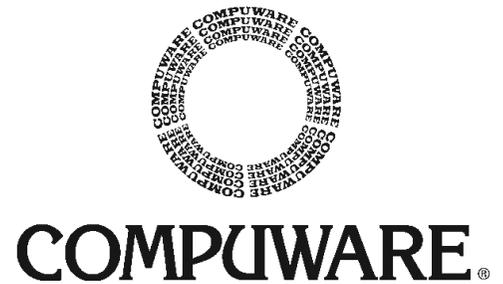


# Abend-AID

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# Installation and Customization Guide

Release 9.5



Please direct questions about Abend-AID  
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## Summary of Changes

This section summarizes the enhancements to the most recent releases of Abend-AID.

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### Release 9.5 Enhancements

This latest Abend-AID release provides the following enhancements:

**Note:** Abend-AID 9.5 requires Compuware Shared Services Release 8.0 or more current.

- **Enhanced Viewing Facility Navigation:** Access to report sections is faster using main menu point-and-shoot navigation. Menu highlighting shows at a glance which report sections are present. If a user selects a section that is unavailable, a pop-up window provides an explanation of why the section is not included in the report.
- **HOTKEY Command Enhancement:** This release extends the HOTKEY command capability introduced in Abend-AID 9.4. Using the new SECT keyword, the user can now link directly to a specific section of the Abend-AID report from within any ISPF application used to view a failing job's system messages.
- **Additional Point-and-Shoot Navigation:** Newly added point-and-shoot links between report sections enable users to more easily and quickly find the information needed to understand and correct program failures. Pressing the Enter key at the highlighted text displays the associated report section.
- **Source Support for COBOL File Definitions:** File records are now formatted using COBOL source program file definitions. This enhancement speeds solving data-related errors by allowing users to easily compare file data with data in the Working-Storage and Linkage sections.
- **Enterprise PL/I Controlled and External Storage:** Abend-AID Release 9.5 identifies and dumps controlled and static external storage for VisualAge and Enterprise PL/I programs using Compuware source support.
- **Multiple DB2 Releases, Subsystems, and Plan Names Supported by Online Installation:** Installers can now use the Abend-AID Release 9.5 installation dialog to install support for multiple DB2 releases, subsystems, and plan names. The installation dialog keeps track of the parameters that installers use to generate the DB2 installation JCL for all selected DB2 releases, subsystems, and plan names. Installers can change these parameters at any time and re-generate the installation JCL. They can also add the installation parameters for support of additional DB2 releases, subsystems, and plan names and generate the installation JCL any time after initial installation.
- **Improved File Section Format:** Current and previous records have been moved in front of the control blocks in the Abend-AID file display. In addition, users can dynamically switch the scale used to display the record between decimal (starting at one) and hexadecimal (starting at zero).

### Support for Earlier Releases

- Support for Abend-AID Release 9.3 will be discontinued on August 1, 2004.
- Abend-AID Release 9.5 is the last version of the product to support the following IBM software:
  - OS/390 Versions 2.9 through 2.4
  - DB2 Versions 5.1 and 4.1

I – IMS Version 5.1.

# Introduction

This manual provides the information needed to install and customize Abend-AID. It consists of the following chapters:

**Chapter 1, “Product Overview”:** Summarizes Abend-AID’s system environment, facilities, and operation.

**Chapter 2, “Installer’s Reference”:** Describes various conditions and requirements that the installer needs to know before beginning Abend-AID installation.

**Chapter 3, “Migration Considerations”:** Assists sites that have customized releases of Abend-AID prior to Release 9.5.

**Chapter 4, “Installing Abend-AID”:** Describes the procedure for installing Abend-AID’s base diagnostics and provides a checklist for all installation steps.

**Chapter 5, “Customization”:** Explains how to customize shared directories for Abend-AID reports setup.

**Chapter 6, “Database Support”:** Explains how to install optional support for DB2, IDMS, and IMS.

**Chapter 7, “Language Support”:** Explains how to install optional support for PL/I without Language Environment and VS FORTRAN.

**Chapter 8, “Customizing Abend-AID”:** Discusses how to customize the Abend-AID tables and how to use the tables to tailor Abend-AID processing.

**Chapter 9, “Configuring Distributed Viewing”:** Tells the installer how to set up Abend-AID so that users can have Extended Language Support across separate MVS systems.

**Chapter 10, “Completing Installation”:** Describes the procedure for completing the installation and putting Abend-AID into production.

**Chapter 11, “User-Coded Customization”:** Defines the capabilities available for customizing Abend-AID processing and output for the specific requirements of your site.

**Chapter 12, “Abend-AID Utilities”:** Discusses the Abend-AID utilities (CWVERIFY, CWINSTAL, CWMODLST, CWTABLST).

**Chapter 13, “Installing Preventive Service”:** Describes the procedure for installing Abend-AID preventive service.

**Chapter 14, “Controlling Abend-AID Processing”:** Lists and summarizes the purposes of Abend-AID’s DD statements.

**Appendix A, “Site-Specific Installation Additional Information”:** Contains additional information about PL/I support, JES2, and installing the Japanese Language Facility.

**Appendix B, “Testing Samples”:** A list of sample faulted programs provided with Abend-AID for testing and training.

**Appendix C, “Global Options”:** Contains additional information about global options.

**Appendix D, “CSS Utilities”:** Explains a convenient, menu-driven way to perform CSS Language Processor functions and manipulate DDIO files.

**Appendix E, “Installation Tutorial”:** Provides an easily printable hardcopy of the online tutorial in the Abend-AID installation dialog that walks you through the steps to set up Abend-AID Report Routing based on routing criteria.

---

## Intended Audience

This manual is intended for use by Abend-AID installers and systems programmers.

---

## Publications

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

- Acrobat PDF 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* 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 PDF files supplied on the documentation CD.

The following documents comprise the documentation set that is supplied with Abend-AID:

- *Abend-AID Installation and Customization Guide:* Provides instructions for installing Abend-AID and information about setting it up to fit the development and system configurations at your site.
- *Abend-AID Messages and Codes Manual:* Lists the informational and error messages you may encounter while using Abend-AID and their explanations. It also describes any recommended user response.
- *Abend-AID Quick Reference:* A handy summary of Abend-AID report sections, Compuware/VF, SNAP-AID, and Abend-AID DD statements.
- *Abend-AID User/Reference Guide:* Provides guidelines and instructions for using Abend-AID basic language support, Extended Language Support (XLS), SNAP-AID, Abend-AID for DB2, Abend-AID for IMS, Abend-AID for IDMS, and Abend-AID DD statements.
- *Abend-AID SMF Cost Analysis Tool User's Guide:* Describes the SMF Cost Analysis Tool, reports, usage, customization, and installation.
- *Enterprise Common Components Installation and Customization Guide:* Provides instructions for installing, customizing, and maintaining Enterprise Common Components (ECC). ECC is a packaging method for the following Compuware facilities: License Management System (LMS), Compuware Shared Services (CSS), Base Services, and Host Communications Interface (HCI). Base Services and HCI are required only for Abend-AID Distributed Viewing Support.
- *Enterprise Common Components Messages and Codes:* Contains error messages and codes generated during ECC installation or while using its components: LMS, CSS, Base Services, or HCI.
- *Compuware Shared Services User/Reference Guide:* Provides operation and reference information about Compuware Shared Services, which includes Extended Language Support, Compuware Viewing Facility, the Compuware language processors (COBOL, Assembler, PL/I, and C), Compuware's DDIO report and source listing datasets, and the batch file utilities (CWDDSUTL, CWFSDUT, CWAASDUT, and CWDDLPUT).

- *License Management System User/Reference Guide*: Provides operation and reference information about the Compuware licensing system that lets you establish, maintain, diagnose, and upgrade access to the Compuware products licensed at your site.

## Online Help

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

## FrontLine Support Website

Access online technical support for Compuware products via our FrontLine support website. View or download documentation, frequently asked questions, and product fixes, or directly e-mail Compuware with questions or comments. To access FrontLine, you must first register and obtain a password at <http://frontline.compuware.com>.

## Online Documentation

Documentation for this product is provided on CD-ROM in several electronic formats.

- View PDF files with the free Adobe Acrobat Reader, available at <http://www.adobe.com>.
- View HTML files with any standard Web browser.
- View BookManager softcopy files with any version of IBM BookManager READ or the IBM Softcopy Reader. To learn more about BookManager or to download the free Softcopy Reader, go to <http://www.ibm.com>.

## World Wide Web

Compuware's site on the World Wide Web provides information about Compuware and its products. The address is <http://www.compuware.com>.

## IBM Documentation

You can find more information related to Abend-AID in the following IBM publications:

- *z/OS Language Environment Customization Guide*: Discusses Language Environment for MVS.
- *z/OS Initialization and Tuning Reference*: Describes APF authorization and the use of (E)LPA.
- *z/OS MVS Programming: Authorized Assembler Services Guide*: Describes APF authorization.

---

## 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 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 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.

**Abend-AID Technical Support**  
Compuware Corporation  
One Campus Martius  
Detroit, MI 48226-5099  
**1-800-538-7822**

# Chapter 1.

## Product Overview

This chapter summarizes Abend-AID's system environment, facilities, and operation.

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## Operating System Environment

**Note:** Consult <http://frontline.compuware.com> for updates.

### *Operating System Support*

- z/OS versions 1.5 through 1.1
- OS/390 version 2

Abend-AID identifies and describes application program failures in the following MVS-based languages and databases:

### *Programming Language Support*

- Language Environment associated with z/OS versions 1.5 through 1.1 and OS/390 version 2
- COBOL:
  - Enterprise COBOL 3.2, 3.1
  - COBOL for OS/390 & VM 2.2, 2.1\*
  - COBOL for MVS & VM 1.2\*
  - AD/Cycle COBOL/370 1.1, 1.0
  - VS COBOL II 1.4, 1.3.2, 1.3.1
  - OS/VS COBOL 2.4
- PL/I:
  - Enterprise PL/I 3.3, 3.2, 3.1
  - VisualAge PL/I 2.2
  - PL/I for MVS & VM 1.1.1\*
  - AD/Cycle PL/I 1.1
  - PL/I 2.3
- Assembler:
  - High Level Assembler (HLASM) 1.4 through 1.1
  - Assembler H
- C:
  - C/MVS
  - C++/MVS
  - AD/Cycle C/370
  - SAS/C
- VS FORTRAN 2.6, 2.5

### *Database Support*

- DB2 8.1, 7.1, 6.1, 5.1, 4.1, 3.1
- DB2 RRSAF Attachment
- IMS 8.1 through 5.1

- IDMS 15.0, 14.0, 12.01

### ***Innovative Access Method (IAM) Support from Innovation Data Processing:***

IAM 7.0 and 6.4 through 6.1

\*Compuware supports the OS/390 and MVS portion of this product.

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## Facilities

Abend-AID intercepts and analyzes application program failures to provide comprehensive fault diagnostics reacting specifically to the type of error, the language of the failing program, and the types of files or databases in use. A concise, easy-to-read report, available online or in printed form, presents the most important information first and includes only the data necessary to solve the problem.

Abend-AID provides diagnostics for DB2, IMS, and IDMS databases as well as COBOL, PL/I, Assembler, C, and VS FORTRAN languages. This support includes those versions of COBOL and PL/I that can be run with Language Environment.

For COBOL, PL/I, and Assembler errors, Abend-AID merges actual source code and diagnostic data into a single report. Online, menu-driven access enables quick and accurate problem resolution. The specialized diagnostics for DB2, IMS, and IDMS environments enable programmers to resolve errors independently of the DBA staff.

## Abend-AID Report

The Abend-AID report consists of these sections, which may be accessed individually online by menu selection:

- **Header:** Includes environmental information about the program in error, the operating system release level, the date and time when the error occurred, job name, step name, and JES ID.
- **Error Analysis section:** Includes a comprehensive explanation of the error condition, specific information about the field(s) contained in the statement in error, and suggested courses of action whenever possible.
- **Error Location section:** Provides information for locating the statement in error. When using Extended Language Support, identifies the exact location of the error. The compile date and length of the program in error are also identified.
- **Call Trace Summary section:** Provides the Call Trace Summary and the Application Program Attributes. The Call Trace Summary includes a trace of called/linked programs on the save area chain and indicates the program in error. The Application Program Attributes include the program name, language, compile date, and length for each application program.
- **Supporting Environmental Data section:** Provides supporting environmental data. This information includes the abending Program Status Word (PSW), program PSW, entry point and load point addresses, and the contents of the registers at the time of the error.
- **Program Storage section:** Formats program storage for application programs on the calling chain. Program storage is formatted based on the programming language.
- **Program Listing section:** Available only with COBOL, PL/I, or Assembler extended language support. Provides the procedure divisions for COBOL programs on the calling chain and source listings for PL/I or Assembler programs on the calling chain with the current statement indicated.

- **File section:** Gives a status of each open file along with formatted current and previous records.
- **Specialized Database Support section:** Provides database-specific support for DB2, IMS, and IDMS if the Abend-AID database support facility for that environment is installed on the system.
- **SORT section:** Includes the current COBOL internal sort information. Available only for COBOL programs with internal sort.
- **COBOL Data Locator section:** Lists occurrences and identifies locations of all or specified data or date strings and formats. Available only during online viewing of COBOL extended language support.
- **Abend-AID for WebSphere MQ section:** Displays MQSeries batch or MQSeries IMS information created by Abend-AID for WebSphere MQ.
- **Language Environment Information section:** Includes information about:
  - *Language Environment run-time options in effect at the time of the error:* Run-time options are obtained from many sources including JCL overrides. These options affect job performance and how a job terminates if an error occurs. Includes how and where the option was set.
  - *User heap storage:* A storage allocation map shows allocated and free storage elements. Overlay errors are identified down to the element in error. Supporting data around the element in error is present to assist in debugging storage overlays.
  - *Significant run-time control blocks (CAA, CIB, EDB, MSIB, PCB, RCB):* In addition to dumping the entire control block, Abend-AID displays important fields in each block, along with the hexadecimal values of those fields.
  - *Run-time library services (RTLS):* Language Environment run-time libraries contain modules that can be accessed via the system LNKST, STEPLIB, and/or a Language Environment service called RTLS. Sites may choose a single method of access to these Language Environment libraries or allow a combination of these access mechanisms. This varied access can cause many run-time issues which may be the root cause of program failures. Using the information provided in the new Language Environment section of the Abend-AID report, the programmer can now determine at a glance what logical library name and RTLS version were used for the application.
- **Epilog section:** Includes report print and IBM dump information, if applicable.

## Extended Language Support

With Extended Language Support (XLS), you get source code in pertinent sections of the Abend-AID report showing where the fault occurs, listing the conditions under which it occurs, and telling why it occurs. XLS is available for COBOL, PL/I, and Assembler (HLASM) programs.

XLS contributes the following information to the report:

- **Error Analysis section:** Shows the source statement that is in error. For data-related errors, also shows the contents of COBOL fields, PL/I variables, or Assembler variables in the statement at the time of the fault.
- **Error Location section:** Shows the source statement being executed.
- **Program Storage section:** Shows the names and contents of all individual COBOL fields, PL/I variables, or Assembler variables in storage.
- **Program Listing section:** Shows the procedure divisions for COBOL programs on the calling chain or the source listings for PL/I or Assembler programs on the calling chain, with the current statement indicated.

### ***Report Viewing***

The Compuware Viewing Facility (Compuware/VF) provides immediate, online access to all report sections. The report can be printed during viewing.

Compuware/VF uses a self-maintaining report dataset that stores Abend-AID output in a compressed format, further reducing DASD space. Reports can be locked to keep them in the report dataset as long as needed.

Compuware/VF keeps track of all Abend-AID activity and provides a comprehensive security system. The report dataset directory summarizes Abend-AID activity in a concise, easy-to-use format. You can sort the directory by job name, report number, error code, date, programmer, or report size.

### ***Source Viewing***

Abend-AID's language processors for COBOL, PL/I, and Assembler enable XLS by capturing the pertinent source code from the compiler listing. The language processors store the source in a special, self-maintaining source listing dataset. For XLS, Compuware/VF inserts applicable information from the source listing dataset into the report sections.

The Abend-AID user can set up a language processor to store the source listing in the source listing dataset either before or after an Abend-AID report is written to the report dataset. One or more source listing datasets are prepared by the installer during installation for this purpose. A source listing dataset can be used by other Compuware products such as XPEDITER/TSO.

The COBOL language processor produces an enhanced compiler listing that gives diagnostic information not available in a standard listing. The enhanced listing enables developers to further review program conditions associated with report diagnostics.

### ***Distributed Viewing***

Distributed viewing enables application developers to merge Abend-AID report and source listing datasets that are on different MVS images that do not share DASD or to access the datasets individually. Users access the datasets through the Compuware/VF, as they normally would.

Working from individual local systems, any number of users can access report and source listing datasets that both reside on other MVS images. The distance between MVS sites has no effect on the speed or reliability of the extended language report presented to a user.

## **Database Support**

Abend-AID provides comprehensive support for DB2, IMS, and IDMS databases. These database support facilities are available as additional cost options.

### **Abend-AID for DB2**

Abend-AID for DB2 solves difficult S04E and S04F abends, as well as application program problems associated with unexpected negative SQL codes. With Abend-AID for DB2, you no longer need to wade through DB2 dumps and message manuals. Abend-AID pinpoints what happened, as well as when, where, and why a DB2 abend or error occurred. Furthermore, Abend-AID for DB2 usually offers a solution to the problem.

Abend-AID can diagnose DB2 problems regardless of the environment in which the program is executing, and it is applicable to TSO, call, or RRSF attach mode, IMS, and DL/I attach mode environments. It alleviates the complexity of DB2 as a result of cross-memory services, multiple address spaces, and the different execution modes.

## Abend-AID for IMS

Abend-AID for IMS features special diagnostic routines for application failures in IMS DB and TM environments. Abend-AID for IMS reduces the complexity surrounding the IMS environment by giving you comprehensive, easy-to-understand diagnostics on IMS user abends in addition to specific database information. Compuware/VF enables immediate, online access to the Abend-AID report that would not normally be available until the region is brought down.

## Abend-AID for IDMS

Abend-AID for IDMS provides diagnostics for failures unique to the CA-IDMS database system. IDMS application failures are thoroughly analyzed by special modules that produce output reports that accurately describe the cause of the error. With Abend-AID for IDMS, you no longer need to rely on manuals or reference cards when debugging IDMS errors.

## SNAP-AID

The SNAP-AID facility produces Abend-AID output without terminating the application program. This facility provides a controlled environment for debugging logic or data errors. For example, SNAP-AID can be very beneficial in the DB2 environment when you want Abend-AID diagnostics for a negative SQL code without terminating the program. SNAP-AID is invoked by a call to the SNAPAID module in the application program. The amount of output can be customized by using a parameter list in the SNAP-AID call.

## Japanese Language Facility

Abend-AID's Japanese language capability uses the IBM double-byte character set (DBCS) to present over 90% of the Abend-AID report in Japanese when viewed online through Compuware/VF. Japanese language is available for DB2, IMS, and COBOL diagnostics. Compuware/VF panels, tutorials, and messages can be displayed in Japanese.

---

## Abend-AID for WebSphere MQ

Abend-AID for WebSphere MQ provides enhanced debugging capabilities for IBM WebSphere MQ batch and IMS applications. Abend-AID for WebSphere MQ is a separate Fault Management product that you can order through your Compuware sales representative.

---

## SMF Cost Analysis Tool

The SMF Cost Analysis Tool analyzes user-provided SMF records spanning any time range to show the volume and type of fault activity on a system. It also estimates the time and system costs saved by using Abend-AID. You can order this tool through your Compuware sales representative.

---

## Operation

Abend-AID remains transparent to the user until an application program failure occurs. When a program failure occurs, Abend-AID intercedes and reports the information you need to resolve the problem. Abend-AID operates according to a control structure preset by system defaults. You can tailor Abend-AID's control structure for specialized environments.

## Basic Process

When an application program failure occurs in Language Environment, the system calls registered Abnormal Termination Exits (ATE) to process the condition. For abnormal termination processing, Compuware provides the module LEAID as the entry point to Abend-AID.

If the application program failure is an abend, the operating system calls SVC51 to create a dump. In this case, Abend-AID operates by intercepting IBM SVC51 dump processing. If a //SYSUDUMP or //SYSABEND DD statement, or both the //SYSMDUMP and //ABENDAID DD statements are present in the execution JCL, Abend-AID intercepts the call to SVC51 and takes control.

In all Abend-AID processing, Abend-AID modules are dynamically loaded to process the error. These modules must be available either in a link list library or via a JOBLIB or STEPLIB library. Abend-AID tables let you further control Abend-AID execution. Global default options, global routing, and user exits provide a means of customizing Abend-AID processing.

Abend-AID operates in the normal problem-program state rather than the supervisor state. This operation maintains the integrity of the application system.

Abend-AID's decision-making capabilities selectively invoke the necessary diagnostic and reporting modules. This selection is based on variables such as the specific abend code, programming language, and file access method. Abend-AID reports information based on the status of the program and the system at the time of the program failure.

To keep overhead to a minimum, Abend-AID invokes only the required modules for each error. Exact memory requirements depend on the particular error, the options installed, and the complexity of the program being analyzed.

## Control Structure

Abend-AID can operate with the default parameters supplied by Compuware or can be customized to your needs. Abend-AID reports can be produced for all application program failures because Abend-AID recognizes which information is most helpful for problem resolution. Abend-AID also provides a sophisticated control structure that can be utilized as needed. Compuware recommends that you employ these controls only after you have identified variations to the product defaults that will aid in resolution of specific types of problems.

A seven-level control structure lets you tailor Abend-AID for specialized environments, such as different levels of support for jobs, programs, or abend codes. The structure is a hierarchical sequence with the highest priority first. Use of a particular control level overrides all of the controls that follow. The seven levels of the control structure are:

1. JCL modification
2. User exits
3. Job and program selection tables
4. Abend code tables
5. Global site options table
6. Global routing criteria and options

## 7. System-wide control.

Each level is described below.

### JCL Modification

You can easily override the user exits, tables, and default system parameters. Examples of JCL modifications:

#### **Example 1:**

Causes Abend-AID to print the Help page:

```
//ABNLHELP DD DUMMY
```

#### **Example 2:**

Causes Abend-AID to format and display all program storage and control blocks, regardless of installation options:

```
//ABNLALL DD DUMMY
```

### User Exits

Abend-AID provides optional user exits for tailoring output by particular jobs and/or programs. The exits dynamically perform specialized processing at execution time. They can be particularly useful for program development or for a phased installation of Abend-AID. The exit allows you to:

- Override job and program tables to specify an alternativeabend code table for particular errors.
- Route report output to alternate report datasets based on site-specific information, specify that Abend-AID not process for certain jobs or errors, and request the IBM dump to be either printed or suppressed.
- Display selected storage areas, such as GETMAIN storage, or tables and control blocks from user-written applications.

### Job and Program Selection Tables

Selection tables let you specify the Abend-AID operation for particular programs or jobs. These operations include *dump* (produces an IBM dump), *nodump* (does not produce an IBM dump), *ignore* (does not produce an Abend-AID report), or *proc* (produces an Abend-AID report).

### Abend Code Tables

Tables are supplied with the product that specify — by abend code, PL/I on-code, or LE condition code — the action that Abend-AID will take when a problem is either fully or partially resolved. These actions include options for dump output, control block formatting, and program storage analysis. These tables allow complete flexibility in tailoring the system.

Compuware distributes the abend code tables with the recommended settings. Because these settings are based on Compuware's experience with many installations, modifications to the tables are seldom necessary.

### Global Site Options Module — CWGLOBAL

The global site options module (CWGLOBAL) provides various Abend-AID system default options such as amount of information provided in certain sections of the report and language type for report text. This load module is created during installation.

## Global Routing Options and Criteria Module — CWROUTE

The global routing options and criteria module (CWROUTE) is created during installation and routes Abend-AID reports to specific report datasets. If specified, criteria can be used to route Abend-AID reports to report databases based on information unique to specific jobs. The names of the default shared directories for reports and source listings are stored here.

## System-Wide Control

This level is used to start Abend-AID on your system or to stop Abend-AID from intercepting application program failures.

## IBM Dump Provision

In most cases, the Abend-AID report is all that is needed to resolve the problem. In the rare case when it cannot fully resolve the problem, Abend-AID provides all of the information that can be obtained, and then automatically invokes a full IBM dump.

Abend-AID supplies tables that either request or suppress an IBM dump based on abend code, program name, or job name. Abend-AID DD statements can be used to override any option selected with the installation tables.

## Utilities

Several Abend-AID utility programs provide users with installation and servicing functions.

- **Installation Verification Report:** Checks the installation of tables and modules.
- **Table Listing Program:** Reviews the contents of the abend code tables, global table with site defaults, job/program selection tables, and the CSECT inclusion table.
- **License Management System:** Installs, checks, or modifies license information.

Other utilities provide users with operational and processing functions.

- **Compuware/VF:** Manages report and source listing datasets online.
- **CSS Utilities:** Sets up a language processor or modifies processing online.
- **CSS Batch File Utilities:** Manage report and source listing datasets in batch mode.

## User Manuals

A complete set of user documentation, in several online formats, Adobe Acrobat PDF, HTML, and IBM BookManager is provided on CD-ROM with each release of Abend-AID. Refer to the “Publications” section of the Introduction for complete information.

## Chapter 2.

# Installer's Reference

Installers should review this chapter before installing or reinstalling Abend-AID. It describes special conditions and requirements for successfully installing and using Abend-AID.

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## Preliminary Considerations

This section contains information that may be applicable to both a new installation and a reinstallation of Abend-AID.

### Information on the Tape Label

The information on the label of the Abend-AID installation tape provides details about your Abend-AID tape. Some of the information applies to installation or operating capability, as noted below:

#### Name/Release

Name and release of the product.

#### Op-Sys

MVS indicates that Abend-AID tapes are valid for the operating system MVS/ESA and later MVS versions.

#### Creation

The Abend-AID installation tape is valid for one year after it is made. If installation will occur after the expiration date, access <http://frontline.compuware.com> or call Abend-AID Technical Support to request a new tape.

#### Security

Minimum level of Compuware's License Management System required.

## Enterprise Common Components

Enterprise Common Components (ECC) is an umbrella program that contains several components including Compuware Shared Services (CSS), License Management System (LMS), and Base Services/HCI.

Abend-AID operation requires the components of ECC, which are provided on a separate installation tape in the Abend-AID shipping package. ECC has its own installation procedure, which you perform in conjunction with the Abend-AID installation. Review the ECC user documentation before installing or reinstalling Abend-AID.

The *Enterprise Common Components Installation and Customization Guide* (provided in printed form) that accompanies the distribution tape applies to all of the ECC components. The other documentation included in the ECC package (provided on a separate documentation CD) includes the *Compuware Shared Services User/Reference Guide*, the *License Management System User/Reference Guide* and the *Enterprise Common Components Messages and Codes* manual.

## Compuware Shared Services

CSS is shared among the following Compuware products:

- Abend-AID
- Abend-AID for CICS
- XPEDITER/CICS
- XPEDITER/TSO
- Abend-AID for WebSphere MQ

CSS preparation is slightly different for each Compuware product on your system. Review the entire installation procedure in the *ECC Installation and Customization Guide* before beginning.

CSS components include the Compuware Viewing Facility (Compuware/VF) with which users view and manage Abend-AID reports, the Compuware language processors that capture source code for Abend-AID reports, and various utilities and services.

New CSS releases are shipped with new releases of the Compuware products that use them. Support for new Abend-AID enhancements often requires installing the new CSS release.

## License Management System

Compuware provides the License Management System (LMS) to help manage access to Compuware's products at your site. The LMS includes several components that together allow you to establish, maintain, diagnose, and upgrade access to the Compuware products licensed by your enterprise.

You install LMS from the Enterprise Common Components (ECC) installation tape provided in the Abend-AID shipping package. Separately, via e-mail you receive a **License Certificate** for Abend-AID.

### IMPORTANT:

Abend-AID operation requires these steps:

1. Ensure that the Compuware License Management System has been installed from the ECC tape.

Refer to the Compuware *Enterprise Common Components Installation and Customization Guide* for installation procedures. This step is only necessary for a first-time install of LMS or when upgrading the License Management System itself.

2. Import the **License Certificate** into your License File.
3. Establish and update the **Runtime License Management System** by running the program LMSINIT.

Follow the *License Certificate Import Checklist* of the Compuware *License Management User/Reference Guide* for detailed instructions.

## Abend-AID for WebSphere MQ Support

Abend-AID Release 9.3 and more current support the Abend-AID for WebSphere MQ product that provides enhanced debugging capabilities for MQSeries batch and IMS applications.

## Language Environment (LE) Support

Install Language Environment support whether or not your site is currently using Language Environment in applications, and particularly if any of these versions are

present in your development environment: z/OS Language Environment, OS/390 Language Environment, Language Environment for MVS & VM, or AD/Cycle LE/370.

## Extended Language Support

You should install the Compuware/VF and the applicable CSS language processor components during ECC installation. The list of options licensed at this site can be obtained from the report created during the installation of LMS.

## Database Support

If either DB2 or IDMS is licensed at this site, then you should install the applicable Abend-AID database option after installing basic support. Refer to **Chapter 6, "Database Support"** for more information.

If IMS is licensed, IMS diagnostics will be installed automatically along with base Abend-AID. The list of options licensed at this site can be obtained from the report created during the installation of LMS.

## Distributed Viewing

Install Distributed Viewing if application developers need to access Abend-AID report and source listing datasets on MVS systems to which they are not logged on and that do not share DASD. Apply the configuration procedures to each image of Abend-AID on each of the MVS systems that users will access.

Distributed Viewing Support installation starts with the installation of the CSS HCI component of ECC. Refer to **Chapter 9, "Configuring Distributed Viewing"** for more information.

---

# General Installation Considerations

## Abend-AID Modules Availability

Modules in the Abend-AID load library, the Abend-AID customization load library, and the CSS load library must be available when Abend-AID is invoked. Abend-AID uses the CSS I/O functionality when writing an Abend-AID report to a Compuware/VF report dataset or to SYSOUT. Abend-AID requests needed modules by using the MVS LOAD macro and specifying the load module name. The normal order of search by the operating system control program for these modules is as follows:

1. Job pack area
2. Task library
3. Step library; if there is no step library, the job library
4. Link pack area ELPA or PLPA
5. Link library as defined by the LNKLST concatenation.

**Note:** The normal load order may be modified depending on how LLA-managed datasets are handled at your site and/or the use of third-party software packages. Refer to the appropriate third-party documentation for the use of these features.

Generally, while testing a new Abend-AID release, use STEPLIB or JOBLIB references for the Abend-AID customization load library and the Abend-AID load library (and the CSS load library if required). When you move Abend-AID to production, put the load libraries in LNKLST.

The IBM *z/OS Initialization and Tuning Reference* manual contains details about LLA, LPA, and LNKLST. Refer to the appropriate sections of this IBM manual for further information.

Refer to “Storage Utilization” on page 2-7 for information about inserting modules into the link pack area EPLPA or PLPA.

## APF Authorization

Modules ABENDAID and CWINSTAL are the only Abend-AID load modules that are required to be APF-authorized. In accordance with IBM system integrity guidelines, Compuware recommends that the load library that contains all of the other Abend-AID modules and the CSS load library not be APF-authorized. Abend-AID is not designed to be used for APF-authorized programs.

If Abend-AID is invoked for a module loaded from an APF-authorized library, and the Abend-AID library and CSS library are not authorized, the following messages may be issued:

```
CSV019I REQUESTED MODULE #XAAINTR NOT ACCESSED, IS IN NON-APF LIBRARY
AB5A2 MODULE #XAAINTR NOT FOUND
```

When this situation occurs, include an //ABNLIGNR DD statement in the JCL.

Refer to the IBM *OS/390 Planning: Security* manual for information about APF-authorization. Refer to the IBM *z/OS Initialization and Tuning Reference* manual under SYS1.PARMLIB member IEAAPFxx or PROGxx for information about defining APF-authorized datasets.

## IBM Dump Processing

Abend-AID generally suppresses the IBM dump. You can selectively turn this option back on using one of two methods:

- Add a DD statement to specify whether the IBM dump is requested:
  - //ABNLDUMP DD to specify the IBM dump
  - //ABNLNODP DD to suppress the IBM dump.

Refer to “IBM Dump-Related” on page 14-3 for more information.

- Specify an IBM dump for a specific job or program name using the Abend-AID CWJOBTAB or CWPGMTAB table. You can set the PROC parameter to DUMP or NODP as needed. Refer to “Job and Program Selection Tables (CWJOBTAB and CWPGMTAB)” on page 8-7 for more information.

---

## Environmental Considerations

The information in this section describes requirements or conditions involving programs or systems other than those of Compuware.

### IBM DFSMS Modules

Abend-AID has full support for the IBM Data Facility Storage Management Subsystem (DFSMS). DFSMS information is provided in the Data Management Control Block section of the Abend-AID report.

Abend-AID searches for IBM module IGWASMS, usually located in the callable system service library SYS1.CSSLIB, to obtain DFSMS information. IGWASMS must be available to Abend-AID at abend time. If IGWASMS is not available, a CSV003I error appears in the JES log for the job as a result of the load. Also, a warning message is printed in the Data

Management Control Block Section of the Abend-AID report indicating that IGWASMS was not available and that no construct information will be given.

## Support for PDSE Object Libraries

Abend-AID has exploitative support for PDSE object libraries. The Error Location section of the Abend-AID report displays the abending PDSE object module name, the time it was bound, and the binder information. In addition to supporting application PDSE object libraries, Abend-AID can be installed into a PDSE object library.

## Resource Security

Abend-AID reads the load libraries associated with the abending program. If users or programs are denied read access to application program load libraries, dataset security violations may be generated by security applications such as RACF or ACF2. To prevent these violations, the #XAAXIO load module requires read access to the application program load library.

## CICS Dumps

Include an Abend-AID ignore (`//ABNLIGNR DD`) statement in the JCL for all CICS online regions. Because Abend-AID does not contain specialized diagnostics for online CICS transaction terminations, Compuware recommends that normal CICS dump processing occur. Abend-AID diagnostics are provided for batch CICS U37xx abends. Therefore, do not include a `//ABNLIGNR DD` statement in the JCL of batch CICS sessions.

## CA-OPTIMIZER Detector Compatibility

To get an Abend-AID report when using the CA-OPTIMIZER Detector feature, modify the Detector's User Abend Control Table to set `DUMP=ON` for all system and user abends.

CA-OPTIMIZER's Extended Detector Support uses an IBM SVC51 interface. Contact Abend-AID Technical Support for details on the requirements for allowing coexistence of the Abend-AID IBM SVC51 interface and the CA-OPTIMIZER IBM SVC51 interface.

## CA-PANEXEC Interface

CA-PANEXEC provides an Abend-AID interface, "PANEACCS". This module must be available to Abend-AID to provide support for modules stored in libraries managed by CA-PANEXEC. If you are no longer using CA-PANEXEC, ensure that PANEACCS is *not* available to Abend-AID. Refer to "Abend-AID Modules Availability" on page 2-3 in this manual and the *CA-PANEXEC System Reference Manual* for more information.

## Innovation Access Method (IAM) File Support

If your site uses IAM files, you must set "Provide IAM Support" to YES in the Abend-AID global site options (CWGLOBAL). Refer to **Appendix C, "Global Options"** for more information.

## JES2 Subsystem

During Abend-AID installation, you assemble and link-edit a table (CWJESTAB) of JES2 control block offsets required by Abend-AID.

### Notes:

1. See "Step 13. JES2" on page 5-2 for instructions about updating CWJESTAB when JES2 maintenance is performed and keeping it current across multiple systems. If you

want to verify that the JES2 table matches your system's JES2, refer to "List Abend-AID Tables (CWTABLST)" on page 12-2.

2. No Abend-AID installation step or setup is required for JES3 sites.

## Operating System Upgrade

Do the following when you upgrade your site's operating system:

1. Verify that the new operating system is supported at the level of Abend-AID currently installed. If not, you may need to add current Abend-AID maintenance to obtain support for the new release.
2. Install Language Environment support for the new operating system. Refer to "Step 11. Install Language Environment Support" on page 4-15. LEAID is required to call Abend-AID in the Language Environment.
3. Do "Step 13. JES2" on page 5-2 to reassemble and link-edit the JES2 control block offset table. This step uses the following three Abend-AID installation library JCL members:
  - Run \$04SMPDD to obtain the correct SHASMAC library to be put in the \$08ASMJT job.
  - Run \$05SMPU1 to provide warning messages when JES is updated so the \$08ASMJT job can be rerun.
  - Run \$08ASMJT to obtain and link-edit the JES2 control block offset table.

---

## Reinstallation Considerations

This section describes conditions and requirements applicable only to reinstallation, typically of a new Abend-AID release.

### Abend-AID for IDMS

The reinstallation of the Abend-AID for IDMS hook, CWAAIDMS, is necessary for the IDMS release number to be shown in the Abend-AID report. Refer to **Chapter 6, "Database Support"** for more information about Abend-AID for IDMS.

### Enterprise Common Components

When installing a new release of Abend-AID, also install the current release of Compuware Shared Services (CSS) and Licensed Management System (LMS) from the ECC installation tape. Use of a less current release of CSS or LMS may limit Abend-AID's operation.

### Abend-AID Tables

If you modified tables in a previous version of Abend-AID, you need to incorporate those modifications in the tables for the current version of Abend-AID. Then reassemble and link all optional Abend-AID tables. Refer to **Chapter 8, "Customizing Abend-AID"** for more information.

### User Exits

If this site has user-coded exits from a release of Abend-AID prior to 9.4, consult **Chapter 3, "Migration Considerations"**. All user exits used in this release must be reassembled and linked.

## User-Coded Diagnostic Modules

Reassemble and link all user-coded diagnostics. Failure to do so may cause unpredictable results or an abend in the user-coded, diagnostic module.

---

## Storage Utilization

Generally, all modules that are reentrant and reusable are eligible for insertion into EPLPA or PLPA. Those modules that are linked AMODE 31 and RMODE ANY are EPLPA-eligible. All other reentrant and reusable modules must reside below the 16-MB line in PLPA. Note that any module that is not both reentrant and reusable cannot reside anywhere in ECSA or CSA and/or EPLPA or PLPA.

However, these Abend-AID modules are not eligible for insertion into EPLPA or PLPA although they are reentrant and reusable: #XAAMKDD, CWJESTAB, CWTABL01, LEAID, and SNAPAID.

The use of EPLPA or PLPA is recommended for performance reasons, but is not required. The amount of EPLPA or PLPA storage used by Abend-AID modules may differ between sites.

The following sample JCL members are provided in the Abend-AID installation library, TPAASAMP, to link-edit Abend-AID modules that are eligible for insertion into EPLPA or PLPA. For further information, refer to the documentation at the beginning of each member.

### JCLOPLPA:

Provided to link-edit modules recommended to be in EPLPA and PLPA for optimal performance when processing a PL/I or COBOL data exception.

### JCLMPLPA:

Provided to link-edit the minimum modules that are EPLPA- and PLPA-eligible.

Table 2-1 shows storage data for the members, followed by explanations. For a more complete discussion of the appropriate use of EPLPA or PLPA, refer to an *MVS Initialization and Customization Guide* or equivalent IBM documentation applicable to your environment.

**Table 2-1.** Storage Utilization

Memory/Disk Storage	Amount of Storage	
ECSA, CSA, EPLPA, or PLPA required for system interface module, ABENDAID	30K	
Maximum cylinders of disk storage, 3380	50	
Maximum cylinders of disk storage, 3390	40	
Number and collective sizes of Abend-AID modules:		
<b>All Modules:</b>		
EPLPA-eligible	1906 modules	5417K
PLPA-eligible	12 modules	144K
Not LPA-eligible	35 modules	298K
<b>JCLOPLPA (recommended optimal):</b>		
EPLPA-eligible	99 modules	531K
PLPA-eligible	12 modules	144K
<b>JCLMPLPA (recommended minimum):</b>		
EPLPA-eligible	76 modules	422K
PLPA-eligible	12 modules	144K

**Notes:**

1. The size of ECSA and/or CSA required for program residence for the Abend-AID system interface module, ABENDAID. The module is placed into ECSA or CSA unless already residing in EPLPA or PLPA when Abend-AID is started.
2. The maximum disk storage space required to contain the entire Abend-AID system. This includes basic Abend-AID as well as all extended language and extended database facilities.
3. The approximate size of the link pack areas (LPAs) — specifically, the pageable link pack area (PLPA) or extended pageable link pack area (EPLPA) — that may be used for program residence. The number of, and collective sizes of, modules in the categories *maximum*, *recommended optimal*, and *recommended minimum* sizes are given.

