------------------
CICS Summary Report for A04IC9N6
------------------------------------------------------------------------ Lvl 3

******** CICS Areas *********
                                          +0       +4       +8       +C
CSA      at 0004DE20 for 0000204 bytes:  00000248 0000D0A0 1C39B0E8 9C7CD7FE  .
COPFL    at 0004D648 for 0000588 bytes:  00000000 00000000 1C494A00 00000000  .
SIT      at 9C0C16B0 for 0000850 bytes:  E702E753 00000000 08500400 00000000  X
CWA      at 000C1000 for 0000400 bytes:  00000000 00000000 00000000 00000000  .
TCT      at 00051D80 for 0000600 bytes:  0006973C 00069810 00051D8C 8004DE20  .

Current TCA at 0005A680 for task #0039 (STGV).

**** Active Task Summary ****

-------------------------------------------------
| Task #0039  Tran STGV  Term G001  User CICSUSER  |
| Date 07/22/2009 at 10.11.07                     |
-------------------------------------------------
 F1=HELP      F2=SPLIT     F3=END       F4=DUMP      F5=RFIND     F6=MAP
 F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

CICS Trace Dialog

The CICS Trace Dialog is available for CICS dumps when the #CICSTRA command appears in the OPTLIB member during dump capture. You can also create this report dynamically from the dump viewer using the CTRACE command. Use this interactive dialog to view the CICS internal trace table, formatted by the CICS trace formatter.

To view this report, the CADVCICS DD must allocate a concatenation of the SDFHLOAD and SDFHLINK libraries for your CICS release when the viewer is started. If you use multiple CICS releases, you can concatenate the libraries for multiple releases.

The CICS Trace dialog enables you to view the internal trace in any of the formats provided by the CICS trace formatter program. This includes *abbreviated*, *short,* and *full* trace formats. The dialog also provides filters that let you to customize the view by selecting only the entries that interest you, and line commands that allow you to zoom in for full details on individual entries.

When the dialog is first appears, the unfiltered trace table is displayed in the abbreviated format, and the filters are disabled, as shown here:

```
CA SymDump System V9.1 --------- Trace ----------------------- Line 1 of 6600
Command ===>                                                    Scroll ===> CSR
-------------------------------------------------------------------------------
CICS - AUXILIARY TRACE FROM 01/04/01 - APPLID A04IC9N6        6,600 ENTRIES
 VIEW ABBREV  FILTERS OFF  SHOW ON   COLUMNS "OR" OFF
           TASK  TCB   DM ID   MOD   DATA
 .         *     *     *  *    *     *
------------------------------------------------------------------------------ Lvl 3
 . =00001= 00053 QR    DS 0002 DSAT  ENTRY CHANGE_PRIORITY
 . =00002= 00053 QR    DS 0003 DSAT  EXIT  CHANGE_PRIORITY/OK
 . =00003= 00053 QR    AP F001 XCP   EXIT  WAIT
 . =00004= 00053 QR    AP 00E1 EIP   EXIT  SUSPEND               OK
 . =00005= 00053 QR    AP 00E1 EIP   ENTRY SUSPEND
 . =00006= 00053 QR    AP F000 XCP   ENTRY WAIT
 . =00007= 00053 QR    DS 0002 DSAT  ENTRY CHANGE_PRIORITY
 . =00008= 00053 QR    DS 0003 DSAT  EXIT  CHANGE_PRIORITY/OK
 . =00009= 00053 QR    AP F001 XCP   EXIT  WAIT
 . =00010= 00053 QR    AP 00E1 EIP   EXIT  SUSPEND               OK
 . =00011= 00053 QR    AP 00E1 EIP   ENTRY SUSPEND
 . =00012= 00053 QR    AP F000 XCP   ENTRY WAIT
 . =00013= 00053 QR    DS 0002 DSAT  ENTRY CHANGE_PRIORITY
 . =00014= 00053 QR    DS 0003 DSAT  EXIT  CHANGE_PRIORITY/OK
```

Control Fields

The control fields are located in the information area at the top of the dialog. These fields are described here:

VIEW

Switches the view for the entire report. Specify either ABBREV (for abbreviated), SHORT or FULL. If you have altered the view for an individual entry, that entry is not affected by this value until it is reset.

