

Abend-AID

Quick Reference

Release 9.5



Please direct questions about Abend-AID
or comments on this document to:

Abend-AID Technical Support

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your local Compuware office or agent.

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Introduction

This quick reference summarizes the procedures for accessing and using Abend-AID and its product facilities. For more information, refer to the *Abend-AID User/Reference Guide*.

Documentation

Abend-AID user documentation is now shipped in three online formats on CD-ROM with Abend-AID: Adobe Acrobat PDF, HTML, and BookManager.

- Acrobat enables unlimited user printing from a Web site or workstation
- HTML enables unlimited user viewing from a Web site
- BookManager ensures precise, fast search capabilities from a network server or workstation.

The *Abend-AID Installation and Customization Guide*, the *Abend-AID Quick Reference*, and the *Enterprise Common Components Installation and Customization Guide* are shipped in paper format. Complete documentation sets should be printed as needed from the Acrobat files supplied on the documentation CD.

For a description of the other documents that are included in the documentation set that is supplied with Abend-AID, refer to the Introduction section of the *Abend-AID User/Reference Guide*.

Online Help

You can find information about using Abend-AID components available through the Abend-AID Primary Menu and the PF1 (HELP) key.

Technical Support

If you need information about Abend-AID's operating or performance capabilities, or assistance in troubleshooting, first refer to the Abend-AID documentation set. Complete online documentation is provided on CD-ROM with each release of Abend-AID and is also accessible for online reading or downloading from the Compuware FrontLine Support web site.

If you call Abend-AID Technical Support for troubleshooting assistance, provide the following information applicable to your problem so that we can help you as quickly as possible.

- The client number as displayed in the header of the Abend-AID report.
- The Abend-AID release number displayed in the header of the Abend-AID report.
- The operating system and release in use as displayed in the header of the Abend-AID report to help determine operating system dependencies.
- All printed output from the job in question, including console messages, JCL stream, Abend-AID output, and the standard dump (SYSUDUMP, SYSABEND, or SYSMDUMP).
- Output from jobs that were used to install or customize Abend-AID. This output includes the report produced by the CWVERIFY utility. \$11VERIF is the Abend-AID installation library member used to execute CWVERIFY.

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Using Abend-AID

Abend-AID intercepts and analyzes application program failures and provides a report that presents vital diagnostic information. Review the Abend-AID report in the following sequence:

Diagnostic Section:

Includes a comprehensive explanation of the error condition.

Next Sequential Instruction Section:

Provides information for locating the statement in error. Extended Language Support (XLS) identifies the exact location of the error.

Trace Section:

Provides a trace of called/linked programs on the save area chain. Includes application program attributes.

Program Storage Section:

Formats program storage for application programs on the calling chain.

File Section:

Gives a status of each open file along with formatted current and previous records.

Specialized Database Support:

Provides database-specific support for DB2, IMS, and IDMS if the Abend-AID support for that environment is installed on the system.

MQSeries Section:

Displays either MQSeries batch or MQSeries IMS information created by the Abend-AID for WebSphere MQ product.

LE Section:

Validation and analysis of heap storage.

File-AID Access

Abend-AID users can keystroke directly into a Compuware File-AID product from an Abend-AID report:

- From the File section you can access File-AID/MVS.
- From the DB2 section you can access File-AID *for DB2*.
- From the IMS section you can access File-AID *for IMS*.

Edit and Browse commands in the report take you into File-AID edit and browse modes within a dataset or database. A current version of the applicable File-AID product must be available on the operating system.

SDSF Access

You can *hot key* from your job log to the report in the Abend-AID report database. This function uses the same REXX EXEC or CLIST as the Abend-AID Viewing Facility (Compuware/VF) that your site set up during CSS installation. Using the SECT and TRACE keywords, you can display a specific Abend-AID report section with trace mode activated. For diagnostic purposes, the TRACE keyword displays the Trace section, which provides the program flow and program attributes.

Source Comparison

A CSS batch utility command enables you to compare any two source listings in a source listing dataset. The Flag command identifies any lines in a more recent listing that differ from a previous listing. You can also compare listings in different source listing datasets.

CSS Utilities

With the CSS Utilities you can modify compile JCL to preprocess or postprocess source code for Abend-AID, or create and format report and source listing datasets, all by entering specifications on ISPF panels. These operations previously involved JCL preparation and were typically done by a systems programmer. Access the utilities through the Abend-AID Primary Menu.