---

## Disaster Recovery

The following items are necessary to run Abend-AID at a disaster recovery site:

- Abend-AID load library
- Abend-AID customization load library
- Compuware Shared Services load library
- License Management System load library
- APF-authorized library containing modules ABENDAID and CWINSTAL for Abend-AID and all LMS APF authorized modules.
- Libraries containing Abend-AID changes needed for the following support:
  - Basic language support: Language Environment, PL/I, VS FORTRAN
  - Database support: DB2 and IDMS.
- See the *License Management System User/Reference Guide*, Option 6 - Disaster.

## Chapter 3. Migration Considerations

---

### Creating the CWGLOBAL Load Module

The CWGLOBAL load module is created during the installation process. The installation dialog will present all of the global options that can be set for review by the installer. The CWGLOBAL load module will then be created with the site specific values.

If a CWGLOBAL load module is available from Abend-AID release 9.1 or later it can be converted. The installation dialog will prompt for the dataset of an existing CWGLOBAL load module. The load module will be converted to the format for this release.

Abend-AID Release 9.3 and prior shipped the GLOBAL and DYNDNSN macros that were updated and assembled. The global options have remained the same with the exception of the DYNDNSN. The DYNDNSN was used to specify a report file used to write all Abend-AID reports. The Site Default Shared Directory for Reports replaces the DYNDNSN value. The default shared directory will be used to write all Abend-AID reports unless overridden.

---

### Using Shared Directories and Attached Databases to Store and Manage Abend-AID Reports and Source Listings

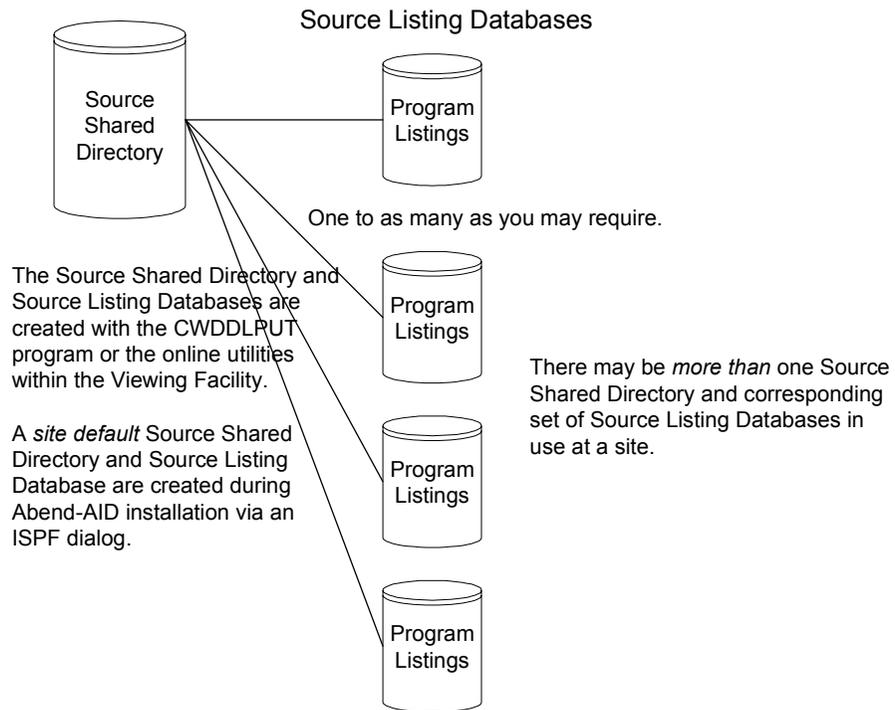
Prior to Abend-AID Release 9.4, a site may need multiple report files to accommodate Abend-AID reports and source listings generated on a system. When additional capacity is required, new report files or source listing files must be created. Implementing a single report shared directory and a single source listing shared directory improves a site's ability to manage these files and access the reports and source listings stored in them. For example, capacity can be expanded by attaching additional databases to a shared directory as needed. Also, a single report shared directory and a single source listing shared directory is all that has to be entered in the Viewing Facility in order to access Abend-AID reports.

Installation of Abend-AID 9.4 and more current requires the creation of a system-wide default report shared directory and a system-wide default source listing shared directory. The Shared Directory is a catalogue of report or listing databases. It is a much smaller VSAM file than the database files. If your site is currently using report files, the following options are available to you:

1. Use Compuware Shared Services (CSS) program CWDDCNVA to convert existing report files to report databases. CSS Utilities can then be used to attach them to the newly created system-wide default report shared directory. This is recommended. See **Appendix D, "CSS Utilities"** for information about using CSS Utilities.
2. Use existing report files as-is. As of this release of Abend-AID, use of report files is still supported. Report files may not be supported in future releases of Abend-AID.

You can continue to specify existing report files on the ABNLTERM DD, in customization exit CWEXIT02, and in table CWJOBTAB.

**Figure 3-1.** Relationship between Abend-AID Source Shared Directory and Source Listing Databases



If your site is currently using source listing files, the following options are available to you:

1. Use CSS Utilities to convert existing source listing files to source listing databases and attach them to the newly created system-wide default source listing shared directory. Compuware recommends this conversion.  
The converted databases can continue to be used by Abend-AID for CICS, XPEDITER/TSO, and XPEDITER/CICS.
2. Use existing source listing files as-is. As of this release of Abend-AID, use of source listing files is still supported. Listing files may not be supported in future releases of Abend-AID.

You can continue to specify existing listing files on the Compuware Viewing Facility and in customization termination exit AAXTERM.

## Starting the SVC51 Interface with Release 9.4 and More Current

The JCL to start the SVC51 interface is provided in the installation library (TPAASAMP) member \$12INSTL. The JCL was modified with Release 9.4. The SVC51 interface cannot be started without a valid CWROUTE load module created during the installation process. A //CWROUTE DD statement pointing to the non-SMP/E managed load library containing the CWROUTE load module is required in the JCL if the CWROUTE load module is not available on the LINKLIST.

## Directing Abend-AID Reports to SYSOUT

Abend-AID Releases 9.4 and more current writes ALL Abend-AID reports to a report dataset. Abend-AID reports cannot be written *only* to SYSOUT. If you have a requirement to continue writing reports to SYSOUT, in addition to the report dataset, you must implement one of the options listed below.

- Create a routing group, using the installation dialog screen shown in Figure 3-2, and specify Y to Route Abend-AID report to SYSOUT as well as report databases. Then use the report routing criteria option, shown in Figure 3-3, to create a profile for the reports that you need written to SYSOUT in addition to the report dataset. If you want *all* reports at your site to be written to SYSOUT, create a profile with an asterisk (\*) in each criteria field and assign that criteria to a group that has reports written to SYSOUT. Report routing criteria is created using the installation dialog and is stored in the CWROUTE load module. For additional information on routing Abend-AID reports see **Chapter 5, "Customization"**.

**Figure 3-2.** Abend-AID Report Routing: All Group Names Screen

```

----- Abend-AID Report Routing: All Group Names - Row 1 to 1 of 1
Command ==>

Commands: "apply"=apply changes

All Abend-AID Report Database Group Names are listed below.
Use a line command of 'i' below to insert (add) a new routing group

  Line  Group
  Cmd   Name      Shared Directory
-----
***** Bottom of data *****

```

**Figure 3-3.** Abend-AID Report Routing: All Routing Criteria Screen

```

----- Abend-AID Report Routing: All Routing Criteria --- Row 1 to 1 of 1
Command ==>

Commands: "apply"=apply changes

All Abend-AID Diagnostic Report Routing Criteria are listed below.
Use a line command of 'i' below to insert (add) new routing criteria

  Line  Group      Jobname  Userid  Job   Programmer Name  Accounting
  Cmd   Name          Jobname  Userid  Cls   Programmer Name  Info
-----

```

- Use the //ABNLTERM DD SYSOUT =\* in the abending job step to write the Abend-AID report to the ABNLTERM DD in addition to the site-specified, default report shared directory. See Chapter 5, “Customization” for additional information on the site default report shared directory.

## Accessing Your Abend-AID Report While Viewing JES Output Display

A new function made available in Abend-AID Release 9.4 with Compuware Shared Services 7.9 and more current allows you to *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 for Compuware/VF that you set up during the CSS installation. The function is context-independent and works from any ISPF screen display. The function merely depends on message, AB400A, introduced with Release 9.4, written at dump capture to the joblog.

While viewing the AB400A message, you can do one of the following to access the report:

- Define the TSO command as an ISPF system command. This implementation frees users from having to know the dataset name where the REXX EXEC or CLIST resides. Refer to the IBM Interactive System Productivity Facility (ISPF) documentation for the procedure to define an ISPF system command.
- Equate the TSO command to a PF key and thus provide hot-key access to the report.
- Type the TSO command TSO EXEC 'CX.SLCXCNTL(CWVFREXE)' 'HOTKEY' and press the Enter key.

See Figure 3-4 below.

**Figure 3-4.** SDSF Display Output

```

SDSF OUTPUT DISPLAY AA950C01 J0249094 DSID      2 LINE 10      COLUMNS 02- 81
COMMAND INPUT ==> TSO EXEC 'CX.SLCXCNTL(CWVFREXE)' 'HOTKEY'  SCROLL ==> HALF
2.34.01 J0975344 ---- MONDAY,      15 SEP 2003 ----
2.34.01 J0975344 IRR010I USERID TSOUSER IS ASSIGNED TO THIS JOB.
2.34.03 J0975344 ICH70001I EFHDMWO LAST ACCESS AT 12:02:58 ON MONDAY, SEPTEMB
2.34.03 J0975344 $HASP373 AA95DMWC STARTED - INIT 2      - CLASS A - SYS CW09
2.34.03 J0975344 IEF403I AA95DMWC - STARTED - TIME=12.34.03
2.34.15 J0975344 +AB400A      ===== ABEND-AID ===== 050
050          REPORT WRITTEN TO: AA.DEV.R95.SHDRRPT
050          REPORT NUMBER: 000494
050          JOB-AA95DMWC STEP-GO
050          LE COND CODE=CCE3209S
2.34.23 J0975344 +LEAID110 LE-AID IS ISSUING U4039-8 ABEND
2.34.27 J0975344 $HASP375 AA95DMWC ESTIMATED LINES EXCEEDED
2.34.29 J0975344 $HASP375 AA95DMWC ESTIMATE EXCEEDED BY              10,000 L
2.34.31 J0975344 $HASP375 AA95DMWC ESTIMATE EXCEEDED BY              20,000 L
2.34.33 J0975344 $HASP375 AA95DMWC ESTIMATE EXCEEDED BY              30,000 L
2.34.35 J0975344 $HASP375 AA95DMWC ESTIMATE EXCEEDED BY              40,000 L
2.34.36 J0975344 $HASP375 AA95DMWC ESTIMATE EXCEEDED BY              50,000 L

```

Type the above TSO command and press the Enter key. The OUTPUT SELECTION MENU of the Abend-AID report is displayed by Compuware/VF. When you exit the Viewing Facility, the original SDSF output screen is redisplayed.

## SECT and TRACE Keywords

New with Release 9.5, you can use the SECT and TRACE keywords with the TSO HOTKEY command to access a specific Abend-AID report section with trace mode activated. For example, valid syntax for the TSO HOTKEY command to access the Next Sequential Instruction (NSI) section of the Abend-AID report with trace mode activated is:

```
TSO EXEC 'dataset-name(CWVFREXE or CWVFCLSE)' 'HOTKEY SECT(NSI) TRACE'
```

---

## Migrating User-Coded Customization Exits

### *CWEXIT02 Routing*

Release 9.4 and more current can perform report routing using the online installation and customization dialog based on job name, user ID, job class, programmer name, and accounting information. See “Define Report Routing” on page 5-5 for more information.

If this site currently has implemented user-coded customization exits, you can use the following to help transition to the report routing through the installation dialog. You can use current exits with this release although they may not be supported in future releases.

If CWEXIT02 was coded to route the report based on the job named, you can use the routing available in place of the exit. Using the routing criteria, you can route reports to a specific report shared directory, a report database attached to a shared directory, or a report file. See **Chapter 5, “Customization”** for more information on routing Abend-AID reports.

### *CWEXIT02 - Other Functions*

If CWEXIT02 is used to place the IMS application program name in the programmer name field on the Compuware Viewing Facility Directory panel, you can use the global option table. You can set the Directory Programmer Name Field global option to perform this function. See **Appendix C, “Global Options”** for a complete description of the global options:

If CWEXIT2D or CWEXIT2E is used to replace the DESCRIPTION field on the Compuware Viewing Facility Directory panel, you can set the global option Directory Programmer Name Field global option to perform this function. This option allows the programmer name field to be replaced with alternate information from the abending job. See **Appendix C, “Global Options”** for a complete description of the global options.

### *AAXTERM*

If AAXTERM1 is used to produce WTO messages in the job log of the abending job, it is not needed with Releases 9.4 and more current. This function has been incorporated into the product. All jobs for which an Abend-AID report is produced contain a WTO message in the job log indicating the report dataset to which the report was written as well as the report number.

If AAXTERM3 is used to produce a copy of the Abend-AID report from a report file to SYSOUT, it is not needed with Release 9.4 and more current. The option to have the report written to SYSOUT is available using specific routing criteria. See **Chapter 5, “Customization”**, for more information on routing Abend-AID reports.

If versions of these exits have been previously implemented, you should remove them from the system that this release of Abend-AID is running on to eliminate the possibility that duplicate output may be generated.

---

## Migrating from CWJOBTAB Using CWROUTE

If CWJOBTAB is used to route Abend-AID output, it is not needed with Release 9.4 and more current. You can accomplish routing reports based on a job name using specific routing criteria. You can route reports to SYSOUT, the site default shared directory, or a specific report dataset based on the job name as well as other criteria. For additional information on routing Abend-AID reports, see **Chapter 5, “Customization”**.

**Note:** Abend-AID releases after 9.4 may not support all previously used user-coded customization exits. Compuware strongly recommends that you implement the routing criteria options in place of previously used exits.

## Chapter 4.

# Installing Abend-AID

This chapter contains a checklist of all installation steps in this manual and the procedure for installing Abend-AID support. This chapter includes steps 1 through 12. Refer to the other chapters of this manual for the remainder of the installation.

### Notes:

1. The Abend-AID installation tape is valid for one year after it is made. The CART DATE (cartridge date) on the tape label is the date of creation. The EXPIRE DATE is when installation capability ends. If you are past the expiration date, contact Abend-AID Technical Support or visit <http://frontline.compuware.com> to order a new tape.
2. All installation steps are applicable to MVS, OS/390, and z/OS.
3. The JCL members referenced in the steps can be found in the Abend-AID installation library (TPAASAMP).

---

## Installation Checklist

Use the following checklist during the Abend-AID installation process:

### Chapter 3, "Migration Considerations"

- "Creating the CWGLOBAL Load Module"
- "Using Shared Directories and Attached Databases to Store and Manage Abend-AID Reports and Source Listings"
- "Starting the SVC51 Interface with Release 9.4 and More Current"
- "Directing Abend-AID Reports to SYSOUT"
- "Accessing Your Abend-AID Report While Viewing JES Output Display"
- "Migrating User-Coded Customization Exits"
- "Migrating from CWJOBTAB Using CWROUTE"

### "Abend-AID Pre-installation Requirements" on page 4-7.

- Ensure Enterprise Common Components (ECC) is installed.
- Ensure License Management System (LMS) is installed.
- Ensure Compuware Shared Services (CSS) is installed.
- Ensure Base Services is installed (optional).
- Ensure Host Communications Interface (HCI) is installed (optional).

### "Step 1. Unload the Abend-AID Installation Tape" on page 4-8.

- [ ] “Allocate and Load the Abend-AID Installation Library”.

**“Step 2. Execute the Abend-AID Installation and Customization Dialog” on page 4-9.**

- [ ] “Start the ISPF Dialog”.  
Issue the following command on the TSO command line to start the ISPF dialog:

```
EX 'COMPWARE.PAA950.TPAASAMP(PAARDIAG)'
```

**“Step 3. Verify and Provide ECC Installation Information” on page 4-9.**

- [ ] “1. Determine the CSS Installation Status”.
- [ ] “2. Provide the CSS Library Names”.
- [ ] CSS Load Library— SLCXLOAD.
- [ ] CSS Sample Library — SLCXCNTL.
- [ ] CSS REXX Library — SLCXEXEC.
- [ ] CSS Message Library — SLCXMENU.
- [ ] CSS Panel Library — SLCXPENU.

**“Part 1. SMP/E Install”.**

**“Step 4. SMP/E Job Generation” on page 4-10.**

- [ ] “1. Enter Information in the Installation Dialog”.
- [ ] “2. Generate JCL”.
- [ ] “3. Review the Log of Generated Jobs”.

**“Step 5. Verify or Allocate Abend-AID Global SMP/E Datasets” on page 4-12.**

- [ ] “Execute \$01ALGBL to Allocate the Compuware Global SMP/E Datasets — if required”.

**“Step 6. Allocate and Initialize the Abend-AID SMP/E Datasets” on page 4-12.**

- [ ] “Execute \$02ALSMP from the TPAASAMP Library”.

**“Step 7. Allocate the SMP/E Target and Distribution Libraries” on page 4-13.**

- [ ] “Execute \$03ALLIB from the TPAASAMP Library”.

**“Step 8. SMP/E Receive the Product and Preventive Maintenance” on page 4-14.**

- [ ] “Execute \$04RECV from the TPAASAMP Library”.

**“Step 9. SMP/E Apply the Product and Preventive Maintenance” on page 4-14.**

- [ ] “Execute \$05APPLY from the TPAASAMP Library”.

**Note:** Verify that the APPLY SELECT statement is applying the FMIDs required at this site based on the information provided in the installation dialog. Compuware recommends that you run an APPLY CHECK before applying the Abend-AID software.

**“Step 10. SMP/E Accept the Product” on page 4-14.**

- [ ] “Execute \$06ACCPT from the TPAASAMP Library”.

**Note:** Verify that the ACCEPT SELECT statement is accepting the FMIDs required at this site based on the information provided in the installation dialog.

**“Step 11. Install Language Environment Support” on page 4-15.**

- [ ] “Register an Abnormal Termination Exit (ATE)”.

**“Step 12. APF-Authorize the SPAAAUTH Library” on page 4-15.**

- [ ] “APF-Authorize the Target Authorized Library”.

**“Part 2. Customization”.****Chapter 5, “Customization”.****“Step 13. JES2” on page 5-2.**

- [ ] “1. Select the JES2 Support Option from the Customization Primary Menu”.
- [ ] “2. Review the Log of Generated Jobs”.
- [ ] “3. Execute \$07SMPEL from the TPAASAMP Library”.
- [ ] “4. Execute \$08SMPDD from the TPAASAMP Library”.
- [ ] “5. Execute \$09ASMJT from the TPAASAMP Library”.
- [ ] “6. Execute \$10SMPU1 from the TPAASAMP Library”.

**“Step 14. Define Shared Directories and Report Routing Criteria” on page 5-3.**

- [ ] “1. Select the Report and Listing Datasets and Routing Information option from the Customization Primary Menu (Figure 5-2 on page 5-2)”.
- [ ] “2. Define the Site Default Shared Directories for Abend-AID Reports”.
- [ ] “3. Define the Site Default Shared Directories for Compuware Source Listings”.

**“Define Report Routing”**

- [ ] “For more information about Abend-AID report routing, review the online tutorial. Refer to Appendix E, “Installation Tutorial” for a hardcopy version of this tutorial.”.
- [ ] “Write All Abend-AID Reports to the Site Default Shared Directory”.
- [ ] Create/Modify Report Dataset Groups.
- [ ] Create/Modify Routing Selection Criteria.
- [ ] Select the option “Abend-AID reports are currently routed using customization from a previous release” if your site currently does routing using customization that was set up with a release of Abend-AID prior to 9.4.0.

**“Step 15. Set Up Global Customization Options” on page 5-10.**

- [ ] “Select the Create/Modify Global Customization Options from the Customization Menu”.
- [ ] Create a New CWGLOBAL Load Module.
- [ ] Update an Existing CWGLOBAL Load Module.

**“Part 3. IVP (Installation Verification Programs)”.**

**“Step 16. Generate the Installation Verification Program” on page 5-11.**

- [ ] “Select Part 3 IVPs from the Install Dialog Menu”.

**“Step 17. Verify Installation” on page 5-11.**

- [ ] “Execute JCL Member \$11VERIF”.

**“Step 18. Start Abend-AID for Test” on page 5-12.**

- [ ] “Execute CWINSTAL Utility to Install Abend-AID SVC51 Interface”.

**“Step 19. Test Abend-AID Basic Support” on page 5-13.**

- [ ] “Execute JCL Member \$71ABTST”.

**“Step 20. Validate Abend-AID LE Support” on page 5-14.**

- [ ] “Test the LE Support”.

**“Step 21. Test Abend-AID Extended Language Support” on page 5-14.**

- [ ] “Execute Install Verification Programs”.

**“Part 4. Install Database Support”.****Chapter 6, “Database Support”.****“Step 22. Install Abend-AID for DB2” on page 6-2.**

- [ ] “Abend-AID for DB2” on page 6-2.
  - [ ] “1. Verify and Submit the JCL to be Used for Abend-AID’s DB2 Support.”.
  - [ ] “2. Test Abend-AID for DB2 Diagnostics”.

**“Step 23. Install Abend-AID for IDMS” on page 6-7**

- [ ] “1. Run JCL Member \$31IDMS1”.
- [ ] “2. Reassemble and Link Abend-AID for IDMS Command Trace Table”.
- [ ] “3. Relink COBOL Programs That Access CA-IDMS 12.01 or More Current Database”.
- [ ] “4. Relink COBOL Programs For Which Abend-AID Is Unable to Provide CA-IDMS Database Diagnostic Information”.
- [ ] “5. Relink All Non-COBOL Programs”.
- [ ] “Abend-AID for IMS” on page 6-10.
  - [ ] No steps necessary. Automatically installed during Abend-AID installation.

**“Part 5. Install PL/I Without LE and VS FORTRAN Support”****Chapter 7, “Language Support”****“Step 24. Install PL/I without LE Support” on page 7-2.**

- [ ] “PL/I Support”.
  - [ ] “2. Test Abend-AID PL/I Support by Running JCL Member \$42PLI02”.
  - [ ] “3. Run JCL Member \$53FORPD to Copy Modules to the Production Libraries”.

**“Step 25. Install VS FORTRAN Support” on page 7-3**

- [ ] “1. Run JCL Member \$51FORBU”.
- [ ] “2. Test Abend-AID VS FORTRAN Support with JCL Member \$52FORTS”.
- [ ] “3. Run JCL Member \$53FORPD to Copy Modules to the Production Libraries”.

**Chapter 8, “Customizing Abend-AID”.****“Step 26. Customize Abend-AID Tables and Report Output” on page 8-1.**

Table	JCL	Description
CWTABS01	JCLASYST	System completion codes processing table.
CWTABU01	JCLAUSRT	User completion codes processing table.
CWTABP01	JCLAPLIT	PL/I on-codes (processing table)
CWTABL01	JCLALECT	LE User abends and condition codes.
CWJOBTAB	JCLJOBTB	Abend-AID processing by job name.
CWPGMTAB	JCLPGMTB	Abend-AID processing by program name.
CSECTBYP	JCLCSECT	Suppress program storage for non-COBOL CSECTs specified.
CWINCLUD	JCLINCLD	Include additional CSECT information.
CWCMTRHT	See CSS	Hexadecimal to EBCDIC translation table for horizontal dump format.
CWCMTRVT	See CSS	Hexadecimal to EBCDIC translation table for vertical dump format.

## Chapter 9, “Configuring Distributed Viewing”.

### “Step 27. Configure Distributed Viewing Support” on page 9-3.

Optional. Only needed to view Abend-AID DDIO files from an MVS image that does not share DASD.

- [ ] “1. Modify the Server JCL”.
- [ ] “2. Configure the LU 6.2 Application ID”.
- [ ] “3. Configure the Server Parameters”.
- [ ] “4. Start the Server”.

## Chapter 10, “Completing Installation”.

### “Step 28. Complete the Installation” on page 10-1.

- [ ] “1. Stop the Test Abend-AID SVC51 Interface”.
- [ ] “2. Verify SVC51 Interface for Reinstallation.”.
- [ ] “3. Make the New Abend-AID Load Modules Accessible for All Jobs”.
- [ ] “4. Start the Abend-AID SVC51 Interface for All Jobs”.
- [ ] “5. Ensure that the Abend-AID SVC51 Interface Is Started During the IPL Process”.
- [ ] “6. Ensure that the Abend-AID Libraries Are Moved to Production”.
- [ ] “7. Implement Abend-AID Access from JES Output Display”.

---

## Abend-AID Pre-installation Requirements

Refer to the *Enterprise Common Components Installation and Customization Guide* for instructions on installing Enterprise Common Components (ECC).

ECC includes the following components on the ECC installation tape included in the Abend-AID shipping package:

- License Management System (LMS) — Compuware’s license management facility that is required for Abend-AID operation.
- Compuware Shared Services (CSS) — includes Compuware’s Viewing Facility and COBOL, PL/I, and Assembler language processors, which are required for Extended Language Support (XLS) operation. A C language processor is also provided.
- Base Services — facility for accessing Abend-AID files on other MVS images. Required for Distributed Viewing Support (DVS) operation.
- Host Communications Interface (HCI) — facility for accessing Abend-AID files on other MVS images. Required for Distributed Viewing Support (DVS) operation.

After completing the ECC installation, continue with the following steps in this chapter to install Abend-AID.

**Note:** When installing a new release of Abend-AID, you must also install the most current release of CSS and LMS from the ECC installation tape. Use of a less current release of CSS or LMS may limit Abend-AID’s operation.

---

## General Installation Overview

The Abend-AID installation dialog prompts you for information and then generates the JCL for installing the product. The JCL that is generated is stored in the TPAASAMP library from which the dialog is executed. There will be an opportunity to redirect the generated JCL during the installation process.

The installation has four parts. “Part 1. SMP/E Install”, “**Part 2. Customization**”, and “Part 3. IVP (Installation Verification Programs)” are required to start and run Abend-AID. “**Part 4. Install Database Support**” is required for sites using the Abend-AID database support for DB2 or IDMS. “Part 5. Install PL/I Without LE and VS FORTRAN Support” is required for sites using PL/I without Language Environment or VS Fortran.

“**Part 1. SMP/E Install**”: Completes the SMP/E installation process. Compuware recommends reading these steps, as well as Chapter 2, before beginning installation.

“**Part 2. Customization**”: Completes the required site-specific customization of the product. Three load modules — CWJESTAB, CWROUTE, and CWGLOBAL — are created during this part of the installation. Customization includes Global Options for report formatting and Global Routing for report routing options.

“**Part 3. IVP (Installation Verification Programs)**”: Generates the IVP JCL and tests the installation of the product. During this part of the installation, the install verification jobs are run to ensure that the product is functioning correctly.

“**Part 4. Install Database Support**”: Installs database support for DB2 and/or IDMS based on the options licensed at this site.

“**Part 5. Install PL/I Without LE and VS FORTRAN Support**”: Installs the language hooks for use with PL/I without Language Environment and/or VS Fortran.

Remaining chapters describe how to customize Abend-AID and configure Distributed Viewing.

**Notes about the Installation Dialog:**

1. While using the installation dialog, online help is available for all screens by using the PF1 (HELP) key.
2. Field level help for each global option is available during “Step 15. Set Up Global Customization Options”.
3. Use the PF4 (RETURN) key within the dialog to exit the dialog.
4. The PF7 and PF8 keys are used to navigate multiple screen panels. The upper right corner of screens where this applies contain the keys.
5. When entering a dataset name, the userid will be added as the high level qualifier if the name is not in quotes.
6. Fields displayed with reverse video are tab selectable.

---

## Step 1. Unload the Abend-AID Installation Tape

**Allocate and Load the Abend-AID Installation Library**

Use the JCL in Figure 4-1 to allocate and load the Abend-AID installation library (TPAASAMP). This library contains the installation and customization dialog that must be used to install and customize Abend-AID.

**Figure 4-1.** JCL to Allocate and Load the Abend-AID Installation Library (TPAASAMP)

```

/** INSERT JOB CARD HERE.....
/**
/** UNLOAD ABEND-AID INSTALLATION SAMPLE LIBRARY FROM TAPE.
/**
/** TVOL - TAPE VOLSER FROM INSTALLATION TAPE.
/** TAPE - ESOTERIC TAPE UNIT NAME (CART, 3490, ETC).
/** DISK - ESOTERIC DASD UNIT NAME (SYSDA, 3380, ETC).
/** SAMP - LIBRARY TO ALLOCATE FOR INSTALLATION SAMPLE LIBRARY
/**
//INSTALL PROC TVOL=?????,TAPE=CART,DISK=SYSDA, <-REVIEW
//          SAMP='COMPWARE.PAA950.TPAASAMP' <-REVIEW
/**
/**
/**
//PSTEP001 EXEC PGM=IEBCOPY
/**
//SYSPRINT DD SYSOUT=*
//SYSUT1 DD DISP=(OLD),UNIT=&TAPE,
//          VOL=SER=&TVOL,DSN=COMPWARE.MPAA950.F1,
//          LABEL=(2,SL,EXPDT=98000)
/**          LABEL=(5,BLP,EXPDT=98000)
/**
//SYSUT2 DD DISP=(,CATLG,DELETE),DSN=&SAMP,
//          SPACE=(CYL,(20,5,400),RLSE),UNIT=&DISK,
//          DCB=(RECFM=FB,LRECL=80,BLKSIZE=3200)
/**          VOL=SER=XXXXXX <-OPTIONAL
//SYSIN DD DUMMY
//          PEND
//JCLFILE EXEC INSTALL

```

## Step 2. Execute the Abend-AID Installation and Customization Dialog

This release of Abend-AID is installed and customized using an ISPF installation and customization dialog.

### *Start the ISPF Dialog*

To start the dialog, execute the following command on the TSO command line:

```
EX 'COMPWARE.PAA950.TPAASAMP(PAARDIAG)'
```

**Figure 4-2.** Installation Dialog Menu

```
----- Abend-AID Installation and Customization Dialog 9.5 -----
Command ==>

Welcome to the Abend-AID Installation and Customization Dialog.  Abend-AID
requires that Compuware Shared Services (CSS) be installed.  If Compuware
Shared Services is already installed, then select Option 1 below to continue
with Abend-AID.  If Compuware Shared Services is not installed, then
select Option 2 below to install CSS.

Type an S next to the desired option and press ENTER.

Option 1: Access Abend-AID Installation and Customization Dialog.
Compuware Shared Services (CSS) is already installed.
To retrieve settings from a previous release of the Abend-AID
Installation Dialog, enter the dataset name containing that previous
release of the Abend-AID Installation Dialog.
Prev Release DSN ==>

Option 2: Install Compuware Shared Services (CSS).
Enter the dataset name of your Compuware Enterprise Common
Components (ECC) Installation Library in order to install CSS.
ECC Install Lib ==> 'COMPWARE.KCW160.INSTALL'
```

## Step 3. Verify and Provide ECC Installation Information

CSS release 8.0 or more current must be installed to continue with the installation of Abend-AID. Abend-AID operation requires License Management System and CSS. Distributed Viewing Support operation (optional) requires HCI.

### *1. Determine the CSS Installation Status*

**Option 1:** CSS is already installed. This option begins the Abend-AID installation process. Enter the dataset name containing your Abend-AID Release 9.4 installation dialog if you want to use most of the same settings for this release.

**Option 2:** CSS is not installed at this site. This option goes to the Compuware ECC installation. After completing that installation, you can continue with the Abend-AID installation.

### *2. Provide the CSS Library Names*

Abend-AID installation requires the use of CSS. In order to proceed with the Abend-AID installation, you must enter the required CSS library names. These libraries are used throughout the installation process.

- **CSS Load Library** — the load library dataset name for CSS. The SLCXLOAD library is created during CSS installation.
- **CSS Sample Library** — the installation library used for CSS installation. The SLCXCNTL library is created during CSS installation
- **CSS REXX Library** — the library containing the REXX programs from the CSS installation. The SLCXEXEC library is created during CSS installation.
- **CSS Message Library** — the message library from the CSS installation. The SLCXMENU library is created during CSS installation
- **CSS Panel Library** — the panel library from the CSS installation. The SLCXPENU library is created during CSS installation

**Figure 4-3.** CSS Datasets Dialog

```

----- Abend-AID Access to CSS Libraries -----
Command ==>

The Abend-AID Installation and Customization Dialog requires access
to release 08.00.00 or higher of your Compuware Shared Services (CSS)
Load Library, Sample Library, REXX Library, Messages Library
and Panel Library. Enter the dataset names below.

CSS Load Lib (SLCXLOAD) ==> 'COMPWARE.LCXNNN.SLCXLOAD'
CSS Sample Lib (SLXCNTL) ==> 'COMPWARE.LCXNNN.SLCXCNTL'
CSS REXX Lib (SLCXEXEC) ==> 'COMPWARE.LCXNNN.SLCXEXEC'
CSS Message Lib (SLCXMENU) ==> 'COMPWARE.LCXNNN.SLCXMENU'
CSS Panel Lib (SLCXPEU) ==> 'COMPWARE.LCXNNN.SLCXPENU'

Press enter key to continue.

```

---

## Part 1. SMP/E Install

---

### Step 4. SMP/E Job Generation

Select the SMP/E install option from the dialog main menu.

#### *1. Enter Information in the Installation Dialog*

**Figure 4-4.** SMP/E Installation

```

----- Abend-AID Installation and Customization Dialog -----
Command ==>

The installation and customization of Abend-AID consists of four parts.
Each part is required to be completed in order to successfully install and
customize Abend-AID.

Type an S next to the desired option and press ENTER.

      Part 1: SMP/E Install (RECEIVE, APPLY, ACCEPT)
      Part 2: Customization
      Part 3: IVP (Installation Verification Programs)
      Part 4: Install Database Support
      Part 5: Install PL/I without LE and VS FORTRAN Support

      Edit Generated Installation JCL

Jobcard Info:
==> //XXXXXXXX JOB ('XXXXXXXX',XXX),'AA SMP/E INSTALL',
==> //  CLASS=L,MSGCLASS=R,MSGLEVEL=(1,1),NOTIFY=&SYSUID
==> //*
==> //*

```

The process gathers all of the information required to generate the JCL to perform the SMP/E installation. The following values are required for the SMP/E installation:

**Table 4-1.** SMP/E Dialog Parameters

Description	Your Value
SMP/E Global Zone CSI	
Global Zone Log Dataset	
Global Zone SMPPTS Dataset	
Dist Zone Name	
Target Zone Name	
High-level qualifier to be used on SMP/E datasets	
LE Link Edit Library	
Customization Library	
Tape Volser	
Tape Device	
Tape Label	
Tape Expir Date	
<b>Dataset allocation information</b>	
SMS Storage Class	
SMS Management Class	
DASD Unit	
DASD Volser	
Japanese Language Support	

The information entered during this phase of installation is used to generate the JCL required to RECEIVE, APPLY, and ACCEPT the FMIDs associated with Abend-AID.

The customization library is a load library that is not managed by SMP/E. This load library **MUST** be available when the Abend-AID hook is started as well as at Abend-AID execution.

It is used to store load modules created during the customization portion of the installation process.

## 2. Generate JCL

After entering the information on the SMP/E installation screens, use the GENERATE command to generate the JCL. The generate command is only valid on the last panel of the SMP/E installation parameters. The generated JCL is stored in the TPAASAMP dataset unless otherwise specified.

## 3. Review the Log of Generated Jobs

When all of the JCL has been generated, you are taken to the member \$\$SMPLOG on the TPAASAMP dataset. This member lists all jobs generated for the SMP/E install. Exiting this member takes you to the member list of TPAASAMP to continue the installation.

---

# Step 5. Verify or Allocate Abend-AID Global SMP/E Datasets

## *Execute \$01ALGBL to Allocate the Compuware Global SMP/E Datasets — if required*

**Note:** If Abend-AID will share the Compuware global SMP/E datasets — global CSI, global SMPLOG, and SMPPTS — that you allocated when you installed LMS and CSS, your installation sample library (TPAASAMP) does not contain a \$01ALGBL member, and you can skip this step.

The job in the installation sample library (TPAASAMP) member \$01ALGBL allocates and initializes the following Compuware global SMP/E datasets for use by Abend-AID only:

- Global zone CSI
- Global zone log
- SMPPTS.

\$01ALGBL is tailored based on the information you specified in the installation dialog. Before you submit \$01ALGBL, verify that the dataset name, unit, and volser, or SMS storage/management class information is correct.

**Note:** \$01ALGBL contains a step to delete the datasets before they are allocated.

---

# Step 6. Allocate and Initialize the Abend-AID SMP/E Datasets

## *Execute \$02ALSMP from the TPAASAMP Library*

This job allocates and initializes the following SMP/E datasets for Abend-AID:

- Global Zone
  - SMPMTS
  - SMPSTS
  - SMPSCDS
- Distribution Zone
  - Distribution zone CSI
  - Distribution zone log
- Target Zone
  - Target zone CSI
  - Target zone log

\$02ALSMP is tailored based on the information you specified. Before you submit \$02ALSMP, verify that the dataset name, unit, and volser, or SMS storage/management class information is correct. Also review the SMP/E UCLIN statements and change the defaults for your site, if necessary.

**Notes:**

1. The following utility names are specified via the UCLIN statement for the global zone:

- ASMA90 (High-Level Assembler)
- IDCAMS
- IEBUPDTE
- IEBCOPY
- IEWL
- IMASPZAP

If your site uses other names for these utilities, change them accordingly in the global zone UCLIN statement before you submit \$02ALSMP. **If you changed the assembler utility name when you installed CSS, you must also change it here.**

2. \$02ALSMP may end with return code 4 if either of the following messages is issued:

```
GIM56501W    THE aaaaaaaaa SUBENTRY WAS ADDED INSTEAD OF REPLACED
              BECAUSE IT DID NOT EXIST.
```

```
GIM27701W    aaaaaaaaa ENTRY bbbbbbbb WAS ADDED INSTEAD OF REPLACED
              BECAUSE IT DID NOT EXIST.
```

Otherwise, the return code should be zero.

3. \$02ALSMP contains a step to delete the datasets before they are allocated.

---

## Step 7. Allocate the SMP/E Target and Distribution Libraries

### *Execute \$03ALLIB from the TPAASAMP Library*

This job allocates the following Abend-AID distribution and target libraries:

- Distribution Abend-AID sample library (APAASAMP)
- Target Abend-AID sample library (SPAASAMP)
- Distribution Abend-AID load library (APAALOAD)
- Target Abend-AID non-authorized load library (SPAALOAD)
- Target Abend-AID authorized load library (SPAAAUTH)
- Distribution Abend-AID authorized load library (APAAAUTH)
- Non-SMP/E managed customization load library

**Note:** \$03ALLIB contains a step to delete the datasets before they are created.

---

## Step 8. SMP/E Receive the Product and Preventive Maintenance

### *Execute \$04RECV from the TPAASAMP Library*

This job performs an SMP/E receive of the Abend-AID software. It also receives all Abend-AID preventive service that was available the day the tape was created. If the label on the tape indicates that it is more than 45 days old, please call Abend-AID technical support or visit <http://frontline.compuware.com> for any additional required maintenance.

The \$04RECV job has two steps.

- a. The first step receives the Abend-AID FMIDs required for this site. The base code FMID will be installed at all sites. The FMID for Japanese language support will be installed at sites that specified Japanese support in the installation dialog.
- b. The second step receives the cumulative maintenance for the Abend-AID FMIDs required at this site.

**Note:** Verify that both RECEIVE statements are correct based on the information you specified in the installation dialog.

---

## Step 9. SMP/E Apply the Product and Preventive Maintenance

### *Execute \$05APPLY from the TPAASAMP Library*

This job performs an SMP/E apply of the Abend-AID software and preventive maintenance.

#### Notes:

1. Verify that the APPLY SELECT statement is applying the FMIDs required at this site based on the information provided in the installation dialog. Compuware recommends that you run an APPLY CHECK before applying the Abend-AID software.
2. This job may generate a return code of 4 if either of the following messages is issued. These messages can be ignored.

```
GIM24701W SMP/E COULD NOT OBTAIN LINK-EDIT PARAMETERS FOR LOAD MODULE
          aaaaaaaaa FOR SYSMOD bbbbbbb.  DEFAULTS WERE USED.
```

```
GIM23903W LINK-EDIT PROCESSING FOR SYSMOD aaaaaaa WAS SUCCESSFUL FOR
          MODULE bbbbbbbb IN LMOD ccccccc in the ddddddd LIBRARY.  THE
          RETURN CODE WAS 04.  DATE yy.ddd - TIME hh:mm:ss - SEQUENCE
          NUMBER nnnnnn.
```

---

## Step 10. SMP/E Accept the Product

### *Execute \$06ACCPT from the TPAASAMP Library*

This job performs an SMP/E accept of the Abend-AID software.