FILTERS

Specify OFF to display the entire unfiltered trace table, or ON to display only those entries matching the filter criteria.

SHOW

Specify ON to display the filters, and OFF to suppress them. This does not affect the trace entries displayed.

COLUMNS "OR"

When filters are active (FILTERS ON), this value determines how the filtering criteria are evaluated. When OFF is specified, only those trace entries that match an entire row of your filtering criteria display. When ON is specified, any entry that matches at least one value from each column displays.

Filter Entries

Each filter entry consists of the following six values:

TASK

The task ID of the CICS task from which the entry originated.

TCB

The CICS TCB ID for the TCB from which the entry originated.

DM

The two-character ID of the domain which wrote the entry.

ID

The four-digit trace point identifier used to differentiate between the various trace entries that originate from the same CICS domain.

MOD

The CICS module from which the trace entry originated, excluding the leading DFH characters.

DATA

Any value from the data portion of the trace entry, including data that is not displaying in the currently selected view. In other words, you can use a data filter that matches data only displayed in the *full* format, even if your current view is *abbreviated*.

You can add as many filtering rows as can fit on your screen, but the display is not scrollable. To add or remove a row, use the following line commands in the command column at the far left side of the filter entries:

D

Deletes a row.

I

Inserts a new blank row.

R

Replicates a row.

You can specify a wild card value ("*") in any column to indicate that any value should match. A row of filtering values containing all wild cards will match every CICS trace entry. You cannot specify a prefix value by appending a wild card character to the end of a value, such as "D*". Wild card values can only be specified as "*" to indicate "match any".

A blank entry in any column will not match any values. Blanking out one column does not cause that column to be ignored, it causes the column to not match any trace entries. Therefore, when Columns "OR" is OFF, blanking out a column serves to disable the entire row.

Trace Entries

Each trace entry appears in the format defined by the VIEW control field, unless that entry was reformatted using one of the following line commands:

A

Display the entry using the abbreviated view.

F

Display the entry using the full view.

R

Reset any overriding view for this entry.

S

Display the entry using the short view.

Help

From within the CICS Trace dialog, type HELP on the command line and press ENTER to display this information online. From any other display within the dump viewer, type HELP AUXTRACE.

Abend Summary Report

The Abend Summary report is generated when the #SUMMARY command appears in the OPTLIB member during dump capture. This report displays information about the abending or dumping task, including the completion code, TCB address, and the registers and PSW at the time of the error.

When this report is produced, the following built-in equates are also created when the dump is loaded:

- CURRTCB is equated to the current TCB address.
- PSW is equated to the next instruction address from the PSW at the time the dump was taken.
- R0 thru R15 are equated to the register values at the time the dump was taken, adjusted for the mode of the application.