Compuware Viewing Facility

Use the Compuware Viewing Facility (Compuware/VF) to view Abend-AID reports and source listings using the features of an ISPF/PDF environment. Compuware/VF can provide access to report and listing datasets on remote MVS systems with unshared DASD. Abend-AID output must be in a report dataset to be accessible through the viewing facility.

Online Help

You will find information about using Abend-AID and the XLS components available through the PF1 (HELP) key. Information is also available from the Abend-AID Primary Menu.

CSS Utilities

This facility enables you to modify compile JCL to preprocess or postprocess source code for XLS, or create and format report and source listing datasets, all by entering specifications on ISPF panels. CSS Utilities is available from the Abend-AID Primary Menu.

Report Scrolling

Compuware/VF supports the standard ISPF/PDF scrolling commands FORWARD, BACKWARD, END, and RETURN.

Entry Panel

With the Compuware/VF Entry Panel, you specify viewing and processing conditions. Refer to the following instructions.

Dataset choice

Specify the number of the report dataset or source listing dataset listed in the Name area that you want to view. Refer to “Abend-AID Dataset Directory” on page 4 and “Source Listing Dataset Directory” on page 10 for additional information.

Member

Specify the member name or group of member names of the file selected via the Dataset choice to be listed on the Dataset Directory Screen. Enter one of the following:

- **blank:** Lists all members in the file.
- **jobname or pgm:** Lists all members in the file associated with the job name (for Abend-AID reports) or program name (for source listings).
- **member*:** Lists all members in the file with the job or program names beginning with the characters specified by the member name mask.

Report dataset

Enter the name of the Abend-AID report dataset.

Source dataset(s)

Enter the name of the source listing dataset(s). You can enter up to eight source listing datasets to be searched at view time.

Volume

Enter the serial number if the file is not cataloged or if the catalog is not available.

Remote Server

If a dataset is on a remote MVS system, identify the Abend-AID server on that system. Both the local and remote Abend-AID servers must be configured for distributed viewing.

Processing options

Use these options to determine the format of the output and to display or suppress certain information.

Confirm delete

Enter **YES** to display a Confirm Delete screen before deleting a report or source listing.

Show print setup

Enter **YES** to display and update print options prior to printing reports or source listings. Refer to “Hardcopy Options Screen” on page 6 for additional information.

Language

The default is mixed-case English. Enter **USAUC** for uppercase English if your terminal does not support mixed case. Enter **JAPANESE** for terminals that support DBCS.

Local Server SSID

If you are accessing a dataset on a remote MVS system, identify the Abend-AID server of the local system. Both the local and remote Abend-AID servers must be configured for distributed viewing.

Source browsing options

These options create a temporary file that is used when browsing a source listing.

Unit

Enter the type of device where the temporary file is to be allocated when browsing a source listing. Recommended entries are **VIO** (if site-supported) or **SYSDA**.

Blocking

Enter the number of records in each block of the temporary file. A larger number may improve response time.

Abend-AID Dataset Directory

The Abend-AID Dataset Directory lists the members in the report dataset specified on the Entry Panel. It shows the following information.

JOBNAME

The job name.

REPT NUMBER

The number assigned by Abend-AID to identify the report. The following status indicators also appear if applicable:

- (L): Report is automatically locked.
- (M): Report is manually locked.

- (L): Report is automatically locked.
- *I: Report is incomplete.
- *IL: Report is incomplete and automatically locked.
- *IM: Report is incomplete and manually locked.

JESID

The job number assigned by the Job Entry Subsystem.

CODE

The system or user abnormal termination code, or SNAP for a SNAP-AID report, or the PL/I on-code.

DATE

The date on which the error occurred or the date of the SNAP-AID report.

TIME

The time at which the error occurred or the time at which the SNAP-AID report was created.

DESC

By default, the first ten characters of the Programmer Name field of the job statement. When using Abend-AID user exit CWEXIT02, or when calling SNAP-AID, you can override this value.

SIZE

The number of bytes allocated for the report in the report dataset.

You can enter the following primary commands in the COMMAND INPUT area on the directory screen:

LOCATE (L) jobname

Positions the matched job name as the first entry on the directory screen.

NEXT (N) nnnn

Scrolls forward to the job name specified in the previous LOCATE command, where nnnn is the next *n*th match to be located. The nnnn default value is 1.