#### Notes:

1. Verify that the ACCEPT SELECT statement is accepting the FMIDs required at this site based on the information provided in the installation dialog.

2. Preventive service is not accepted by default. Compuware recommends that you thoroughly test any PTFs before you accept them. If you do accept preventive service, the following message is normal and can be ignored:

```
GIM23903W LINK-EDIT PROCESSING FOR SYSMOD aaaaaaa WAS SUCCESSFUL FOR
          MODULE bbbbbbbb IN LMOD ccccccc in the ddddddd LIBRARY. THE
          RETURN CODE WAS 04. DATE yy.ddd - TIME hh:mm:ss - SEQUENCE
          NUMBER nnnnnn.
```

After completing the SMP/E installation, exit the edit mode for the TPAASAMP library to continue using the installation dialog. Use the Exit (PF3) key to return to the main menu of the installation dialog.

---

## Step 11. Install Language Environment Support

### *Register an Abnormal Termination Exit (ATE)*

IBM provides the capability to register an Abnormal Termination Exit (ATE). You must register LEAID as a Language Environment ATE. In addition to initially performing this step, repeat this step whenever a new release of Language Environment is installed. If LEAID is already registered as a LE ATE on your system, you do not need to perform this step. Otherwise, do the following:

- a. In member CEEEXTAN in the IBM Language Environment sample library (CEE.SCEESAMP), where CEEEXART is specified: change the XXXXXXXX to LEAID, and change the \* in column 1 to a blank.
- b. Follow the directions in member CEEWDEXT of the Language Environment sample library (CEE.SCEESAMP), and make the appropriate changes.
- c. When all appropriate modifications to member CEEWDEXT have been made, submit this JCL to assemble and link-edit CSECT CEEEXTAN. After this is done, LEAID is registered as a Language Environment ATE.

**Note:** The LEAID load module is included in the Abend-AID load library (SPAALOAD).

---

## Step 12. APF-Authorize the SPAAAUTH Library

### *APF-Authorize the Target Authorized Library*

The target authorized library, SPAAAUTH, allocated in “**Step 7. Allocate the SMP/E Target and Distribution Libraries**” on page 4-13 must be APF-authorized.



## Chapter 5. Customization

The customization portion of the installation creates load modules that need to be stored in the load library that is not managed by SMP/E. (This customization load library is allocated in “**Step 7. Allocate the SMP/E Target and Distribution Libraries**” on page 4-13.) These load modules *must* be available when the Abend-AID hook is started as well as at Abend-AID execution.

**Figure 5-1.** Abend-AID Installation and Customization Dialog Menu

```

----- Abend-AID Installation and Customization Dialog -----
Command ==>

The installation and customization of Abend-AID consists of five parts.
Each part is required to be completed in order to successfully install and
customize Abend-AID.

Type an S next to the desired option and press ENTER.

      Part 1: SMP/E Install (RECEIVE, APPLY, ACCEPT)
      Part 2: Customization
      Part 3: IVP (Installation Verification Programs)
      Part 4: Install Database Support
      Part 5: Install PL/I without LE and VS FORTRAN Support

      Edit Generated Installation JCL

Jobcard Info:
==> //XXXXXXXX JOB ('AAAAAA',BBB),'AA SMP/E INSTALL',
==> // CLASS=A,MSGCLASS=R,MSGLEVEL=(1,1),NOTIFY=&SYSUID
==> /*
==> /*

```

The customization option from the installation dialog main menu defines and builds three customization load modules — CWJESTAB, CWROUTE, and CWGLOBAL. The CWJESTAB module contains JES2 information. The CWROUTE module contains the default report and source listing shared directories and criteria used for routing to report datasets. The CWGLOBAL module contains the global product options.

The Abend-AID load library is required to build the load modules. This should be the SPAALOAD library created during the SMP/E install.

Customization includes the following options:

- JES2 Support
- Create/Modify Report and Listing Files and Routing Information
- Create/Modify Global Customization Options

**Figure 5-2.** Abend-AID Customization - Primary Menu

```

----- Abend-AID Customization Primary Menu -----
Command ==>

Customizing Abend-AID consists of setting up Global Customization Options
as well as information to provide Source Support Diagnostics.

Type an S next to the desired option and press ENTER.

        JES2 Support
        Report and Listing Datasets and Routing Information
        Global Customization Options

Abend-AID Load Library ==> 'AA.R950.DEVL.SPAALOAD'
    
```

---

## Part 2. Customization

### Enter the Abend-AID Load Library Dataset Name

The first screen prompts for the Abend-AID load library, which was created earlier in the installation process, as shown in Figure 5-2. The Abend-AID load library is required to create the routing load module, CWROUTE.

**Note:** This option will be used in the future to modify your site default shared directories and routing information.

---

## Step 13. JES2

**Note:** JES3 does not require Abend-AID setup or an installation step. If your site is using JES2 the following steps are required:

This step creates the JES2 Control Block Offset table CWJESTAB used by Abend-AID. When JES2 maintenance is applied, the CWJESTAB module needs to be updated. The jobs created will add a USERMOD to the OS390 SMP/E global zone to remind the installer of the need to reassemble CWJESTAB.

Description	Your Value
OS390 SMP/E Global CSI DSN	
OS390 SMP/E Target Zone	
SMP/E Usermod Name to Use	
Assembler Macro Library	
Running z/OS 1.4 or higher?	
JES2 Release Level	

#### 1. Select the JES2 Support Option from the Customization Primary Menu

Enter the site-specific parameters.

## 2. Review the Log of Generated Jobs

After all of the JCL has been generated, you will be taken to member \$\$JESLOG on the TPAASAMP dataset. This member lists all jobs generated for the JES2 install. Exiting this member takes you to the member list of TPAASAMP to continue the installation.

Run these members for the purposes described:

### 3. Execute \$07SMPEL from the TPAASAMP Library

This job performs an SMP/E list of the macros used in the assembly of CWJESTAB.

### 4. Execute \$08SMPDD from the TPAASAMP Library

This job performs an SMP/E LIST DDDEF to list the DDNAMEs and DSNAMES in the SMP/E TARGET zone. The SHASMAC DDNAME found in the output of this job corresponds to the DSNAMES of the correct JES2 macros. This DSN name should be used in the SYSLIB DD statement in job \$09ASMJT.

### 5. Execute \$09ASMJT from the TPAASAMP Library

This job assembles and link-edits two load modules. The load module CWJESTAB will be the site default load module. The second load module created is CWJTxxxx, where xxxx is the four-character system ID of the system for which the load module was created. This allows the same load library to be used across a Sysplex where different levels of JES2 are being used.

**Note:** This job needs to be run on each system with a unique JES2 level.

### 6. Execute \$10SMPU1 from the TPAASAMP Library

This job updates the SMP/E ZONES so a warning or failure will be generated when maintenance is applied to JES2.

---

## Step 14. Define Shared Directories and Report Routing Criteria

Each site *must* have at least one shared directory for reports and one shared directory for source listings as the site default shared directories. Compuware recommends that each site create one shared directory for reports and one shared directory for source listings. Each shared directory can have multiple database files attached to it.

### 1. Select the Report and Listing Datasets and Routing Information option from the Customization Primary Menu (Figure 5-2 on page 5-2)

This option steps through setting the site default shared directories for reports and source listings. Each site *must* have one default shared directory for reports and one default shared directory for source listings. You will be able to allocate shared directories if your site does not already have them or if you need to create new ones.

**Note:** You can convert an existing CWROUTE module from a previous release to the current format. On the Abend-AID: Maintain Report and Listing Dataset and Routing Criteria screen, enter the dataset name that contains the existing CWROUTE module. In the pop-up window, enter the dataset name of the current Abend-AID customization load library where you want to store the converted CWROUTE module. The module format is converted, and the settings are displayed. Modify the settings as needed. Create a new CWROUTE module by entering the APPLY command. If you exit the dialog before the new module is generated, your changes are not saved.

**Figure 5-3.** Abend-AID Default Report and Listing Dataset Customization

```

----- Abend-AID Default Report and Listing Dataset Customization -----
Command ==>

Abend-AID customization requires that two default Shared Directories be
defined, one for Abend-AID Reports and one for Source Listings.
Enter the dataset names below that will be used as your Default Shared
Directories.  When completed, press the enter key to continue.

Dataset Name of New or Existing
Report Shared Directory ==>

Dataset Name of New or Existing Source
Listing Shared Directory ==>

```

### ***2. Define the Site Default Shared Directories for Abend-AID Reports***

Each site must define a default shared directories for Abend-AID reports. ALL diagnostic reports will be written to a report shared directory. See Figure 5-3.

The dataset name entered for the site default shared directory for reports must be a valid shared directory.

If the dataset entered does not exist, or is not formatted for Abend-AID reports, you are prompted to create the dataset (see **Appendix D, “CSS Utilities”**).

**Note:** The dataset must be created and formatted before the installation process can continue.

### ***3. Define the Site Default Shared Directories for Compuware Source Listings***

Each site must define a default shared directory for source listings to be used by Abend-AID. When viewing an Abend-AID report using the Compuware Viewing Facility, source merge is attempted for all reports. See Figure 5-3.

If a routing group directs reports to SYSOUT in addition to the report shared directory, source support is provided in reports written to SYSOUT if the source listings are available in the site default shared directory.

The dataset name entered for the site default shared directory for source listings must be a valid shared directory for source listings or a Compuware DDIO file formatted for Compuware source listings.

If the dataset entered does not exist, or is not formatted for Compuware source listings, the installation dialog will step through the process of creating the dataset.

**Note:** This dataset must be created and formatted before the installation process can continue (see **Appendix D, “CSS Utilities”**).

### ***4. Select the Create/Modify Routing Criteria to Route Abend-AID Reports to Multiple Report Databases or Shared Directories Option***

Select the first option from the Abend-AID: Customization Dialog screen, as shown in Figure 5-4 on page 5-5. The Abend-AID Routing/Setup Maintenance menu is displayed as shown in Figure 5-5 on page 5-5.

**Figure 5-4.** Abend-AID: Customization Dialog Menu

```

----- Abend-AID: Customization Dialog -----
Command ==>

Abend-AID will always write its error analysis reports to an Abend-AID
report database that is attached to a shared directory for Abend-AID reports.
These reports are available for viewing using the Compuware Viewing Facility.

Type an S next to the one option that best meets the needs of your site.

        Create/Modify routing criteria to route Abend-AID reports to
        multiple report databases or shared directories.

        Write ALL Abend-AID reports to one single site default shared
        directory. Reports are NOT routed to shared directories or
        report databases based on routing criteria.

All databases attached to a shared directory will be used to store reports
if specific routing is not used. Routing should be used if you want to
specify which databases will be used.
Each site should verify that the databases created have sufficient
space to hold the reports that will be created.

```

## Define Report Routing

All diagnostic reports are written to a report shared directory. Each site needs to define where the diagnostic reports will be written using routing criteria from one of the options listed. The routing criteria is stored in the load module, CWROUTE.

**Figure 5-5.** Abend-AID Routing Setup/Maintenance Menu

```

----- Abend-AID Routing Setup / Maintenance -----
Command ==>

Abend-AID routing allows Abend-AID diagnostic reports to be routed to
appropriate Shared Directories and associated Abend-AID Report Database(s)
based on selection criteria set up through this dialog.

Type an S next to the desired option and press ENTER.

        Learn about routing Abend-AID Reports
        Create/Modify Report Database Groups
        Create/Modify Routing Selection Criteria
        Abend-AID reports are currently routed using customization from
        a previous release

```

Select one of the following options from the Abend-AID Routing Setup/Maintenance menu shown in Figure 5-5.

– **Option 1. Review the Abend-AID Report Routing Tutorial**

For more information about Abend-AID report routing, review the online tutorial. Refer to **Appendix E, “Installation Tutorial”** for a hardcopy version of this tutorial.

– **Options 2 and 3. Define Routing Criteria to Route Abend-AID Reports**

Use this option if your site is not able to use one site default shared directory for Abend-AID reports. This option allows reports to be routed to different shared directories based on job criteria.

1. Create/Modify Report Dataset Groups

A routing group associates a group name with shared directories and/or report database files.

**Figure 5-6.** Abend-AID Report Routing: All Group Names Screen

```

----- Abend-AID Report Routing: All Group Names - Row 1 to 1 of 1
Command ==>

Commands: "apply"=apply changes

All Abend-AID Report Database Group Names are listed below.
Use a line command of 'i' below to insert (add) a new routing group

  Line   Group
  Cmd    Name   Shared Directory
-----
***** Bottom of data *****

```

Use the following line commands to update the routing groups:

E - Edit a group

I - Insert a new group

R - Replicate a group

D - Delete a group

Specifying the E (Edit) or I (Insert) line command brings up the screen shown in Figure 5-6 on page 5-6 that allows you to edit the routing group information.

**Figure 5-7.** Abend-AID Report Routing: Group Name Screen

```

----- Abend-AID Report Routing: Group Name ---- Row 1 to 1 of 1
Command ==>

Group Name      ==>
Shared Directory ==>

Route Abend-AID report to SYSOUT as well as Report Databases? ==> N (Y/N)

Assigning report databases below limits the routing of Abend-AID reports to
the report databases specified here.  If no databases are listed, reports will
be routed to any of the databases attached to the Shared Directory.
End key to verify and return.  CANCEL command to cancel changes and return.

Enter the dataset name below to insert (add) a Report Database

Line
Cmd   Report Database(s)                Message
-----

```

- The group name is a one- to eight-character name that defines the group and will be used when specific criteria is set up.
- The shared directory name is required. Each routing group can have only one shared directory associated with it. All reports that are routed based on the group name are written to the specified shared directory.
- The report database files are optional. Zero to 256 report database files can be associated with a single group. If zero report database files are specified, the reports for the group are written to one of the databases attached to the specified shared directory. If one or more report databases are specified, then reports routed based on the group name are written to one of the specified report database files.

**Note:** The database file(s) listed must be attached to the shared directory specified for the group.

If a dataset name is specified, and the dataset does not exist, you are given the option to allocate and format the dataset. Processing will continue if the dataset is not allocated.

2. Create/Modify Routing Selection Criteria

Reports can be routed based on the criteria in the group specified. *All* fields of a set of criteria must match the abending job in order to be used for report routing. If a job does not match any of the criteria defined, the Abend-AID report is written to the site default report shared directory.

**Note:** If your site requires writing reports to SYSOUT in addition to the report dataset, see **Chapter 3, "Migration Considerations"**.

**Figure 5-8.** Abend-AID Report Routing: All Routing Criteria Screen

```

----- Abend-AID Report Routing: All Routing Criteria --- Row 1 to 1 of 1
Command ==>

Commands: "apply"=apply changes

All Abend-AID Diagnostic Report Routing Criteria are listed below.
Use a line command of 'i' below to insert (add) new routing criteria

Line  Group          Jobname  Userid   Job    Accounting
Cmd   Name              Program  CIs      Name   Info
-----

```

The routing criteria screen lists the criteria sets used to match with the abending job information to determine where the Abend-AID report will be written. Use the following line commands to update the routing selection criteria information:

- E - Edit existing criteria
- I - Insert a new set of criteria
- R - Replicate a set of criteria to change or add criteria
- D - Delete a set of criteria

Specifying the E (Edit) or I (Insert) line command brings up the screen shown in Figure 5-9 or Figure 5-10 that allows you to edit the routing criteria detail or add new routing detail. Here you define the routing group and the value for each criteria. The R (Replicate) line command repeats the line. You can update the new line using the E (Edit) line command.

**Figure 5-9.** Abend-AID Report Routing: Edit Routing Criteria Detail Screen

```

----- Abend-AID Report Routing: Edit Routing Criteria Detail -----
--
Command ===>

Enter new routing criteria below. When completed, press end key to verify and
return. CANCEL command to cancel changes and return.

Group Name      ===>
Jobname         ===>
Userid          ===>
Job Class       ===>
Programmer Name ===>
Accounting Information:
  Parameter #   Comparison String
  ---
  ---
    
```

**Figure 5-10.** Abend-AID Report Routing : Add New Routing Detail Screen

```

----- Abend-AID Report Routing: Add New Routing Detail -----
Command ===>

Enter new routing criteria below. When completed, press end key to verify and
return. CANCEL command to cancel changes and return.

Group Name      ===>
Jobname         ===>
Userid          ===>
Job Class       ===>
Programmer Name ===>
Accounting Information:
  Parameter #   Comparison String
  ---
  ---
    
```

The criteria that you can use to route reports are:

- Jobname      Name assigned to the abending job
- Userid      ID of the user for the abending job
- Job Class    Job class the abending job was run in

Programmer name	Information taken from the programmer name field of the job card for the abending job
Accounting information	Information contained in the accounting parameters of the job card for the abending job

When you're defining a criteria element, wild card values are available. You can use a wild card character in any position of a criteria element.

An asterisk (\*) in any position denotes zero or more characters.

A per cent sign (%) in any position denotes one and only one character.

#### Examples:

- If the Jobname field has \*AB\*, it will match any job that has AB in the name in any position.
- If the Jobname field has \*AB, it will match any job that has AB as the last two characters or any job that has AB as the only two characters of the job name.
- If the Jobname field has %AB, it will match if the job name is three characters and the second and third characters of the job name are AB.
- If the Jobname field has A\*B%, it will match if A is the first character and B is the second to last character of the job name.

#### IMPORTANT:

The routing criteria sets are evaluated in the order displayed on the screen, from first to last. When an abending job matches all defined criteria fields, the routing group for that set of criteria is used to determine where to route the report. The remaining criteria sets will *not* be tested for a match.

#### – Option 4. Use Customization from a Previous Abend-AID Release

Select the fourth option, Abend-AID reports are currently routed using customization from a previous release, if your site currently does routing using customization that was set up with a release of Abend-AID prior to Release 9.4.

### Write All Abend-AID Reports to the Site Default Shared Directory

Select this option from the Abend-AID: Customization Dialog menu as shown in Figure 5-4 on page 5-5 if your site plans to write all Abend-AID diagnostic reports to a single shared directory using multiple report databases. Choosing this option creates the CWROUTE load module, and the default repositories are set as the site default for reports and source listings.

## Step 15. Set Up Global Customization Options

Select the Create/Modify Global Customization Options from the Customization Menu

Figure 5-11. Customization Menu

```

----- Abend-AID Customization Primary Menu -----
Command ==>

Customizing Abend-AID consists of setting up Global Customization Options
as well as information to provide Source Support Diagnostics.

Type an S next to the desired option and press ENTER.

        JES2 Support
        Report and Listing Datasets and Routing Information
        Global Customization Options

Abend-AID Load Library ==> 'AA.R950.DEVL.SPAALOAD'

```

Do *one* of the following:

- Create a New CWGLOBAL Load Module

The installation dialog presents all of the global options. You can use Compuware-supplied defaults or modify options for your site.

After all of the option screens have been displayed, the CWGLOBAL load module is created to store the specified values. This load module *must* be available to Abend-AID at abend time. Compuware recommends that it be stored in the Abend-AID non-SMP/E load library allocated in “**Step 7. Allocate the SMP/E Target and Distribution Libraries**” on page 4-13.

The CWGLOBAL load module is generated when you execute the APPLY command in the installation dialog. A prompt is displayed to enter the dataset name where the new CWGLOBAL load module is to be stored. The default is the non-SMP/E load library allocated in “**Step 7. Allocate the SMP/E Target and Distribution Libraries**” on page 4-13.

- Update an Existing CWGLOBAL Load Module

**Note:** You can convert an existing CWGLOBAL load module to the new format. If you enter a dataset that contains a CWGLOBAL module from Abend-AID Release 9.1 or more current, the options are set using the current values.

You can update the global options load module, CWGLOBAL, by using the installation dialog. If you enter a dataset name on the global options panel and a CWGLOBAL load module exists in that library, the option settings from that load module are presented on the screen. You can then change any of the options and create a new CWGLOBAL load module by using the APPLY command. If you exit the dialog before the new load module is generated, then the changes are not saved.

A complete list of the global options is available for review in **Appendix C, “Global Options”**.

**Note:** Field-level help for each global option is available by placing the cursor on the field entry area and pressing the PF1 (HELP) key.

---

## Part 3. IVP (Installation Verification Programs)

---

### Step 16. Generate the Installation Verification Program

IVP jobs will be generated for COBOL, PL/I, and Assembler. The following information is needed to generate COBOL and PL/I samples.

Description	Your Value
COBOL	
COBOL Compiler Library	
COBOL Link Time Lib	
COBOL Run Time Lib	
SORTLIB Dataset Name	
PL/I	
PL/I Compiler Library	
PL/I Runtime Library	
PLIBASE (LKED) Library	
SIBMLINK (RUNTIME) Lib	
SIBMBASE (LKED) Lib	

#### *Select Part 3 IVPs from the Install Dialog Menu*

Site-specific information is required to generate the IVPs that are used to verify Abend-AID installation.

After the you supply the required information, use the GENERATE command on the last panel to generate the IVP jobs. The JCL is generated in the TPAASAMP dataset, unless otherwise specified.

**Note:** The IVPs generated for PL/I are designed to be used with Language Environment (LE). If you are using PL/I without LE, refer to **Chapter 7, “Language Support”**.

---

### Step 17. Verify Installation

#### *Execute JCL Member \$11VERIF*

JCL member \$11VERIF, generated in the installation library, executes the utility CWVERIFY to verify that the Abend-AID load library was correctly built.

Review and save for future reference the report that CWVERIFY provides. It includes the following sections:

- **List of Abend-AID Modules Linked:** Missing modules are noted with an error message. If the first column of the report is blank, the module was loaded correctly. A message in the first column may indicate a problem in linking that module. If so, refer to the **Should Be** column for the correction required.
- **List of Abend-AID Modules—Recap:** Review the recap to determine if any modules were loaded with errors. If an error is indicated, check the **Should Be** column in the “List of Abend-AID Modules Linked” section, then correctly relink the modules.

- **IBM-dependent Modules:** Abend-AID uses IGWASMS to provide Data Facility Storage Management Subsystem (DFSMS) support and must be available to Abend-AID at abend time. If CWVERIFY cannot find IGWASMS, the message MODULE IGWASMS NOT FOUND AND IS REQUIRED FOR ABEND-AID SMS SUPPORT is displayed in the Recap section. If your site is not using DFSMS, you can ignore this message. Please refer to “Environmental Considerations” on page 2-4 for more information on Abend-AID’s DFSMS support.
- **Abend-AID Tables:** This section lists the Compuware default table settings. You may want to install optional tables or alter default tables. Refer to **Chapter 8, “Customizing Abend-AID”** for information about installing or altering tables. This section also shows the release of JES2 from which the Abend-AID table of JES2 control block field offsets was built and warns you if the table is not up-to-date with your current JES2.

For more information about using the CWVERIFY utility, refer to “Installation Verification Utility (CWVERIFY)” on page 12-1.

**Notes:**

1. A CWML-16 error message may be issued by CWVERIFY if an incompatible version of Abend-AID is being installed on the operating system.
2. CWVERIFY does not recognize the SYSIN DD statement in its validation routine. If \$11VERIF produces the message SYSIN CONTROL STATEMENTS IGNORED, it means that you are running an incompatible release of the JCL containing a SYSIN DD statement.
3. If your site uses JES3, you will receive a return code of 4 when CWVERIFY does not find the CWJESTAB table of JES2 control block offsets. JES3 does not require CWJESTAB. Disregard the message and continue installation.

---

## Step 18. Start Abend-AID for Test

### *Execute CWINSTAL Utility to Install Abend-AID SVC51 Interface*

The CWINSTAL utility starts and stops the Abend-AID SVC51 interface by specifying parameters using the PARM field of the execution statement. After the Abend-AID SVC51 interface is installed, it automatically begins intercepting calls to SVC51 when an application program failure occurs.

Executing CWINSTAL with no parameters starts Abend-AID in production mode for all jobs and all users. When the test parameter is specified, you start Abend-AID for specific job names or job name masks. You can find complete information about using CWINSTAL in “Abend-AID SVC51 Interface Installation Utility (CWINSTAL)” on page 12-4.

**Note:** When testing a new release of Abend-AID, you must use the new Abend-AID SVC51 interface, the new Abend-AID load library, the new Abend-AID customization load library, and the appropriate CSS load library. Refer to “**Step 3. Verify and Provide ECC Installation Information**” on page 4-9 for the appropriate CSS release.

To test the Abend-AID SVC51 interface, refer to the appropriate section below. For a reinstallation, to verify that the interface was initially installed dynamically, run CWINSTAL with PARM='LIST'. JCL member \$12INSTL, generated in the Abend-AID installation library, executes CWINSTAL.

- **Installing the Interface for the First Time:**

This section below is for sites installing Abend-AID for the first time on this operating system.

- **Reinstalling the Interface If the Old Release Was Installed Dynamically:**

This section is for sites replacing an old release of Abend-AID that was installed dynamically on this operating system.

## Installing the Interface for the First Time

Perform these steps to install Abend-AID for test job names or job name masks:

1. Execute \$12INSTL, generated in the installation library, with the following criteria:
  - PARM='TEST,jobname,jobname,jobname...': The string of job names can be from one to 95 characters. Refer to "Abend-AID SVC51 Interface Installation Utility (CWINSTAL)" on page 12-4 for more information about specifying job names and job name masks.
  - //STEPLIB and //ABENDLIB DD statements pointing to the authorized load library(ies) containing CWINSTAL and ABENDAID respectively.
  - //CWROUTE DD statement pointing to the load library containing CWROUTE.
2. Before starting Abend-AID, run the program LMSINIT to establish the Runtime License Management System.

## Reinstalling the Interface

**Note:** Follow these instructions only if the old release was installed dynamically.

You can start a new release of Abend-AID in test mode without stopping the current production Abend-AID. However, you cannot start a production Abend-AID or another test version if a test version is active. Perform these steps to install Abend-AID for test job names or job name masks:

1. Execute \$12INSTL with the following criteria:
  - PARM='TEST,jobname,jobname,jobname...': The string of job names can be 1 to 95 characters. Refer to "Abend-AID SVC51 Interface Installation Utility (CWINSTAL)" on page 12-4 for more information about specifying job names and job name masks.
  - //STEPLIB and //ABENDLIB DD statements pointing to the authorized library(ies) containing the new CWINSTAL and ABENDAID load modules respectively.
  - //CWROUTE DD statement pointing to the load library containing the new load module CWROUTE.
2. Change the ABENDAID PROC to use the new CWINSTAL utility with the new test job names. Refer to member JCLTDYN (startup proc — production and test). This step is necessary to prevent any IPLs that may occur during this test period from negating changes made. If an IPL occurs during the test period and the PROC has not been changed, run \$12INSTL again.
3. Before starting Abend-AID, run the program LMSINIT to establish the Runtime License Management System.

---

## Step 19. Test Abend-AID Basic Support

### *Execute JCL Member \$71ABTST*

Test Abend-AID basic support by executing JCL member \$71ABTST generated in the installation library. Use a job name that matches a job name or job name mask that was used when Abend-AID was started in "Step 18. Start Abend-AID for Test".

If you want to test Abend-AID further with your own jobs, note the following:

- Before starting Abend-AID, run the program LMSINIT to establish the Runtime License Management System.
- To invoke Abend-AID for most jobs, a //SYSUDUMP or //SYSABEND DD statement must be included in the job's JCL. PL/I non-abending jobs and Language Environment jobs are an exception to this requirement because of the way error processing is performed. See Chapter 9, "Using Abend-AID DD Statements" of the *Abend-AID User/Reference Guide*, for complete information about DD statements.
- Error message AB5A2 may be issued if the Abend-AID load library is not accessible for an application program failure being processed by Abend-AID. Error message AB62A may be issued if the CSS load library is not accessible for an application program failure being processed by Abend-AID. These messages indicate that Abend-AID could not locate the next module to be loaded. For more information on how to make these libraries accessible, refer to "Preliminary Considerations" on page 2-1.

If you need to stop Abend-AID after testing, refer to "Abend-AID SVC51 Interface Installation Utility (CWINSTAL)" on page 12-4.

---

## Step 20. Validate Abend-AID LE Support

### *Test the LE Support*

Test the LE support by running JCL in the applicable member generated in Abend-AID's installation library:

- \$72LECOB: Tests diagnostics for COBOL programs.
- \$73LEPLI: Tests diagnostics for PL/I programs.

---

## Step 21. Test Abend-AID Extended Language Support

### *Execute Install Verification Programs*

Execute one or more of the following members in the Abend-AID installation library. These jobs compile listings to the source listing database and write the Abend-AID report to the report shared directory. You can then use Compuware/VF to view the abend report with source statements merged into the analysis.

**Table 5-1.** Extended Language Support (XLS) IVPs

• \$75XLSC1 for COBOL preprocessor
• \$75XLSC2 for COBOL postprocessor
• \$75XLSC3 for COBOL preprocessor
• \$75XLSC4 for COBOL preprocessor
• \$75XLSP1 for PL/I preprocessor
• \$75XLSP2 for PL/I postprocessor
• \$75XLSP3 for PL/I preprocessor
• \$75XLSP4 for PL/I preprocessor
• \$75XLSA1 for Assembler preprocessor
• \$75XLSA2 for Assembler preprocessor
• \$75XLSA3 for Assembler preprocessor
• \$75XLSA4 for Assembler preprocessor

## Chapter 6. Database Support

**Note:** Abend-AID's basic support *must* be installed before you can install database support. The database support facilities are licensed options.

This section explains how to install the Abend-AID database support facilities:

- Abend-AID for DB2
- Abend-AID for IDMS
- Abend-AID for IMS.

Skip to the next step “**Step 24. Install PL/I without LE Support**” on page 7-2 if your site is not licensed for any Abend-AID database support.

**Note:** If you need information about how Abend-AID's database diagnostics are used, refer to Chapter 7, “Understanding Database Diagnostics,” in the *Abend-AID User/Reference Guide*.

---

### Part 4. Install Database Support

From the Abend-AID Installation and Customization Dialog menu (Figure 5-1 on page 5-1), select option 4, Part 4: Install Database Support, to display the Abend-AID Installation : Site-specific Database Support menu, as shown in Figure 6-1.

**Figure 6-1.** Abend-AID Site-specific Installation Menu

```

----- Abend-AID Installation: Site-specific Database Support -----
Command ==>

The Abend-AID installation requires site-specific information to complete
the installation for database options for which you are licensed.

Type an S next to the desired option(s) and press ENTER.

      DB2 Support
      IDMS Support

      (Note: No further action is required for IMS Support)

```

Select the first option, DB2 Support, to install Abend-AID for DB2 support.

## Step 22. Install Abend-AID for DB2

### Abend-AID for DB2

The Abend-AID for DB2 diagnostic modules are included in the Abend-AID Load Library (SPAALOAD). Follow the instructions in this section to complete the installation of Abend-AID for DB2. The remainder of the installation consists of assembling and linking module CWDB2OPT and binding the Abend-AID plan. Creating the Abend-AID recording table, creating indexes on the DB2 catalog tables, and installing stored procedures support are optional.

### CWDB2OPT

Module CWDB2OPT communicates Abend-AID for DB2's plan name, recording table name, and recording table creation authorization ID to the Abend-AID for DB2 diagnostic routines. The plan and table names can be the recommended default names or custom names chosen by you. If your system has multiple DB2 subsystems, Compuware recommends using the same plan name and the same recording table name for all DB2 subsystems. If, however, different DB2 subsystems require different plan names or recording table names, each subsystem must have its own CWDB2OPT module.

### CWDB2PLN

Abend-AID for DB2 uses SQL statements to obtain information from the DB2 system catalog tables when an application's attach method is CALL attach, TSO attach, or RRSAF attach. The four DBRMs containing these SQL statements are located in the Abend-AID sample library (SPAASAMP).

- DBRM Members CWDB224 and CWDB225 are bound into the Abend-AID for DB2 plan (CWDB2PLN) for subsystem releases prior to DB2 Version 6.1.
- DBRM Members CWDB226 and CWDB227 are bound into the Abend-AID for DB2 plan (CWDB2PLN) for DB2 Version 6.1 and more current subsystems.

You can bind these DBRMs into packages prior to binding the plan. This plan name can be changed, if necessary. If your system has multiple DB2 subsystems, this plan must be bound on each DB2 subsystem.

### AATAB

AATAB is an optional table that Abend-AID for DB2 uses to record information about DB2 abends and SQL return codes. Abend-AID for DB2 records this information whenever a DB2 application calls SNAPAID or abends, and the application's attach method is *CALL attach*, *TSO attach*, or *RRSAF attach*. If your system has multiple DB2 subsystems, a separate recording table must be created for each DB2 subsystem for which information will be recorded.

Table 6-1 describes the information collected in the recording table. When this information is used as input to Compuware's SMF Cost Analysis Tool, a more comprehensive report of the operational and programmer savings realized by Abend-AID for DB2 is provided. For more information, refer to the *Abend-AID SMF Cost Analysis Tool User's Guide*.

**Table 6-1.** Abend-AID Recording Table Data

Column Name	Type	Description
AA_ABEND_CODE	CHAR(5)	System completion code
AA_REASON	INTEGER	R15 at time of abend (contains DB2 reason code for S04E and S04F abends)
AA_SQLCODE	INTEGER	DB2 SQL return code
AA_JOBNAME	CHAR(8)	Name of abending job

**Table 6-1.** Abend-AID Recording Table Data

AA_STEPNAME	CHAR(8)	Name of abending step
AA_PROCSTEP_NAME	CHAR(8)	Name of abending JCL procedure step
AA_DATE	CHAR(5)	Julian date of abend
AA_TIME	CHAR(6)	Military time of abend, hhmmss
AA_SOLVED	CHAR(1)	Y=Abend-AID solved the abend N=Abend-AID did not. Dump produced
AA_ATTACH_TYPE	CHAR(4)	DB2 attach method: TSO, CALL, or RRS
AA_PROGRAM	CHAR(8)	Name of abending CSECT
AA_PLAN	CHAR(8)	DB2 plan name
AA_AUTH_ID	CHAR(8)	DB2 authorization ID
AA_SSID	CHAR(4)	DB2 subsystem ID
AA_REASON_CHAR	CHAR(8)	Character representation of AA_REASON

## Abend-AID for DB2 Installation Considerations

Review the following installation considerations regarding Abend-AID for DB2.

### Storage Requirements

When Abend-AID for DB2 is invoked, approximately 132K bytes of storage above the 16-MB line is used.

### Accessed DB2 Tables

Abend-AID for DB2 selects from the following DB2 system catalog tables:

SYSIBM.SYSCOLUMNS	SYSIBM.SYSDBRM
SYSIBM.SYSFIELDS	SYSIBM.SYSINDEXES
SYSIBM.SYSKEYS	SYSIBM.SYSPACKAGE
SYSIBM.SYSPACKSTMT	SYSIBM.SYSPACKLIST
SYSIBM.SYSPACKDEP	SYSIBM.SYSPLAN
SYSIBM.SYSPLANDEP	SYSIBM.SYSSTMT
SYSIBM.SYSSYNONYMS	SYSIBM.SYSTRIGGERS
SYSIBM.SYSROUTINES	

### Accessed DB2 Modules

Abend-AID for DB2 requires the use of modules from the DB2 load library. Specify this library by a //JOB LIB or //STEPLIB DD statement in the DB2 applications' JCL, or include the DB2 load library in the system link list.

## DB2 Versions 4.1 and Above

Review this section if you plan to use DB2 Versions 4.1 or more current.

### Stored Procedures

Stored procedures were introduced in DB2 Version 4 Release 1 and expanded in subsequent releases. A stored procedure is a user-written application containing static and/or dynamic SQL statements that can be invoked by a single SQL call statement. Stored procedures must be written using a Language Environment (LE)-enabled language running in an LE environment.

Stored procedures run in a special DB2 stored procedures address space 'xxxxSPAS', where 'xxxx' is the DB2 subsystem identifier, or are initiated by work load manager in DB2 Version 5 Release 1 or more current.

To use Abend-AID for DB2 stored procedure support, add the following to the DB2 'xxxxSPAS' and 'xxxxWLM' startup procedures:

- Add to the //STEPLIB DD concatenation:
  - Language Environment (LE) run-time library
  - Abend-AID load library
  - CSS load library
  - Abend-AID customization load library
- Add the following DD statements:
  - //SYSUDUMP DD SYSOUT=\*
  - //ABENDAID DD SYSOUT=\*
  - //ABNLTERM DD DSN=*aa.report.dataset*,DISP=SHR (optional)

**Note:** Because of the nature of DB2 stored procedures, the work load manager address space can be run on any system and is a different address space than for DB2. As an alternative to putting the LE run-time library, the Abend-AID customization and load libraries, and the CSS load library in the //STEPLIB DD concatenation of the actual work load manager procedure, ensure that on whatever system the work load manager stored procedure is running Abend-AID is started and that the libraries are available in the link list.

Abend-AID provides diagnostics for abends and/or SNAP AID calls from the stored procedure running in the DB2 stored procedures address space. Abend-AID reports can be viewed immediately using Compuware/VF.

## Indexes

Abend-AID for DB2 provides improved performance when using Type 2 indexes available only with DB2 Version 4 Release 1 and Version 5 Release 1. Creating indexes on DB2 system catalog tables can help to eliminate slow performing tablespace scans.

## Abend-AID for DB2 Installation Procedure

When you select the first option, DB2 support, from the Abend-AID Installation: Site-specific Database Support menu (Figure 6-1 on page 6-1), the Abend-AID Installation: Generated DB2 Support screen is displayed as shown in Figure 6-2.

**Figure 6-2.** Abend-AID Installation: Generated DB2 Support Screen

```

----- Abend-AID Installation: Generated DB2 Support Row 1 to 3 of 3
Command ==>

Abend-AID DB2 Plan Name ==> CWR95PLN

Line commands: 'e' = edit, 'i' = insert(add), 'r' = replicate, 'd' = delete

Line   --- DB2 Information ---           ----- DB2 Installation JCL -----
Cmd    Subsystem Release Plan           Generated?  Date       Time       User
-----
_
***** Bottom of data *****

```

Do one of the following on the Abend-AID Installation: Generated DB2 Support Screen shown in Figure 6-2 on page 6-5:

- If this the first time you're installing Abend-AID Release 9.5 support for any DB2 release, you must first use the I (Insert) command to display the Abend-AID Installation: Site-specific DB2 Support screen and complete this panel with the information for at least one DB2 release, subsystem, and plan name as shown in Figure 6-3. Then you can use the E (Edit), I (Insert), R (Replicate), or D (Delete) line commands to update the installation dialog information for all of the DB2 versions required at your site.
- If you've already installed Abend-AID Release 9.5 support for at least one DB2 release, subsystem, and plan name, then the DB2 summary information for each DB2 release already installed displays on the Abend-AID: Generated DB2 Support screen in Figure 6-2 on page 6-5. Use the E (Edit), I (Insert), R (Replicate), or D (Delete) line commands to update the installation dialog information and to display the Abend-AID Installation: Site-specific DB2 Support screen shown in Figure 6-3. You can update/add information on this panel at any time for any DB2 version required at your site.

Enter the GENERATE command on the Abend-AID Installation: Site-specific DB2 Support screen (Figure 6-3) to generate the JCL to install DB2 support for each release, subsystem, and plan name. Each JCL member generated into the TPAASAMP installation sample library is \$21vxxx, where v represents the one-numeric character DB2 release identifier and xxx is the four-alphanumeric character DB2 subsystem ID. The JCL is replaced in the TPAASAMP library only if the DB2 release and subsystem are the same.

**Figure 6-3.** Abend-AID Installation: Site-specific DB2 Support Screen

```

----- Abend-AID Installation: Site-specific DB2 Support -----
Command ==>

Abend-AID DB2 Plan Name  ==> CWR95PLN
DB2 Subsystem ID        ==> AAAA    DB2 Release   ==> 6.1

Use Package? (Y/N)      ==> N        Collection ID ==> AADB2COL
DB2 Load Library        ==> 'DSN610.SDSNLOAD'
DB2 Application Load Lib ==> 'DSN610.RUNLIB.LOAD'
DB2 Exit Library        ==> 'DSN610.SDSNEXIT'
DB2 Stored Proc Load Lib ==> 'DSN610.D510SPAS.LOAD'
Use optional DB2 Recording Table ==> NO      (NEW, EXIST or NO)
  Creator  ==> AAAAAAAA      Name      ==> AATAB
  Database ==> AADB          Tablespace ==> AATS
Generate optional perf. indexes on DB2 system catalog tables? (Y/N) ==> Y
  (If "Y", specify DB2 storage group to use ==> AAAAAAAA

  Previously generated JCL ==>
  Edit "bind plan" JCL?    ==> N (Y/N)

Current function: Adding new DB2 installation parameters
Enter 'generate' on command line to create the installation JCL.