The following is a sample Abend Summary report:

```
CA SymDump System V9.1 --------- Abend Summary ------------------ Line 1 of 19
Command ===>                                                    Scroll ===> CSR
-------------------------------------------------------------------------------
Job: MIKED530   System: XAE1       Asid: 00B3
-------------------------------------------------------------------- Lvl 3
Abend Summary for SM0102

DFHSM0102 A04IC9N6 A storage violation (code X'030B') has been detected by modu

PIDS/565501800 LVLS/530 MS/DFHSM0102 RIDS/DFHSMGF PTFS/UQ52744 PRCS/0000030B

PSW at time of error:        078D2000 9BFEF5F0      DFHSIP  +AC970

TCB address:                 007CF850

Registers at time of error:

   Reg 0  = 000000B8  PSA+B8             Reg 8  = 1C0B67D8  E-PVT
   Reg 1  = 1CC435A0  E-PVT              Reg 9  = 1CC4362C  E-PVT
   Reg 2  = 1C0B67D8  E-PVT              Reg 10 = 1CC4362C  E-PVT
   Reg 3  = 9BFEDDA8  DFHSIP+EDDA8       Reg 11 = 1CC42C87  E-PVT
   Reg 4  = 1CC434A0  E-PVT              Reg 12 = 0005A680  PVT
   Reg 5  = 1BFEEDA7  DFHSIP+EEDA7       Reg 13 = 1CC434A0  E-PVT
   Reg 6  = 1BFEFDA6  DFHSIP+EFDA6       Reg 14 = 007D2828  JSTCB-3E8
   Reg 7  = 1CC42904  E-PVT              Reg 15 = 00000000  PSA
 -------------------------------------------------------------------------------

 F1=HELP      F2=SPLIT     F3=END       F4=DUMP      F5=RFIND     F6=MAP
 F7=UP        F8=DOWN      F9=SWAP     F10=LEFT     F11=RIGHT    F12=RETRIEVE
```

Appendix C: Report Categories

During dump capture, CA SymDump System communicates with CA SYSVIEW (or Server) to collect information about the dumping address space. This information is stored in the reports data set, the smaller of the two data sets created for each dump. When the dump is loaded, the reports are displayed in the dump tree in the Formatted Reports folder, grouped by the type of information they provide and listed alphabetically within each group by report title.

This section lists each of the report folders within Formatted Reports and describes the reports they contain.

Reports produced by commands not listed in this appendix are in the Miscellaneous folder under Formatted Reports.

This section contains the following topics:

MVS Address Space (see page 100)
MVS Devices (see page 100)
MVS Data Sets (see page 102)
MVS History (see page 103)
MVS Storage (see page 103)
MVS System Information (see page 104)
CA Common Services (see page 106)
CAISMF (see page 107)
CICS Resources (see page 107)
CICS Status (see page 108)
CICS Storage (see page 109)
CICS System Definitions (see page 109)
DATACOM (see page 109)
DB2 (see page 110)
IMS (see page 110)

MVS Address Space

#SUMMARY	Abend Summary
ABENDX	Abend exits
ALLIST	Access lists
ASID	Change target address space
ATLIST	Authorization table
ATTNX	Attention exits
DDLIST	Display and search ddname libraries
DISASSEM	Disassemble in-storage modules
DSALLOC	Allocated data sets
DUMP	Display virtual and real storage
ENQJOB	Enqueues for job
JPA	Job pack area modules
LISTLOAD	Loaded modules
MAP	Map storage
MODULES	Loaded Modules
NAMETOKN	Name/token pairs
SNAP	Dump storage for PRINT/CAPTURE
SYMBOLS	Symbol table
TASK	Task structure
TASKLIB	TASKLIB/STEPLIB/JOBLIB libraries
TASKMON	Task monitor
TIMERS	Timer intervals and exits

MVS Devices

ALLOCAS	Device allocation status
ALLOCDS	Data set allocations
CACHECTL	Cache controllers
CACHEDEV	Cache devices
CATALOG	Catalogs
CHANPATH	Channel paths
DASD	DASD units
DASDRESP	DASD response time
DEVPATH	Device paths
EDT	Eligible device table
EXTENTS	Volume extents
SMSGROUP	SMS storage groups
SPACE	DASD free space
SUBCHAN	Subchannels
TAPE	Tape units
UNIT	Units
VTOC	Volume table of contents
APFLIST	APF data sets
BROWSE	Browse data with ISPF BROWSE
CATALOG	Catalogs
DDLIST	DDname libraries
DSCAT	Cataloged data sets
DSINFO	Data set information
DUMPDS	Dump data sets