SORT sort-key

Sorts the directory list by the specified sort key. Sort-key can be any column except Time. Valid sort keys and their abbreviations are:

- JOBNAME (JN)
- NUMBER (NUM)
- JESID
- CODE
- DATE
- DESCRIPTION (DESC)
- SIZE

You can enter the following line commands to the left of the job name:

C: Contact Information
S: View
L: Lock
U: Unlock
D: Delete
P: Print.

Hardcopy Options Screen

If you enter **P** (Print) as a line command, and if you previously entered **YES** in the Show print setup field on the Entry Panel, the Hardcopy Options screen is displayed. This screen lets you update options for printing. Valid entries for the Route field are:

SYSOUT

TSO builds a *SYSOUT* file. Job information is obtained from the security profile attached to your TSO account. Your user ID is used as the job name.

BATCH

A print job is submitted using the default job card from your ISPF 0.2 screen.

Output Selection Menu

After you select an Abend-AID report for viewing, the Output Selection Menu is displayed. Press the Enter key to view the Diagnostic Summary. To move from section to section, enter the section number or section name at the top of the screen. The sections provide the following information:

0 or HEADER

Top of output, including the header information and available help information.

1 or DIAGS

Diagnostic information.

2 or NSI

Instruction section.

3 or TRACE

Call Trace Summary and Application Program Attributes.

5 or REGS

Register contents and PSW.

6 or PROG

Program storage for each program. If more than one program is present, a selection list is displayed. Enter an **S** next to the program storage to be viewed. To display a specific program's storage, enter one of the following commands on any Abend-AID output screen:

For COBOL programs (basic support only):

PROG(programname) BL x

Locates the cell specified by **x** in the program specified by **programname**. Specify **x'x'** for hexadecimal cell numbers.

BL x, BLL x, BLW x, BLX x

Locates the base locator cell specified by **x** in the current program storage.

PROG(programname) TGT

Locates the TGT in the program specified by **programname**.

TGT

Locates the TGT in the current program.

EXT

Displays the COBOL External Data Section.

For PL/I programs (basic support only):

AUTO: Locates automatic storage.

STAT: Locates static storage.

CTL: Locates controlled storage.

7 or PLIST:

XLS only. Displays the Procedure Divisions for COBOL programs and the source listings for PL/I or Assembler programs with the current statement indicated. If more than one program is on the calling chain, a selection list is displayed. Select the program to be viewed by entering an **S** next to it. The parameters below determine the source statements shown.

blank:

Displays source statements as determined by the **SLSLIST** or **SLSMLST** option in the **CWGLOBAL** table.

PARA:

Displays the COBOL paragraph containing the current statement.

LABEL:

Displays the label portion of the PL/I program containing the current statement.

ALL:

Displays the complete COBOL Procedure Division, or PL/I or Assembler source listing.

nn:

Displays *nn* lines before and after the current statement.

8 or FILES:

File and current data management control block information. If more than one file is present, a selection list is displayed. Enter one of the commands identified on the screen to access a file through Compuware Viewing Facility or through File-AID. To display a specific file, enter **FILE(ddname)** in the COMMAND INPUT field.

9 or IMS:

Abend-AID for IMS information.

10 or IDMS:

Abend-AID for IDMS information.

11 or DB2:

Abend-AID for DB2 information.

12 or SORT:

Current sort record for internal COBOL sorts.

13 or DATALOC:

Identifies data strings in COBOL programs.

14 or MQ:

Displays either MQSeries batch or MQSeries IMS information created by Abend-AID for WebSphere MQ.

15 or LE:

Validation and analysis of heap storage.

20 or EPILOG:

Abend-AID termination information.

Source Warnings

You receive a source warning when you choose a report section that presents source information if the source datasets specified on the Entry Panel do not contain a source listing that matches the program identified in the report.

Note: Because the compile time for a PL/I program may not be available in the load module, Abend-AID cannot determine compile time. Therefore, a mismatch results.

Proceed without source information, choose a source listing from the directory presented, or retrieve a source listing by submitting background JCL.

Report Commands

SOURCE Command

SOURCE ON:

Default. Show source. Applicable only to the open report.

SOURCE OFF:

Suppress source.

SOURCE MISMATCH:

For COBOL and PL/I, presents a source warning screen at which you can access a directory listing of the source datasets specified on the Entry Panel. For Assembler, directly presents the directory listing.