```

### 1. Verify and Submit the JCL to be Used for Abend-AID's DB2 Support.

JCL member \$21vxxx, generated in the Abend-AID installation library, installs Abend-AID's DB2 support. Based on the information input during the generation of the JCL, the member created will do one of the following:

- Install using no recording table, assemble and link module CWDB2OPT, and bind the Abend-AID plan using PLAN or PLAN PACKAGE support. Also, optional performance indexes are created here.
- Install using a new recording table, assemble and link module CWDB2OPT, and bind the Abend-AID plan using PLAN or PLAN PACKAGE support. Also, optional performance indexes are created here.
- Install using an existing current version recording table, assemble and link module CWDB2OPT, and bind the Abend-AID plan using PLAN or PLAN PACKAGE support. Also, optional performance indexes are created here.

**Note:** The tablespace identified by the CREATE TABLE database.tablespace parameter in this job must already exist in order to run this job.

### 2. Test Abend-AID for DB2 Diagnostics

Test Abend-AID for DB2 diagnostics with applicable sample programs generated in the Abend-AID installation library. Members containing the programs are identified below.

**Note:** You may also prepare your own stored procedure samples for site-specific testing.

- For COBOL:
  - Member \$81vxxx causes a -310 SQLCODE with DB2 Version 4 and above and a -302 SQLCODE with DB2 Version 3.

**Note:** This test job can end with a normal zero return code even though the Abend-AID for DB2 plan has been bound incorrectly. Make sure there

are no warning messages in the job output signifying an incorrectly bound plan.

- Member \$82vxxx produces the same results as JCLDBSCS1, but binds the DBRM using DB2 packages.

The following member can be used to test DB2 Stored Procedure support. The sample consists of an application that invokes the sample stored procedure and the sample application. The sample stored procedure produces a -407 SQLCODE and the sample application receives a 000 SQLCODE.

- Member \$83vxxx

– For PL/I:

- Member \$91vxxx causes a -310 SQLCODE with DB2 Version 4 and above, and a -302 SQLCODE with DB2 Version 3.
- Member \$92vxxx produces the same results as JCLBPS1, but binds the DBRM using DB2 packages.
- Member \$93vxxx can be used to test DB2 Stored Procedure support. The sample consists of an application that invokes the sample stored procedure and the sample application. The sample stored procedure produces a -407 SQLCODE and the sample application receives a 000 SQLCODE.

---

## Step 23. Install Abend-AID for IDMS

Abend-AID for IDMS supports CA-IDMS Releases 15.00, 14.00 and 12.01.

### Notes:

1. Abend-AID for IDMS cannot support CA-IDMS release 12.00 but can support release 12.01 and later releases.
2. Be sure to follow steps one and two of the installation procedures that follow. Abend-AID for IDMS is not operable without them.

Complete the following steps to install Abend-AID for IDMS. After upgrading to Release 15.00 or 14.00 from a release before 12.00, relink all application modules that include CA-IDMS modules.

When you select the second option, IDMS Support, from the Abend-AID Installation : Site-specific Database Support menu (Figure 6-1 on page 6-1), the Abend-AID Installation: Site-specific IDMS Support screen is displayed. Specify the desired options, and press Enter to generate the JCL.

### 1. Run JCL Member \$31IDMS1

Member \$31IDMS1 is generated in the Abend-AID installation library to link the Abend-AID for IDMS code with the IDMS module IDMSIDMS.

**Note:** The Abend-AID interface to IDMSIDMS is called by CWAAIDMS and is added by running \$31IDMS1. This interface must be accessed at execution time before IDMSIDMS. If it is not, Abend-AID issues a message that Abend-AID for IDMS is not installed. In addition, verify that you are using a copy of IDMSIDMS that does not already contain the CWAAIDMS CSECT. If it does, \$31IDMS1 will fail with a user abend and store the resulting IDMSIDMS in a library that is accessed at execution time by the IDMS application program.

### 2. Reassemble and Link Abend-AID for IDMS Command Trace Table

If the Abend-AID for IDMS command trace table has been customized to contain more than ten entries (default), reassemble and link it by executing the job in

member \$32IDMS1. Refer to “Customizing the Command Trace Section” on page 6-9 if you need more information.

**Notes:**

- a. If a new release of IDMS is installed or maintenance is applied to IDMSIDMS, repeat step 1.
- b. No additional steps are required for sites using DBSTATS.

## Application Program Considerations

### 3. Relink COBOL Programs That Access CA-IDMS 12.01 or More Current Database

You must relink COBOL programs that access a CA-IDMS 12.01 or more current database that are still linked with CA-IDMS 10.2 or less current subschemas.

### 4. Relink COBOL Programs For Which Abend-AID Is Unable to Provide CA-IDMS Database Diagnostic Information

You must relink COBOL programs for which Abend-AID is unable to provide CA-IDMS database diagnostic information with CA-IDMS 12.01 or more current.

### 5. Relink All Non-COBOL Programs

You must relink all non-COBOL programs. Sample JCL is shown in Figure 6-4.

**Figure 6-4.** Sample JCL for Relinking Non-COBOL Application Programs

```
//LKED      EXEC  PGM=IEWL,
//  PARM='XREF,LIST,NCAL,LET,SIZE=(524288,65536)'
//SYSUT1    DD   DSN=&&SYSUT1,UNIT=SYSDA,SPACE=(1024,(1000,100))
//SYSPRINT  DD   SYSOUT=*
//INPUT     DD   DSN=INPUT.LOAD.LIBRARY,DISP=SHR           <---- CHECK DATASET NAME.
//SYSLIB    DD   DSN=REL.12.IDMS.LOAD.LIBRARY,DISP=SHR    <---- CHECK DATASET NAME.
//SYSLMOD   DD   DSN=OUTPUT.LOAD.LIBRARY,DISP=SHR        <---- CHECK DATASET NAME.
//SYSLIN    DD   *
INCLUDE SYSLIB(IDMS,IDMSCANC)
INCLUDE INPUT(USERPROG)                                  <---- CHECK PROGRAM NAME.
ENTRY entryname                                          <---- CHECK ENTRY NAME.
NAME USERPROG(R)                                        <---- CHECK PROGRAM NAME.
/*
```

### Application Programs Linked with IDMSIDMS

Compuware recommends that you do *not* link copies of IDMSIDMS with your application programs. However, if you do, you must relink any application load modules that contain IDMSIDMS in order to replace them with the version of the modules modified by the installation process. Figure 6-5 shows sample JCL for relinking.

If you choose to remove IDMSIDMS from your application programs, Figure 6-6 shows sample JCL for removing the module.

Figure 6-5. Sample Relinking JCL

```

//LKED EXEC PGM=IEWL,
// PARM='NORENT,NOREUS,XREF,LIST,NCAL,LET'
//SYSUT1 DD DSN=&&SYSUT1,UNIT=SYSDA,SPACE=(1024,50,20))
//SYSPRINT DD SYSOUT=*
//SYSLMOD DD DSN=PROGRAM.LOAD,DISP=SHR
//SYSLIB DD DSN=AA.CUSTOMIZATION.LOAD,DISP=SHR <---- LIBRARY THAT CONTAINS ABEND-AID
// HOOK TO IDMSIDMS
//SYSLIN DD DD *
INCLUDE SYSLIB(IDMSIDMS)
INCLUDE SYSLMOD(USERPROG) <---- CHECK PROGRAM NAME.
NAME USERPROG(R) <---- CHECK PROGRAM NAME.
/*
//

```

Figure 6-6. Sample Removal JCL

```

//LKED EXEC PGM=IEWL,
// PARM='NORENT,NOREUS,XREF,LIST,NCAL,LET,SIZE=(524288,65536)'
//SYSUT1 DD DSN=&&SYSUT1,UNIT=SYSDA,SPACE=(1024,(1000,100))
//SYSPRINT DD SYSOUT=*
//SYSLMOD DD DSN=OUTPUT.LIBRARY,DISP=SHR <---- CHECK DATASET NAME.
//INPUT DD DSN=INPUT.LIBRARY,DISP=SHR <---- CHECK DATASET NAME.
//SYSLIN DD *
REPLACE IDMSIDMS
INCLUDE INPUT(USERPROG) <---- CHECK PROGRAM NAME.
ENTRY entryname <---- CHECK ENTRY NAME.
NAME USERPROG(R) <---- CHECK PROGRAM NAME.
/*
//

```

### Storage Considerations

Abend-AID incurs a minimum overhead of 16K for each bind run unit issued. This storage remains allocated until step termination. If your application program issues a large number of bind run units (hundreds, for example), an S106-C abend may occur. Refer to the CWGLOBAL global option “Free Abend-AID for IDMS work areas” on page C-7. You can set this option to Yes if a potential for S106 (out of memory) abends exists with certain application programs. The //ABNLIFRE DD statement is also available for individual application programs. If specified in the execution JCL, this statement causes the work areas that are acquired by Abend-AID for IDMS for each bind run unit to be freed when a finish is issued.

### Customizing the Command Trace Section

The default number of commands that appear in the Database Command Trace section of the Abend-AID for IDMS listing is 10 commands. To alter the default number, change the TNUMBER value in sample JCL member \$32IDMS1 for CA-IDMS release 12.01 and more current as follows:

```
TNUMBER=x
```

The *x* represents the number of commands in the trace table.

The amount of storage used by the trace module is computed as follows:

$$(440 \times z) + 248$$

The *z* represents the number of commands in the trace table.

If the number of commands to be traced is changed, execute member \$32IDMS1 to assemble and link the trace module into the appropriate library.

---

## **Abend-AID for IMS**

If Abend-AID for IMS was requested for your site, all necessary modules were included on the product tape. No special installation procedure is required for this optional database support facility. Abend-AID for IMS is automatically installed with Abend-AID basic support.

## Chapter 7. Language Support

This section explains how to install Abend-AID language support facilities:

- PL/I without LE support
- VS FORTRAN support.

Abend-AID's basic support must be installed before you can install language support. Skip to the next step “**Step 26. Customize Abend-AID Tables and Report Output**” on page 8-1 if your site is not installing support for either of these languages.

---

### Part 5. Install PL/I Without LE and VS FORTRAN Support

Abend-AID provides support for PL/I and VS FORTRAN run-time environments. Install the support applicable to your site.

From the Abend-AID Installation and Customization Dialog menu (Figure 5-1 on page 5-1), select option 5, Part 5: Install PL/I without LE and VS FORTRAN Support, to display the Abend-AID Installation: Non-LE Language Support menu, as shown in Figure 7-1.

**Figure 7-1.** Abend-AID Installation: Non-LE Language Support Menu

```

----- Abend-AID Installation: Non-LE Language Support -----
Command ==>

The Abend-AID installation requires site-specific information to complete
the installation for non-LE language support.

Type an S next to the desired option(s) and press ENTER.

      PL/I Hook Support
      Fortran Hook Support

```

---

## Step 24. Install PL/I without LE Support

From the Abend-AID Installation: Non-LE Language Support menu (Figure 7-1 on page 7-1), select the first option, PL/I Hook Support.

### PL/I Support

**Note:** When PL/I is used with Language Environment (LE), Abend-AID receives control via LE condition-handling rather than PL/I condition-handling. Therefore, if you are using PL/I exclusively with LE, install Abend-AID LE support instead of Abend-AID PL/I support.

This section describes installation requirements and installation procedures. Removal of Abend-AID PL/I support is described in **Appendix A, “Site-Specific Installation Additional Information”**.

#### *Installation Requirements*

Abend-AID PL/I support modules are upward-compatible with new Abend-AID releases. Proceed with the Abend-AID PL/I support installation only if you are installing Abend-AID PL/I support:

- For the first time
- For a new release of PL/I.

**Note:** If you decide to install a more current release of Abend-AID PL/I support, you must remove any existing Abend-AID PL/I support.

#### *PL/I Support Installation Procedure*

When you select the first option, PL/I Hook Support, from the Abend-AID Installation: Non-LE Language Support menu, the Abend-AID Installation: Site-specific PL/I Non-LE Support screen is displayed. Specify the parameters specific to your site, and press Enter to generate the JCL.

Abend-AID provides non-abending and abending support for PL/I. The type of support you install depends on how PL/I application programs at your site presently terminate following an error.

- **Non-abending support:** Install non-abending PL/I support if job steps in error at your site presently end with a non-zero return code. Non-abending support diagnoses the error and returns control to PL/I. This allows the program to terminate with the appropriate PL/I return code.
- **Abending Support:** Install abending PL/I support if job steps in error at your site presently end with an abend. Abending support is useful if your site normally requires an IBMBEER or IBMBXITA exit coded to abend in an IMS environment. Abending support issues a U3001 abend. Abend-AID is then invoked through normal SVC51 processing to diagnose the error.

**Note:** The Abend-AID SVC51 interface must be started when using either non-abending or abending PL/I support.

#### **1. Back Up PL/I Modules and Install PL/I Support into Test Libraries Using JCL Member \$41PLI01**

Use JCL member \$41PLI01, generated in the Abend-AID installation library, to back up the PL/I modules used by Abend-AID, and install Abend-AID PL/I support into test libraries.

**Note:** The abending support links a modified version of IBMBKMRA that suppresses PL/I's PLIDUMP facility. To use PLIDUMP with Abend-AID, comment out Step 4 in the JCL. Refer to **Appendix A, "Site-Specific Installation Additional Information"** for additional information on the IBMBKMRA hook.

The last step of the JCL member produces a report that verifies the installation. This report details the linkage of the Abend-AID PL/I support modules. The following types of installation errors are noted:

- **Linked incorrectly:** Abend-AID PL/I support modules linked with the incorrect AMODE/RMODE or RENT/REUS attributes are noted in the SHOULD BE column.
- **Non-Abend-AID:** IBM PL/I modules that are linked without corresponding Abend-AID PL/I support modules are marked NOT AA.
- **Inconsistent release:** Abend-AID PL/I support modules that are a different release level than the release level of CWMODLST verification program are indicated with an asterisk (\*).
- **Missing:** Missing IBM PL/I modules to which Abend-AID interfaces are marked NOT FOUND.
- **Not executable:** Modules flagged by the linkage editor or binder as not executable are so marked.
- **Invalid entry point:** Modules with an invalid entry point are so marked.

If the PLIDUMP suppression feature is installed, the bit switch settings are also displayed. This is an optional feature and is not required for complete Abend-AID PL/I support. If this feature is not installed, the IBMBKMRA module is marked as NOT AA.

### 2. Test Abend-AID PL/I Support by Running JCL Member \$42PLI02

Test Abend-AID PL/I support by running JCL member \$42PLI02, generated in the Abend-AID installation library.

- a. Use a job name that matches the job name or job name mask for which Abend-AID was started in **"Step 18. Start Abend-AID for Test" on page 5-12**.
- b. Ensure that the //JOB LIB DD concatenation includes the appropriate Compuware Shared Services load library. Refer to **"Step 3. Verify and Provide ECC Installation Information" on page 4-9** for the appropriate CSS release.

### 3. Run JCL Member \$43PLI03 to Move Modules to the Production Libraries

When Abend-AID PL/I support has been tested and is ready to be moved to production, run JCL member \$43PLI03 (generated in the installation library) to move the modules to the production libraries.

---

## Step 25. Install VS FORTRAN Support

From the Abend-AID Installation: Non-LE Language Support menu (Figure 7-1 on page 7-1), select the second option, Fortran Hook Support.

Abend-AID helps FORTRAN programmers diagnose application program errors by reporting information that VS FORTRAN's normal error recovery process obscures. VS FORTRAN run-time routines intercept application program abends when its SPIE and STAE run-time options are in effect. VS FORTRAN then terminates the application with a U0240 abend, hiding the original error. Although basic information about the application's problem may be provided by VS FORTRAN messages, this information is usually insufficient to help resolve errors. When Abend-AID VS FORTRAN support is installed, however, Abend-AID provides crucial diagnostic information pertaining to the original error.

## Installation Considerations

Abend-AID VS FORTRAN support modules are upward-compatible with new Abend-AID releases. Proceed with the Abend-AID VS FORTRAN support installation procedure only if you are installing Abend-AID VS FORTRAN support:

- For the first time
- For a new release of VS FORTRAN
- For a new release of Language Environment, beginning with Version 1 Release 5.

**Note:** If you decide to install a newer release of Abend-AID VS FORTRAN support, you must remove any existing Abend-AID VS FORTRAN support. Refer to “Removing Abend-AID VS FORTRAN Support” below.

## VS FORTRAN Support Installation Procedure

When you select the second option, Fortran Hook Support, from the Abend-AID Installation: Non-LE Language Support menu, the Abend-AID Installation: Site-specific Fortran Support screen is displayed. Specify the parameters specific to your site, and press Enter on the last screen to generate the JCL.

To install VS FORTRAN support, complete the following steps:

### 1. Run JCL Member \$51FORBU

Run JCL member \$51FORBU, generated in the Abend-AID installation library, to back up the VS FORTRAN modules used by Abend-AID, and install VS FORTRAN support into test libraries.

### 2. Test Abend-AID VS FORTRAN Support with JCL Member \$52FORTS

Test Abend-AID VS FORTRAN support with JCL member \$52FORTS, generated in the Abend-AID installation library. Use a job name that matches the job name or job name mask for which Abend-AID was started in “Step 18. Start Abend-AID for Test” on page 5-12.

### 3. Run JCL Member \$53FORPD to Copy Modules to the Production Libraries

When Abend-AID VS FORTRAN support has been tested and is ready to be moved to production, run JCL member \$53FORPD generated in the installation library to copy the modules to the production libraries.

## Removing Abend-AID VS FORTRAN Support

If it becomes necessary to remove any existing Abend-AID VS FORTRAN support, execute the appropriate sample JCL member depending on the type of support to be removed. This must be done if you decide to install a newer release of Abend-AID VS FORTRAN support.

- **JCLF2LER:** JCL for Language Environment
- **JCLF25R:** JCL for VS FORTRAN Version 2 Releases 6 and 5

## VS FORTRAN Extended Error Handling Facility

Abend-AID VS FORTRAN support does not interfere with VS FORTRAN’s normal recovery and reporting process. This means that VS FORTRAN may allow a number of errors of a particular type to occur in an application before taking corrective action or terminating with a U0240 abend. Therefore, if an application encounters errors, but completes before the error count is exceeded, no U0240 abend occurs. Consequently, no Abend-AID report is produced.

## Chapter 8.

# Customizing Abend-AID

This chapter describes how to customize Abend-AID tables and how to use tables to tailor Abend-AID processing.

**Note:** Abend-AID tables may not be compatible between releases. If you are reinstalling Abend-AID, and tables were assembled and linked with the previous release, you must reassemble and link the tables with the current release.

If you make no changes to the Abend-AID tables, continue to the next step in **Chapter 9**, “Configuring Distributed Viewing”.

---

## Step 26. Customize Abend-AID Tables and Report Output

Abend-AID provides the following tables:

- Abend Code Tables:
  - CWTABS01: Specifies Abend-AID processing by system completion code.
  - CWTABU01: Specifies Abend-AID processing by user completion code.
  - CWTABP01: Specifies Abend-AID processing by PL/I on-code.
- Language Environment Condition Code Table (CWTABLE01): Specifies Abend-AID processing by Language Environment (LE) condition codes.
- Job and Program Selection Tables:
  - CWJOBTAB: Directs or suppresses Abend-AID processing by job name
  - CWPGMTAB: Directs or suppresses Abend-AID processing by program name.
- CSECT Bypass Table (CSECTBYP): Suppresses display of Program Storage for specific non-COBOL CSECTs.
- CSECT Inclusion Table (CWINCLUD): Provides CSECT information not normally included in the Abend-AID storage dump.
- Compuware Shared Services Translation Tables:
  - CWCMTTRHT: Hexadecimal to EBCDIC translation table for horizontal dump format.
  - CWCMTTRVT: Hexadecimal to EBCDIC translation table for vertical dump format.

### Abend Code Tables (CWTABS01, CWTABU01, and CWTABP01)

The abend code tables contain Compuware’s recommended settings for dump and output generation in response to most abends, including user abends.

The abend code tables are:

- CWTABS01: Specifies Abend-AID processing by system completion code.
- CWTABU01: Specifies Abend-AID processing by user completion code.

- **CWTABP01:** Specifies Abend-AID processing by PL/I on-code.

The abend code tables let you choose the type of diagnostic output provided, based on the abend code and whether the abend is solved by Abend-AID. If an abend code is not in the table, the default abend code entry determines the output options. The default abend code entries are:

- **CWTABS01:** S=(D,Y,Y), U=(D,Y,Y)
- **CWTABU01:** S=(N,Y,Y), U=(N,Y,Y)
- **CWTABP01:** S=(N,Y,Y), U=(D,Y,Y)

The source code and JCL used to create abend code tables are located in the following members of the Abend-AID installation library (TPAASAMP):

- **CWTABSXX:** Source code for recommended system completion code table
- **JCLASYST:** JCL to assemble and link the CWTABS01
- **CWTABUXX:** Source code for recommended user completion code table
- **JCLAUSRT:** JCL to assemble and link the CWTABU01
- **CWTABPXX:** Source code for recommended PL/I on-code table. Abend-AID abending PL/I support searches CWTABP01 before CWTABU01 when a U3001 abend is issued.
- **JCLAPLIT:** JCL to assemble and link the CWTABP01 table.

Each table segment is limited to 1950 bytes. A larger table generation results in an MNOTE 12 error during assembly. If one of the tables becomes too large, create a second table with a name ending with 02. For example, if CWTABU01 fills up, create a second table named CWTABU02 to contain the rest of the user abend codes. If more tables become necessary, create CWTABU03, and so on.

## Abend Code Table Instructions

The table consists of the following assembler macro instructions, which are contained in the Abend-AID installation library (TPAASAMP):

- **CWINIT**
- **ACODE**
- **CWEND.**

Each instruction is described below.

### **CWINIT**

Names the control section and must be the first instruction.

### **ACODE**

Defines the abend code. Each entry into the abend code table follows this format:

#### **ACODE syntax**

```
ACODE CODE=Axxxx,S=(D,Y,Y),U=(D,Y,Y),ENV=I|D|R,RC=xxxxxxxx
```

### **CODE**

There are three types of abend code tables, each containing a unique code. Valid codes for Axxxx are:

- **Sxxx:** Specifies a system abend code of xxx to use in CWTABS01.
- **Uxxxx:** Specifies a user abend code of xxxx to use in CWTABU01.
- **Pxxxx:** Specifies a PL/I on-code of xxxx to use in CWTABP01.

## S

Specifies the diagnostic information option for an application program abend that Abend-AID considers to be solved.

– **IBM dump option:** Valid entries are:

**D:** Default. Complete IBM snap dump follows the Abend-AID report.

**N:** No IBM dump follows the Abend-AID report.

**F:** Only the formatted operating system control blocks of the IBM dump follow the Abend-AID report.

– **Data management control blocks option:** Valid entries are:

**Y:** Default. Displays all file control blocks.

**N:** Suppresses file control blocks.

**C:** Displays only the control blocks of the file causing the error.

– **Program storage display option:** Valid entries are:

**Y:** Default. Displays program storage or CSECTs for all programs on the calling chain.

**N:** Suppresses program storage.

## U

Specifies the diagnostic information option for an application program abend that Abend-AID considers to be unsolved.

– **IBM dump option:** Valid entries are:

**D:** Default. Complete IBM snap dump follows the Abend-AID report.

**N:** No IBM dump follows the Abend-AID report.

**F:** Only the formatted operating system control blocks of the IBM dump follow the Abend-AID report.

– **Data management control blocks option:** Valid entries are:

**Y:** Default. Displays all file control blocks.

**N:** Suppresses file control blocks.

**C:** Displays only the control blocks of the file causing the error.

– **Program storage display option:** Valid entries are:

**Y:** Default. Displays program storage or CSECTs for all programs on the calling chain.

**N:** Suppresses program storage.

**ENV**

Use this keyword to specify the output options for abends occurring in a specific environment. Code an additional entry for the same abend code without the ENV option. This supplies Abend-AID with the output options for abends occurring in a nonspecific environment. Valid entries are:

- I:** Specifies the output option for an IMS-issued abend.
- D:** Specifies the output option for a DUO-issued abend or for an abend in a program running under DUO.
- R:** Specifies the output option for the reason code value specified by the RC keyword. Generally used for DB2 abends.

**RC**

Specifies the eight-character reason code contained in register 15. Use this field when ENV=R is specified. If register 15 is equal to the specified reason code, the output option for the ACODE entry is used.

The following examples illustrate various ACODE options.

**Example 1:**

```
col 10
|
v
ACODE CODE=S213,S=(N,N,N),U=(D,Y,Y)
```

If the S213 abend is solved, Abend-AID performs the following tasks:

- Suppresses the normal dump
- Does not display file control blocks
- Does not display program storage.

If the S213 abend is unsolved, for example, if an invalid return code or the S213 abend is issued via the ABEND macro, Abend-AID performs the following tasks:

- Produces a normal dump
- Displays all open file control blocks
- Displays all program storage.

**Example 2:**

```
ACODE CODE=S0C7,S=(N,Y,Y),U=(D,Y,Y)
```

If the S0C7 abend is solved, Abend-AID performs the following tasks:

- Suppresses the dump
- Displays file control blocks for all open files
- Displays program storage.

If the S0C7 abend is unsolved, for example, if a S0C7 abend is not in the region and no file problem is found, Abend-AID performs the following tasks:

- Produces the dump
- Displays file control blocks for all open files
- Displays program storage.

**CWEND**

Generates the table delimiter and end statement. CWEND must be the last instruction.

**Language Environment (LE) Condition Code Table (CWTABLE01)**

The Language Environment (LE) condition code table customizes settings that control which diagnostic information Abend-AID provides and whether Abend-AID requests a dump from the operating system. Each condition code can be individually customized with these settings.

If a program encounters a condition code that is not in the table, default condition code entries determine which diagnostic information is presented. CWTABLE01, as initially installed from the Abend-AID MVS product tape, contains only default entries. Since certain LE error conditions correspond to actual abends, these default entries instruct Abend-AID to use settings from the corresponding entry in table CWTABS01, CWTABU01, or CWTABP01.

Add custom settings to the LE condition code table, CWTABLE01, if certain LE error conditions require different diagnostic information than is produced by settings in CWTABS01, CWTABU01, or CWTABP01. Member CWTABLXX in the Abend-AID installation library (TPAASAMP) contains the assembler source code for the table installed from the product tape. You customize the table by modifying the member with the LECOND macro, summarized below. Assemble and link the customized table using the JCL in member JCLALECT in the Abend-AID installation library (TPAASAMP).

Each table is limited in size to 1950 bytes. Source code that yields a larger table causes an MNOTE 12 error during assembly. If the table becomes too large, create a second table named CWTABLE02.

**LE Condition Code Table Instructions**

The table consists of the following assembler macro instructions, which are contained in the Abend-AID installation library (TPAASAMP):

- CWINIT
- CWEND
- LECOND.

Each instruction is described below.

**CWINIT**

Names the control section and must be the first instruction.

**CWEND**

Generates the table delimiter and end statement, and must be the last instruction.

**LECOND**

Use LECOND to override or add to the default settings of CWTABLE01. Each entry follows this format:

**LECOND macro syntax**

```
name LECOND CODE=DDDxxxxL, IGNORE=N, TAB=N, S=(D, Y, Y), U=(D, Y, Y)
```

**name**

Optional symbol.

**CODE**

Names the LE condition code to which these settings apply. No CEE3250C code is allowed in the table because of the nature of the error it represents.

- DDD:** Prefix identifier, typically CEE (common run-time), IGZ (COBOL run-time), or IBM (PL/I run-time).
- xxxx:** Numerical identifier.
- L:** Level of severity.

**IGNORE**

Specifies whether Abend-AID will ignore this LE condition. Valid entries are:

- N:** Default. Abend-AID produces a report.
- Y:** Abend-AID ignores occurrences of this error condition and does not produce a report.

**TAB**

Specifies if Abend-AID will use settings from CWTABS01, CWTABU01, or CWTABP01 instead of settings from CWTABL01. Valid entries are:

- N:** Default. Settings from CWTABL01 are used.
- Y:** Settings from CWTABS01, CWTABU01, or CWTABP01 are used.

**S**

Specifies the diagnostic information option for an application program error that Abend-AID considers to be solved.

- **Operating system dump option:** Valid entries are:

- N:** Default. Abend-AID does not request a dump from the operating system.
- D:** Abend-AID requests a U4039-8 dump from the operating system.

- **Data management control blocks option:** Valid entries are:

- Y:** Default. Abend-AID displays control blocks of all open files.
- N:** Abend-AID does not display control blocks of any files.
- C:** Abend-AID displays control blocks of only the file in error.

- **Program storage display option:** Valid entries are:

- Y:** Default. Abend-AID displays program storage of all programs on the active calling chain.
- N:** Abend-AID does not display program storage of any programs.

**U**

Specifies the diagnostic information option for an application program error that Abend-AID considers to be unsolved.

- **Operating system dump option:** Valid entries are:
  - D:** Default. Abend-AID requests a U4039-8 dump from the operating system.
  - N:** Abend-AID does not request a dump from the operating system.
- **Data management control blocks option:** Valid entries are:
  - Y:** Default. Abend-AID displays control blocks of all open files.
  - N:** Abend-AID does not display control blocks of any files.
  - C:** Abend-AID displays control blocks of only the file in error.
- **Program storage display option:** Valid entries are:
  - Y:** Default. Abend-AID displays program storage of all programs on the active calling chain.
  - N:** Abend-AID does not display program storage of any programs.

## Job and Program Selection Tables (CWJOBTAB and CWPGMTAB)

The job and program selection tables (CWJOBTAB and CWPGMTAB) are optional tables that suppress or direct Abend-AID processing for specific job or program names. Both tables can be used to direct selected Abend-AID output to the 72-column output format. CWJOBTAB can be used to route Abend-AID output to a specified report dataset that overrides the entry in the report routing CWROUTE load module.

Abend-AID scans the CWJOBTAB table to compare entries in it with the current job name. A *true* condition (either equal or not equal) invokes the specified option. If no true condition is found in CWJOBTAB, then Abend-AID scans the CWPGMTAB table in the same way, but it also scans all program names in the load lists that are pointed to by program request blocks. If no match occurs, processing continues through Abend-AID.

The Abend-AID installation library (TPAASAMP) provides three samples, two for CWJOBTAB and one for CWPGMTAB:

- **CWJOBTAB:** Provides an IBM dump, in addition to the Abend-AID report, for all jobs named ZZZZZZZZ.
- **CWJOBTB1:** Routes the Abend-AID report based on job name.
- **CWPGMTAB:** Provides an IBM dump, in addition to the Abend-AID report, for all programs named \$\$.

Incorporate the CWJOBTAB and CWPGMTAB tables into Abend-AID processing by linking them into the Abend-AID load library. Sample JCL required to install the tables is in the Abend-AID installation library (TPAASAMP) members JCLJOBTB for CWJOBTAB and JCLPGMTB for CWPGMTAB.

## Job and Program Selection Tables Instructions

The tables consist of the following assembler macro instructions, which are contained in the Abend-AID installation library:

- CWINIT
- CWEND
- SELECT.

Each instruction is described below.

**CWINIT**

Names the control section and must be the first instruction. The PREFIX=YES parameter must be used.

**CWEND**

Generates the table delimiter and end statement, and must be the last instruction.

**SELECT**

The SELECT macro builds the CWJOBTAB and CWPGMTAB tables.

**SELECT macro syntax**

```
anylabel SELECT NAME=COMPWARE,LENGTH=8,OPTION=IGNR, X
                DISPL=0,OP=EQ,ONLINE=NO
```

**NAME**

In CWJOBTAB, this specifies the job name. In CWPGMTAB, it refers to a program name pattern. There are no system defaults. Valid entries are one to eight, user-defined characters.

**LENGTH**

Specifies the length of the field to be compared. Valid entries range from one to eight. The default is **eight**.

**OPTION**

Specifies the processing option if the condition is true. Valid entries are:

- DUMP:** Process by Abend-AID and request the IBM dump.
- FMTD:** Process by Abend-AID and produce only the formatted portion of the IBM dump.
- IGNR:** Default. Bypass Abend-AID processing. Abend-AID terminates and all user exits are ignored.

**Note:** This option does not bypass SNAP-AID processing. If a call to 'SNAPAID' is made in the application program, a SNAP-AID report is produced.

**NODP:** Process by Abend-AID and suppress the dump.

**PROC:** Process by Abend-AID.

**DISPL**

Specifies the displacement, relative to zero, in the job or program name where the comparison will be made. Valid entries range from zero to seven. The default is **0** (zero).

**OP**

Specifies an equal or not equal comparison. Valid entries are:

**EQ:** Default. Equal comparison.

**NE:** Not equal comparison.

**ONLINE**

Controls the width of the Abend-AID report written to the SYSUDUMP, SYSABEND, and ABENDAID DDs. Valid entries are:

**YES:** Display all output in 72-column format.

**NO:** Default. Display all output 121-column format.

You can also request the 72- or 121-column format with the following:

- The Use 72-column Width Format global option (see **Appendix C, “Global Options”**).
- A JCL DD override

**ROUTE**

Valid only with the job selection table, CWJOBTAB. Specifies the routing destination of the Abend-AID report. There are no system defaults. Valid entries are:

**SYSOUT:** Route Abend-AID output to a SYSOUT destination in addition to the report dataset.

**GLOBAL:** Route Abend-AID output to the report dataset specified in the report routing CWROUTE load module.

**Any valid dataset name:** Route Abend-AID output to a site-defined report dataset.

You can also specify report output destinations with the following:

- Report routing CWROUTE load module
- The output-processing exit, CWEXIT02 (see **Chapter 11, “User-Coded Customization”**)
- An //ABNLTERM DD statement

**Notes:**

1. Refer to **Chapter 14, “Controlling Abend-AID Processing”** for information about DD statements and override hierarchy.
2. Specifying ONLINE=NO in the SELECT macro does not override the “Use 72-column Width Format” global option and does not prevent Abend-AID from writing to the Abend-AID report dataset.

The following examples illustrate SELECT options:

**Job Name Examples****Example 1**

Ignores jobs that do not have *TS* in the second and third characters of the job name. Use the 72-column output format for those jobs that have *TS* in the second and third characters of the job name.

```
col 1      col 10                                     col 72
|          |                                         |
v          v                                         v
PROCTS    SELECT NAME=TS,LENGTH=2,DISPL=1,           X
           col 16--> OPTION=IGNR,OP=NE
PROCTS2   SELECT NAME=TS,LENGTH=2,DISPL=1,           X
           OPTION=PROC,OP=EQ,ONLINE=Y
```

**Example 2**

Always requests a dump for job TPMON.

```
DUMPTP  SELECT NAME=TPMON,OPTION=DUMP
```

**Example 3**

Valid only with the job selection table, CWJOBTAB. Routes jobs beginning with *PAY* to report dataset ABENDAID.PAYROLL.RPTFILE. Routes jobs beginning with *DB2* to report dataset ABENDAID.DB2.RPTFILE.

```
RTEPAY  SELECT NAME=PAY,OPTION=PROC,DISPL=0,OP=EQ,LENGTH=3,          X
          ROUTE='ABENDAID.PAYROLL.RPTFILE'
RTEDB2  SELECT NAME=DB2,OPTION=PROC,DISPL=0,OP=EQ,LENGTH=3,          X
          ROUTE='ABENDAID.DB2.RPTFILE'
```

**Program Name Examples****Example 1**

Ignores Abend-AID for any step with program name MYPROG.

```
IGNRMYPG SELECT NAME=MYPROGxx
```

Although not coded, the following defaults are also in effect for Example 1:

```
LENGTH=8,DISPL=0,OP=EQ,OPTION=IGNR,ONLINE=NO
```

**Example 2**

Ignores Abend-AID for any step with program names that begin with *SEC*.

```
IGNRSEC  SELECT NAME=SEC,LENGTH=3
```

Although not coded, the following defaults are also in effect for Example 2:

```
DISPL=0,OP=EQ,OPTION=IGNR,ONLINE=NO
```

**Example 3**

Ignores Abend-AID for any step with program names that end with *AUDIT*.

```
IGNRAUDI SELECT NAME=AUDIT,LENGTH=5,DISPL=3
```

Although not coded, the following defaults are also in effect for Example 3:

```
OPTION=IGNR,OP=EQ,ONLINE=NO
```

**CSECT Bypass Table (CSECTBYP)**

The CSECT bypass table (CSECTBYP) is an optional table that suppresses the display of program storage for specific non-COBOL CSECTs. For example, these CSECTs can be COBOL ILBO subroutines, IMS control programs, or common Assembler routines whose storage is not needed.

Abend-AID includes a default CSECT bypass table. To use it, link-edit the CSECT bypass table with Abend-AID system control modules in the SMP/E load library. Refer to member JCLCSECT to change the CSECTBYP table. JCLCSECT contains current source code and JCL to assemble and link the CSECT bypass table.

**CSECTBYP syntax**

```
CSECTBYP CSECT=('csect1','csect2',... 'csect-n')
```

## CSECT

Specifies the CSECTs to suppress the display of program storage. Enclose the CSECT names in quotes and separate them by commas. The number of characters between the quotes determines the length of each name. Do not use special characters for wildcard characters in the CSECT name mask. The following example shows how to code CSECTBYP.

### Example:

```
col 10
|
v
TITLE 'ABEND-AID CSECT BYPASS TABLE'
CSECTBYP CSECT=('ILBO','DFS','DUO')
```

The example specifies not to format program storage for CSECTs beginning with either ILBO or DFS (IMS control programs), or the CSECT DUO.

**Note:** CSECTBYP is overridden by the CSECT inclusion table (CWINCLUD). The CSECTs specified to be suppressed in CSECTBYP are displayed if they are also specified in the CSECT inclusion table.

## CSECT Inclusion Table (CWINCLUD)

The CSECT inclusion table (CWINCLUD) is an optional table that triggers the display of selected CSECTs in storage that are not normally included in Abend-AID's Program Storage section. Common data areas, utility subroutines, and FORTRAN labeled common areas fall into this CSECT category. In addition, COBOL working storage for selected programs for which Abend-AID can find the associated COBOL TGTs and save areas will be displayed. Add an //ABNLINCL DD statement to the abending job's JCL for load modules in the region to be considered for inclusion. The format of this statement is //ABNLINCL DD DUMMY.

These are the effects on the Program Storage section:

- Without CWINCLUD, the report shows all programs on the calling chain.
- With CWINCLUD only, selected Assembler CSECTs and COBOL working storage in load modules on the calling chain are eligible for inclusion in the report.
- With CWINCLUD and ABNLINCL, selected Assembler CSECTs and COBOL working storage in all currently loaded modules of the abending task are eligible for inclusion in the report.

The CSECT inclusion table name must be CWINCLUD. Link-edit the table into the Abend-AID non-SMP/E load library member CWINCLUD. The JCL to assemble and link-edit the table is in member JCLINCLD. Member CWINCLUD contains a sample source code program. The CSECT inclusion table requires no special terminator. The table consists of the following assembler macro instructions, which are contained in the Abend-AID installation library (TPAASAMP):

- CWINIT
- PATTERN
- CWEND.

Each instruction is defined below.

### **CWINIT**

Names the control section and must be the first instruction.

**PATTERN**

Defines the pattern to use when matching CSECT names. All matching CSECTs in load modules on the RB chain are displayed.

The sample CWINCLUDE table contains a number of sample CSECT names that are coded using the PATTERN macro.

**PATTERN macro syntax**

```
PATTERN xxxx,MULTC=-,SINGLEC=?,SINGLEN=+,LEN=8
```

**xxxx**

Specifies the string containing the characters and special symbols used in the comparison process.

**MULTC**

Specifies, for this PATTERN macro expansion only, the special symbol used to match a character string. The default value is a **hyphen (-)**.

**SINGLEC**

Specifies, for this PATTERN macro expansion only, the special symbol used to match any single character. The default value is a **question mark (?)**.

**SINGLEN**

Specifies, for this PATTERN macro expansion only, the special symbol used to match a single numeric character. The default value is a **plus sign (+)**.

**LEN**

Sets the scan length to a value from 1 to 8, indicating the number of characters compared. The default is **8**.