DUPLICAT	Locate duplicate library members
IDCAMS	IDCAMS command facility
LINKJOBS	Dynamic linklist set jobs
LINKLIBS	Dynamic linklist set libraries
LINKLIST	Linklist libraries
LINKSETS	Dynamic linklist sets
LISTDIR	List PDS directory
LLASTATS	LLA statistics
LPALIST	Lpalist libraries
PAGEDS	Page data sets
PARMLIST	Logical PARMLIB concatenation
PROCLIST	JES2 proclib libraries
SMF	SMF data sets
SWAPDS	Swap data sets

MVS Data Sets

APFLIST	APF data sets
BROWSE	Browse data with ISPF BROWSE
CATALOG	Catalogs
DDLIST	DDname libraries
DSCAT	Cataloged data sets
DSINFO	Data set information
DUMPDS	Dump data sets
DUPLICAT	Locate duplicate library members

IDCAMS	IDCAMS command facility
LINKJOBS	Dynamic linklist set jobs
LINKLIBS	Dynamic linklist set libraries
LINKLIST	Linklist libraries
LINKSETS	Dynamic linklist sets
LISTDIR	List PDS directory
LLASTATS	LLA statistics
LPALIST	Lpalist libraries
PAGEDS	Page data sets
PARMLIST	Logical PARMLIB concatenation
PROCLIST	JES2 proclib libraries
SMF	SMF data sets
SWAPDS	Swap data sets

MVS History

LOGREC	LOGREC event history
MTT	Master Trace Table
OPERLOG	Operations log
PLOTLOG	Historical plot log
SMFDATA	SMF data collection
SMFLOG	SMF log
SYSLOG	System log
TRACE	System Trace

MVS Storage

CELLPOOL	Cell pools allocated
COMMON	Common area storage usage
DSLIST	Data spaces
EFRAMES	Expanded storage frames
EST	Expanded storage table
FRAMES	Real storage frames
PAGEDS	Page data sets
PAGES	Virtual storage pages
PAGING	System paging
PFT	Page frame table
PRIVATE	Private area storage usage
REGION	Virtual storage regions
SEGMENTS	Virtual storage segments
STORAGE	System storage
SUBPOOL	Subpool information
SWAPDS	Swap data sets
SWAPPING	System swapping
VSMTRACK	VSM common storage tracking

MVS System Information

XATABLE	Auth index allocation table
ACTIVITY	System activity
ALERTS	MVS exception alerts
CONFLICT	Enqueue conflicts

CPFTABLE	Command prefix table
DOMAIN	Performance domains
DUMPOPTS	Dump options
DYNEXIT	Dynamic exits
ESRTABLE	Extended SVC router table
ENFLIST	Event notification facility info
ENQSUM	Enqueue summary
ENQUEUE	Enqueue detail
ETCON	Entry table connections
ETLIST	Entry table entries
ETRINFO	External Time Reference Info
IPLINFO	IPL information
ISPTCM	ISPF TSO command table
LISTCONS	List consoles
LPA	Link pack area modules
LXATABLE	Linkage index allocation table
NUCLEUS	Nucleus modules
PCLIST	PC routines
PPT	Program properties table
REGION	Virtual storage regions
RESERVE	Reserved DASD devices
RNLIST	Resource name lists
SFTABLE	System function table
SUBSYS	Subsystem information

SVCTABLE	SVC table
SYSGROUP	System groups
SYSSYM	Static system symbols
TSOTABLE	TSO tables

CA Common Services

CAICCI	CA CCI receivers
CAILMP	CA LMP information
CAIRIM	CA RIM installed products

CAISMF

CA RIM SMF intercepts

#CTRACE	Trace Dialog
#CICSKER	Kernel Error Summary
CLOGS	List of historical CICS logs
CREVIEW	Hourly transaction activity
CSYSDATA	System interval analysis
CTRANLOG	Transaction log summary
CTRANSUM	Transaction interval summary
CXLOG	Exception log