Compuware/VF FIND Command

The FIND command can be used within a report or a source listing. The word *find* cannot substitute for the syntax shown below.

F xxx	Finds the characters specified by xxx in the current report section. Ignores letter case.
F 'xxx yyy'	Finds the character string specified by 'xxx yyy' with embedded blanks. Ignores letter case.
F	Finds the character string specified in the previous FIND command. Ignores letter case. Use this command instead of the REPEAT FIND PF key.
FS xxx	Finds the characters specified by xxx in the current report section. Case-sensitive.
FS 'xxx yyy'	Finds the character string specified by 'xxx yyy' with embedded blanks. Case-sensitive.
FS	Finds the character string specified in the previous FIND command. Case-sensitive. Use this command instead of the REPEAT FIND PF key.

VIEW Command

The VIEW command, operable only in Assembler XLS reports, enables viewing of source data beyond column 72.

VIEW Left (VL) Default setting. Standard online view.

VIEW Right (VR) Compresses VIEW Left data to the left and presents data that was off screen in VIEW Left.

Source Listing Dataset Directory

The Source Listing Dataset Directory lists the members in the source datasets specified on the Entry Panel. It shows the following information.

PROGRAM:

The program name.

LIST NUMBER:

The number assigned by the Compuware Language Processor to identify the source listing. The following status indicators also appear if applicable:

(L): Source listing is automatically locked.

(M): Source listing is manually locked.

***I:** Source listing is incomplete.

***IL:** Source listing is incomplete and automatically locked.

***IM:** Source listing is incomplete and manually locked.

COMP DATE:

The date the program was compiled.

TIME:

The time the program was compiled.

RC:

The Compuware Language Processor return code.

LANGUAGE:

The program language.

SIZE:

The number of bytes allocated for the source listing in the source listing dataset.

You can enter the following commands in the COMMAND INPUT area on the directory:

LOCATE (L) program:

Positions the matched program name as the first entry on the directory screen. The asterisk (*) wildcard character is valid.

NEXT (N) nnnn:

Scrolls forward to the program name specified in the previous LOCATE command, where nnnn is the next nth match to be located. The nnnn default value is 1.

SORT sort-key:

Sorts the directory list by the specified sort key. Sort-key can be any column except TIME. By default, the directory is displayed in descending order by LIST NUMBER. Valid sort keys and their abbreviations are:

- PROGRAM (PGM)
- NUMBER (NUM)
- DATE
- RC
- LANGUAGE (LANG)
- SIZE

You can enter the following line commands to the left of the program name.

- S: Select
- L: Lock
- U: Unlock
- D: Delete
- P: Print

Hardcopy Options Screen

If you enter P (Print) as a line command and if you previously entered YES in the Show print setup field on the Entry Panel, the Hardcopy Options screen is displayed. Refer to "Hardcopy Options Screen" on page 6 for additional information.

SNAP-AID

You can use SNAP-AID to produce Abend-AID output without terminating the program. SNAP-AID is invoked by a call to the module SNAPAID from COBOL, PL/I, Assembler, or FORTRAN programs. SNAP-AID can help in resolving difficult logic problems or when working with a DB2 or IDMS database management system.

To use SNAP-AID, perform the following steps:

1. Code a call to the module SNAPAID (or SNPAID for FORTRAN).

2. Compile and link-edit the program using one of the following:
 - The DYNAM compiler option, which is available for COBOL
 - A //SYSLIB DD statement for the link-edit that includes the Abend-AID load library:

```
//SYSLIB DD DSN=SYS1.ABENDAID,DISP=SHR
```

- A linkage editor INCLUDE statement for the SNAPAID subroutine module:

```
//SYSIN DD *
INCLUDE SYSLIB(SNAPAID)
```

3. Add an //ABENDAID DD statement to the execution JCL.

Normally, the SNAP-AID report is written using the site default report shared directory named by CWROUTE. However, you can override this destination by specifying as follows:

- //ABNLTERM DD, which overrides
- CWEXIT02, which overrides
- CWJOBTAB, which overrides
- CWROUTE routing group specification, which overrides
- CWROUTE site default report shared directory specification.

To write the SNAP-AID report to the //ABENDAID DD, use CWEXIT02, CWJOBTAB, or a CWROUTE routing group to designate that the report be written to SYSOUT. Refer to the *Abend-AID Installation and Customization Guide*, Chapter 5, “Customization” for more information about routing report output.