The following examples illustrate the various options for the PATTERN macro:

**Example 1**

Prints CSECTs starting with *TAB*.

```
col 10
|
v
PATTERN TAB-
```

**Example 2**

Prints CSECTs starting with any single character, followed by a single numeric character, followed by *TAB*, and ending with one to three characters.

```
PATTERN +-TAB$,SINGLEN=-,SINGLEC=+,MULTC=$
```

**Example 3**

Prints CSECTs starting with *CTR* and ending in five numeric characters.

```
PATTERN CTR+++++
```

**Example 4**

Prints CSECTs starting with *X* and having a *T* as the second to the last character.

```
PATTERN X-T?
```

**Example 5**

Prints a CSECT starting with *AB*, ending with *X*, and having one to five characters between *AB* and *X*

```
PATTERN AB-X
```

**CWEND**

This macro must be the last instruction. Generates the table delimiter and end statement.

**Note:** The CWINCLUD table overrides the CSECT bypass table (CSECTBYP). The CSECTs specified to be suppressed in CSECTBYP are printed if they are also specified in CWINCLUD.

## Compuware Shared Services Translation Tables (CWCMTTRHT and CWCMTTRVT)

When necessary, Abend-AID displays storage areas in both hexadecimal and character representation. These storage areas may appear in two different formats:

- Horizontal dump format—for example, the TGT for a COBOL program.
- Vertical dump format—for example, a current or previous record for a particular ddname.

Installation of a customized translation table is an optional step in the CSS installation procedure. Refer to the *Enterprise Common Components Installation and Customization Guide* for information about sample JCL to assemble and link the translation tables.

The Abend-AID epilug box at the end of the Abend-AID report identifies the customized translation table in use, if installed.

## Dynamically Allocated Report Output DD Statements

When Abend-AID needs to dynamically allocate a DD statement to SYSOUT for report output, it uses the #XAAMKDD dynamic allocation program, summarized in a subsequent section. When the statement needed is ABENDAID or SYSUDUMP, the #XAAMKDD program uses as a model the existing CEEDUMP, SYSUDUMP, PLIDUMP, or PL1DUMP statement, or the override you specified via the “Model DD name to be used” on page C-8. It searches for each individually, in that order of priority, rather than using the first that it finds.

Abend-AID requires the ABENDAID DD statement to generate report output for non-abending error conditions, in the situations noted below:

- An application-program error condition in LE
- An application-program error condition in the PL/I environment when Abend-AID non-abending support is installed
- An application program call to SNAPAID.

When a DD statement is required, Abend-AID first checks for it in the execution JCL. If it is not present, Abend-AID takes the following action:

- Dynamically allocates the ABENDAID statement if the application-program error condition has occurred in LE or PL/I, as noted above.
- Dynamically allocates the SYSUDUMP statement if the error condition occurred in PL/I when Abend-AID’s PL/I abending support is installed.
- Dynamically allocates the ABENDAID statement if so requested in the SNAPAID call parameter list in the application program.

When it is dynamically allocating a DD statement, Abend-AID may obtain input data by the methods described below.

- Uses the data in the parameter list when the request comes from a user call to SNAPAID and a parameter list was specified.
- Models the allocation on the existing CEEDUMP, SYSUDUMP, PLIDUMP, or PL1DUMP statement when one or more of the following conditions exist:
  - The call is from LEAID or Abend-AID's non-abending PL/I support
  - A specified SNAPAID parameter list lacks required data
  - A SNAPAID parameter list is not specified
  - Modeling was specified in the #XAAMKDD program and a model was found.
- Abend-AID refers to the global options for dynamic allocation under the following conditions:
  - No model is found
  - The model cannot be used for some reason
  - No model was specified in the #XAAMKDD program.

## Chapter 9.

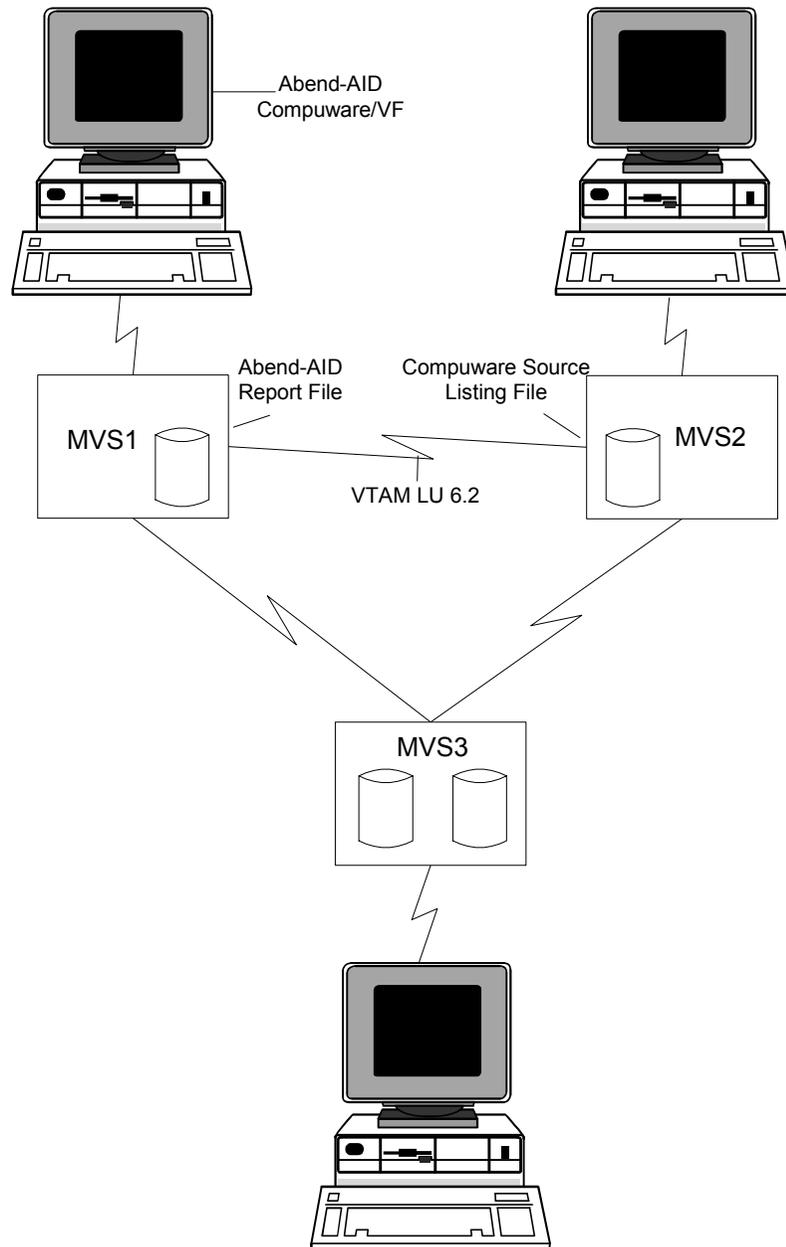
# Configuring Distributed Viewing

**Note:** If your site does not need Distributed Viewing Support, skip to the next step in **Chapter 10, “Completing Installation”**.

Install Distributed Viewing Support (DVS) if application developers need to access Abend-AID report and source listing datasets on MVS systems to which they are not logged on and that do not share DASD. Apply the configuration procedures to each image of Abend-AID on each of the MVS systems that users will access.

You may need assistance from a VTAM or MVS systems programmer.

**Figure 9-1.** Distributed Viewing Support



## Step 27. Configure Distributed Viewing Support

The Abend-AID server is a program that enables Distributed Viewing Support by linking MVS systems over VTAM LU 6.2. The Abend-AID server must be configured and active on a user's local system and on each remote system accessed. Compuware recommends that you run the server as a started task that is always available.

Although multiple servers can be operated on a single system, Compuware recommends for a first installation that you configure only one server per system.

Prepare the server for distributed viewing in these stages:

1. Modify server JCL.
2. Configure the LU 6.2 application ID.
3. Configure the server parameters.
4. Start the server.

### 1. Modify the Server JCL

Review and modify the sample JCL in the installation library (TPAASAMP) member JCLSRVR as described below.

1. Configure JCL as a job or started task:

The server JCL is initially configured to run as a started task. Compuware recommends leaving it in that configuration. If you want it to run as a job, change the PROC statements to JOB statements.

#### Notes:

- a. The execute statement parameter **TIME=1440** in the JCL prevents the server from timing out, regardless of the CPU time used. You can modify this parameter to your site's requirements.
  - b. The server region size defined on the execute statement is 8 megabytes. This is the minimum recommended region size for the server.
2. Name the server:
 

Provide a unique 1- to 8-character name for the server in the execute statement. This name is required when configuring a remote server to link to this one. It is specified in the HCI\_SIT\_ENTRY parameter TPNAME.
  3. Verify the Abend-AID server datasets:

The DD statements listed below point to datasets created during CSS installation. Verify them now to make sure they are correct.

```
//STEPLIB DD COMPWARE.KMPNNN.SKMPAUTH
// DD COMPWARE.LHCNNN.SLHCAUTH
//FDBDRPL DD COMPWARE.LCXNNN.SLCXLOAD
// DD COMPWARE.KMPNNN.SKMPLOAD
// DD COMPWARE.LHCNNN.SLHCLOAD
```

4. Verify the server parameter dataset:

Ensure that the FDBDPARM DD statement points to the installation library member DVFPARMS.

```
//FDBDPARM DD DISP=SHR,DSN=ABENDAID.TPAASAMP(DVFPARMS)
```

## 5. Verify the server log destination:

The FDBDLOG DD statement specifies a SYSOUT dataset for informational and error messages. Compuware recommends that users check this file if they have difficulty using the distributed viewing facility.

```
//FDBDLOG DD SYSOUT=*
```

## 6. SYSUDUMP and ABNLIGNR DD Statements:

The server JCL contains a SYSUDUMP DD statement in case of server abends. It also contains an ABNLIGNR DD DUMMY statement so that Abend-AID does not process server dumps. These statements should be left in the server JCL.

## 7. Copy the PROC:

If you are running the server as a started task, copy the PROC to a library in your system PROCLIB concatenation. If you are running it as a job, disregard this step.

## 8. Add START command:

If you are running the server as a started task, add a START command for this PROC to COMMNDxx of SYS1.PARMLIB. If you are running it as a job, disregard this step.

## 2. Configure the LU 6.2 Application ID

Define an LU 6.2 APPLID for each server before you configure the server's parameters. The APPLID must be defined in the SYS1.VTAMLST library of the system on which you plan to run the Abend-AID server.

You can find sample parameters for the LU 6.2 application ID, shown here, in member SAMPLU62 of the installation library (TPAASAMP):

### LU 6.2 APPLID sample

```
ADVFLU62 APPL ACBNAME=ADVFLU62,APPC=YES,ATNLOSS=ALL,
AUTH=(ACQ),AUTOSES=10,DDRAINL=ALLOW,
DLOGMOD=ADVFLGM,DMINWNL=10,DMINWNR=10,
DRESPL=ALLOW,DSESLIM=256,EAS=256,
LIMQSINT=1440,LMDENT=256,MODETAB=CWHCIMOD,
OPERCNOS=ALLOW,PARSESS=YES,SECACPT=AVPV,
SYNCLVL=CONFIRM,VERIFY=NONE,VPACING=7,
SRBEXIT=YES
```

### Notes:

1. If you are using VTAM version 3.3 and less current:
  - Specify SECACPT=ALREADYV instead of SECACPT=AVPV.
  - The LIMQSINT and OPERCNOS parameters are not supported.
2. Ensure that the VTAM node associated with the APPLID is activated and the cross-domain definitions are correct.

## Assemble and Link-Edit Logon Mode Table

Assemble and link-edit a logon mode table entry to support LU 6.2 communications. Figure 9-2 shows the required bind image for the table, which you can find in the installation library (TPAASAMP) member SAMPMOD.

The table member must be available in SYS1.VTAMLIB or a library in the SYS1.VTAMLIB concatenation.

Figure 9-2. Sample Logon Mode Table Entry LU 6.2 Communications

```

*****
*
*   ADVFLOGM - THIS IS A BIND IMAGE FOR INDEPENDENT LU 6.2.
*               IT SPECIFIES PACING AND RU SIZES OF 4096.
*               ADDITIONALLY, IT SPECIFIES THE FOLLOWING:
*
*   BYTE 23  X'10' ACCESS SECURITY ACCEPTED
*             X'02' ALREADY VERIFIED ACCEPTED
*             X'01' PERSISTENT VERIFICATION ACCEPTED
*
*   BYTE 24  X'20' CONFIRM SUPPORTED
*             X'0C' EITHER PARTNER WILL REINITIATE SESSION
*             X'02' PARALLEL SESSIONS SUPPORTED
*             X'01' CNOS SUPPORTED
*
*   BYTE 25  X'00'
*
*****
DVFLOGM MODEENT LOGMODE=ADVFLOGM,      APPL PROCESSING ENTRY *
      TYPE=0,
      ENCR=0,
      FMPROF=X'13',
      TSPROF=X'07',
      PRIPROT=X'B0',
      SECPROT=X'B0',
      COMPROT=X'D0B1',
      PSNDPAC=X'07',
      RUSIZES=X'8989',
      SRCVPAC=X'07',
      SSNDPAC=X'07',
      PSERVIC=X'0602000000000000000132F00'
MODEEND
END

```

### 3. Configure the Server Parameters

This section explains the server parameters. Server parameter member DVFPARMS in the installation library (TPAASAMP) contains sample parameters for communicating between two Abend-AID servers. Customize them as applicable for your site. DVFPARMS is pointed to by the server DD statement FDBDPARM.

**Note:** The server parameter member does not have to reside in the installation library (TPAASAMP). You can use any PDS member or sequential file for the parameters, as long as the dataset has the following attributes:

```

LRECL=80
BLKSIZE=any multiple of 80
RECFM=FB

```

If you rename/move DVFPARMS, ensure that you include the new name and its location in the //FDBDPARM DD statement verified in the server JCL in step 4 on page 9-3.

If you run the server as a job, you can also specify the server configuration parameters as SYSIN in the server JCL by specifying //FDBDPARM DD \* followed by the parameters.

#### Parameter Rules

These rules apply to all parameters described in the following sections:

1. Begin the parameter name in column one, and code it exactly as indicated. Abbreviations for the parameters are not allowed.
2. Specify only one parameter per line.

3. Immediately follow the parameter name with an equal sign (=), and immediately follow the equal sign with the parameter value. No intervening blanks are allowed. For example:

```
LU62_APPLID=ADVFLU62
```

4. If you do not specify a parameter and there is a default value for the parameter, the default is used.
5. You can specify parameters in any order.
6. Indicate comments by an asterisk (\*) in column one.
7. If a parameter has multiple operands, make sure that you enclose the values you specify in parentheses, as shown in the documentation for the parameter.  
  
You can specify each operand on a separate line. Follow all but the final operand with a comma, and ensure that you put the closing parenthesis after the final operand. Begin the operand on each new line in column one.
8. If you specify a parameter more than once, the server uses the value specified for the *last* occurrence of the parameter.

When you have modified the applicable parameters, save the parameter member. You previously verified that the member is identified in the server JCL in step 4 on page 9-3.

**Note:** If you add or change a parameter while the server is active, you must stop and restart the server for the new value to take effect.

## Required Parameters

The parameters listed below must always be specified.

### MVS\_SUBSYSTEM

Specifies the subsystem name to be assigned to the Abend-AID distributed viewing server and whether it is an owner or a user of the subsystem. The server uses the subsystem to handle task and address space termination to ensure proper session outage notification.

*Abend-AID distributed viewing requires only one MVS subsystem per MVS image, regardless of how many servers you are running on the image.* To share a single subsystem, one server must be defined as the subsystem *owner*, and the other servers on the image are defined as “users” of the subsystem. The server that *owns* the MVS subsystem must be active to process communication requests for servers that are *users* of the subsystem.

As an alternative, you can specify a unique MVS subsystem name for each server on the MVS image. In this case, each server is the *owner* of its own subsystem, and has no dependencies on the other servers for communication.

For ease of configuration, Compuware recommends that you define each server on an MVS image as the *owner* of a subsystem, and that you do not share a subsystem between servers.

### MVS\_SUBSYSTEM parameter

```
MVS_SUBSYSTEM=(name,OWNER|USER)
```

#### **name:**

Specifies the 4-character MVS subsystem name. The user enters this name in the field **Local Server SSID** of the Compuware/VF Entry Panel in order to use distributed viewing. The server dynamically starts the subsystem, so you *must not* add an entry for it to SYS1.PARMLIB(IEFSSNxx). The name must be unique on this MVS image in these situations:

- If this is the only Abend-AID server on the MVS image.

- If you have multiple Abend-AID servers on the MVS image that do not share the subsystem.

The name must be the same for multiple servers on this MVS image if they share the subsystem, but unique among any non-Abend-AID subsystems.

**OWNER:**

Default. This server owns the MVS subsystem, and therefore processes communication requests for all servers defined on this MVS image that use this subsystem. The *owning* server must be active to process communication requests for any *user* server.

**Notes:**

- You must specify **OWNER** for the first server you configure.
- If you are not sharing the MVS subsystem between servers, you must specify **OWNER** for each server.
- The LU 6.2 APPLID you specify should be for the server that *owns* the Abend-AID subsystem.

**USER:**

The subsystem specified by Name is owned by another server, on this MVS image, and this server is a user of that subsystem. The *owning* server must be active to process communication requests from this server.

**LU62\_APPLID**

Specifies the 1- to 8-character VTAM LU 6.2 APPLID defined for this server. The parameter requirements were shown in “2. Configure the LU 6.2 Application ID” on page 9-4.

The APPLID you specify must be included in SYS1.VTAMLST. The VTAM node associated with the APPLID must be active.

**LOGMODE**

Specifies the 1- to 8-character VTAM logon mode table entry associated with conversations using this server. “Assemble and Link-Edit Logon Mode Table” on page 9-4 describes the requirements for the logmode name.

There is no default value for this parameter, but the value used in all distributed Abend-AID examples is ADVFLOGM.

**DISTRIBUTED\_VIEWING\_FACILITY**

Turns the Abend-AID server distributed viewing capability on or off. Set this to YES to make distributed viewing operable.

**NO:** Default. Distributed viewing disabled.

**YES:** Distributed viewing enabled.

**EXTERNAL\_SECURITY\_ENABLED**

Activates password checking when logging on to a remote MVS system through the Abend-AID server. Set this to YES to specify that the remote Abend-AID server calls external security packages before accessing its report or listing files.

**NO:** Default. Password checking disabled.

**YES:** Password checking enabled.

**HCI\_SIT\_ENTRY**

Precedes a parameter set that defines a communication link to a remote server. Conclude the parameter set with END. Each HCI\_SIT\_ENTRY set defines a single Side Information Table Entry and a single communication link to a single remote server. It is required for connecting from this server to the remote server. It does not connect from the remote server to this one. Create as many HCI\_SIT\_ENTRY sets as needed. The following parameters comprise a set.

**HCI\_SIT\_ENTRY parameter set**

```
HCI_SIT_ENTRY
SYMNAME=xxxxxxxx
TPNAME=xxxxxxxx
PLUNAME=xxxxxxxx
LUTYPE=LU62
MODNAME=xxxxxxxx
MAXS=nnn
MINCL=nnn
MINCW=nnn
END
```

**SYMNAME**

Specifies the 1- to 8-character symbolic name of the remote server. A user enters this name in the Remote Server field of the Compuware/VF Entry Panel to access a dataset on that system.

**TPNAME**

Specifies the 1- to 8-character name of the remote server. This is the server name that was specified in the parameter on the EXEC card of the remote server.

**PLUNAME**

Identifies the remote LU 6.2 partner. This is the 8-character LU 6.2 APPLID of the remote Abend-AID server.

**LUTYPE**

Specifies the communications type. LU 6.2 is the only option.

**LU62** LU62 must be used, specified in 4 characters.

**MODNAME**

Specifies the 1- to 8-character logon mode table entry that defines the sessions between this Abend-AID server and the remote server. This is the name that was specified for the DLOGMOD parameter when defining the LU 6.2 application ID for this server.

**MAXS**

Specifies the maximum number of sessions that can exist between this Abend-AID server and the remote server. Compuware recommends that you specify 0 here as well as at MINCL and MINCW. VTAM then applies values to these parameters from the APPL definition statement in the VTAMLST for this server.

**0 to 250:** Maximum number of sessions. Installation default: 128.

**MINCL**

Specifies the minimum number of contention loser sessions that can exist between this Abend-AID server and the remote server. Compuware recommends that you

specify 0 here as well as at MAXS and MINCW. VTAM then applies values to these parameters from the APPL definition statement in the VTAMLST for this server.

**0 to 250:** Minimum number of sessions. Installation default: 0.

#### MINCW

Specifies the minimum number of contention winner sessions that can exist between this Abend-AID server and the remote server. Compuware recommends that you specify 0 here as well as at MAXS and MINCL. VTAM then applies values to these parameters from the APPL definition statement in the VTAMLST for this server.

**0 to 255:** Minimum number of sessions. Installation default: 1.

#### END

Concludes the HCL\_SIT\_ENTRY parameter set.

## Optional Tuning Parameters

The optional parameters listed below are used to tune the server processing. If a parameter is not specified, the default value is used.

#### MESSAGES

Specifies whether all server messages are produced. Messages are written to the server log file specified by the **FDBDLOG** DD statement in the server JCL.

**YES:** Default. Logs both error and informational messages.

**NO:** Logs only error messages.

#### NON\_SWAPPABLE

Specifies whether the server address space is non-swappable.

**YES:** Default. The server address space cannot be swapped.

**NO:** The server address space can be swapped.

#### Notes:

- a. If you specified the **MVS\_SUBSYSTEM** parameter with the **OWNER** subparameter for this server, the server address space is made non-swappable, and this parameter is ignored. This is because the MVS subsystem uses cross-memory services to communicate and, therefore, the server address space must always be available.
- b. Specifying **NO** can result in longer response time for Abend-AID users.

#### SERVER\_TIMEOUT

Specifies the time, in minutes, that the server remains active without any user activity. When the specified interval is reached, the server shuts down.

**1 to 1,440:** Time in minutes. Installation default: 1,440.

**Note:** The server JCL is always generated with a **TIME=1440** parameter on the job card, regardless of what you specify for this parameter. **TIME=1440** on the job card refers to the CPU time-out value for the job; 1440 means the server never times out, regardless of how much CPU time it uses. The **SERVER\_TIMEOUT** value controls how long the server remains active if there is no user activity.

**SERVER\_DYNAMIC\_SYSOUT**

Specifies where the Abend-AID server writes dumps of the server address space in case of an error. Compuware recommends using the default setting.

**SVCDUMP:** Default. Causes dumps of the server address space to be written to the SYS1.DUMPxx datasets.

**class:** Specifies a valid SYSOUT class — for example, \* (asterisk).

## 4. Start the Server

Start the server by the method applicable to its JCL configuration:

- Start the PROC that initiates the server.
- Submit the server job.

If you are running the server as a started task, as Compuware recommends, in step 8 on page 9-4 you added a **START** command for the server to SYS1.PARMLIB(COMMNDxx). This automatically starts and makes the server available after a system IPL.

**Note:** If you run the server as a job and a user is logged onto it when the server stops or is shutdown, you may get one of the following messages:

```
IEF355A  INITIATOR TERMINATED, RESTART INITIATOR.
IEF352I  ADDRESS SPACE UNAVAILABLE.
```

This condition is normal and occurs because the server is using cross-memory services. Running the server as a started task avoids this condition.

You can test distributed viewing by accessing other configured Abend-AID servers with the Compuware/VF. Note that the servers must be configured for distributed viewing. If you would like an introduction to using Compuware/VF that includes specifying remote servers, refer to the section about accessing and browsing reports in the “Getting Started” chapter of the *Abend-AID User/Reference Guide*.

---

## Stopping and Monitoring

MVS commands enable you to stop a server and obtain server operating information. You can use these commands to stop a server:

- MVS STOP command
- MVS MODIFY command

### MVS STOP

Stops the Abend-AID server from the console.

```
▶▶P— jobname—▶▶
```

### **jobname**

The server job name.





# Chapter 10.

## Completing Installation

This chapter describes the procedure to complete the installation and put Abend-AID into operation.

---

### Step 28. Complete the Installation

In this step you stop the test mode of Abend-AID's SVC51 interface and restart the interface in production mode, then make final operating preparations.

**Note:** Production mode diagnoses failures in all jobs. Test mode diagnoses failures in specified jobs.

**CAUTION:**

The SVC51 interface can be run in production and test modes simultaneously. You can start the test mode without stopping the production mode. You cannot start the production mode if the test mode is active. If the interface is started twice without a PARM setting, the first will be production mode and the second will fail because production mode is already active.

#### 1. Stop the Test Abend-AID SVC51 Interface

Remove the method used for testing Abend-AID:

- If the new Abend-AID SVC51 interface is started with test job names or job name masks, stop the test Abend-AID SVC51 interface. Sample JCL is in member \$12INSTL in the Abend-AID installation library. Submit job \$12INSTL with:
  - PARM='STOP,\*'
  - //STEPLIB and //ABENDLIB DD statements that point to the authorized library(ies) containing the new CWINSTAL and ABENDAID load modules respectively.
  - //CWROUTE DD statement that points to the load library containing the Routing load module CWROUTE created in “**Step 14. Define Shared Directories and Report Routing Criteria**” on page 5-3.
- If Abend-AID was installed using the global option, “Disable Abend-AID processing” on page C-5 set to “YES”, then change this to “NO” and apply this change to the CWGLOBAL module. Abend-AID is then in effect without adding an //ABNLENAB DD statement to the JCL. Refer to **Appendix C, “Global Options”** for more information.

#### 2. Verify SVC51 Interface for Reinstallation.

If you are installing the Abend-AID SVC51 interface for the first time, skip to step “3. Make the New Abend-AID Load Modules Accessible for All Jobs” on page 10-2. For a reinstallation, to verify that the interface was installed dynamically, submit job \$12INSTL with PARM='LIST'.

If the old interface was installed dynamically, submit job \$12INSTL with:

- PARM='STOP'

- //STEPLIB and //ABENDLIB DD statements that point to the authorized library(ies) containing the new CWINSTAL and ABENDAID load modules respectively.
- //CWROUTE DD statement that points to the load library containing the Routing load module CWROUTE created in “**Step 14. Define Shared Directories and Report Routing Criteria**” on page 5-3.

### **3. Make the New Abend-AID Load Modules Accessible for All Jobs**

Refer to “Abend-AID Modules Availability” on page 2-3 for more information and a module usage and search order summary.

**Note:** The Abend-AID customization load library, the Abend-AID load library, and the CSS load library must be added to the linklist (in that order) unless all jobs contain JOBLIB or STEPLIB DD statements.

### **4. Start the Abend-AID SVC51 Interface for All Jobs**

Submit job \$12INSTL with:

- No parameters
- //STEPLIB and //ABENDLIB DD statements that point to the authorized library(ies) containing the new CWINSTAL and ABENDAID load modules respectively.
- //CWROUTE DD statement that points to the load library containing the Routing load module CWROUTE created in “**Step 14. Define Shared Directories and Report Routing Criteria**” on page 5-3.

### **5. Ensure that the Abend-AID SVC51 Interface Is Started During the IPL Process**

Place a START ABENDAID command in the system startup automatic command list, member COMMNDxx of SYS1.PARMLIB. Abend-AID installation library member JCLEXDYN contains sample JCL that you can use to create a PROC named ABENDAID in SYS1.PROCLIB for this purpose (replaces JCLTDYN used while testing).

### **6. Ensure that the Abend-AID Libraries Are Moved to Production**

If you installed Abend-AID PL/I or Abend-AID VS FORTRAN support, ensure that the modified modules have been copied to production libraries. Refer to **Chapter 7, “Language Support”** for PL/I (\$43PLI03) and VS FORTRAN (\$53FORPD) instructions.

### **7. Implement Abend-AID Access from JES Output Display**

Refer to “Accessing Your Abend-AID Report While Viewing JES Output Display” on page 3-4 for information about how to implement Abend-AID access from the job log.

# Chapter 11.

## User-Coded Customization

This chapter contains information on tailoring Abend-AID's processing to meet specific requirements of your site. The following user-coded programs and exits, when made available as load modules or program objects, are called by Abend-AID.

- "Customized Diagnostics"
- "Customized Help Text (CWHELP)" on page 11-2
- "Processing Control (CWEXIT01)" on page 11-3
- "Report Routing and Control (CWEXIT02)" on page 11-4
- "Customized Storage Display (CWEXIT03)" on page 11-5
- "Termination Processing (AAXTERM)" on page 11-6.

---

## Customized Diagnostics

Customized diagnostics can be created for both system and user abends. These customized diagnostics can supplement or replace the Abend-AID diagnostic text for any abend. The customized text is displayed in the Error Analysis section of the Abend-AID report. Diagnostic information from the Abend-AID work area is made available for use in user-coded diagnostic programs via mapping macro USERCOMM. Sample programs and assembly/link JCL can be found in the Abend-AID installation library.

**Sample program:**

CWDIAG

**Assembly/link JCL:**

JCLDIAG

**Sample program and assembly/link JCL for SOC4:**

JCLDIAG4

**Sample program and assembly/link JCL for SOC7:**

JCLDIAG7

**Macros used:**

UKINIT (which expands USERCOMM), UKTXT, UKEND

**Naming conventions:**

The module name must be in the format #XAaannnn where

#XA: IBM MVS

a: Environment. Valid entries are:

A: System abend codes and non-IMS and non-DUO user abend codes

I: IMS user abend codes

D: DUO user abend codes

**nnnn:** Abend code. Valid entries are:

**For user abends:** Four-digit user abend code. For example, #XAA0001 for a U0001 abend.

**For non-program interrupt system abends (non-S0Cx):** Three-digit system abend code followed by the letter A. For example, #XAAB78A for an SB78 abend.

**For program-interrupt abends S0C7, S0C9, S0CB:** Three-digit system abend code followed by the letter B. For example, #XAA0C7B for a S0C7 abend.

**For all other program-interrupt abends:** The four characters 0CXA. See the note below regarding important naming considerations. For example, #XAA0CXA for a S0C4 abend.

### ***Naming considerations:***

Existing Abend-AID diagnostic modules also follow the above naming convention. When creating a customized diagnostic for a particular abend, you should rename the existing Abend-AID diagnostic module for that abend. One convention to follow is to substitute the last character of the original name with the letter Z. To supplement Abend-AID's usual diagnostic for an abend with a customized diagnostic, you must retain Abend-AID's original diagnostic module by renaming it as described above.

For all program-interrupt abends, including S0C7, S0C9, and S0CB, Abend-AID first calls module #XAA0CXA. Abend-AID's version of this module contains logic to determine the types of program-interrupts. Your version of this module must do the same. It then must indicate that the Abend-AID version, which you must rename, be the next Abend-AID module to process. This allows Abend-AID to provide its usual diagnostics for types of program-interrupts other than the types for which you have created customized diagnostics.

To remove a customized diagnostic module, reinstate the original diagnostic module by renaming it to its original name.

### ***Coding considerations:***

When adding customized diagnostics, use standard linkage. Also, register 15 must be set to zero on return to the calling application.

---

## **Customized Help Text (CWHELP)**

Customized help text introduces Abend-AID to an organization. It can also communicate system-wide fault diagnosis-related information to Abend-AID users. With the help facility active, customized help text can either supplement or replace the standard Abend-AID help text displayed at the beginning of the Abend-AID report.

Abend-AID's help facility can be activated in one of the following ways:

- For a particular job, include an //ABNLHELP DD DUMMY card in the JCL.
- For all jobs accessing the global site options module, use "Display Help Screens in Abend-AID Report" on page C-5.

Sample programs and assembly/link JCL can be found in the Abend-AID installation library.

### ***Sample program and assembly/link JCL:***

```
JCLHELP
```

### ***Macros used:***

```
UKTXT
```

**Naming convention:**

Name the first help module #XAAHLPA. If additional modules are needed, use #XAAHLPB, #XAAHLPC, etc.

---

## Processing Control (CWEXIT01)

CWEXIT01 can be used to:

- Cause Abend-AID to conditionally ignore an application program failure based on user-specified information.
- Override Abend-AID's normal course of action requesting or not requesting that an operating system abend dump be printed when Abend-AID returns control to the operating system.
- Specify an alternate abend code table to be used in place of Abend-AID's default tables (CW TABS01, CW TABU01, CW TABP01).

Sample programs and assembly/link JCL can be found in the Abend-AID installation library.

**Sample programs:**

- **CWEXIT01:** Causes Abend-AID, based on job name, to either ignore an application program failure or process it and request an operating system dump.
- **CWEXIT1A:** Causes Abend-AID to ignore a program failure in started tasks and in TSO.
- **CWEXIT1B:** Causes Abend-AID to ignore an application program failure based on information returned by a call to RACF.

**Naming convention:**

The program must be named CWEXIT01.

**Assembly/link JCL:**

JCLXIT01

**Macros used:**

None

**Parameter list:**

List of addresses pointed to by register 1 at entry:

**PTAB**

Points to an eight-byte field containing binary zeros at entry. To use an alternate abend code table in place of default tables CW TABS01, CW TABU01, and CW TABP01, move its name to this field.

**PCODE**

Points to a five-byte field containing an abend code in the form Sxxx or Uxxxx or the string SNAPA for any form of SNAP-AID. Modifying this field has no effect on Abend-AID processing.

**PIND**

Points to a one-byte field containing binary zeros at entry. To override the dump request setting of table CWTABS01, CWTABU01, CWTABP01, or CWTABL01, move one of the following characters to this field:

- D:** Request that an operating system abend dump be printed when returning control to the operating system.
- N:** Request that an operating system abend dump not be printed when returning control to the operating system.
- F:** Request that only the formatted control block portion of an operating system dump be printed when returning control to the operating system.
- I:** Ignore this application program failure and return control to the operating system without producing an Abend-AID report. An operating system abend dump will be requested.

**PJOB**

Points to an eight-byte field containing the job name. This field must not be modified.

---

## Report Routing and Control (CWEXIT02)

CWEXIT02 manages the routing of Abend-AID reports to one or more report files. CWEXIT02 can be used to:

- Route an Abend-AID report to a report dataset or shared directory that is not the site default.
- Cause Abend-AID to conditionally ignore an application program failure.

Sample programs and assembly/link JCL can be found in the Abend-AID installation library.

***Sample programs:***

- **CWEXIT2A:** Causes Abend-AID to ignore an application program failure based on information returned by a call to RACF.

***Naming convention:***

The program must be named CWEXIT02.

***Assembly/link JCL:***

JCLXIT02

***Macros used:***

CWINFO01, USRREL

***Parameter list:***

Register 1, at entry, points to a list containing one address that points to an area containing the following fields mapped by macro CWINFO01:

**XJOBNAME**

An eight-byte field containing the job name from the operating system TIOT for the job. The contents of this field will be placed in the job name field of the report file directory and should not be altered.

**XABCODE**

A four-byte field containing the operating system completion code in the format X'00ssnnn', where sss is the hexadecimal system code and nnn is a hexadecimal representation of the decimal user code. The completion code represented by this field will be placed in the completion code field of the report dataset directory and should not be altered by CWEXIT02.

**XPROG**

A ten-byte field containing the programmer name specified on the JCL job statement or a user comment from a SNAP-AID parameter list. The contents of this field at exit will be placed in the programmer name field of the report dataset directory.

**XDEFDSK**

A 44-byte field containing the name of the report dataset from the CWROUTE module or CWJOBTAB module. The report will be written to the report dataset named by this field if XOPT1 is set to D at exit.

**XOPT1**

A one-byte report-routing options flag:

- P** Paper. Routes the Abend-AID report to the destination specified by the DD statement ABENDAID, SYSUDUMP, or SYSABEND if DD statement ABNLTERM is not specified by JCL. This value is the default if XDEFDSK is blank at entry.
- D** Disk. Routes the Abend-AID report to the report dataset named by field XDEFDSK at exit. This value is the default if XDEFDSK contains the name of a report shared directory from CWROUTE at entry.
- B** Bypass. Causes Abend-AID to ignore this application program failure.

**XOPT2**

A one-byte report formatting flag for use when XOPT1 is set to P.

- N** Narrow column format (72 characters). This value is the default if either CWGLOBAL or CWJOBTAB/CWPGMTAB has set 72-column width format.
- W** Wide column format (121 characters). This value is the default if neither CWGLOBAL nor CWJOBTAB/CWPGMTAB has set 72-column width format.

---

## Customized Storage Display (CWEXIT03)

CWEXIT03 displays storage that is not usually displayed by Abend-AID. Such storage might consist of dynamically allocated areas containing tables or control blocks created by and used by application programs. This storage is displayed at the end of the Program Storage section of the Abend-AID report and is limited to 5000 pages.

Sample programs and assembly/link JCL can be found in the Abend-AID installation library.

**Sample programs:**

- **CWEXIT03:** Optional main driver for calling other sample programs. Use this when more than one of the following programs will be implemented for your environment:
- **CWEXIT3L:** Tests for the existence of a COBOL application environment, but does not display storage. This program is called by CWEXIT03 via macro CW3COBOL. To display storage for only non-COBOL applications, test the return code from CWEXIT3L in CWEXIT03.

- **CWEXIT3P:** Displays the PL/I dynamic work areas and save area chain. This program can be called by CWEXIT03 via macro CW3PLI, or used as a stand-alone program if named CWEXIT03 when linked. If called by CWEXIT03, an option can be specified to display storage for all PL/I errors, or only U4000 level PL/I abends.
- **CWEXIT3S:** Displays allocated areas of subpools used by SAS/C. This program can be called by CWEXIT03 via macro CW3SASC, or used as a stand-alone program if named CWEXIT03 when linked.
- **CWEXIT3V:** Displays the dynamic save area chain. This program can be called by CWEXIT03 via macro CW3SAVCH, or used as a stand-alone program if named CWEXIT03 when linked.
- **CWEXIT3X:** Displays storage dynamically allocated by an operating system facility such as GETMAIN or STORAGE OBTAIN. This program can be called by CWEXIT03 via CW3SUBPL, or used as a stand-alone program if named CWEXIT03 when linked. If called by CWEXIT03, an option can be specified to limit the display of storage to that allocated to certain subpools.

**Naming convention:**

The program must be named CWEXIT03. Other programs listed above must be named as listed if called by CWEXIT03 using supplied macros. If one is used as a stand-alone program, it must be named CWEXIT03.

**Assembly/link JCL:**

JCLXIT03

**Macros used:**

UKINIT (which expands USERCOMM), UKLIMIT, UKTXT, UKDUMP, UKEND

---

## Termination Processing (AAXTERM)

AAXTERM is called after Abend-AID completes processing, but before Abend-AID returns control to the operating system. AAXTERM provides additional functionality required by your site such as the display of information messages in the JES message log or an output dataset, or any functionality provided by a batch execution of the Compuware Shared Services (CSS) batch file utility CWDDSUTL. Commonly requested CWDDSUTL functions are:

- EXPORT of the Abend-AID report from the report dataset to a sequential file
- COPY of the Abend-AID report from the report dataset to another report dataset

Sample programs and assembly/link JCL can be found in the Abend-AID installation library.

**Sample programs:**

- **AAXTERM:** Calls any or all of the exits described below.
- **AAXTERM2:** Calls CWPCMAIN to compile a COBOL source program with the COBOL language processor for an abending control section.
- **AAXTERM4:** Dynamically allocates files and invokes ENDEVOR in batch mode to copy the compiler listing for the failing program from the ENDEVOR listing library into the applicable Abend-AID listing library.
- **AAXTERM5:** Invokes JCL to extract the compiled listing for the abending COBOL module out of ENDEVOR and LP processes it into the source listing DDIO file.

- **AAXTERM6:** Invokes JCL to extract the compiled listing for the abending COBOL module out of Serena Software ChangeMan and LP processes it into the source listing DDIO file.

**Naming convention:**

This user-coded exit program must be named AAXTERM.

**Assembly/link JCL:**

JCLXTERM

**Macros used:**

USRREL, USERCOMM, SNAPSW

**Parameter list:**

The address in register 1 at entry is copied to register 2, which is then used to address data defined by USERCOMM. Field SCBDMPN of this area contains the report number of the Abend-AID report written to the report dataset.

**Usage Instructions for AAXTERM:**

To incorporate functionality of any of the AAXTERM sample programs into Abend-AID processing, refer to the instructions in the individual AAXTERM members in the Abend-AID installation library.

---

## Abend-AID Macros

Abend-AID user-coded programs and exits use the Abend-AID macros described below.

### UKINIT

The expansion of macro UKINIT contains code to provide program linkage and initialization, a DSECT to map the USERCOMM area, and a print subroutine used by macro UKTXT. This macro must be the first instruction coded in programs using it.