CICS Resources

DIR	CICS directory domain elements
CGBLEXIT	Global user exits
CFILES	File Control Table Entries
CJINFO	Journal information
CJMODEL	Journal models
CJOURNAL	Journal statistics
CKTCB	Kernel tasks
CLSRBUFF	LSR Buffer Statistics
CLSRPOOL	LSR Pool Statistics
CPROGRAM	Program statistics
CREMOTE	Remote system entries
CSOCKETS	TCP/IP sockets

CSOCKUSE	TCP/IP socket users
CTASKENT	Kernel task table entries
CTCLASS	Transaction classes
CTDATA	Transient data queues
CTERMS	Terminal statistics
CTIMERS	Interval timers
CTRANS	Transaction summary
CVSAM	VSAM File Performance

CICS Status

#CICSMSG	CICS message help
#CICSSUM	CICS summary
LISTCICS	Monitored CICS regions
CAIDS	Automatic initiate descriptors
CDOMAINS	CICS domains
CDUMPS	CICS dump statistics
CENQPOOL	CICS enqueue pools
CENQUEUE	CICS enqueues
CICE	Interval control elements
CLIFE	Lifetime range statistics
CMONITOR	CICS monitor domain information
CSTATUS	CICS resource status summary
CTASKS	Active tasks
CUSERS	CICS external security user info

CWAITS	Degradation wait analysis

CICS Storage

#CICSAXS	Task storage summary
CDSAS	Dynamic storage areas
CDSAX	Dynamic storage area extents
CELEMENT	Dynamic storage elements
CSUBPOOL	Dynamic storage subpools
CSUBSPAC	CICS subspace areas
CSYMBOLS	CICS symbols
CTEMPSTG	Temporary storage summary
CTSQUEUE	Temporary storage queues

CICS System Definitions

CMCT	Monitor Control Table
CSIT	System Initialization Table
CSRT	System Recovery Table

DATACOM

CSFBUSY	CSF TCB utilization
CSFCODES	CSF return codes
CSFIO	CSF TCB start I/O statistics
CSFLOAD	CSF load modules
CSFOPTS	CSF generation options
CSFREQS	CSF request statistics

CSFTABLE	CSF URT file tables
CSFTASKS	CSF TCB tasks
CSFTCBS	CSF TCB usage
CSFTRACE	CSF trace
CSFURTS	CSF URTs
CSFUSERS	CSF concurrent users

DB2

CDB2CONN	DB2 RDO connections
CDB2ENTR	DB2 RDO entries
CDB2PLAN	DB2 plans
CDB2RCT	DB2 resource control table
DCAREAS	Directory areas
DCDBASES	Directory databases
DCMUFS	MUF identity
DCTASKS	MUF active tasks
LISTDCOM	List of DATACOM jobs

IMS

CIMS	IMS overview
CDBCTL	IMS DB control
CIMSDMB	IMS DMB information
CIMSPSB	IMS PSB information
CIMSSTAT	IMS file statistics
CIMSTASK	IMS active tasks

IMSLIST	IMS Control region list
IMSALERT	IMS exception alerts

Appendix D: User Exits

CA SymDump System provides two user exits for advanced control over product behavior.

User exit CADVUSR1 is called before the dump capture evaluation process to allow for complex evaluation of dump capture criteria.

User exit CADVUSR2 is called before viewing a captured dump to allow for security validation of the potential viewer.

This section contains the following topics:

Customizing the User Exits (see page 113)
CADVUSR1 (see page 113)
CADVUSR2 (see page 117)

Customizing the User Exits

The source and JCL for each of the user exits can be found in the CAI.CCPIJCL library. Each exit is provided as a shell, providing no control logic. Since the CAI.CCPIJCL library is SMP/E controlled, user exit members must be copied to non-SMP/E controlled datasets before being modified. After the user exit source has been modified, submit the assemble and link JCL. Unlike modifying the options table, a product re-initialization is not required when changing a user exit.

CADVUSR1

Use this exit program to control the evaluation of dump capture criteria when the available selection criteria in the options table are not adequate for your needs.