SNAP-AID Parameter List

Using a parameter list in a call to SNAPAID lets you:

- Customize your SNAP-AID report by selecting or suppressing specified report sections.
- Identify SNAP-AID reports in the Compuware/VF report file directory.
- Cause dynamic allocation of the //ABENDAID DD.
- Display storage ranges between selected addresses.

To code a SNAP-AID parameter list, define the parameter interface in your program with the following fields:

- **Identification:** This six-byte field must be coded as SNPRML.
- **Action flag:** This field is used to select the action (display or suppress) that SNAPAID applies to the sections specified. Valid values are:

0 (default): Display all report sections

- 1: Display specified report sections
- 2: Suppress specified report sections.
- **Section selection flags:** When the action flag is set to 1 or 2, use the section selection flag(s) to identify the report section(s) to be displayed or suppressed. Valid values are:
 - 0 (default): Do not apply the action specified by the action flag.
 - 1: Apply the action specified by the action flag.
- **Comment:** This ten-character field is used to identify the SNAPAID call that generated the report. The contents of the comment field is displayed in the **Programmer** field on the report file directory.

Examples

Figure 1 and Figure 2 show examples of the parameter interface.

Example 1

Using a parameter list:

- COBOL:

```
CALL 'SNAPAID' USING PARM-INTERFACE.
```

- PL/I:

```
CALL SNAPAID (PARM_INTERFACE)
```

- Assembler:

```

        OI   ADDR0,X'80'       Set end-of-list bit
        LA   R1,PARMLIST      Point to parameter list
        B    AROUND_LIST
PARMLIST DS    0F
ADDR0    DC   A(SNPMITR)      Address of SNAPAID parameters
AROUND_LIST EQU *
        CALL SNAPAID
```

Two additional parameters can be used to specify a range of storage to be displayed in the Program Storage section. The field name specified as the second parameter defines the beginning of the storage address. The field name specified as the third parameter defines the ending storage address.

Example 2

Using a parameter list specifying ranges of addresses:

- COBOL:

```
CALL 'SNAPAID' USING PARM-INTERFACE
        WS-RANGE1-BEG WS-RANGE1-END
        WS-RANGE2-BEG WS-RANGE2-END.
```

- PL/I:

```
CALL SNAP AID ( PARM_INTERFACE
RANGE1_BEG, RANGE1_END,
RANGE2_BEG, RANGE1_END);
```

- Assembler:

OI	ADDR4, X'80'	Set end-of-list bit
LA	R1, PARMLIST	Point to parameter list
B	AROUND_LIST	
PARMLIST DS	0F	
ADDR0	DC A(SNPMITR)	Address of SNAP AID parameters
ADDR1	DC A(BEGDATA)	Address of storage dump start
ADDR2	DC A(ENDDATA)	Address of storage dump stop
ADDR3	DC A(BEGDATA#)	Address of storage dump start
ADDR4	DC A(ENDDATA#)	Address of storage dump stop
AROUND_LIST	EQU *	
	CALL SNAP AID	