**UKINIT macro syntax**

name	UKINIT RENT=NO, REUS=NO, AMODE=ANY, RMODE=ANY, EPOFF=, BAS2=, R2LOAD=YES	X
name	Required symbol that defines the CSECT name	
RENT=NO RENT=YES	Creates a literal used by program CWMODLST and CWVERIFY. The default is <b>NO</b> .	
REUS=NO REUS=YES	Creates a literal used by program CWMODLST and CWVERIFY. The default is <b>NO</b> .	
AMODE=ANY AMODE=24 AMODE=31	Creates a literal used by program CWMODLST and CWVERIFY, and generates an appropriate assembler AMODE statement. The default is <b>ANY</b> .	
RMODE=ANY RMODE=24	Creates a literal used by program CWMODLST and CWVERIFY, and generates an appropriate assembler RMODE statement. The default is <b>ANY</b> .	
EPOFF= <i>hex value</i> EPOFF=( <i>entry point label-load point label</i> )	Creates a literal used by programs CWMODLST and CWVERIFY. The entry point offset can be specified either as a hexadecimal value or as the difference between two labels, enclosed in parentheses.	

BAS2=register	A register to use a second base register. Valid registers are 4, 5, 6, 7, 8, 10, and 12. If no value is specified for this parameter, a second base register is not used.
R2LOAD=YES R2LOAD=other value	If YES, register 2 is loaded with the contents of register 1 at entry. Register 2 provides addressability to the user portion of the Abend-AID common work area.

## USRREL

Macro USRREL is nested within macro UKINIT and establishes default parameter values to be passed to macro RELEASE nested within USRREL. If macro UKINIT's program initialization and other functions are not needed, macro USRREL may itself be coded instead.

### USRREL macro syntax

name	USRREL RENT=NO, REUS=NO, AMODE=ANY, RMODE=ANY, EPOFF=
name	Required symbol that defines the CSECT name
RENT=NO RENT=YES	Creates a literal used by program CWMODLST and CWVERIFY. The default is <b>NO</b> .
REUS=NO REUS=YES	Creates a literal used by programs CWMODLST and CWVERIFY. The default is <b>NO</b> .
AMODE=ANY AMODE=24 AMODE=31	Creates a literal used by program CWMODLST and CWVERIFY, and generates an appropriate assembler AMODE statement. The default is <b>ANY</b> .
RMODE=ANY RMODE=24	Creates a literal used by program CWMODLST and CWVERIFY, and generates an appropriate assembler RMODE statement. The default is <b>ANY</b> .
EPOFF= <i>hex value</i> EPOFF=( <i>entry point label-load point label</i> )	Creates a literal used by programs CWMODLST and CWVERIFY. The entry point offset can be specified either as a hexadecimal value or as the difference between two labels, enclosed in parentheses.

## RELEASE

Macro RELEASE is nested within macro USRREL and provides program initialization code. Parameter values specified on macro UKINIT are passed, via macro USRREL, to macro RELEASE.

### CAUTION:

**No user-modifications to macro RELEASE or its parameters are required or recommended.**

## UKTXT

UKTXT provides a convenient way to display lines of text in an Abend-AID report. UKTXT can be used only in programs in which macros UKINIT and UKEND are also used.

### UKTXT macro syntax

name	UKTXT 'first line of user-coded text', X 'next line of user-coded text'
name	Optional symbol
user-coded text	Text to be displayed, enclosed in apostrophes. Each line of text is limited to 72 characters.

## UKEND

UKEND provides program linkage and returns control to either Abend-AID or another user-coded program. UKEND is used in programs in which macro UKINIT is also used.

### UKEND macro syntax

```
name      UKEND MOD=END
```

name                    Optional symbol

MOD=END                Another user-coded program to which control will be passed, or END if control  
MOD=program name      will be returned to Abend-AID.

## UKDUMP

UKEND provides a way to display an area of storage in the Abend-AID report. UKDUMP can be used only in programs in which macros UKINIT and UKEND are also used.

### UKDUMP macro syntax

```
name      UKDUMP (address),(length),'optional title'
```

name                    Optional symbol

address                Register, enclosed in parentheses, that contains the address of the start of the storage  
area to display.

length                 Register, enclosed in parentheses, that contains the number of bytes of storage to display.

optional title         Text, enclosed in apostrophes, used as a title preceding the displayed storage. This is  
optional and can be up to 72 characters in length.

## UKLIMIT

UKLIMIT limits the amount of storage displayed by a single UKDUMP macro call. If you use UKLIMIT, place it preceding the UKDUMP macro call for which the limit will be effective.

### UKLIMIT macro syntax

```
name      UKLIMIT limit
```

name                    Optional symbol

limit                  Number of bytes specified as a numeral in the range 0 - 32768, or number of kilobytes  
specified as an expression in the range 0K - 32K, or register containing a binary value in  
the range 0 - 21768.

## USERCOMM

Macro UKINIT's expansion provides addressability to fields mapped by USERCOMM. Many of these fields contain information that you may find useful when coding a user-coded assembler program (exit). Care must be exercised when using these fields. Generally, altering the contents of fields mapped by USERCOMM is not recommended. Doing so may adversely affect Abend-AID's diagnostic and reporting ability following return of control by your exit program.

Figure 11-1 on page 11-10 through Figure 11-4 on page 11-13 show the USERCOMM macro.

Figure 11-1. USERCOMM Macro (Part 1 of 4)

```

MACRO
    USERCOMM
*****
*           PSW AND REGISTER CONTENTS AT ABEND (SOME OF THIS DATA *
*           MAY BE MANIPULATED BY ABEND-AID). *
*****
STAABPSW DS    D           PSW AT ABEND
STAPRPSW DS    D           LAST PROG PSW BEFORE ABEND
SR0ABND  DS    F           REG 0 AT ENTRY TO ABEND
SR1ABND  DS    F           REG 1 AT ENTRY TO ABEND
SR2ABND  DS    F           REG 2 AT ENTRY TO ABEND
SR3ABND  DS    F           REG 3 AT ENTRY TO ABEND
SR4ABND  DS    F           REG 4 AT ENTRY TO ABEND
SR5ABND  DS    F           REG 5 AT ENTRY TO ABEND
SR6ABND  DS    F           REG 6 AT ENTRY TO ABEND
SR7ABND  DS    F           REG 7 AT ENTRY TO ABEND
SR8ABND  DS    F           REG 8 AT ENTRY TO ABEND
SR9ABND  DS    F           REG 9 AT ENTRY TO ABEND
SR10ABND DS    F          REG 10 AT ENTRY TO ABEND
SR11ABND DS    F          REG 11 AT ENTRY TO ABEND
SR12ABND DS    F          REG 12 AT ENTRY TO ABEND
SR13ABND DS    F          REG 13 AT ENTRY TO ABEND
SR14ABND DS    F          REG 14 AT ENTRY TO ABEND
SR15ABND DS    F          REG 15 AT ENTRY TO ABEND
*****
*           ORIGINAL PSW, REGISTER CONTENTS, ILC. AND INTC AT *
*           ABEND (THESE FIELDS ARE UNMODIFIED BY ABEND-AID) *
*****
SOAABPSW DS    D           PSW AT ABEND
S00ABND  DS    F           REG 0 AT ENTRY TO ABEND
S01ABND  DS    F           REG 1 AT ENTRY TO ABEND
S02ABND  DS    F           REG 2 AT ENTRY TO ABEND
S03ABND  DS    F           REG 3 AT ENTRY TO ABEND
S04ABND  DS    F           REG 4 AT ENTRY TO ABEND
S05ABND  DS    F           REG 5 AT ENTRY TO ABEND
S06ABND  DS    F           REG 6 AT ENTRY TO ABEND
S07ABND  DS    F           REG 7 AT ENTRY TO ABEND
S08ABND  DS    F           REG 8 AT ENTRY TO ABEND
S09ABND  DS    F           REG 9 AT ENTRY TO ABEND
S010ABND DS    F          REG 10 AT ENTRY TO ABEND
S011ABND DS    F          REG 11 AT ENTRY TO ABEND
S012ABND DS    F          REG 12 AT ENTRY TO ABEND
S013ABND DS    F          REG 13 AT ENTRY TO ABEND
S014ABND DS    F          REG 14 AT ENTRY TO ABEND
S015ABND DS    F          REG 15 AT ENTRY TO ABEND
SCBILC   DS    CL2        INSTRUCTION LENGTH CODE
SCBIC    DS    CL2        INTERRUPT CODE
*****
*           ORIGINAL PSW AND REGISTER CONTENTS AT TIME OF *
*           DUO ABEND. *
*****
DVTAD    DS    F           A(DUO VECTOR TABLE)
DVTPSW   DS    CL8        PSW FROM DUO VECTOR TABLE
DVTREGS  DS    16F        REGS FROM DUO VECTOR TABLE
    
```

Figure 11-2. USERCOMM Macro (Part 2 of 4)

```

*****
* MISCELLANEOUS DATA. *
*****
MRECSIZE DS F MAXIMUM RECORD SIZE FOR I/O
ABNARELS DS CL8 ABEND-AID RELEASE ID

SPRGNAME DS CL8 SVC51> Name of the load module associated with
* the abend PSW (STAABPSW).
* SNAPAID> Name of the load module associated with
* R14 at the time of the call to SNAPAID.
* LEAID> Name of the load module associated with
* the "abend PSW" (adjusted STAABPSW).

SPRGENTR DS F SVC51> Entry point address of the load module
* associated with the abend PSW (STAABPSW).
* SNAPAID> Entry point address of the load module
* associated with R14 at the time of the
* call to SNAPAID.
* LEAID> Entry point address of the load module
* associated with the "abend PSW" (adjusted
* STAABPSW).

SCBNAME DS CL8 SVC51> Name of the load module associated with
* the first CDE chained off of the problem
* program RB.
* SNAPAID> Name of the load module associated with
* R14 at the time of the call to SNAPAID.
* LEAID> Name of the load module associated with
* the "program PSW" (adjusted STAPRPSW).

COPGMNME DS CL8 NEXT MODULE NAME TO TMLINK TO
* OR 'END'. USED BY UKEND MACRO
COUSRARA DS CL100 AREA AVAILABLE FOR USER EXITS
SAVDCB DS A A(ABENDAID/ABNLTERM/SYSUDUMP DCB)
SAVTCB DS A A(TASK TCB)
SAVTIOT DS A A(TASK TIOT)
ABNSVRBA DS A A(ABEND SVRB)
CCADMPW DS A A(LOGICAL WRITE ROUTINE)

SCBEPABI DS F SVC51> Entry point address of the load module
* associated with the first CDE chained
* off of the problem program RB.
* SNAPAID> Entry point address of the load module
* associated with R14 at the time of the
* call to SNAPAID
* LEAID> Entry point address of the load module
* associated with the "program PSW"
* (adjusted STAPRPSW).

CCADMPV DS A A(LOGICAL WRITE ROUTINE)
SCBMODEL DS CL4 MODEL NUMBER - 158 = X'F1F5F8'
SCBRELS DS CL4 RELEASE OF OPERATING SYSTEM
SCBVERS DS CL8 MVS RELEASE 3.8+ VERSION NO.
SCBOPSYS DS CL4 SYSTEM-- ESA,MXA,MVS,FAE
SCBOPT DS CL4 IGNR switch
SCBDATE DS CL5 ZONED YYDDD
SCBCCODE DS CL5 SYST COMP CODE SXXX/UXXXX
SCBTIME DS OCL6 ZONED HHMMSS
SCBTIME_HH DS CL2 hours
SCBTIME_MM DS CL2 minutes
SCBTIME_SS DS CL2 seconds
DS CL3 *** Reserved ***
SOLDUMP DS CL1 SOL DUMP OPTION Y OR N
SOLCBLK DS CL1 SOL CTL BLKS Y,N OR C
SOLWSPRT DS CL1 SOL W-S PRINT Y OR N
DS CL1 *** Reserved ***
UNSDUMP DS CL1 UNS DUMP OPTION Y OR N
UNSCBLK DS CL1 UNS CTL BLKS Y,N OR C
UNSWSPRT DS CL1 UNS W-S PRINT Y OR N
DS CL1 *** Reserved ***

```

Figure 11-3. USERCOMM Macro (Part 3 of 4)

```

CORETCDE DS    CL3           USED FOR SPECIFIC RETURN CODE
SOLVED   DS    CL1           Y IF SOLVED, N IF NOT
ABLINCNT DS    PL2           PRINT LINE COUNT
ABPGECNT DS    PL3           PAGE COUNT
APPPREPA DS    A             APPLICATION PROGRAM EPA
SCBDMPN  DS    F             ONLINE DUMP NUMBER
UKPARM   DS    A             USER EXIT SUBROUTINE PARM LIST PTR
*****
*          AJES2JBID POINTS TO AN 8 BYTE CHARACTER FIELD THAT          *
*          CONTAINS THE JOB ID (E.G. JOB25418) OF THE ABENDED JOB.    *
*****
AJES2JID DS    A             A(JES2 JOB IDENTIFIER)
*****
* AJOBACCT holds the address of tokenized JES2 job accounting
* information representing what was specified on a job statement.
* It points to a 1-byte field containing the count of variable
* length fields that follow. Each variable length area has two
* parts - the first is a 1-byte field containing the length of the
* data which occupies the second part of the field.
*
* The maximum length of the all fields including the 1-byte
* length fields is 144 bytes. A length field of zero terminates
* the list anywhere prior to the 144-byte maximum.
*
* Example: AJOBACCT contains an address, such as 008EB817, that
*          points to a set of fields as follows:
*
*          X'02'           NUMBER OF FIELDS
*          X'0A'           LENGTH OF 1ST FIELD
*          C'PARAMETER1'   1ST FIELD DATA
*          X'02'           LENGTH OF 2ND FIELD
*          C'75'           2ND FIELD DATA
*          X'00'           ZERO LENGTH TERMINATES LIST
*****
AJOBACCT DS    A             A(JES2 JOB ACCOUNTING INFORMATION)

```

Figure 11-4. USERCOMM Macro (Part 4 of 4)

```

*****
* SLDMDNAM is the name of the load module that contains the
* program-in-error named in Abend-AID's Instruction Section.
*
* SCSECTAD points to the CSECT name of the program-in-error
* named in Abend-AID's Instruction Section. This name is
* most often eight or fewer bytes, but can be up to 1024 bytes
* bytes under certain circumstances.
*
* SCSECTLN contains the length of the CSECT name pointed to
* by SCSECTAD.
*
* CSECLAN2 is a 1-byte field that describes generally the
* language in which the program-in-error was written.
*
* CSECLANG is a 1-byte field that describes the specific
* language in which the program-in-error was written.
*****
SLDMDNAM DS CL8
SCSECTAD DS A
SCSECTLN DS H
CSECLAN2 DS C Generalized language flag
CSECLANG DS C Specialized language flag
UC_JOBID DS CL8 Job ID from SSIB
UC_COND_ID DS CL8 LE condition ID
ACODSNME DS F Address of the data set name of
* the library from which the
* program-in-error was loaded.
*
* DS 15F *** Reserved for expansion ***
UC_JOBNAME DS CL8 Jobname from TIOT
UC_JOBSTEP_PROC DS OCL16 Stepname/procname from TIOT
UC_STEPNAME DS OCL8 |Job step name if nonproc
UC_JOBSTEP DS CL8 |Job step name if proc
UC_PROGRAMMER DS CL20 Programmer name from ACT
UC_DESCRIPTION DS CL10 Description from SNAPAID parm list
* DS CL2 *** Reserved for expansion ***
UC_JOBCLS DS C Jobclass from JCT
UC_JPRTY DS C Job priority from JCT
UC_USERID DS CL8 Userid from JCT
UC_SYSID DS CL4 System ID from SMCA
UC_FMID DS CL8 FMID from CVT prefix
OPSYSNM DS CL16 Operating System Name
OPSYSVRM DS CL6 Operating System V.R.M.
*****
* The DESC SRC field is used to specify the value that *
* is to be placed into the DESC column of the directory *
* entry in the Abend-AID report data set. This value *
* may be set in the Report Routing and Control user *
* exit, CWEXIT02. A sample user exit to set this field *
* is provided in the CWEXIT2E member of the INSTALL data *
* set. Valid values for this field are: *
*
* A - Displays the abending program name. *
* L - Displays the Language Environment condition. *
* I - Displays the IMS application program name. *
* T - Displays the IMS transaction name. *
*
* NOTE: If the DESC SRC field is not modified, the first *
* ten characters of the Programmer Name field are placed *
* into the DESC column of the directory entry. *
*****
DESC SRC DS CL1 DESC content; A,L,I,T OR BLANK
DS XL27 *** Reserved for expansion ***
MEND

```



## Chapter 12.

# Abend-AID Utilities

This chapter describes the use of the following Abend-AID utilities:

- **“Installation Verification Utility (CWVERIFY)”**: Verifies the Abend-AID installation.
- **“List Abend-AID Tables (CWTABLST)” on page 12-2**: Displays a list of required and optional tables used by Abend-AID.
- **“Abend-AID SVC51 Interface Installation Utility (CWINSTAL)” on page 12-4**: Installs the Abend-AID SVC51 interface.
- **“List Abend-AID Modules (CWMODLST)” on page 12-6**: Displays a list of the Abend-AID modules.

---

## Installation Verification Utility (CWVERIFY)

Running the CWVERIFY utility in **“Step 17. Verify Installation” on page 5-11** produces a report that enables you to verify these components:

- The Abend-AID modules link-edited
- The abend code tables and global site options table
- The optional job and program selection tables
- The optional CSECT inclusion table
- The currency of Abend-AID’s JES2 control block offsets table
- Custom translation tables on CSS, if used.

JCL member \$11VERIF in the Abend-AID installation library executes CWVERIFY, which calls the following modules:

- **CWMODLST**: Displays a list of the Abend-AID modules. Refer to **“List Abend-AID Modules (CWMODLST)” on page 12-6** for additional information.
- **CWTABLST**: Displays the contents of required and optional tables used by Abend-AID. Refer to **“List Abend-AID Tables (CWTABLST)” on page 12-2** for additional information.

Verify that a current CWMODLST and CWTABLST are present in the JOBLIB or STEPLIB library specified in \$11VERIF or in the LINKLST.

### Notes:

1. Each utility can be run separately.
2. CWVERIFY does not recognize the SYSIN DD statement in its validation routine. If \$11VERIF produces the message SYSIN CONTROL STATEMENTS IGNORED, it means that you are running an incompatible release of the JCL containing a SYSIN DD statement.
3. The report summary at the end lists return codes from each report section. If sections produced non-zero codes, correct any corresponding installation errors.

---

## List Abend-AID Tables (CWTABLEST)

The CWTABLEST utility reports the tables available for use by Abend-AID. The member JCLLIST, which executes CWTABLEST, uses a list of standard tables. Here you can add tables and specify an optional table as required. If you specify a required table as optional, however, it will be overridden and a report warning with a non-zero return code (4) will be issued. A warning with non-zero return code (12) will also notify you of a required table not found. No warning is issued for an optional table not found.

CWTABLEST checks the following standard tables:

- **Abend Code Tables:** Displays individual sections containing abend code and environment with the solved and unsolved options. The report shows the Abend-AID dump option, how the control blocks are printed, and whether working storage is printed for solved abends. The abend code tables are:
  - CWTABS01: System completion codes
  - CWTABU01: User completion codes
  - CWTABP01: PL/I on-codes.
  - CWTABLE01: Language Environment (LE) condition code table.
- **Global Site Options Table:** Displays (by option name and value) Abend-AID system defaults and user, site-specific options for Abend-AID processing in the CWGLOBAL table.
- **Job and Program Selection Tables:** Displays the contents of tables CWJOBTAB and CWPGMTAB. For each SELECT macro in the table, a printed statement describes Abend-AID action.
- **CSECT Inclusion Table:** Displays the contents of the CWINCLUDE table. A message is printed if CWTABLEST does not find the table.
- **Custom Translation Tables:** Displays the contents of CSS tables CWCMTHT and CWCMTVRT. The translation tables convert specific characters in the Abend-AID report to characters of your choice.
- **JES2 Control Block Offsets Table:** Identifies the release of JES2 that Abend-AID's CWJESTAB is set up for. CWJESTAB must be up-to-date with your site's JES2.

## Control Statement Format

Member JCLLIST in the Abend-AID installation library contains sample JCL to execute CWTABLEST. The CWTABLEST control statement consists of a table type, a load module name, a descriptive name, identification of whether the table is required, and, if applicable, a specification for translation table format.

### *SYSIN DD*

Use an asterisk, or delete, to check standard tables only.

### *Column 1*

Specify table type:

- |           |  |
|-----------|--|
| <b>A:</b> | Lists the abend code table (CWTABS01, CWTABU01, CWTABP01, CWTABLE01) |
| <b>C:</b> | Lists the CSECT inclusion table (CWINCLUDE)                          |
| <b>G:</b> | Lists the global site options table (CWGLOBAL)                       |
| <b>H:</b> | Lists the custom translation tables (CWCMTHT, CWCMTVRT)              |

- J:** Checks the JES2 control block offsets table (CWJESTAB)
- S:** Lists the job/program selection tables (CWJOBTAB, CWPGMTAB)
- \*asterisk** Lists all standard tables. Cannot be used with any other table types.

### Columns 11–18

Specify the table load module name. Do not specify a load module name when an asterisk is entered in column 1. These are the standard tables:

<b>CWTABS01</b>	Abend code table for system completion codes (required table)
<b>CWTABU01</b>	Abend code table for user completion codes (required table)
<b>CWTABP01</b>	Abend code table for PL/I on-codes (required table)
<b>CWTABL01</b>	LE condition code table (required table)
<b>CWINCLUD</b>	CSECT inclusion table
<b>CWGLOBAL</b>	Global site options table (required table)
<b>CWJOBTAB</b>	Job selection table
<b>CWPGMTAB</b>	Program selection table
<b>CWCMTRHT</b>	Custom translation table for horizontal hexadecimal data
<b>CWCMTRVT</b>	Custom translation table for vertical hexadecimal data
<b>CWJESTAB</b>	JES2 control block offsets table (required table)

### Columns 19–25

For translation tables only. Place a comma in column 19, and then specify one of two formats. The entry **FORMAT** obtains a formatted display of the table. **DUMP** obtains a hexadecimal and character dump of the table. You can also obtain a dump by leaving column 19 blank.

#### Examples

H	CWCMTRHT,DUMP	OPTIONAL HORIZONTAL TRANSLATION TABLE
H	CWCMTRVT,FORMAT	OPTIONAL VERTICAL TRANSLATION TABLE

### Columns 60–65

Indicate whether the table is required (Y) or not (N). Default optional tables may be made required. An optional specification for a default required table, however, will be overridden. Report warnings with non-zero return codes notify you of a required table not found or an overridden optional specification.

#### Required Tables

- CWTABS01
- CWTABU01
- CWTABP01
- CWTABL01
- CWGLOBAL
- CWJESTAB

## Abend-AID SVC51 Interface Installation Utility (CWINSTAL)

With the CWINSTAL utility, you start and stop Abend-AID and perform various other functions related to the Abend-AID SVC51 interface. The JCL required to execute CWINSTAL can be found in member \$12INSTL in the Abend-AID installation library.

**Note:** When testing a new release of Abend-AID, you must use the new Abend-AID SVC51 interface, the new Abend-AID SMP/E-managed load library, the new Abend-AID customization load library, and the appropriate CSS load library. Refer to “Step 3. Verify and Provide ECC Installation Information” on page 4-9 for the appropriate CSS release.

All Abend-AID diagnostics, including those for LEAID, non-abending PL/I, and SNAP-AID processing, require the use of the Abend-AID SVC51 interface.

The SVC51 interface operates in production mode only, in test mode only, or in both production and test modes simultaneously. Only one production SVC51 interface and/or one test SVC51 interface can be in operation at a time. If Abend-AID is to be started in both production and test modes, the production SVC51 interface must be started first and the test SVC51 interface must be started second. This enables the test SVC51 interface to gain control first and perform its jobname evaluation. If the jobname does not match a CWINSTAL TEST parameter jobname mask, then control is passed to the production SVC51 interface.

You start Abend-AID production mode, which diagnoses failures in all jobs, by executing CWINSTAL without specifying a parameter. You start test mode, which diagnoses failures in specified jobs, with the TEST parameter. Invoke other functions with the parameters listed below. Messages generated from CWINSTAL appear in the job log.

The non-SMP/E managed load library containing the load module CWROUTE must be specified on the //CWROUTE DD in the JCL.

### **CWINSTAL syntax**

```

PARM='LIST'
      'TEST,jobname...'
      'STOP'
      'STOP,*'
      'AJOB,jobname...'
      'DJOB,jobname...'

```

## Parameters

### **LIST**

Displays the status of the Abend-AID SVC51 interface (the releases started and other pertinent status information).

### **TEST,jobname**

Starts a test version of Abend-AID for selected jobs. The production version of Abend-AID does not need to be stopped and restarted in order to start a test version of Abend-AID.

The jobname subparameter specifies either an actual job name or job name mask. A string of multiple job names and/or job name masks separated by commas can be entered. The string can be 1 to 95 characters. When specifying a job name mask, do not include a wildcard or special character. Only specify these characters if they are actually used in the job names at your site.

**Examples**

All jobs that have job name NEWAATST or job names that begin with the characters ABC will utilize the test Abend-AID interface:

```
PARM='TEST,NEWAATST,ABC'
```

To continue a string of multiple job names onto another statement, enclose the expression in parentheses. End each statement with a comma after a complete jobname subparameter and begin the second line in column 16, as shown below:

```
//AADYNAM EXEC PGM=CWINSTAL,PARM=(TEST,ABCDEF,GHI,
//                               XYZ)
```

**STOP**

Stops the production version of the Abend-AID interface.

**STOP,\***

Stops the test version of the Abend-AID interface that was started using the TEST,jobname parameter.

**AJOB,jobname**

Add the specified job name(s) or job name mask(s) to an active test Abend-AID interface.

**DJOB,jobname**

Delete the specified job name(s) or job name mask(s) from an active test Abend-AID interface.

**Examples**

Adds the job name mask DEF to the list of jobs that utilize the test Abend-AID interface:

```
PARM='AJOB,DEF'
```

Deletes job name NEWAATST from the list of jobs that utilize the test Abend-AID interface:

```
PARM='DJOB,NEWAATST'
```

**APF-Authorization Considerations**

The modules CWINSTAL and ABENDAID must be APF-authorized. They were link-edited during the SMP/E install.

If the load library containing CWINSTAL and ABENDAID is authorized only because it is on the link list and not in the APF list, authorization will be lost when the load library is accessed via a JOBLIB, STEPLIB, and/or ABENDLIB DD statement(s).

---

## List Abend-AID Modules (CWMODLST)

The CWMODLST utility displays a list of the installed Abend-AID modules. CWMODLST lists the module name, whether it is executable, the module's size in hexadecimal and decimal notation, the library in which it resides, the release number, and the assembly date. The report also includes EP, RENT, and REUS values and AMODE and RMODE values. It also provides the total number of found modules at the end of the report.

Missing modules are noted with an error message. If the first column of the report is blank the module was loaded correctly. A message in the first column indicates one of the following:

### IBM LE

An IBM Language Environment module used by Abend-AID. For information only.

### IBM SMS

An IBM SMS module used by Abend-AID. For information only.

### BADLNG

The length of the load module is less than the 23 bytes required by Abend-AID. Verify that the module was correctly linked.

### NOT AA

The load module is not Abend-AID's. Verify that it should be an Abend-AID module and that it was correctly linked.

### NOT REG

The load module is not properly registered as a Language Environment Abnormal Termination Exit.

### X NOT F

Abend-AID for CA IDMS is not properly installed.

### ERROR

The load module has an error. Refer to the Should be column for the correction required, take appropriate action, then relink the module.

Sample JCL to execute CWMODLST is shown in Figure 12-1 and provided in member JCLMODLS of the Abend-AID installation library.

**Figure 12-1.** CWMODLST List Abend-AID Modules JCL (JCLMODLS)

---

```
//CWVERIFY EXEC PGM=CWMODLST,PARM='DATE=dd mmm yyyy'
//STEPLIB DD DSN=SYS1.ABENDAID,DISP=SHR
//SYSPRINT DD SYSOUT=*
//SYSUDUMP DD SYSOUT=*
//CWNAME$ DD DSN=ABENDAID.TPAASAMP(CWNAME$),DISP=SHR
```

---

Verify that the dataset name entered in the CWNAMES DD statement contains the module names.

**CWMODLST syntax**

```
[PARM = '*' (none)]  
PARM = 'PLI'  
PARM='DATE=dd mmm yyyy'
```

**none**

Lists all Abend-AID modules installed. Generates the standard Abend-AID report.

**DATE**

Lists all modules installed after the specified date, or found in error.

**PLI**

Lists Abend-AID PL/I support modules only.



## Chapter 13.

# Installing Preventive Service

**Note:** Before installing this release of Abend-AID, check the date on the tape label. If the tape is more than 45 days old, call Abend-AID Technical Support for any required maintenance. If the tape is more than one year old, it is no longer valid, and you must call Abend-AID Technical Support for a new tape.

This chapter describes the procedure for installing Abend-AID preventive service. Your Abend-AID release tape includes all service available as of the day the tape was created. You can request a separate cumulative maintenance tape from Compuware Technical Support that contains the latest preventive service for Abend-AID. You may also obtain individual PTFs from Compuware to address specific problems you report.

Abend-AID preventive service is installed using SMP/E. The installation sample library (TPAASAMP) contains three sample jobs to install an Abend-AID cumulative maintenance tape:

- CUMLRECV performs an SMP/E receive of Abend-AID service.
- CUMLAPPLY performs an SMP/E apply of Abend-AID service.
- CUMLACPT performs an SMP/E accept of Abend-AID service.

As distributed, these sample jobs receive, apply, and accept all PTFs on an Abend-AID cumulative maintenance tape for all Abend-AID FMIDs. To install an Abend-AID cumulative maintenance tape, complete the steps described below.

You can modify these jobs to install selected PTFs by changing the RECEIVE, APPLY, and ACCEPT statements to affect only the required SYSMODs. Alternatively, you can use the SMP/E ISPF dialogs to install Abend-AID cumulative maintenance tapes or individual PTFs.

For more information about using SMP/E, consult the *SMP/E Reference* or *SMP/E User's Guide* for the release of SMP/E you are using.

---

## Step 1. Unload the PTF Directory

The first file on the cumulative maintenance tape contains a PTF directory that briefly describes each PTF on the tape. Installation sample library (TPAASAMP) member CUMLDIR contains sample JCL to unload the PTF directory. Review the JCL to ensure that you add the correct tape volume serial number before you submit the JCL.

---

## Step 2. SMP/E Receive the PTFs

Installation sample library (TPAASAMP) member CUMLRECV contains sample JCL to receive PTFs for every Abend-AID FMID. Review this JCL, and make the following modifications:

- Specify the volser of the cumulative maintenance tape on the SMPPTFIN DD statement.

- Delete any FMIDs (that are not installed at your site) from the RECEIVE SYSMODS FORFMID statement. Otherwise, you may receive message “GIM3901 No Applicable ++VER.” You may ignore these messages if they are issued for FMIDs that are not installed.

**Notes:**

1. Run CUMLRECV in a job class suitable for long-running tape jobs.
2. SMP/E returns message “GIM24801W No SYSMODS satisfied the operands specified on the receive command” if there is no preventive service applicable for the specified FMID(s).

---

## Step 3. Review HOLDDATA

At times, installing Abend-AID preventive service requires additional actions that must be performed after a PTF(s) is applied. In these cases, the PTF is identified as an exception SYSMOD (++)HOLD) and the PTF HOLDDATA contains information on the additional actions you must perform to completely implement the change.

It is very important that you perform any HOLDDATA action. Failure to do so can cause unpredictable results, including incorrect data.

---

## Step 4. SMP/E Apply the PTFs

Installation sample library (TPAASAMP) member CUMLAPLY contains sample JCL to apply the Abend-AID PTFs. Review this JCL, and delete any FMIDs that are not installed at your site from the APPLY SYSMODS FORFMID statement.

**Notes:**

1. Do not apply maintenance to the libraries from which Abend-AID is executing. If you execute Abend-AID from the target libraries, stop the Abend-AID SVC51 interface.
2. You may be required to SMP/E restore a USERMOD prior to applying a PTF to a module. SMP/E messages inform you when this action is necessary. After the PTF is applied, you must reapply the USERMOD.
3. It is advisable to run an APPLY CHECK before applying the PTFs.
4. Run CUMLAPLY in a job class suitable for long-running batch jobs.

---

## Step 5. Stop and Restart Abend-AID

After you complete the previous steps, do the following to enable the new maintenance:

1. Stop the SVC51 interface.
2. Restart the SVC51 interface.

---

## Step 6. SMP/E Accept the PTFs

**CAUTION:**

Compuware strongly recommends that you do not accept any PTFs until they have been thoroughly tested at your site.

Installation sample library (TPAASAMP) member CUMLACPT contains sample JCL to accept the Abend-AID PTFs. Review this JCL, and delete any FMIDs that are not installed at your site from the ACCEPT SYSMODS FORFMID statement.

**Notes:**

1. It is advisable to run an ACCEPT CHECK before accepting the PTFs.
2. Run CUMLACPT in a job class suitable for long-running batch jobs.
3. The following message is normal and can be ignored:

```
GIM23903W LINK-EDIT PROCESSING FOR SYSMOD aaaaaaa WAS SUCCESSFUL FOR
          MODULE bbbbbbbb IN LMOD ccccccc in the ddddddd LIBRARY. THE
          RETURN CODE WAS 04. DATE yy.ddd - TIME hh:mm:ss - SEQUENCE
          NUMBER nnnnnn.
```



## Chapter 14.

# Controlling Abend-AID Processing

This chapter contains information about using the Abend-AID DD statements. You can add DD statements to the execution JCL to override specifications in the Abend-AID tables and user exits.

The following types of Abend-AID DD statements can be coded:

- General usage
- IBM dump-related
- Processing control
- Report output
- Storage-related
- Record format
- IDMS-related

The Abend-AID tables and user exits are installed and modified by the Abend-AID installer. The tables and user exits listed below may be installed at your site.

### ***Abend-AID Tables***

- Global site options table (CWGLOBAL) created during installation
- Routing criteria (CWROUTE) created during installation
- Job and program selection tables (CWJOBTAB and CWPGMTAB)
- Abend code tables (CWTABS01, CWTABU01, CWTABP01, CWTABL01)
- CSECT inclusion table (CWINCLUD)
- CSECT bypass table (CSECTBYP).

### ***Abend-AID User Exits***

- Processing control (CWEXIT01)
- Report routing and control (CWEXIT02)
- Customized storage display (CWEXIT03).

---

## Control Hierarchy

When the DD statements, tables, and user exits are used, there is a hierarchy that determines Abend-AID control. The following control hierarchy within Abend-AID defines the order in which overrides occur:

- JCL DD statements override what is specified in user exits, job and program selection tables, routing criteria, and the global site options table.
- User exits override job and program selection tables, routing criteria, and the global site options table.
- The job selection table overrides what is specified in the program selection table, routing criteria, and the global site options table. The program selection table is ignored when a match is found in the job selection table.
- The program selection table overrides what is specified in the routing criteria and global site options table.

## Abend-AID DD Statements

Any of the DD statements listed in this section can be included in the execution JCL to control Abend-AID processing and/or reports. If two mutually exclusive DD statements are present in the JCL, the last DD statement encountered will be in effect. Mutually exclusive DD statements are noted in this chapter.

### General Usage

Following is a description of the general usage DD statements:

<code>//SYSUDUMP DD SYSOUT</code> or <code>//SYSABEND DD SYSOUT</code> or <code>//SYSMDUMP DD SYSOUT</code>	Any one of these DD statements will invoke Abend-AID. However, users of <code>//SYSMDUMP</code> must use the <code>//ABENDAID DD</code> (see below) to receive Abend-AID output because Abend-AID does not write to <code>//SYSMDUMP</code> . If more than one DD is specified, the last listed DD is used.
<code>//ABENDAID DD SYSOUT</code>	An alternate DD for Abend-AID output. If it is not present in the JCL, it may be dynamically allocated. A <code>//SYSUDUMP</code> or <code>//SYSABEND DD SYSOUT</code> is still required. Abend-AID's output is written to the <code>//ABENDAID DD</code> when using Language Environment support or Abend-AID's abending or non-abending PL/I support.  <b>JCL Override:</b> When <code>//ABENDAID DD SYSOUT</code> is specified, all output goes to <code>//ABENDAID DD SYSOUT</code> , not to <code>//SYSUDUMP</code> or <code>//SYSABEND</code> .
<code>//ABNLHELP DD DUMMY</code>	Produces the Abend-AID Help pages. These pages go to the same DD specified for the Abend-AID report output.  <b>Table Override:</b> <code>//ABNLHELP DD</code> overrides the Display Help Text in Abend-AID Report CWGLOBAL option, which suppresses the Help pages.  <b>Table Usage:</b> Help pages can be either displayed or suppressed globally by using the Display Help Text in Abend-AID Report CWGLOBAL option.
<code>//ABNLIGNR DD DUMMY</code>	Suppresses Abend-AID and allows normal IBM dump processing.
<code>//ABNLIGNS DD DUMMY</code>	Suppresses SNAP-AID and allows normal processing to continue.
<code>//ABNLTERM DD DSN</code>	Specifies an Abend-AID report dataset for Abend-AID output.
<code>//ABNLTERM DD SYSOUT</code>	Routes Abend-AID output to SYSOUT in 72-column format.
<code>//ABNLWIDE DD DUMMY</code>	Specifies 121-column output when the default is 72 columns.

## IBM Dump-Related

Following is a description of the IBM-related DD statements:

**//ABNLDUMP DD DUMMY** Requests printing of the normal IBM dump in addition to the Abend-AID report. Dump output is routed to //SYSUDUMP DD SYSOUT or //SYSABEND DD SYSOUT. It is not routed to the Abend-AID report dataset or to Abend-AID-specific SYSOUTs. Refer to the overrides.

**//ABNLFMTD DD DUMMY** Requests printing of only the formatted control blocks part of the IBM dump as defined by your installation. Refer to the overrides.

**//ABNLNODP DD DUMMY** Suppresses printing of the normal IBM dump.

**Mutually Exclusive:** //ABNLDUMP and //ABNLFMTD are mutually exclusive of //ABNLNODP.

## Overrides

**User Exit Override:** //ABNLDUMP, //ABNLFMTD, or //ABNLNODP DD takes precedence over printing or suppressing the IBM dump as specified in the CWEXIT01abend-handling user exit and the abend-handling tables below.

**Method of Hierarchy:** The abend-handling user exit and tables are listed by precedence; that is, each one listed takes priority over the ones below.

- CWEXIT01
- CWJOBTAB
- CWPGMTAB
- CWTABS01, CWTABU01, CWTABP01, CWTABL01.

## Processing Control

Use the following DD statements to control Abend-AID processing.

### Enabling Abend-AID

Following is a description of the ABNLENAB DD statement:

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

If //ABNLENAB DD is present in the JCL, it can be overridden, and Abend-AID processing will be ignored. See “Bypassing Abend-AID”.

**Table Override:** Use //ABNLENAB DD to override the “Disable Abend-AID Processing” global options, which disables Abend-AID processing. See **Appendix C**, “Global Options”.

### Bypassing Abend-AID

After Abend-AID processing is active, it can be bypassed in the following ways:

- Include the //ABNLIGNR DD DUMMY statement to ignore Abend-AID processing for a particular job step.

- Include the //ABNLIGNS DD DUMMY statement to ignore SNAP-AID processing for a particular job step.
- Use the CWEXIT01 processing control exit to ignore Abend-AID processing for a specific abend code or job name.
- Use the CWEXIT02 user exit to bypass Abend-AID processing.
- Use the CWJOBTAB selection table to bypass Abend-AID processing based on a specific job name or job name prefix. Use the CWPGMTAB selection table to bypass Abend-AID processing based on a specific program name or program name prefix.

## Report Output

This section discusses how to control where Abend-AID report output is routed. Abend-AID output can be routed to one of the three following destinations:

- Abend-AID report shared directory
- Abend-AID report database attached to a shared directory
- Abend-AID report file
- Sequential file
- SYSOUT.

## Report Datasets - Shared Directories, Databases, and DDIO Files

Abend-AID uses the Compuware Viewing Facility (Compuware/VF) and the features of an ISPF/PDF environment to provide interactive viewing of reports and source listings.

Abend-AID report datasets, or specifically, report shared directories and the report databases attached to them, as well as DDIO report files, must be preallocated and preformatted. Refer to Chapter 2, “Allocating and Formatting DDIO Files”, in the *Compuware Shared Services User/Reference Guide* for information on defining, allocating, and formatting report datasets.