The *parm* area CADVPRM1, shown below, contains information about the dumping address space that you can use to make your decision.

Fields in the *parm* area include:

- PRM1JOB CL8 Job Name
- PRM1PROG CL8 Program Name
- PRM1USER CL8 User Id
- PRM1CODE XL4 Completion Code
- PRM1OFST XL4 Program Offset
- PRM1WORK XL256 Work area

The sample user exit CADVUSR1 is shown here:

```
CADVUSR1 TITLE 'CA SymDump System Sample User Exit (#1)'
**-------------------------------------------------------------------**
**                                                                   **
**  CADVUSR1 – CA SymDump System User Exit (#1)                      **
**                                                                   **
**  This user exit allows for the evaluation of complex              **
**  dump capture criteria during dump capture.                       **
**                                                                   **
**  Input Registers:                                                 **
**                                                                   **
**  R1 contains the address of the parm area (CADVPRM1)              **
**  R13 contains the address of a register save area                 **
**  R14 contains the return address                                  **
**  R15 contains the address of CADVUSR1                             **
**                                                                   **
**  All other registers are unpredictable.                           **
**                                                                   **
**  Output Registers:                                                **
**                                                                   **
**  R15 contains the return code (described below)                   **
**                                                                   **
**  All other registers must be returned unchanged.                  **
**                                                                   **
**  Return Codes                                                     **
**                                                                   **
**  R15 = 0   Tells CA SymDump System to use the                     **
**            normal dump capture criteria from CADVTABL.            **
**                                                                   **
**  R15 = 4   Tells CA SymDump System to capture                     **
**            the dump.                                              **
**                                                                   **
**  R15 = 8   Tells CA SymDump System to suppress                    **
**            dump capture.                                          **
**                                                                   **
**-------------------------------------------------------------------**
         SPACE ,
CADVUSR1 CSECT
         USING CADVUSR1,R12            Map the User Exit
         USING LDATA,R13               Map Local Data
         USING CADVPRM1,R8             Map the Parameter Area
         SPACE ,
         STM   R14,R12,12(R13)         Save caller's registers
         LR    R12,R15                 Set procedure base
         LR    R8,R1                   Set parm base
         SPACE ,
         LA    R1,PRM1WORK             @ Work area provided
         ST    R13,4(,R1)              Save backward chain
         ST    R1,8(,R13)              Save forward chain
         LR    R13,R1                  Set our RSA address
         SPACE ,
* Perform complex selection criteria here.
         SPACE ,
         SLR   R15,R15                 RC=0 (no decision)
         SPACE ,
         L     R13,4(,R13)             Restore @ caller's rsa
         L     R14,12(,R13)            Load return address
         LM    R0,R12,20(R13)          Restore registers
         BR    R14                     Return to caller
         TITLE 'LITERALS'
         LTORG ,
         TITLE 'DSECTS: Local Data'
LDATA    DSECT
```

```
LDSAVE   DS    18F
           TITLE 'DSECTS: Parameter Area'


**-------------------------------------------------------------------**
**                                                                   **
**  CADVPRM1 - CA SymDump System Parameter Area # 1                  **
**                                                                   **
**  This copy member maps the parameter area passed to CADVUSR1      **
**  during dump capture.                                             **
**                                                                   **
**-------------------------------------------------------------------**
         SPACE ,
CADVPRM1 DSECT
PRM1JOB  DS    CL8                    Job Name
PRM1PROG DS    CL8                    Program Name
PRM1USER DS    CL8                    User Id
PRM1CODE DS    XL4                    Completion Code
*-------------------------------------------------------------------
*                          System abend codes ===> 00sss000
*                            User abend codes ===> 00000uuu
*                             CICS dump codes ===> ddddcccc
*               CICS transaction abend codes ===> tttttttt
*
* Where:
*      sss is a three-digit hexidecimal system completion code
*      uuu is a three-digit hexidecimal user abend code
*     dddd is a two-character EBCDIC CICS facility id (ie. AP or SM)
*     cccc is a two-byte binary code (0-9999)
* tttttttt is a four-character EBCDIC transaction abend code (ie. ASRA)
*
*-------------------------------------------------------------------
PRM1OFST DS    XL4                    Program Offset
PRM1WORK DS    XL256                  256-BYTE WORK AREA
LPRM1    EQU   *-CADVPRM1
         TITLE 'REGISTER EQUATES'
R0       EQU   0
R1       EQU   1
R2       EQU   2
R3       EQU   3
R4       EQU   4
R5       EQU   5
R6       EQU   6
R7       EQU   7
R8       EQU   8
R9       EQU   9
R10      EQU   10
R11      EQU   11
R12      EQU   12
R13      EQU   13
R14      EQU   14
R15      EQU   15
         END   CADVUSR1
```