Figure 1. Parameter Interface in a COBOL Program

```

01 PARM-INTERFACE.
03 PARM-IDENT          PIC X(6)  VALUE 'SNPRML'.
03 PARM-ACTION        PIC 9      VALUE ZERO.
   88 DISPLAY-ALL-SECTIONS          VALUE 0.
   88 DISPLAY-SECTION              VALUE 1.
   88 SUPPRESS-SECTION             VALUE 2.
*
*   0 FULL SNAPAID REPORT (NO CUSTOMIZATION)
*   1 DISPLAY SELECTED SECTIONS
*   2 SUPPRESS SELECTED SECTIONS
03 PARM-SECTION-SELECTION.
   05 NSI-SECTION          PIC 9      VALUE ZERO.
   88 DO-NOT-APPLY-PARM-ACTION VALUE 0.
   88 APPLY-PARM-ACTION   VALUE 1.
*
*   0 DO NOT APPLY PARM-ACTION TO THIS SECTION
*   1 APPLY PARM-ACTION TO THIS SECTION
   05 REGISTERS-PSW       PIC 9      VALUE ZERO.
   05 TRACE-SUMMARY      PIC 9      VALUE ZERO.
   05 PROGRAM-STORAGE    PIC 9      VALUE ZERO.
   05 FILES-SECTION      PIC 9      VALUE ZERO.
   05 IMS-SECTION        PIC 9      VALUE ZERO.
   05 IDMS-SECTION       PIC 9      VALUE ZERO.
   05 DB2-SECTION        PIC 9      VALUE ZERO.
   05 SORT-SECTION       PIC 9      VALUE ZERO.
   05 ECM-SECTION        PIC 9      VALUE ZERO.
   05 PARML-VERSION      PIC 9      VALUE ZERO
*
   05 DYNAMICAL ALLOCATION INFORMATION NOT PRESENT IF BLANK
*
   05 DYNAMIC ALLOCATION INFORMATION PRESENT
   PARM-COMMENT          PIC 9      VALUE SPACE.
*
   DYNALC-REQ           PIC X(10)  VALUE SPACE.
3 88 DON'T-ALLOCATE-ABENDAID VALUE SPACE.
   88 ALLOCATE-ABENDAID  VALUE 'D'.
   88 ALLOC-AND-FREE-ON-CLOSE VALUE 'F'.
*
*   THE ABENDAID DD WILL NOT BE DYNAMICALLY ALLOCATED IF
*   BLANK
*
*   D DYNAMICALLY ALLOCATE THE ABENDAID DD
*   F DYNAMICALLY ALLOCATE THE ABENDAID DD AND FREE=CLOSE
03 OUTPUT-CLASS        PIC X      VALUE SPACE.
03 HOLD-OUTPUT         PIC X      VALUE SPACE.
   88 DONT-HOLD-DEF     VALUE SPACE.
   88 HOLD              VALUE 'Y'.
   88 DONT-HOLD        VALUE 'N'.
03 FILLER              PIC X      VALUE SPACE.
03 DESTINATION-PARM    PIC X(8)   VALUE SPACE.
03 USERID              PIC X(8)   VALUE SPACE.
03 OUTPUT-WRITER       PIC X(8)   VALUE SPACE.
03 USER-FORM           PIC X(4)   VALUE SPACE.

```

Figure 2. Parameter Interface in a PL/I Program

```

DECLARE          1  PARM_INTERFACE,
                2  PARM_IDENT      CHAR(6)  INIT('SNPRML'),
                2  PARM_ACTION     CHAR(1)  INIT('0'),
/*              = 0 FULL SNAPPAID REPORT (NO CUSTOMIZATION)  */
/*              = 1 DISPLAY SELECTED SECTIONS                */
/*              = 2 SUPPRESS SELECTED SECTIONS              */
                2  PARM_SECTION(11)
                CHAR(1)  INIT((11)('0'),(1)('1')),
/*              (1) NSI                                     */
/*              (2) REGISTERS-PSW                          */
/*              = 0 DO NOT APPLY PARM_ACTION FOR THIS SECT */
/*              = 1 APPLY PARM_ACTION FOR THIS SECTION     */
                (3) TRACE-SUMMARY                          */
                (4) PROGRAM-STORAGE                        */
                (5) FILES                                  */
                (6) IMS-SECTION                            */
                (7) IDMS-SECTION                           */
                (8) DB2-SECTION                            */
                (9) SORT-SECTION                           */
                (10) UNUSED                                 */
                (11) PARML-VERSION                         */
/*              = 1 DYNAMIC ALLOCATION DATA IS PRESENT     */
                2  PARM_COMMENT    CHAR(10) INIT((10)' '),
                2  DYNALC-REQ      CHAR(1)  INIT('F'),
/*              = D DYNAMIC ALLOCATION OF THE ABENDAID DD   */
/*              = F DYNAMICALLY ALLOCATE AND DO FREE=CLOSE */
                2  OUTPUT-CLASS   CHAR(1)  INIT('A'),
/*              = X ANY VALID OUTPUT CLASS                 */
                2  HOLD-OUTPUT    CHAR(1)  INIT('Y'),
/*              = Y HOLD THE OUTPUT                        */
/*              = N DON'T HOLD THE OUTPUT                  */
                2  FILLER         CHAR(1)  INIT(' '),
                2  DESTINATION     CHAR(8)  INIT('RMT5'),
                2  USERID         CHAR(8)  INIT('MYID'),
                2  OUTPUT-WRITER   CHAR(8)  INIT(' '),
                2  USER-FORM      CHAR(4)  INIT('SPCL');
DCL SNAPPAID EXTERNAL ENTRY OPTIONS(RETCODE,ASSEMBLER);