Abend-AID reports can be routed to the site default shared directory or to selected report datasets in any of the following ways:

- Specify a single default Abend-AID report shared directory name in the CWROUTE default set during installation.
- Specify an Abend-AID report dataset name in the output processing user exit, CWEXIT02.
- Use the //ABNLTERM DD DSN to specify an Abend-AID report dataset name. For example, insert the card //ABNLTERM DD DSN=MY.ABEND.REPORTS to route Abend-AID reports to that report dataset.
- CWJOBTAB

**Note:** //ABNLTERM DD DSN and //ABNLTERM DD SYSOUT are mutually exclusive.

The following overrides occur:

- The //ABNLTERM DD statement overrides what is specified in CWEXIT02, CWJOBTAB, and CWROUTE.
- CWEXIT02 overrides what is specified in CWJOBTAB and CWROUTE.
- CWJOBTAB overrides what is specified in CWROUTE.

**Note:** SNAP-AID output is also routed to the Abend-AID report dataset. IBM dumps are *not* routed to the Abend-AID report dataset.

## Defining a Sequential File

Use the //ABNLTERM DD DSN statement in your JCL to route the Abend-AID output to a sequential file. The DCB attributes must be RECFM=VBA and LRECL=125. Otherwise, Abend-AID issues the error message ABONL-2. If Abend-AID is unable to open this file, one of the following DD statements is used to route the Abend-AID output:

- //SYSUDUMP DD
- //SYSABEND DD
- //ABENDAID DD.

**User Exit Override:** The //ABNLTERM DD DSN overrides the Abend-AID file name specified in the output processing user exit, CWEXIT02.

**Table Override:** The //ABNLTERM DD DSN overrides the Abend-AID shared directory from CROUTE or CWJOBTAB.

**Mutually Exclusive:** //ABNLTERM DD DSN and //ABNLTERM DD SYSOUT are mutually exclusive.

## Routing Output to SYSOUT

Use the //ABNLTERM DD SYSOUT statement in your JCL to route the Abend-AID output to SYSOUT. For example, an //ABNLTERM DD SYSOUT=\* card in your JCL routes the Abend-AID report to the MSGCLASS destination as coded on the JOB card.

### *Specifying Narrow Output*

Use the //ABNLTERM DD SYSOUT statement to route output in narrow (72-column) format.

### *Specifying Wide Output*

Use the //ABNLWIDE DD DUMMY statement to specify 121-column output when the default report width has been changed to 72 columns.

**User Exit Override - CWEXIT02:** The //ABNLTERM DD DSN overrides the Abend-AID file name specified in the output processing user exit, CWEXIT02.

**Table Override:** The //ABNLWIDE DD statement overrides the following tables:

- CWJOBTAB
- CWPGMTAB
- CWGLOBAL.

**Note:** Use the //ABNLWIDE DD DUMMY statement with the //ABNLTERM DD SYSOUT statement to cause wide (121-column) output to be written to the //ABNLTERM SYSOUT.

## Controlling Report Format

Viewing or printing Abend-AID reports can be done in a narrow (72-column) or wide (121-column) format when routed to SYSOUT or a sequential file. The report format in

the Abend-AID report dataset cannot be altered. Refer to Table 14-1 to determine the column width of the Abend-AID report.

**Table 14-1.** ABNLTERM Decision Table

“Use 72-column width format” CWGLOBAL option setting of Yes or No, CWJOBTAB, or CWPGMTAB (ONLINE=)	//ABNLTERM	FORMAT
N	N	121 on //SYSUDUMP
N	Y	72 on //ABNLTERM
Y	N	72 on //SYSUDUMP
Y	Y	72 on //ABNLTERM

## Storage-Related

Use these DD statements to control displaying program working storage and control block information in the Abend-AID report. Mutually exclusive DD statements are noted.

## Overrides

Use the following DD statements to override the specific program working storage and control block setting(s) made in these tables:

### Table Override:

- CWGLOBAL
- CWTABS01
- CWTABU01
- CWTABP01
- CWTABL01.

**//ABNLALL DD DUMMY** Requests formatting of all program storage and data management control blocks.

**Mutually Exclusive:** //ABNLALL DD and //ABNLNONE DD

**//ABNLNONE DD DUMMY** Suppresses formatting of all program storage and data management control blocks.

**Mutually Exclusive:** //ABNLNONE DD and //ABNLALL DD

**//ABNLPCBS DD DUMMY** Requests displaying of the Abend-AID data management control blocks section.

**Mutually Exclusive:** //ABNLPCBS DD and //ABNLNCBS DD

**//ABNLNCBS DD DUMMY** Suppresses displaying of the Abend-AID data management control blocks section.

**Mutually Exclusive:** //ABNLNCBS DD and //ABNLPCBS DD.

**//ABNLWSPT DD DUMMY** Requests displaying of the Abend-AID Program Storage section.

**Mutually Exclusive:** //ABNLWSPT DD and //ABNLNWSP DD

**//ABNLNWSP DD DUMMY** Suppresses displaying of the Abend-AID Program Storage section.

**Mutually Exclusive:** //ABNLNWSP DD and //ABNLWSPT DD

**//ABNLINCL DD DUMMY** Causes all active load modules to be considered for CSECT inclusion when the CWINCLUD table is present. Refer to **Chapter 8, "Customizing Abend-AID"** for additional information.

These are the effects on the Program Storage section:

- Without CWINCLUD, the report shows all Assembler CSECTs on the calling chain.
- With CWINCLUD only, Assembler CSECTs in load modules on the calling chain are eligible for inclusion in the report.
- With CWINCLUD and ABNLINCL, Assembler CSECTs in all currently loaded modules of the abending task are eligible for inclusion in the report.

## Record Format

Following is a description of the ABNLSPRT DD statement:

**//ABNLSPRT DD DUMMY** Displays the entire record in the file summary section of the Abend-AID report when the default has been changed by the Display the Entire Current Record CWGLOBAL option to be NO.

**Table Override:** CWGLOBAL

## IDMS-Related

Following is a description of the IDMS-related DD statements:

**//ABNLIGNI DD DUMMY** Bypasses only the Abend-AID for IDMS reporting facility.

**Note:** This does not affect any other Abend-AID report processing, including SNAP-AID.

**//ABNLIDTR DD SYSOUT** Used by Abend-AID for IDMS to produce a dynamic trace output. Traces and displays all calls made to the IDMS database.

**//ABNLIFRE DD DUMMY** Causes the work areas that are acquired by Abend-AID for IDMS for each bind run unit to be freed when a finish is issued.



# Appendix A.

## Site-Specific Installation Additional Information

---

### PL/I Support

#### Removing Abend-AID PL/I Support

If you need to remove Abend-AID PL/I support, execute the appropriate sample JCL member depending on the type of support to be removed. Removal of a prior release is required if you decide to install a newer release of Abend-AID PL/I support.

- Non-abending Support
  - JCLP23NR: JCL for PL/I Version 2 Release 3
  - JCLP22NR: JCL for PL/I Version 2 Release 2
  - JCLP1NR: JCL for PL/I Version 1 Release 5.
- Abending Support
  - JCLP23AR: JCL for PL/I Version 2 Release 3
  - JCLP22AR: JCL for PL/I Version 2 Release 2
  - JCLP1AR: JCL for PL/I Version 1 Release 5.

#### Invoking and Customizing Abend-AID PL/I Support

Abend-AID processing options are determined by the PL/I on-code. To customize Abend-AID processing, specify the on-codes and corresponding processing options in the table CWTABP01. For an explanation of Abend-AID tables and instructions for customizing them, refer to “Abend Code Tables (CWTABS01, CWTABU01, and CWTABP01)” on page 8-1.

Abend-AID PL/I processing can be bypassed by performing one of the following tasks:

- Include an //ABNLIGNR DD or //ABNLDUMP DD statement in the abending job’s JCL
- Invoke the checkout compiler
- Invoke PL/I multitasking
- Issue a STOP or EXIT statement.

#### Non-Abending PL/I Support

Non-abending PL/I support processes the PL/I error after the FINISH condition is raised and returns control to the PL/I library. Abend-AID processing is invoked to diagnose the PL/I error and returns the PL/I condition codes.

**DD Statements:** Invoking PL/I support and producing the PL/I dump requires including a //PLIDUMP DD statement in the job’s JCL. Printing the report requires including the //ABENDAID DD statement in the job’s JCL.

The required //ABENDAID DD statement will be dynamically allocated. See “Dynamically Allocated Report Output DD Statements” on page 8-13 for information about dynamic allocation of the //ABENDAID DD statement. To prevent Abend-AID from dynamically creating the //ABENDAID DD statement, include the //ABNLIGNR DD statement in the JCL of the application program’s execution step.

## Abending PL/I Support

Abending PL/I support is provided for customers who require abends to provide database compatibility or who require an abend to terminate jobs in error.

**DD Statements:** Because Abend-AID cannot write to the //PLIDUMP DD, a //SYSUDUMP DD is required. If a //SYSUDUMP DD statement is not present, Abend-AID dynamically allocates one. See “Dynamically Allocated Report Output DD Statements” on page 8-13 for further information. To prevent Abend-AID from dynamically allocating the //SYSUDUMP DD, include the //ABNLIGNR DD in the JCL of the application program’s execution step.

**PLIDUMP Suppression Switches:** The PLIDUMP suppress hook, IBMBKMRA (Abend-AID module CWBKMRA), contains one byte of bit switches at X’0002’. These switches indicate when calls to PLIDUMP are to be suppressed. A switch is on if the bit is set to 1. The default values shipped by Compuware are 10101111. The values can be zapped to meet site requirements.

**Note:** Proper functioning of the rest of Abend-AID PL/I support does not require the PLIDUMP suppression feature.

The bit settings are defined as follows:

<b>B’10000000’</b>	If an S (STOP) or an E (EXIT) is included in the PLIDUMP parameter string, force U3001 abend.
<b>B’01000000’</b>	If an S (STOP) or an E (EXIT) is included in the PLIDUMP parameter string, call PLIDUMP (see note 1).
<b>B’00100000’</b>	If a D (DUMP) is included in the PLIDUMP parameter string, call PLIDUMP.
<b>B’00010000’</b>	If the call to PLIDUMP is from within an ON-UNIT, suppress PLIDUMP (see note 2).
<b>B’00001000’</b>	If the call to PLIDUMP is from within an ERROR ON-UNIT, suppress PLIDUMP (see note 2).
<b>B’00000100’</b>	If a //SYSUDUMP DD is <i>not</i> included in the JCL, call PLIDUMP (see note 3).
<b>B’00000010’</b>	If an //ABNLDUMP DD is included in the JCL, call PLIDUMP.
<b>B’00000001’</b>	If an //ABNLIGNR DD is included in the JCL, call PLIDUMP.
<b>B’11111111’</b>	Always call PLIDUMP.

**Default Switch Settings:** The default settings shipped by Compuware, B’10101111’, suppress PLIDUMP and generate an Abend-AID report if PLIDUMP:

- Is called from an ON-ERROR block

and

- Does *not* have an E, S, or D in the PLIDUMP parameter string.

and the JOB

- Does *not* have an //ABNLDUMP, or //ABNLIGNR DD in the JCL for that step

and

- Does have a //SYSUDUMP DD in the JCL for that step (see note 3).

**Notes:**

1. This setting overrides the B'10000000' switch.
2. If the call to PLIDUMP was in an ON-UNIT or an ERROR ON-UNIT, suppress PLIDUMP and allow Abend-AID to diagnose the problem. Otherwise, call PLIDUMP.
3. If the absence of a //SYSUDUMP DD is the only requirement missing for PLIDUMP suppression, Abend-AID attempts to allocate one.

---

## JES2

The File section of the Abend-AID report provides extensive information about SYSOUT (JES2) files that are open at abend time. This reporting requires a special Abend-AID load module table called CWJESTAB that is based on the particular version and maintenance level of JES2 that you are running. Abend-AID also uses CWJESTAB to perform dynamic allocation of the ABENDAID SYSOUT statement, when needed in Language Environment. CWJESTAB must be in a library that is available to Abend-AID at abend time.

During Abend-AID installation, the installer creates CWJESTAB with an assembly and link. The assembly uses the current JES2 macros, which are required for Abend-AID's JES2 reporting. CWJESTAB must be assembled with the JES2 macros that represent the state of JES2 in the system on which Abend-AID will be running. If a new level of JES2 is installed, or any type of SMP/E JES2 maintenance is installed, it is possible and likely that changes will be made to the JES2 macros and the current CWJESTAB will be invalidated.

### Symptoms of Problems With CWJESTAB

The File section of an Abend-AID report for a JES2 file can indicate an invalid CWJESTAB in the following ways.

- Data management control block information appears in a non-JES2 file format. Abend-AID does not summarize JES2 information. The current and previous records are displayed from the user's buffers rather than the JES2 buffers.
- This warning occurs in the report where JES2 information is normally printed:

```
ABJES001  Unable to format JES2 file information.  Level of
           JES2 not recognized.  Contact the Abend-AID installer at your site for
           JES2 level verification.
```

### CWJESTAB and JES2 Maintenance

Perform the following steps to ensure that CWJESTAB remains valid.

1. Modify job \$08SMPDD in Abend-AID's installation library to point to the SMP/E global zone, and then run the job. This job performs an SMP/E LIST DDDEF to list the DD statements and dataset names in your SMP/E global zone.
2. Search the output of the \$08SMPDD job for the SHASMAC DD statement. This statement corresponds to the dataset name of the current JES2 macros. Use this name on the SYSLIB DD statement in the \$09ASMJT job. If you use JES2 4.1 or more current, \$09ASMJT points to the proper source member (CWJES4TB) to use to create CWJESTAB. If you are using an earlier version of JES2, change the member name on the SYSIN DD statement from CWJES4TB to the pre-4.1 name CWJESTAB. This job will assemble and link CWJESTAB.
3. Select an SMP/E USERMOD name following the conventions of your installation. Edit and run job \$10SMPU1, which will add the USERMOD name to the set of UMIDs associated with the JES2 macros used in assembling CWJESTAB. This updates the SMP/E control files so that you will be warned when maintenance is installed on JES2.

## Corrective Action

When maintenance is applied to your JES2, a warning message will be issued to update the CWJESTAB table for Abend-AID. During the installation of Abend-AID, JCL member \$10SMPU1 was executed to update the SMP/E ZONES so that they would generate the warning when JES2 maintenance is performed.

In order to reassemble and install a current table of JES2 control block field offsets, perform the following steps.

1. JCL member JCLSMPU2, generated in the Abend-AID installation library, will remove the USERMOD name associated with the JES2 macros used in the assembly of CWJESTAB. This must be completed before the application of system maintenance to JES2.
2. Apply JES2 maintenance.
3. After completing the JES2 maintenance, JCL member \$09ASMJT, generated in the Abend-AID installation library, assembles CWJES4TB using the correct IBM macros and links it as CWJESTAB in the Abend-AID load library.
4. JCL member \$10SMPU1, generated in the Abend-AID installation library, updates the SMP/E ZONES so that a warning message is generated when maintenance is performed on JES2.

Installation job \$09ASMJT must be executed on each system that will use Abend-AID. A load module, CWJSxxxx, where xxxx is the system ID, will be created. Store the load modules in the Abend-AID customization load library. This load library must be available to Abend-AID on each system.

---

## Using Japanese Language Facility

This section describes Abend-AID's optional Japanese language facility, which presents Abend-AID reports in Japanese and works with software products that use the IBM double-byte character set (DBCS) and/or Japanese language. Abend-AID displays Japanese language only when viewing an Abend-AID report via the Compuware Viewing Facility (Compuware/VF).

Follow the procedures described below to obtain Abend-AID reports in Japanese language and Abend-AID for DBCS.

## Japanese Language in Abend-AID Reports

### User Requirements

Use 3270 Emulator supporting Japanese (i.e., eNetwork Personal Communications Workstation Program), or any equivalent hardware.

### Usage Procedure

1. Use Compuware/VF to view an Abend-AID report in Japanese language.
2. Set LANGUAGE=JAPANESE on the COMPUWARE/VF - ENTRY PANEL screen.
3. Optionally, you can use "Language Type for Report Text" on page C-4 to provide uppercase English in reports written to SYSOUT. Refer to **Appendix C, "Global Options"** for a complete description of this parameter.

Japanese text is available for Abend-AID reports only when they are viewed via Compuware/VF. It includes most Abend-AID report text, panels, and messages.

## **Abend-AID for DBCS**

Abend-AID is compatible with software products installed with the appropriate DBCS and Japanese language features. The requirements for installing DBCS for these software products must be followed in order for Abend-AID to function with them.



## Appendix B.

# Testing Samples

This table lists sample programs (IVPs) containing faults. The programs may be used in Abend-AID testing and training. They are kept in the Abend-AID installation library (TPAASAMP).

**Note:** Any permanent datasets created by Abend-AID IVPs are allocated using the installer's TSO ID as the high-level qualifier.

In some member names provided below, *v* represents the DB2 version number and *xxxx* is the DB2 subsystem ID.

**Table B-1.** Testing Samples

Program name	Tests	Language	Fault/Purpose
\$71ABTST	Base report	Assembler	B37, D37, 0C7, 0C4
\$74ABSPF	Compuware/VF	Assembler	B37, D37, 0C7, 0C4
\$72LECOB	Compuware/VF	COBOL LE	0C7
\$73LEPLI	Compuware/VF	PL/I LE	Oncode 0320
\$75XLSC1	XLS report	COBOL	0C7
\$75XLSC2	XLS report	COBOL	0C7
\$75XLSC3	XLS report	COBOL	0C7
\$75XLSC4	XLS report	COBOL	0C7
\$75XLSP1	XLS report	PL/I	Oncode 0320
\$75XLSP2	XLS report	PL/I	Oncode 0320
\$75XLSP3	XLS report	PL/I	Oncode 0320
\$75XLSA1	XLS report	Assembler	0C7
\$75XLSA2	XLS report	Assembler	0CB
\$75XLSA3	XLS report	Assembler	U0200
\$75XLSA4	XLS report	Assembler	0C7
\$81vxxxx	Base report	COBOL	DB2, Plan, -302 or -310
\$82vxxxx	Base report	COBOL	DB2, Package, -302 or -310
\$83vxxxx	Base report	COBOL	DB2 V4, Stored Procedures, -407
\$84vxxxx	Base report	COBOL	DB2 V5, Stored Procedures, -407
\$85vxxxx	Base report	COBOL	DB2 V6, Stored Procedures, -407
\$86vxxxx	Base report	COBOL	DB2 V7, Stored Procedures, -407
\$91vxxxx	Base report	PL/I	DB2, Plan, -302 or -310
\$92vxxxx	Base report	PL/I	DB2, Package, -302 or -310
\$93vxxxx	Base report	PL/I	DB2 V4, Stored Procedures, -407
\$94vxxxx	Base report	PL/I	DB2 V5, Stored Procedures, -407
\$95vxxxx	Base report	PL/I	DB2 V6, Stored Procedures, -407

**Table B-1.** Testing Samples

<b>Program name</b>	<b>Tests</b>	<b>Language</b>	<b>Fault/Purpose</b>
\$96vxxxx	Base report	PL/I	DB2 V7, Stored Procedures, -407
\$52FORTS	Base report	FORTRAN	FORTRAN, FORTRAN in LE
\$42PLI02	Base report	PL/I	U3020

## Appendix C. Global Options

---

### Global Site Options Table (CWGLOBAL)

Global options are set using the installation dialog. The parameters and their valid entries are discussed below.

#### Display Program Storage Section

Display the Program Storage section of the Abend-AID report. Valid entries are:

**YES** Default. Display the Program Storage section.

**NO** Suppress program storage unless an //ABNLWSPT DD statement is included in the abending job step JCL.

#### Use Field Wrapping in Program Storage

Applies to COBOL and PL/I Extended Language Support (XLS). Controls field wrapping when displaying program storage. This option takes effect at the time of the abend. Valid entries are:

**YES** Default. Wrap fields when displaying program storage.

**NO** Do not wrap fields when displaying program storage. The first 20 characters are presented. Enter the command **SOURCE OFF** to see all of the field's contents in storage.

#### COBOL External Data Display Format

Specifies, for COBOL external data, the display format in the Program Storage section of the Abend-AID report. Valid entries are:

**V** Default. Vertical format.

**H** Horizontal format.

#### BL Cell Data Display Format

Specifies, for COBOL working storage, the display format of BL cell numbers in the Program Storage section of the Abend-AID report. Valid entries are:

**BOTH** Default. Display BL cell numbers in decimal and hexadecimal format.

**DEC** Display BL cell numbers in decimal format only.

#### Display BLL Cells in Program Storage

Specifies, for COBOL linkage (BLL cells), whether to display the data in the Program Storage section of the Abend-AID report. Valid entries are:

**Yes** Default. Display the data.

**No** Suppress the data.

**COBOL Programs to Have Source Displayed**

Applies to COBOL Extended Language Support (XLS). Specifies the display of program storage in the Program Storage section of the Abend-AID report and whether it will contain source support.

**ALL** Default. Display all program storage in all programs with source support.

**ACTIVE** Display all program storage in the active program with source support. Display all program storage in the other programs without source support.

**PL/I Programs to Have Source Displayed**

Applies to PL/I Extended Language Support (XLS). Specifies the display of program storage in the Program Storage section of the Abend-AID report and whether it will contain source support.

**ALL** Default. Display all program storage in all procedures with source support.

**ACTIVE** Display all program storage in the active procedure with source support. Display all program storage in the other procedures without source support.

**Maximum NORENT CSECT Display Amount (k)**

Specifies the maximum size of an Assembler/unknown-type non-reentrant CSECT, module, or program object that will be shown in the Program Storage section of the Abend-AID report. If the size exceeds this value, the amount shown will default to the size specified in Program Storage Display Limit (k).

0 to 65,535 Represents a K value. Installation default: **32K**. A zero specifies no limitation, which will display all working storage data.

**Maximum RENT CSECT Display Amount (k)**

Specifies the maximum size of an Assembler/unknown-type reentrant CSECT, module, or program object that will be shown in the Program Storage section of the Abend-AID report. If the size exceeds this value, the amount shown will default to the size specified in Program Storage Display Limit (k).

0 to 65,535 Represents a K value. Installation default: **16K**. A zero specifies no limitation, which will display all working storage data.

**Program Storage Display Limit (k)**

Specifies the amount of non-reentrant or reentrant source information that will be shown in the Program Storage section when the Maximum NORENT CSECT Display Amount (k) or Maximum RENT CSECT Display Amount (k) value is exceeded.

1 to 65,535 Represents a K value. Installation default: **4K**.

**Program Storage Display Around PSW (k)**

Specifies the amount of program that will be shown in the Program Storage section before and after a program PSW.

1 to 65,535 Represents a K value. Installation default: **2K**.

**Active Program Listing Display Amount**

Applies to COBOL and PL/I Extended Language Support (XLS). Specifies which part of the program source listing is displayed in the Program Listing section of the Abend-AID report for the active COBOL program or PL/I procedure. Valid entries are:

- ALL** Display the program source listing for the active COBOL program or PL/I procedure.
- PARA** Default. Display the current paragraph or label portion of the program source listing for the active COBOL program or PL/I procedure.
- SUPPRESS** Suppress the display of the program source listing for the active COBOL program or PL/I procedure.
- NNNN** Display *nnnn* lines before and after the statement of the active program.

**Inactive Program Listing Display Amount**

Applies to COBOL and PL/I Extended Language Support (XLS). Specifies which part of the program source listing is displayed in the Program Listing section of the Abend-AID report for the inactive COBOL program(s) or PL/I procedure(s). Valid entries are:

- ALL** Display the program source listing for all inactive COBOL program(s) or PL/I procedure(s).
- PARA** Default. Display the current paragraph or label portion of the program source listing for all inactive COBOL program(s) or PL/I procedure(s).
- SUPPRESS** Suppress the display of the program source listing for all inactive COBOL program(s) or PL/I procedures.
- NNNN** Display *nnnn* lines before and after the current statement of the program source listing for all inactive COBOL program(s) or PL/I procedure(s).

**Display the Entire Current Record**

Specifies the current record size display option. Valid entries are:

- YES** Default. Display all current records formatted in the control blocks section, based on the current record length.
- NO** Display only the first 100 bytes of the current records.

**Print Data Management Control Blocks**

Specifies the data management control block print option. Valid entries are:

- YES** Default. Display the data management control blocks.
- NO** Suppress the data management control blocks.

**Use JES2 Formatting**

Specifies a format for the File section. Valid entries are:

- YES** Default. Format for JES2 files.
- NO** Disable formatting for JES2 files.

### **Linkage Section Format**

Specifies a format for the Linkage section. Valid entries are:

**YES** Default.

**NO** Disable formatting for

### **Provide IAM File Support**

Provides Abend-AID support for Innovation Access Method (IAM) files. Valid entries are:

**YES** Support IAM files. If specified, all IAM controlled datasets are recognized, and record information is reported in the File section of the Abend-AID report.

**NO** Default. Do not support IAM files.

### **Show Non-VSAM Control Blocks**

Determines if the control block information for non-VSAM files will be displayed.

**YES** Default. Show control blocks for all file types.

**NO** Show control blocks for VSAM files only.

### **Only Show Current Record from PLHRECP**

When the I/O buffers differ, display the current record from both the system and application buffers.

**YES** Display both records.

**NO** Default. Display only system buffer.

### **Language Type for Report Text**

Specifies the Abend-AID report text language type. This option applies only to Abend-AID reports that are written to a SYSOUT destination.

The Abend-AID report text in a Compuware/VF report dataset is not affected by this option. The language type for a Compuware/VF report dataset can be specified on the Compuware/VF entry panel at view time. Valid entries are:

**ENGLISH** Default. Mixed-case English.

**USAMIX** Alias for English.

**USAUC** Uppercase English.

### **Directory Programmer Name Field Option**

Determines what will be displayed in the DESCription field on the Viewing Facility directory screen.

**P** Default. Programmer name information from the job card.

**A** Name of the load module associated with the abend or call to SNAPAID.

**L** LE condition code for jobs run using Language Environment (LE).

**I** IMS application program name.

**T** IMS transaction name.

**Note:** If the option selected is not relevant to a particular job, the default (P) information will be displayed in the DEScription field.

#### **Provide IBM Dump if Application Run Minutes Exceed:**

Specifies the number of minutes that a job is allowed to run before Abend-AID requests a dump. This option requests a dump for the abending steps that have run for the time limit specified. Valid entries are:

**0** Default. Zero does not override the dump/nodump option.

**1 to 1440** Valid range of minutes.

#### **Display Help Text in Abend-AID Report**

Specifies the Help output option. Valid entries are:

**Yes** Display Help output.

**No** Default. Suppress Help output unless the //ABNLHELP DD statement is included in the abending job's JCL.

**TST** Display Help output for trial users. This value suppresses Help output for current customers.

#### **Disable Abend-AID Processing**

Specifies the system disable option. Valid entries are:

**Yes** Disable the Abend-AID system. Abend-AID produces output only if an //ABNLENAB DD statement is included in the abending step's JCL.

**No** Default. Enable Abend-AID processing.

**Note:** If the Disable Abend-AID Processing CWGLOBAL option is set to Yes, and the //ABNLENAB DD statement is not used, include the following Abend-AID modules in the link list to avoid generating error message AB5A2:

#XAACOMM, #XAACRTS, #XAACRT2, #XAAINTR, #XAAINT2, #XAAMFDD, #XAARCV1, #XAATRAC, CWROUTE, and CWGLOBAL

#### **Display Diagnostic Specific Information**

Display Specific Information in the Error Analysis section of the Abend-AID report for COBOL S0C7 and S0CB abends. Valid entries are:

**Yes** Display the Specific Information.

**No** Default. Suppress the Specific Information.

#### **Display AA Memory Utilization**

Specifies whether to display Abend-AID's memory utilization statistics.

**YES** Default. Display the statistics

**NO** Suppress the statistics.

**Display additional data with XPEDITER**

Determines the amount of information that will be displayed when Abend-AID is invoked from XPEDITER.

**YES** Show all sections of the Abend-AID report.

**NO** Default. Show only certain sections of the Abend-AID report.

**WTO with LE U4039 and no Abend-AID**

**YES** Write a WTO when Abend-AID is not produced for an LE U4039 abend.

**NO** Default. Do not write a WTO when Abend-AID is not produced for an LE U4039 abend.

**Suppress second Abend-AID report in LE**

X

**NO** Default.

**YES**

**WTO with Non-zero Dump and no Abend-AID**

Determines if WTO messages will be displayed when a dump with a non-zero ID is produced.

**NO** Default. Do not display the WTO messages when a dump with a non-zero ID is produced.

**YES** Display the WTO messages when a dump with a non-zero ID is produced.

**Maximum element display for LE storage**

This option limits the number of LE heap elements analyzed by Abend-AID.

A valid numeric from 1 to 99999999.

Default is 300.

**Maximum SAS/C CSA Length Displayed**

This option sets the length in bytes to use to format a SAS/C C program save area in the event that Abend-AID cannot determine the length by usual means.

A valid numeric from 0 to 8388608.

Default is 4095.

**Maximum DSA displayed for LE U4083**

This option limits the number of LE Dynamic Save Areas (DSAs) formatted by Abend-AID during the analysis and diagnosis of an LE U4083 abend.

A valid numeric from 1 to 99999999.

Default is 64.

**Free Abend-AID for IDMS work areas**

Abend-AID for IDMS only. Determines whether the work areas that are acquired by Abend-AID for IDMS for each IDMS bind run unit are freed when a finish is issued. This option is intended to prevent potential S106 (out of memory) situations when an IDMS application program issues an excessive number of bind run units. Valid entries are:

**Yes** Free the work area related to each bind run unit when the associated finish is processed.

If **Yes** is specified, Abend-AID is not able to display all data relating to an IDMS user abend caused by referencing a bind run unit after an associated finish is processed (that is, the currency of records, sets, and areas as they existed prior to the finish).

**No** Default. Retain the work areas related to all bind run units until step termination.

**IMS Driver Name**

Abend-AID for IMS only. Specifies for Abend-AID the IMS driver name. Change this only if you have renamed DFSRRC00. Maximum eight characters. The first character must exist in the national character set. Remaining characters must be national character set or the numbers 0 to 9.

**CA-1 TMS SVC Value**

Specifies the CA-1 (TMS) SVC number. Valid entry is:

Two-digit hexadecimal number corresponding to your site's CA-1 (TMS) SVC number.

Abend-AID supports system abends and associated return codes issued by CA-1 (TMS). Abend-AID uses this value to know if a system abend is a CA-1 (TMS) abend or an operating system abend.

**Provide Dump with SYSCHK DD**

Allows you to request a dump if a program checkpoint, SYSCHK DD, is present. Valid entries are:

**Yes** Request a dump if a checkpoint is present.

**No** Default. Do not request a dump if checkpoint is present.

**Lines Per Page for Abend-AID Report**

Specifies the number of lines per page for the Abend-AID report. This option does not affect the output from the Abend-AID utility programs such as CWVERIFY or reports written to the Abend-AID report datasets. Valid entries are:

**55** Default. Fifty-five lines per page.

**20 to 88** Valid range of number of lines per page.

**Use 72 Column Width Format**

Defines the width of Abend-AID report written to SYSUDUMP/SYSABEND and ABENDAID DD statements.

**Yes** Display Abend-AID report in 72-column format.

**No** Display Abend-AID report in 121-column format.

**Abend-AID DD Dynamic Allocation Parameters****Use a DD as a Model**

Specifies whether to refer to CEEDUMP, SYSUDUMP, PLIDUMP, or the one that is specified under USEDDNM, as a model for the statement to be allocated, unless the model was dynamically allocated. See “Model DD Can Be Dynamically Allocated,” below.

**Yes** Default. Use model information.

**No** Do not use model information.

**Model DD Can Be Dynamically Allocated**

**Yes** Use a model whether or not it was dynamically allocated.

**No** Default. Do not use a model if it was dynamically allocated.

**Blank:** Defaults to No.

**Model DD Name to Be Used**

Specifies a DD name to use as a model instead of CEEDUMP, SYSUDUMP, PLIDUMP, or PL1DUMP. Maximum eight characters. Default is **blank**.

**Hold the Output Class**

Specifies whether to hold the SYSOUT dataset.

**Yes** Places SYSOUT dataset in the hold queue.

**No** Default. Places SYSOUT dataset in the output queue.

**Force Free = Close**

Override for FREE=CLOSE.

**Yes** Default. Force FREE=CLOSE even if it is not specified in the model.

**No** Use model specification.

**Blank:** Defaults to **No**.

**Set Free = Close**

This will determine if the dynamically allocated DD will be freed when a close is done.

**Yes** Default. Free on close.

**No** Do not free on close.

**Dynamically Allocated DD Output Class**

Specifies the output class. The default is **CLASS=\***, which implies usage of the MSGCLASS value. Valid values: a digit from 0 to 9, an uppercase alphabetic character, or an asterisk.

**Dynamically Allocated DD User Form**

Specifies a user form to associate with the SYSOUT dataset. Four characters maximum. Inactive unless specified.

**Dynamically Allocated DD Destination**

Specifies a node to which the SYSOUT dataset may be routed. Use values applicable to your system's output options. The default is **LOCAL**.

**User ID for Routing Output**

Specifies a user ID or remote at the destination node to which the SYSOUT dataset may be routed. Use values applicable to your site's user IDs, from one to eight characters. Inactive unless specified.

**Output Writer for Routing Output**

Specifies an output writer to process the output. Use values applicable to your site's output writers, from one to eight characters. Inactive unless specified. If both "User ID for Routing Output" and "Output Writer for Routing Output" are specified, only the user ID specified will be used.



## Appendix D. CSS Utilities

The information in this appendix is provided to help you with your Abend-AID installation. It has been extracted from the *Compuware Shared Services User/Reference Guide*. For more complete information, refer to the CSS Utilities chapter in that manual.

### Getting Started

You may invoke CSS Utilities in a number of different ways depending on how it was installed at your site. To verify the installation procedure, see the *ECC Installation and Customization Guide*. If you need additional assistance to determine how to invoke CSS Utilities, see your systems programmer.

If you're in the Customization portion of the Abend-AID installation dialog and you've entered the dataset name for a report shared directory or a listing shared directory that does not exist, you are given the option to access the CSS utilities to create the dataset. If you're using the Compuware Viewing Facility, you can invoke the CSS Utilities by entering the **CSSUTIL** command.

When you invoke CSS Utilities, the CSS Utilities - Primary Menu (Figure D-1) is displayed.

**Figure D-1.** CSS Utilities - Primary Menu

```

----- Compuware CSS Utilities ---- Primary Menu -----   CSS V8.0.0
OPTION  ==>

    1 Settings      - Specify General Settings
    2 CreateJCL    - Create JCL to invoke Compuware Language Processor(LP)
    3 Source       - Create/List/Maintain Source Listing Files/SHRDIR/Databases
    4 AARepor     - Create/List/Maintain Abend-AID Report FilesSHRDIR/DB(s)
    5 DDIOCalc    - Calculate DDIO & Database File Sizes

    L LP          - Learn about Compuware Language Processor
    D DDIO        - Learn about Source Listing and Report DDIO Files
    S SD/Database - Learn about Shared Directory and Database Files
    C Legal       - Display Full Copyright/Trade Secret Notice

    Copyright (c) 2002, Compuware Corporation. All rights Reserved.
    Unpublished - rights reserved under the Copyright laws of the United
    States.

                    (800) 538-7822
                    Compuware Shared Services

                    Enter END command to terminate
  
```

**Note:** Options 1, 2, 3, and 4 have been renumbered, starting with this release, so that the Create JCL, Source, and Abend-AID report numbers will match those on the Viewing Facility main menu

To select an option, enter the corresponding number at the OPTION prompt. The primary menu options are:

**SETTINGS**

Displays general (global) CSS Utilities settings. General settings may be overridden by settings on other screens.

**CREATEJCL**

Enables you to create and store a compiler listing or read and store an existing compiler listing. By selecting this option, you can select whether to create JCL to run the Preprocessor or Postprocessor.

**SOURCE**

Enables you to set options for creating, reformatting, displaying, and manipulating source listing files and/or source shared directories.

**AAREPORT**

Enables you to set options for creating, reformatting, displaying, and manipulating Abend-AID report files and/or report shared directories.

**LP**

Displays an introduction to the Compuware Language Processor.

**DDIO**

Displays an overview of source listing and Abend-AID report files.

**SD/Database**

Displays an overview of Shared Directory and Report Database files.

**LEGAL**

Displays the full CSS Utilities copyright and trade secrets notice.

To get help for a particular CSS Utilities screen, press **PF1**.

---

## Creating and Formatting Source Listing Files

On the CSS Utilities - Source Listing File Facility screen (Figure D-2), the Source Listing Files section lists the eight source listing files that have been most recently used.

**Figure D-2.** CSS Utilities - Source Listing File Facility Screen

```

----- CSS UTILITIES - Source Listing File Facility ----- CSS V8.0.0
COMMAND ==>
Commands: SEtup  DD (DDIO tutorial)  SD (SD/DB tutorial)  LP (LP tutorial)

Processing Options for S/Member List:          Source Browsing Options:
  Confirm Delete ==> YES (Yes or No)           Unit ==> V10
  Show print setup ==> YES (Yes or No)         Blocking ==> 10
  Language ==> ENGLISH                         (ENGLISH/JAPANESE/USAMIX/USAUC)

SEL Options:  C (Create)  I (Info)  M (Move)  S (Member List)  A (Adv Function)

SEL  ----- Source Listing Files -----
-----
- (1) 'PFHBWKO.LISTFILE'
- (2) 'PFHBWKO.LP.CATALOG4'
- (3) 'PFHBWKO.TEST.LPDDI05'
- (4) 'PFHBWKO.THIS.ISANEW.TEST'
- (5) 'PFHBWKO.TEST.LISTFILE'
- (6) 'PFHBWKO.NEW.TEST.LISTFILE'
- (7) 'CX.R070601.DDIO'
- (8) 'PFHBWKO.LISTFILE.TEST1'

```

To create and format source listing files, complete the following steps.

1. Perform the appropriate step:
  - To reformat an existing source listing file, scan the Source Listing Files List on this screen. If it does not contain the file you want to reformat, enter the file name on the blank line at the top of the list. Enter C to the left of the file name
  - To create a new source listing file (and add the file to the list), enter the file name at the entry line under **Source Listing Files**, then enter a C to the left of the file name.
2. Press **Enter**.

If the file name you entered does NOT exist yet, you will first see the following file-type selection panel. You must select which type of file you want to create. Based on the type selected, one of the following “create” screens will then appear:

**Figure D-3.** CSS Utilities - Select Desired File Type

```

-----CSS UTILITIES - Select Desired File Type -----CSS V8.0.0
COMMAND ==>
Commands: SEtup DD (DDIO tutorial) SD (SD/DB tutorial) LP (LP tutorial)

File Name entered: 'CX.NEW.FILE'

      1 Shared Directory   - Create a shared directory

      2 Database File     - Create a DDIO/Database that will be
                           attached to a shared directory

      3 DDIO File         - Create a standard source listing DDIO

Enter END command to terminate

```

The CSS Utilities - Create/Format Source Listing File screen (Figure D-4) is displayed for existing standard DDIO files, CSS Utilities - Create/Format Shared Directory (Figure D-5) is displayed for exiting shared directory files, and CSS Utilities - Create/Format Source Listing Database (Figure D-6 on page D-5) is displayed for existing Source Listing Database files attached to a shared directory.