CADVUSR2

Use this exit program to control access to captured dumps by potential viewers. Since all dumps captured use the same high-level qualifier, this user exit can be used to deny access to sensitive dump data.

The parm area CADVPRM2, shown next, contains information about the captured dump and also the ID of the user attempting to view it.

Fields in the parm area include:

- PRM2REQ XL4 Request type
- PRM2USR CL8 Requestor's user id
- PRM2DJOB CL8 Dump job name
- PRM2DUSR CL8 Dump user id
- PRM2WORK XL256 256-BYTE WORK AREA

Request codes include:

- P2_OPEN 5 = OPEN A DUMP FOR VIEWING
- P2_DDEL 7 = DELETE A DUMP
- P2_LOCK 22 = LOCK A DUMP INDEX ENTRY
- P2_UNLK 23 = UNLOCK A DUMP INDEX ENTRY
- P2_DDLX 28 = DELETE A DUMP INDEX ENTRY
- P2_BSTX 31 = BUILD ASTORAGE INDEX

The sample user exit CADVUSR2 is shown next:

```
CADVUSR2 TITLE 'CA SymDump System Sample User Exit (#2)'
**-------------------------------------------------------------------**
**                                                                   **
**  CADVUSR2 – CA SymDump System User Exit (#2)                      **
**                                                                   **
**  This user exit performs security validation prior to             **
**  dump loading by the viewer.                                      **
**                                                                   **
**  Input Registers:                                                 **
**                                                                   **
**  R1 contains the address of the parm area (CADVPRM2)              **
**  R13 contains the address of a register save area                 **
**  R14 contains the return address                                  **
**  R15 contains the address of CADVUSR2                             **
**                                                                   **
**  All other registers are unpredictable.                           **
**                                                                   **
**  Output Registers:                                                **
**                                                                   **
**  R15 contains the return code (described below)                   **
**                                                                   **
**  All other registers must be returned unchanged.                  **
**                                                                   **
**  Return Codes                                                     **
**                                                                   **
**  R15 = 0   Allow dump viewing.                                    **
**                                                                   **
**  R15 > 0   Disallow dump viewing.                                 **
**                                                                   **
**-------------------------------------------------------------------**
         SPACE ,
CADVUSR2 CSECT
         USING CADVUSR2,R12            Map the User Exit
         USING LDATA,R13               Map Local Data
         USING CADVPRM2,R8             Map the Parameter Area
         SPACE ,
```

```
         STM   R14,R12,12(R13)         Save caller's registers
         LR    R12,R15                 Set procedure base
         LR    R8,R1                   Set parm base
         SPACE ,
         LA    R1,PRM2WORK             @ Work area provided
         XC    0(256,R1),0(R1)         Clear it out
         ST    R13,4(,R1)              Save backward chain
         ST    R1,8(,R13)              Save forward chain
         LR    R13,R1                  Set our RSA address
         SPACE ,

* Perform security validation here.
         SPACE ,
RETURN   DS    0H
         L     R15,LDRC                Load the return code
         L     R13,4(,R13)             Restore @ caller's rsa
         L     R14,12(,R13)            Load return address
         LM    R0,R12,20(R13)          Restore registers
         BR    R14                     Return to caller
         TITLE 'LITERALS'
         LTORG ,
         TITLE 'DSECTS: Local Data'
LDATA    DSECT
```

```
LDSAVE   DS    18F
LDRC     DS    F
         TITLE 'DSECTS: Parameter Area'

**-------------------------------------------------------------------**
**                                                                   **
**  CADVPRM2 - CA SymDump System Parameter Area #2                   **
**                                                                   **
**  This copy member maps the parameter area passed to CADVUSR2      **
**  prior to dump loading.                                           **
**                                                                   **
**-------------------------------------------------------------------**
         SPACE ,
CADVPRM2 DSECT
PRM2REQ  DS    XL4                    Request type
P2_OPEN  EQU   5                       5 = OPEN A DUMP FOR VIEWING
P2_DDEL  EQU   7                       7 = DELETE A DUMP
P2_LOCK  EQU   22                     22 = LOCK A DUMP INDEX ENTRY
P2_UNLK  EQU   23                     23 = UNLOCK A DUMP INDEX ENTRY
P2_DDLX  EQU   28                     28 = DELETE A DUMP INDEX ENTRY
P2_BSTX  EQU   31                     31 = BUILD  ASTORAGE INDEX
PRM2USR  DS    CL8                    Requestor's user id
PRM2DJOB DS    CL8                    Dump job name
PRM2DUSR DS    CL8                    Dump user id
PRM2WORK DS    XL256                  256-BYTE WORK AREA
LPRM2    EQU   *-CADVPRM2
         TITLE 'REGISTER EQUATES'
R0       EQU   0
R1       EQU   1
R2       EQU   2
R3       EQU   3
R4       EQU   4
R5       EQU   5
R6       EQU   6
R7       EQU   7
R8       EQU   8
R9       EQU   9
R10      EQU   10
R11      EQU   11

R12      EQU   12
R13      EQU   13
R14      EQU   14
R15      EQU   15
         END   CADVUSR2
```