```

Figure 3. Parameter Interface in an Assembler Program

```

SNPRMITR DS 0H
PARMIDEN DC CL6'SNPRML' +0 CALLER ID
*
PARMACTN DC CL1'0' +6 ACTION FLAG
* EQUATES TO BE USED IN SETTING PARMACTN (ACTION).
FULLFLG EQU C'0' FULL SNAPAID REPORT
* (NO CUSTOMIZATION)
DISPLYFLG EQU C'1' DISPLAY SELECTED SECTIONS
SUPPRFLG EQU C'2' SUPPRESS SELECTED SECTIONS
*
PARMSECT EQU * SECTION FLAGS - SET TO "0" OR "1"
NSISCT DC CL1'0' +7 NSI
REGSCT DC CL1'0' +8 REGISTERS-PSW
TRACSCT DC CL1'0' +9 TRACE-SUMMARY
PROGSCT DC CL1'0' +10 PROGRAM-STORAGE
FILESCT DC CL1'0' +11 FILES
IMSSCT DC CL1'0' +12 IMS-SECTION
IDMSSCT DC CL1'0' +13 IDMS-SECTION
DB2SCT DC CL1'0' +14 DB2-SECTION
SRTSCT DC CL1'0' +15 SORT-SECTION
ECMSET DC CL1'0' +16 E-COMMERCE-SECTION
PRMLVERS DC CL1'1' +17 DYNAMIC ALLOCATION DATA PRESENT
* EQUATES TO BE USED IN SETTING SECTION FLAGS ABOVE.
SECTNOFF EQU C'0' DO NOT APPLY DISPLAY/SUPPRESS
* ACTION TO THIS SECTION.
SECTNON EQU C'1' APPLY DISPLAY/SUPPRESS ACTION
* TO THIS SECTION.
PARCMNT DC 10CL1' ' +18 COMMENT - APPEARS IN PROGRAMMER
* COLUMN OF REPORT FILE DIRECTORY
DYNASECT EQU * DYNAMIC ALLOCATION SECTION
DYNALC DC CL1' ' +28 DYNAMICALLY ALLOC ABENDAID
* AND OPTIONALLY SPECIFY
* FREE=CLOSE
DYNALLOC EQU C'D' DYNAMICALLY ALLOC ABENDAID
FREEQCLS EQU C'F' SPECIFY FREE=CLOSE TOO
OUTPTCLS DC CL1' ' +29 SYSOUT CLASS TO BE USED
HOLDOUTP DC CL1' ' +30 HOLD THE OUTPUT (Y/N)
UNUSE2 DC CL1' ' +31 UNUSED
DESTNATN DC CL8' ' +32 DESTINATION (LOCAL / REMOTE)
USERID DC CL8' ' +40 USER I.D.
OUTPWTR DC CL8' ' +48 OUPUT WRITER NAME
USERFORM DC CL4' ' +56 USER FORM NAME
SNPRMLNG EQU *-SNPRMITR
END

```

Abend-AID DD Statements

Abend-AID provides the following DD statements. If two mutually exclusive DD statements are present in the JCL, the last one encountered takes effect.

//ABENDAID DD SYSOUT: Alternate DD for Abend-AID output. This DD statement is required for SNAP-AID.

Note: Sites using SYSMDUMP must specify a different dump dataset with the //ABENDAID DD statement in order to receive Abend-AID output. Abend-AID does not write to SYSMDUMP.

//ABNLDUMP DD DUMMY: Requests printing of the normal IBM dump in addition to the Abend-AID report.

//ABNLENAB DD DUMMY: Enables Abend-AID when it has been disabled in the CWGLOBAL table.

//ABNLHELP DD DUMMY: Produces the Abend-AID help pages.

//ABNLIGNR DD DUMMY: Suppresses Abend-AID and allows normal IBM dump processing.

//ABNLIGNS DD DUMMY: Suppresses SNAP-AID.

//ABNLINCL DD DUMMY: Causes all active load modules to be considered for CSECT inclusion via CWINCLUD table.

//ABNLTERM DD DSN: Specifies an Abend-AID report dataset for Abend-AID output.

//ABNLTERM DD SYSOUT: Routes Abend-AID output to SYSOUT in 72-column format.

//ABNLWIDE DD DUMMY: Specifies 121-column output when the default is 72 columns.