Appendix E: Special DD Statements

This section describes the special DD statements that control the behavior of CA SymDump System during the dump capture process.

Add any of these DD statements to the JCL for any job to affect dump capture for that job.

This section contains the following topics:

DD Statements (see page 121)

DD Statements

CADVNOSD

Suppresses system dump for a job after dump capture.

This DD statement, when specified in the JCL, suppresses an IBM system dump after a successful dump capture. This DD statement overrides the SDUMP=YES option in CADVTABL.

```
//CADVNOSD DD DUMMY
```

This DD statement has no effect until a successful dump capture completes. If the system dump is not captured for any reason, this DD statement has no effect on the generation of an IBM system dump.

CADVOPT

Provides report control overrides for a job.

This DD statement, when specified in the JCL, allocates the list of report control statements used during dump capture. This DD statement overrides the normal OPTLIB selection process.

```
//CADVOPT DD DISP=SHR,DSN=yourhlq.optlib(member)
```

(OR)

```
//CADVOPT DD *

(in-stream report control statements)

/*
```

This DD statement has no effect until a system dump is selected for capture. When the capture process begins, this DD is used to determine which reports must be captured with the dump.

CADVSDMP

Forces system dump for a job after dump capture.

This DD statement, when specified in the JCL, forces an IBM system dump in addition to a dump capture. This DD statement overrides the SDUMP=NO option in CADVTABL.

```
//CADVSDMP DD DUMMY
```

This DD statement has no effect until a successful dump capture completes.

CADVSTOP

Suppresses dump capture for a job.

This DD statement, when specified in the JCL, unconditionally prevents any system dump from being captured for this job. It cannot be overridden by any setting in the options table, and it cannot be overridden by user exit CADVUSR1.

```
//CADVSTOP DD DUMMY
```

When this DD statement is present, IBM system dumps may still be taken but may not be captured by CA SymDump System.