**Figure D-4.** CSS Utilities - Create/Format Source Listing File Screen (Standard DDIO Files)

```

--- COMPUWARE CSS UTILITIES - CREATE/FORMAT Source Listing File ---- V8.0.0
COMMAND ==>

Commands: SEtup   A (Advanced Parms)   D (Delete file)
          DD (DDIO tutorial)   SD (SD/DB tutorial)   LP (LP tutorial)

Dataset Name ==> 'CX.LISTFILE'

Preparation ==> EDITJCL   (Batch/Editjcl)
DS Organization ==> VSAM   (Vsam/Sequential)
Reallocate ==> NO        (Yes/No)

Model DSN ==>
Storage Class ==>         (optional)
Management Class ==>     (optional)
Data Class ==>           (optional)
Volume ==>               (optional)
Unit ==>                 (optional)

Space Units ==> TRACKS   (Blocks/Tracks/Cylinders)
Primary Quantity ==> 200
Number of Members ==> 100   (1 to 32767)

Press ENTER to process or enter END command to terminate

```

**Figure D-5.** CSS Utilities - Create/Format Source Listing Shared Directory

```

--- COMPUWARE CSS UTILITIES - CREATE/FORMAT Shared Directory ---- CSS V8.0.0
COMMAND ==>

Commands: SEtup   A (Advanced Parms)
          DD (DDIO tutorial)   SD (SD/DB tutorial)   LP (LP tutorial)

Dataset Name ==> 'CX.NEWFILE'

Preparation ==> EDITJCL   (Batch/Editjcl)
Reallocate ==> YES        (Yes/No)

Model DSN ==> 'CX.NEW.LP.SD'
Storage Class ==>         (optional)
Management Class ==>     (optional)
Data Class ==>           (optional)
Volume ==>               (optional)

Space Units ==> TRACKS   (Blocks/Tracks/Cylinders)
Primary Quantity ==> 100
OR
Number of Entries ==> 100   (1 to 32767)   (optional)
(This field overrides above space parms & calculates space needed)

Press ENTER to process or enter END command to terminate

```

**Figure D-6.** CSS Utilities - Create Source Listing Database (Attached to a Shared Directory)

```

- COMPUWARE CSS UTILITIES - CREATE/FORMAT Source Database- CSS V8.0.0
COMMAND ==>

Commands: SEtup   A (Advanced Parms)
          DD (DDIO tutorial)  SD (SD/DB tutorial)  LP (LP tutorial)

          Dataset Name ==> 'CX.LP.DATABASE'

          Preparation ==> EDITJCL   (Batch/Editjcl)
          DS Organization ==> V      (Vsam/Sequential)
          Reallocate ==> YES        (Yes/No)

          Model DSN ==> 'CX.LP.DATABASE'
          Storage Class ==>          (optional)
          Management Class ==>      (optional)
          Data Class ==>            (optional)
          Volume ==>                (optional)
          Unit ==>                  (optional)

          Space Units ==> CYLINDERS (Blocks/Tracks/Cylinders)
          Primary Quantity ==> 10
          Number of Members ==> 100 (1 to 32767)
          Shared Directory ==> 'CX.LP.SHDIR'

          Press ENTER to process or enter END command to terminate
    
```

3. Complete the fields on these screens using the following table as a guide.

**Table D-1.** Create/Format Source Listing File Fields

To:	Do This:
Edit the CSS Utilities General Settings	Enter <b>SE</b> at the Command prompt.
Display advanced parameters	Enter <b>A</b> at the Command prompt.  For a complete description of the advanced parameters, see Table D-2 on page D-9.
Delete the source listing file specified in the Dataset Name field	Enter <b>D</b> at the Command prompt.  (only on standard DDIO create)
Use batch processing to submit your job	Enter <b>BATCH</b> in the Preparation field.
Generate JCL for the Create/Format job, then edit the JCL	Enter <b>EDITJCL</b> in the Preparation field.
Specify the file type	Enter <b>VSAM</b> or <b>SEQUENTIAL</b> in the DS Organization field.  <b>Note:</b> If a Model DSN is specified (see below), this parameter is optional. If a Model DSN is not specified, you must specify a file type.
Delete and reallocate the specified source listing file	Enter <b>YES</b> in the Reallocate field.
Specify a "template" (another source listing file) for allocating and formatting source listing files	<b>(Optional)</b> Enter the dataset name in the Model DSN field.  <b>Note:</b> All explicitly set parameters on this screen, and on the Advanced Parameters screen, override settings in the template file.
Specify a Storage Management Subsystem (SMS) storage class	<b>(Optional)</b> Enter an eight-character storage class in the Storage Class field.
Specify an SMS management class	<b>(Optional)</b> Enter an eight-character management class in the Management Class field.
Specify an SMS data class	<b>(Optional)</b> Enter an eight-character data class in the Data Class field.

**Table D-1.** Create/Format Source Listing File Fields

To:	Do This:
Specify the volume serial number of the source listing file	<b>(Optional)</b> Enter the volser in the Volume field.
Specify a device or device type	<b>(Optional)</b> Enter the device or device type in the Unit field.
Specify a unit of measure for the file size	Enter BLOCKS, TRACKS, or CYLINDERS in the Space Units field. <b>Note:</b> If DS Organization = VSAM and a Model DSN is specified, this parameter is optional. If not, this parameter is required.
Specify an amount of primary space for the source listing file	Enter a value in the Primary Quantity field. <b>Note:</b> If DS Organization = VSAM and a Model DSN is specified, this parameter is optional. If not, this parameter is required.
<b>(DDIO or Database only)</b> Specify the maximum number of members that the source listing file can contain	Enter a value in the Number of Members field. <b>Note:</b> If a Model DSN is specified, this parameter is optional. If not, this parameter is required.
<b>(Shared Directory only)</b> Specify the number of entries, total number of members, to be stored in the shared directory.	<b>(Optional)</b> Enter a value in the Number of Entries field. If a value is entered here, it will override the space Parameters entered.
<b>(Source Listing Database Only)</b> Specify the shared directory	Enter the name of the Shared directory to which you want to attach the Database.

4. After you have finished editing the fields, perform the appropriate action:
  - To submit the Create/Format job, ensure that the Command prompt is blank and press **Enter**.
  - To cancel the changes and return to the previous screen, enter **END** at the Command prompt.

### Setting Advanced Create/Format Parameters

To edit source listing file Create/Format advanced parameters, complete the following steps:

1. Enter **A** at the command prompt on the CSS Utilities - Create/Format Source Listing File screen (Figure D-4 on page D-4).
2. Make sure the DS Organization field has been set to the desired file type.
3. Press **Enter**.

**Note:** Figure D-7 displays the Source Listing File Create/Format - Advanced Parameters screen for Sequential Source Listing files. Figure D-8 displays the Source Listing File Create/Format - Advanced Parameters screen for VSAM files.

**Figure D-7.** Source Listing File Create/Format - Advanced Parameters Screen (Sequential)

```

----- SOURCE LISTING FILE CREATE/FORMAT - ADVANCED PARAMETERS ----- V8.0.0
COMMAND ==>
Commands: SEtup DD (DDIO tutorial) SD (SD/DB tutorial) LP (LP tutorial)

Prompt this panel upon process ==> N (Y/N)

Enter/Modify parameters for Sequential Source Listing file:

Blocksize ==>          (2048 to TRKSIZE)          DEFAULTS:
                                                4096

Groupcount ==>         (1 to 2048)                4
Autodelete ==> DUPS    (Dups/Yes/No/Staged)        YES
Extents ==>           (1 to 460)                  64

Note: Once any of the above parameters are modified, the new values will
      remain in effect for future formatting until they are modified again.

Press ENTER to process or enter END command to terminate

```

**Figure D-8.** Source Listing File Create/Format - Advanced Parameters Screen (VSAM)

```

----- Source Listing File CREATE/FORMAT - ADVANCED PARAMETERS ----- V8.0.0
COMMAND ==>
Commands: SEtup DD (DDIO tutorial) SD (SD/DB tutorial) LP (LP tutorial)

Prompt this panel upon process ==> N (Y/N)

Enter/Modify parameters for VSAM Source Listing file:

CISIZE ==>                                DEFAULTS:
Secondary ==> YES (Yes or No)              4096
Sec.Quantity ==> 2 (Uses primary space units) NO
VSAM Catalog ==>

Groupcount ==>         (1 to 2048)                4
Autodelete ==> YES    (Dups/Yes/No/STAGED)        YES
Extents ==>           (1 to 460)                  64

Note: Once any of the above parameters are modified, the new values will
      remain in effect for future formatting until they are modified again.

Press ENTER to process or enter END command to terminate

```

**Figure D-9.** Shared Directory Create/Format - Advanced Parameters Screen

```
----- Shared Directory CREATE/FORMAT - ADVANCED PARAMETERS ----- CSS V8.0.0
COMMAND ==>
Commands: SETup DD (DDIO tutorial) SD (SD/DB tutorial) LP (LP tutorial)

Prompt this panel upon process ==> N (Y/N)

Enter/Modify parameters for VSAM Shared Directory:

          CISIZE ==> 7000                                DEFAULTS:
          Secondary ==> NO      (Yes or No)                4096
                                                           NO
          VSAM Catalog ==>

Note: Once any of the above parameters are modified, the new values will
      remain in effect for future formatting until they are modified again.

      Press ENTER to process or enter END command to terminate
```

**Figure D-10.** Source Listing Database Create/Format - Advanced Parameters Screen (VSAM)

```
----- Source Database CREATE/FORMAT - ADVANCED PARAMETERS ----- CSS V8.0.0
COMMAND ==>
Commands: SETup DD (DDIO tutorial) SD (SD/DB tutorial) LP (LP tutorial)

Prompt this panel upon process ==> N (Y/N)

Enter/Modify parameters for VSAM Source Database:

          CISIZE ==> 8192                                DEFAULTS:
          Secondary ==>      (Yes or No)                4096
                                                           NO
          VSAM Catalog ==>

          Groupcount ==> 8      (1 to 2048)                4
          Autodelete ==> DUPS   (Dups/Yes/No)            YES
          Extents ==>          (1 to 460)                64

Note: Once any of the above parameters are modified, the new values will
      remain in effect for future formatting until they are modified again.
```

**Figure D-11.** Source Listing Database Create/Format - Advanced Parameters Screen (Sequential)

```

----- Source Database CREATE/FORMAT - ADVANCED PARAMETERS --- CSS V8.0.0
COMMAND ==>
Commands: SSetup DD (DDIO tutorial) SD (SD/DB tutorial) LP (LP tutorial)

Prompt this panel upon process ==> N (Y/N)

Enter/Modify parameters for Sequential Source Database:

Blocksize ==>          (2048 to TRKSIZE)          DEFAULTS:
                                                4096

Groupcount ==> 8      (1 to 2048)                4
Autodelete ==> DUPS   (Dups/Yes/No)              YES
Extents ==>          (1 to 460)                  64

Note: Once any of the above parameters are modified, the new values will
      remain in effect for future formatting until they are modified again.
    
```

4. Complete the fields on this screen, as necessary, using the following table as a guide.

**Table D-2.** Create/Format Source Listing File Advanced Parameters

To:	Do This:
Specify whether advanced parameters will be displayed each time a Create/Format Source Listing File command is processed	Enter one of the following in the Prompt This Panel Upon Process field: <b>Y:</b> Displays advanced parameters before processing Create/Format commands. <b>N:</b> Processes Create/Format commands without displaying advanced parameters.
<b>(Sequential files only)</b> Specify the source listing file blocksize	Enter an integer between 2048 and 32760 in the Blocksize field. <ul style="list-style-type: none"> <li>If you do not complete this field, the default blocksize of 4096 will be used.</li> <li>The blocksize is always ignored during the file allocation phase.</li> </ul>
<b>(VSAM files only)</b> Specify the control interval size	Enter an integer in the CISIZE field. If you do not complete this field, the default value of 4096 will be used.
<b>(VSAM files only)</b> Specify whether VSAM source listing files are allocated with secondary extents	Enter one of the following in the Secondary field: <b>Yes:</b> VSAM source listing files will be allocated with secondary extents. <b>No:</b> (Default) VSAM source listing files will not be allocated with secondary extents.
<b>VSAM files only)</b> Specify the amount of secondary space for the specified source listing file (used when the primary space has been consumed)	Enter a number of blocks, tracks, or cylinders in the Sec. Quantity field. <b>Note:</b> The unit of measure (blocks, tracks, or cylinders) is determined by the Space Units setting on the CSS Utilities - Create/Format Source Listing File screen (Figure D-4 on page D-4).
<b>(VSAM files only)</b> Specify the VSAM catalog in which the source listing file will be created	<b>(Optional)</b> Enter a catalog name in the VSAM Catalog field.

**Table D-2.** Create/Format Source Listing File Advanced Parameters

To:	Do This:
Specify the number of blocks allocated to a source listing file when additional space is needed	Enter a number between 1 and 2048 in the Groupcount field. <b>Note:</b> Compuware recommends setting the Groupcount to <b>8</b> . The default setting is <b>4</b> .
Specify whether the oldest member of a source listing file is deleted when the file becomes full	Enter one of the following settings in the Autodelete field: <b>Dups:</b> Unlocks automatically locked members with the same name, then locks the most recent member. <b>Yes:</b> (Default) Automatically deletes one or more of the oldest unlocked members to allow new members to be written to the file. <b>No:</b> You must manually delete members when the DDIO file becomes full. <b>Staged:</b> Similar to DUPS. Valid for source listings only.  For a complete description of these settings, see "Command Parameters for DDIO Files" in the <i>Compuware Shared Services User/Reference Guide</i> .
Specify the maximum number of extents allocated to each source listing member	Enter a number between 1 and 460 in the Extents field. <b>Note:</b> If you do not complete this field, the default value of 64 will be used.

5. After you have finished editing the fields, perform the appropriate action:
  - To apply the advanced parameter settings and return to the previous screen, ensure that the Command prompt is blank and press **Enter**.
  - To cancel the changes and return to the previous screen, enter **END** at the Command prompt.

---

## Creating and Formatting Abend-AID Report Files

On the CSS Utilities - Abend-AID Report File Facility screen, the Abend-AID Report Files section lists the eight Abend-AID report files that have been most recently used. To create and format Abend-AID report files, complete the following steps.

1. Perform the appropriate step:
  - To reformat an existing Abend-AID report file, scan the Abend-AID Report Files list. If it does not contain the file you want to reformat, enter the file name on the blank line at the top of the list. Then enter **C** to the left of the file name.
  - To create a new Abend-AID report file (and add the file to the list), enter the file name at the entry line under **Abend-AID Report Files**, then enter a **C** to the left of the file name.
2. Press **Enter**.

If the file name you entered does NOT exist yet, you will first see the following file-type selection panel. You must select which type of file you want to create. Based on the type selected, one of the following "create" screens will then appear:

**Figure D-12.** CSS Utilities - Select Desired File Type

```

-----CSS UTILITIES - Select Desired File Type -----CSS V8.0.0
COMMAND ==>
Commands: SSetup DD (DDIO tutorial) SD (SD/DB tutorial) LP (LP tutorial)

File Name entered: 'CX.NEW.FILE'

      1 Shared Directory - Create a shared directory

      2 Database File - Create a DDIO/Database that will be
                        attached to a shared directory

      3 DDIO File - Create a standard source listing DDIO

Enter END command to terminate

```

The CSS Utilities - Create/Format Abend-AID Report screen (Figure D-13) is displayed for existing standard DDIO files, CSS Utilities - Create/Format Shared Directory (Figure D-14) is displayed for exiting shared directory files, and CSS Utilities - Create/Format Report Database (Figure D-15 on page D-12) is displayed for existing Report Database files attached to a shared directory.

**Figure D-13.** CSS Utilities - Create/Format Abend-AID File Screen (Standard DDIO Files)

```

--- COMPUWARE CSS UTILITIES - CREATE/FORMAT Abend-Aid Report File -- V7.9.0
COMMAND ==>
Commands: SSetup A (Advanced Parms) D (Delete file)
          DD (DDIO tutorial) SD (SD/DB tutorial) LP (LP tutorial)

Dataset Name ==> 'PFHYXIO.CX.REPTFILE'

Preparation ==> EDITJCL (Batch/Editjcl)
DS Organization ==> SEQUENTIAL (Vsam/Sequential)
Reallocate ==> NO (Yes/No)

Model DSN ==>
Storage Class ==> (optional)
Management Class ==> (optional)
Data Class ==> (optional)
Volume ==> (optional)
Unit ==> (optional)

Space Units ==> TRACKS (Blocks/Tracks/Cylinders)
Primary Quantity ==> 200
Number of Members ==> 100 (1 to 32767)

Press ENTER to process or enter END command to terminate

```

**Figure D-14.** CSS Utilities - Create/Format Abend-AID Shared Directory Files Screen

```

--- COMPUWARE CSS UTILITIES - CREATE/FORMAT Shared Directory - ---- CSS V7.9.0
COMMAND ==>

Commands: SSetup  A (Advanced Parms)
          DD (DDIO tutorial)  SD (SD/DB tutorial)  LP (LP tutorial)

          Dataset Name ==> 'CX.TECH.TEST.SHRDIR'

          Preparation ==> EDITJCL  (Batch/Editjcl)
          Reallocate ==> YES      (Yes/No)

          Model DSN ==>
          Storage Class ==>      (optional)
          Management Class ==>   (optional)
          Data Class ==>        (optional)
          Volume ==>            (optional)

          Space Units ==> CYLINDERS (Blocks/Tracks/Cylinders)
          Primary Quantity ==> 10
          Number of Entries ==> 100 (1 to 32767) (Overrides space amt)

          Press ENTER to process or enter END command to terminate
    
```

**Figure D-15.** CSS Utilities - Create/Format Abend-AID Report Database File

```

--- COMPUWARE CSS UTILITIES - Create/Format Report Database - CSS V7.9.0
COMMAND ==>

Commands: SSetup  A (Advanced Parms)
          DD (DDIO tutorial)  SD (SD/DB tutorial)  LP (LP tutorial)

          Dataset Name ==> 'CX.TECH.TEST.DATABASE'

          Preparation ==> EDITJCL  (Batch/Editjcl)
          DS Organization ==> V    (Vsam/Sequential)
          Reallocate ==> YES      (Yes/No)

          Model DSN ==>
          Storage Class ==>      (optional)
          Management Class ==>   (optional)
          Data Class ==>        (optional)
          Volume ==>            (optional)
          Unit ==>              (optional)

          Space Units ==> CYLINDERS (Blocks/Tracks/Cylinders)
          Primary Quantity ==> 10
          Number of Members ==> 100 (1 to 32767)
          Shared directory ==> 'PFHBWKO.ABENDAID.SHRDIR'

          Press ENTER to process or enter END command to terminate
    
```

3. Complete the fields on this screen using the following table as a guide.

**Table D-3.** Create/Format Abend-AID Report File Fields

To:	Do This:
Edit the CSS Utilities General Settings	Enter <b>SE</b> at the Command prompt.
Display advanced parameters	Enter <b>A</b> at the Command prompt.  For a complete description of the advanced parameters, see Table D-4 on page D-16.
Delete the Abend-AID report file specified in the Dataset Name field	Enter <b>D</b> at the Command prompt.  (Only valid for standard DDIO create)

**Table D-3.** Create/Format Abend-AID Report File Fields

To:	Do This:
Use batch processing to submit your job	Enter <b>BATCH</b> in the Preparation field.
Generate JCL for the Create/Format job, then edit the JCL	Enter <b>EDITJCL</b> in the Preparation field.
Specify the file type	Enter <b>VSAM</b> or <b>SEQUENTIAL</b> in the DS Organization field. <b>Note:</b> If a Model DSN is specified (see below), this parameter is optional. If a Model DSN is not specified, you must specify a file type.
Delete and reallocate the specified report file	Enter <b>YES</b> in the Reallocate field.
Specify a "template" (another Abend-AID report file) for allocating and formatting Abend-AID report files	<b>(Optional)</b> Enter the dataset name in the Model DSN field. <b>Note:</b> All explicitly set parameters on this screen, and on the Advanced Parameters screen, override settings in the template file.
Specify a Storage Management Subsystem (SMS) storage class	<b>(Optional)</b> Enter an eight-character storage class in the Storage Class field.
Specify an SMS management class	<b>(Optional)</b> Enter an eight-character management class in the Management Class field.
Specify an SMS data class	<b>(Optional)</b> Enter an eight-character data class in the Data Class field.
Specify the volume serial number of the Abend-AID report file	<b>(Optional)</b> Enter the volser in the Volume field.
Specify a device or device type	<b>(Optional)</b> Enter the device or device type in the Unit field.
Specify a unit of measure for the file size	Enter <b>BLOCKS</b> , <b>TRACKS</b> , or <b>CYLINDERS</b> in the Space Units field. <b>Note:</b> If DS Organization = VSAM and a Model DSN is specified, this parameter is optional. If not, this parameter is required.
Specify an amount of primary space for the Abend-AID report file	Enter a value in the Primary Quantity field. <b>Note:</b> If DS Organization = VSAM and a Model DSN is specified, this parameter is optional. If not, this parameter is required.
<b>(DDIO or Database only)</b> Specify the maximum number of members that the Abend-AID report file can contain	Enter a value in the Number of Members field. <b>Note:</b> If a Model DSN is specified, this parameter is optional. If not, this parameter is required.
<b>(Shared Directory only)</b> Specify the number of entries, Total number of members, to be stored In the shared directory.	<b>(Optional)</b> Enter a value in the Number of Entries field. If a value is entered here, it will override the space Parameters entered.
<b>(Source Listing Database Only)</b> Specify the shared directory	Enter the name of the Shared directory you want the Database attached to.

4. After you have finished editing the fields, perform the appropriate action:
  - To submit the Create/Format job, ensure that the Command prompt is blank and press **Enter**.
  - To cancel the changes and return to the previous screen, enter **END** at the Command prompt.

## Setting Advanced Create/Format Parameters

To edit Abend-AID report file Create/Format advanced parameters, complete the following steps:

1. Enter **A** at the command prompt on the CSS Utilities - Create/Format Abend-AID Report File screen (Figure D-13 on page D-11).
2. Make sure the DS Organization field is set to the desired file type.
3. Press **Enter**.

**Note:** Figure D-16 displays the Abend-AID Report File Create/Format - Advanced Parameters screen for Sequential Abend-AID report files. Figure D-17 displays the Abend-AID Report File Create/Format - Advanced Parameters screen for VSAM Abend-AID report files.

**Figure D-16.** Abend-AID Report File Create/Format - Advanced Parms (Sequential)

```

----- Abend-Aid REPORT FILE CREATE/FORMAT - ADVANCED PARAMETERS ----- V7.9.0
COMMAND ==>
Commands: SSetup DD (DDIO tutorial) SD (SD/DB tutorial) LP (LP tutorial)

Prompt this panel upon process ==> N (Y/N)

Enter/Modify parameters for Sequential Abend-Aid Report file:

Blocksize ==>          (2048 to TRKSIZE)          DEFAULTS:
                                                4096

Groupcount ==>          (1 to 2048)                4
Autodelete ==> YES      (Dups/Yes/No)             YES
Extents ==>             (1 to 460)                 64

Note: Once any of the above parameters are modified, the new values will
      remain in effect for future formatting until they are modified again.

Press ENTER to process or enter END command to terminate

```

**Figure D-17.** Abend-AID Report File Create/Format - Advanced Parms (VSAM)

```

----- Abend-AID Report File CREATE/FORMAT - ADVANCED PARAMETERS -----V7.9.0
COMMAND ==>
Commands: SSetup DD (DDIO tutorial) SD (SD/DB tutorial) LP (LP tutorial)

Prompt this panel upon process ==> N (Y/N)

Enter/Modify parameters for VSAM Abend-AID Report file:

CISIZE ==>
Secondary ==>          (Yes or No)                DEFAULTS:
Sec.Quantity ==>      (TRACKS)                    4096
VSAM Catalog ==>
                                                NO

Groupcount ==>          (1 to 2048)                4
Autodelete ==> DUPS    (Dups/Yes/No)             YES
Extents ==>            (1 to 460)                 64

Note: Once any of the above parameters are modified, the new values will
      remain in effect for future formatting until they are modified again.

Press ENTER to process or enter END command to terminate

```

**Figure D-18.** Abend-AID Report File Shared Directory Create - Advanced Parms

```

---- Shared Directory CREATE/FORMAT - ADVANCED PARAMETERS ----CSS V7.9.0
COMMAND ==>
Commands: SSetup DD (DDIO tutorial) SD (SD/DB tutorial) LP (LP tutorial)

Prompt this panel upon process ==> N (Y/N)

Enter/Modify parameters for VSAM Shared Directory:

          CISIZE ==> 8000                                DEFAULTS:
Secondary ==> YES      (Yes or No)                      4096
                                                    NO
VSAM Catalog ==>

Note: Once any of the above parameters are modified, the new values will
      remain in effect for future formatting until they are modified again.

      Press ENTER to process or enter  END command to terminate

```

**Figure D-19.** Abend-AID Report Database Create/Format - Advanced Parms (VSAM)

```

---- DDIO/Database Create/Format - Advanced Parameters --- CSS V7.9.0
COMMAND ==>
Commands: SSetup DD (DDIO tutorial) SD (SD/DB tutorial) LP (LP tutorial)

Prompt this panel upon process ==> N (Y/N)

Enter/Modify parameters for VSAM Report
Database:

          CISIZE ==>                                     DEFAULTS:
Secondary ==> YES      (Yes or No)                      4096
Sec.Quantity ==>      (TRACKS)                          NO
VSAM Catalog ==>

          Groupcount ==> 20      (1 to 2048)              4
Autodelete ==> YES      (Dups/Yes/No)                    YES
          Extents ==>          (1 to 460)                  64

Note: Once any of the above parameters are modified, the new values will
      remain in effect for future formatting until they are modified again.

```

**Figure D-20.** Abend-AID Report Database Create/Format - Advanced Params (Sequential)

```

----- DDIO/Database Create/Format - Advanced Parameters ----- CSS V7.9.0
COMMAND ==>
Commands: SSetup DD (DDIO tutorial) SD (SD/DB tutorial) LP (LP tutorial)

Prompt this panel upon process ==> N (Y/N)

Enter/Modify parameters for Sequential Report Database:

Blocksize ==>          (2048 to TRKSIZE)          DEFAULTS:
                                         4096

Groupcount ==> 20      (1 to 2048)                4
Autodelete ==> YES    (Dups/Yes/No)              YES
Extents ==>           (1 to 460)                  64

Note: Once any of the above parameters are modified, the new values will
      remain in effect for future formatting until they are modified again.

Press ENTER to process or enter END command to terminate
    
```

4. Complete the fields on this screen, as necessary, using the following table as a guide.

**Table D-4.** Create/Format Abend-AID Report File Advanced Parameters

To:	Do This:
Specify whether advanced parameters will be displayed each time a Create/Format Abend-AID Report File command is processed	Enter one of the following in the Prompt This Panel Upon Process field:  <b>Y:</b> Displays advanced parameters before processing Create/Format commands.  <b>N:</b> Processes Create/Format commands without displaying advanced parameters.
<b>(Sequential files only)</b> Specify the Abend-AID report file blocksize	Enter an integer between 2048 and 32760 in the Blocksize field.  <ul style="list-style-type: none"> <li>If you do not complete this field, the default blocksize of 4096 will be used.</li> <li>The blocksize is always ignored during the file allocation phase.</li> </ul>
<b>(VSAM files only)</b> Specify the control interval size	Enter an integer in the CISIZE field.  If you do not complete this field, the default value of 4096 will be used.
<b>(VSAM files only)</b> Specify whether VSAM Abend-AID report files will be allocated with secondary extents	Enter one of the following in the Secondary field:  <b>Yes:</b> VSAM Abend-AID report files will be allocated with secondary extents.  <b>No:</b> (Default) VSAM Abend-AID report files will not be allocated with secondary extents.
<b>(VSAM files only)</b> Specify the amount of secondary space for the specified Abend-AID report file (used when the primary space has been consumed)	Enter a number of blocks, tracks, or cylinders in the Sec. Quantity field.  <b>Note:</b> The unit of measure (blocks, tracks, or cylinders) is determined by the Space Units setting on the Create/Format Abend-AID Report File screen.
<b>(VSAM files only)</b> Specify the VSAM catalog in which the Abend-AID report file will be created	<b>(Optional)</b> Enter a catalog name in the VSAM Catalog field.

**Table D-4.** Create/Format Abend-AID Report File Advanced Parameters

To:	Do This:
Specify the number of blocks allocated to an Abend-AID report file when additional space is needed	Enter a number between 1 and 2048 in the Groupcount field. <b>Note:</b> Compuware recommends setting the Groupcount to <b>8</b> . The default setting is <b>4</b> .
Specify whether the oldest member of an Abend-AID report file is deleted when the file becomes full	Enter one of the following settings in the Autodelete field: <b>Dups:</b> Unlocks automatically locked members with the same name, then locks the most recent member. <b>Yes:</b> (Default) Automatically deletes one or more of the oldest unlocked members to allow new members to be written to the file. <b>No:</b> You must manually delete members when the DDIO file becomes full.
Specify the maximum number of extents allocated to each Abend-AID report file member	Enter a number between 1 and 460 in the Extents field. If you do not complete this field, the default value of 64 will be used.

5. After you have finished editing the fields, perform the appropriate action:
  - To apply the advanced parameter settings and return to the previous screen, ensure that the Command prompt is blank and press Enter.
  - To cancel the changes and return to the previous screen, enter **END** at the Command prompt.



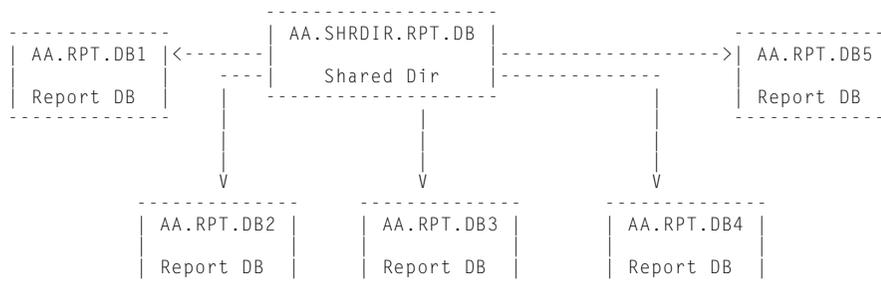
## Appendix E. Installation Tutorial

This Abend-AID tutorial will walk through the steps to set up Abend-AID Report Routing based on routing criteria. Abend-AID provides the capability to route Abend-AID diagnostic reports to a Shared Directory at dump capture time. This approach allows the Shared Directory to determine which attached Report Database to use when routing an Abend-AID diagnostic report. Abend-AID also provides the capability to route Abend-AID diagnostic reports to specific Report Databases at dump capture time.

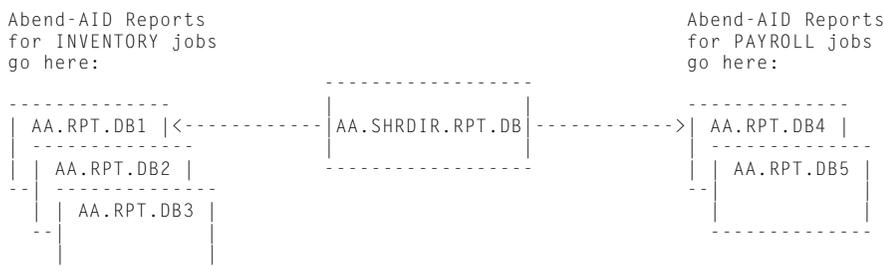
The tutorial example will assume that all Abend-AID diagnostic reports for Inventory jobs should be routed to a specific set of Report Databases and all Abend-AID diagnostic reports for Payroll jobs should be routed to a different set up Report Databases. The example's environment consists of a single Shared Directory with five Report Databases attached to it. It assumes that the Abend-AID diagnostic reports for the Inventory jobs will go to three of the five Report Databases and that the diagnostic reports for the Payroll jobs will go to the remaining two Report Databases.

Abend-AID uses the Compuware Shared Services (CSS) services to store and manage the Abend-AID diagnostic reports. CSS uses a proprietary file access method and manages Abend-AID diagnostic reports through Shared Directories and attached Report Databases.

In this example, assume that a Compuware Shared Services Shared Directory with a name of 'AA.SHRDIR.RPT.DB' points to five Abend-AID Report Databases, as diagrammed below.



Continuing with this example, assume that all Abend-AID Reports for INVENTORY jobs should go to one of the following 3 Report Databases: 'AA.RPT.DB1', 'AA.RPT.DB2' and 'AA.RPT.DB3'. Also assume that all Abend-AID Reports for PAYROLL jobs should go to one of these Report Databases: 'AA.RPT.DB4' and 'AA.RPT.DB5'.



In order to set up the example where Abend-AID Reports for INVENTORY jobs go to one set of Abend-AID Report Databases and Abend-AID Reports for PAYROLL jobs go to another set of Abend-AID Report Databases, Abend-AID Report Routing needs to be set up.

For this example, assume that any INVENTORY jobname begins with the characters INV and any PAYROLL jobname begins with the characters PAY. The job name can contain any characters after the "INV" or "PAY".

In order to set up the routing for this example, the Abend-AID Customization Primary Menu will be used. A section of that display is included below.

```

-----
                          Abend-AID Customization Primary Menu
Command ==>

Customizing Abend-AID consists of setting up Global Customization
as well as information to provide Source Support Diagnostics.

Type an S next to the desired option and press ENTER.

- JES2 Support
- Create/Modify Report and Listing Datasets and Routing Informa
- Create/Modify Global Customization Options

Abend-AID Load Library==> _____
    
```

The second option on the Customization Primary Menu will be selected in order to set up the routing criteria for the Inventory and Payroll jobs for this example.

```

-----
                          Abend-AID Customization Primary Menu-
>
This option is needed to set up routing
Abend-AID consists of setting up Global Customization
information to provide Source Support Diagnostics
Type an S next to the desired option and press ENTER.
- JES2 Support
-----> s Create/Modify Report and Listing Databases and Routing Informa
- Create/Modify Global Customization Options

Abend-AID Load Library==> _____
    
```

Before going further, it is important to note that the Abend-AID load library is required by the Abend-AID dialog to set up report routing. This library is set up and populated by the Abend-AID SMP/E installation jobs.

```

-----
                          Abend-AID Customization Primary Menu
Command ==>

Customizing Abend-AID consists of setting up Global Customization
as well as information to provide Source Support Diagnostics.

Type an S next to the desired option a
- JES2 Support
- Create/Modify Report and Listin
- Create/Modify Global Customizat
This library is required to set up routing
ting Information
Abend-AID Load Library==> 'compuware.spaaalload'_____
    
```

The Abend-AID Maintain Report and Listing Files and Routing Criteria display is the primary starting point for setting up new routing criteria or editing existing routing criteria. A section of that display is included below.

```
-----
Abend-AID: Maintain Report and Listing Datasets and Routing Criter
Command ==>

This customization dialog provides the creation/maintenance of Report
Listing Datasets and Routing Criteria for Abend-AID Diagnostic Reports.

If you already have a Report and Listing Datasets and Routing Criteri
module (CWROUTE) that you want to modify, enter the name of the load l
where that information is currently located below. Otherwise, leave
blank and a new load module will be created.

Existing Load Library==> _____

Press the enter key to continue.
```

Abend-AID maintains the routing criteria for diagnostic reports in a load module named CWROUTE. The dialog allows for the editing of the routing information contained in an existing CWROUTE load module. In this case, the dialog needs to know the name of the load library where that existing CWROUTE load module resides.

In this tutorial example, the assumption is that we are setting up a new set of routing information. So the name of the load library will be left blank.

```
-----
This customization dialog provides | Load library | enance of Report
Listing Datasets and Routing Criter | left blank | LS Diagnostic Re
| because new | Routing Criteri
If you already have a Report and Li | CWROUTE | ame of the load
module (CWROUTE) that you want to m | | below. Otherwise, leave
where that information is currently | locat |
blank and a new load module will be creat |
|
Existing Load Library==> _____
```

The Default Report and Listing Dataset Customization display requires that two default Shared Directories be set up: one for Reports and one for Source Listings. A section of that display is included below.

```
-----
-----Abend-AID Default Report and Listing Dataset Customizati
Command ==>

Abend-AID customization requires that two default Shared Directories
defined, one for Abend-AID Reports and one for Source Listings.
Enter the dataset names below that will be used as your Default Shared
Directories. When completed, press the enter key to continue.

Dataset Name of New or Existing
Report Shared Directory ==> _____

Dataset Name of New or Existing Source
Listing Shared Directory ==> _____
```

In our example, since we are not using existing routing information the two Shared Directories will not be filled in when this panel is initially displayed. However, the dialog will not continue until two existing and valid Shared Directories are supplied. If the



of this tutorial, assume the Shared Directory was allocated through Compuware Shared Services and we can proceed.

```

Abend-AID customization requires that two default      Status of      r
defined, one for Abend-AID Report Databases and on   Shared Dir     n
Enter the dataset names below that will be used as  shown here
Directories. When completed, press the enter key

Dataset Name of New or Existing
Report Shared Directory ==> 'AA.SHRDIR.RPT.DB'
*** DATASET NOT FOUND *** <-----

```

The Abend-AID dialog will invoke Compuware Shared Services to verify that the default Shared Directory for Report Databases is a valid Shared Directory. If so, then the Customization Dialog panel will be displayed. A section of that display is included below. For this example, the second option is needed:

```

-----
| This option | ill always write its error analysis reports to an Abend- |
| is needed to | base that is attached to a shared directory for Abend-AI |
| define routing | ts are available for viewing using the Compuware Viewing |
| for INVENT and | ext to the one option and press ENTER. |
| PAY jobs      |
-----
|
|      - Write ALL Abend-AID reports to one single site default share |
|      directory. Reports are NOT routed to shared directories or |
|      report databases based on routing criteria. |
|-----> s Create/Modify routing criteria to route Abend-AID reports to |
|      multiple report databases or shared directories. |
|

```

For this example, a routing group needs to be set up to associate the Shared Directory to the 3 Abend-AID Report Databases that will receive Abend-AID Reports for INVENTORY jobs. The first option on the Routing Setup / Maintenance panel will be used. A section of that panel is included below:

```

Abend-AID Routing Setup / Maintenance
| Command ==>
-----
| This option | routing allows Abend-AID diagnostic reports to be |
| is needed to | Shared Directories and associated Abend-AID Report Data |
| define INVENT | lection criteria set up through this dialog. |
| routing group |
-----
|
|      - Learn about routing Abend-AID Reports |
|-----> s Create/Modify Report Database Groups |
|      - Create/Modify Routing Selection Criteria |
|      - Abend-AID reports are currently routed using customization |
|
-----

```

For this example, a group named "INVENT" will be inserted (added) to the routing information to associate the 3 Report Databases to a Shared Directory. The All Group



If the Shared Directory does not exist, then a popup window will be displayed to provide the option of entering Compuware Shared Services (CSS) to create a Shared Directory. A section of that display is shown below:

```

-----
Abend-AID Report Routing: Group Name
Command ==>
Group Name      ==> INVENT__
Shared Directory==> 'AA.SHRDIR.RPT.DB'
Route Abend-AID re  Shared Directory Does
Cmd ==>
Assigning report d  the report databas
be routed to any o End key to verify
The specified Shared Directory that is listed
above does not exist.
Press enter key to allocate a new one or
end key to return.
-----

```

If Compuware Shared Services was invoked to allocate the new Shared Directory, then upon return to the Abend-AID Dialog the status message for that Shared Directory will be refreshed indicating whether or not the Shared Directory exists and is valid. A section of the display is included below:

```

-----
Abend-AID Report Routing
Command ==>
Group Name      ==> INVENT__
Shared Directory==> 'AA.SHRDIR.RPT.DB'
Route Abend-AID report to SYSOUT as well as Report Databases? ==> _
Assigning report databases below limits the routing of Abend-AID repo
the report databases specified here. If no databases are listed, rep
be routed to any of the databases attached to the Shared Directory.
Endkey to verify and return. CANCEL command to cancel changes and ret
-----

```

At this point, the Shared Directory to use for the "INVENT" group has been set up. Now, limiting the routing of Inventory jobs to the three Report Databases in the example needs to be done. The first Report Database is specified on the first line. A section of the display is included:

```

-----
Assigning report databases below limits the routing of Abend-AID repo
the report databases specified here. If no databases are listed, rep
be routed to any of the databases attached to the Shared Directory.
Endkey to verify and return. CANCEL command to cancel changes and ret
Enter the dataset name below to insert (add) a Report Database
-----
Line      Report Database(s)      Report Database
Cmd       atabase(s)                   specified here      Message
-----
_         'aa.rpt.db1'
-----

```

Similar to the Shared Directory, the specified Report Database will be checked to see if it exists. If not, then a popup window will allow Compuware Shared Services (CSS) to be accessed to allocate a new one:

```

Shared Directory== -----
Route Abend-AID re |           Report Database | Report DB does
                    | Cmd ==>                  | not exist. CSS
                    |                               | can be invoked
                    |                               | to create one.
Assigning report d  | 'AA.RPT.DB1' <----- |
the report databas | The specified Report Database that is listed
be routed to any o | above does not exist.
Endkey to verify a |
Enter the dataset  | Press enter key to allocate a new one or
                    | end key to return.
                    |-----|
Line
Cmd   Report Database(s)           Message
-----|-----|
_     'aa.rpt.db1'
    
```

If Compuware Shared Services was invoked to allocate the new Report Database, then upon return to the Abend-AID Dialog the status message for that Report Database will be refreshed indicating whether or not the Report Database exists and is valid. A section of the display is included below:

```

Assigning report databases below limits the routing of Abend-AID repo
the report databases specified here. If no databases are listed, rep
be routed to any of the databases attached to the Shared Directory.
Endkey to verify and return. CANCEL command to cancel changes and ret
-----|-----|
Line commands: "i" = insert, "r" | Status message | delete
                    | of the Report |
                    | Database.     |
Line
Cmd   Report Database(s)           Message
-----|-----|
_     'AA.RPT.DB1' -----> AA DB (SHRDIR
    
```

At this point, the second Report Database to be used for Inventory job routing will be set up. A line command of "i" (to insert a new Report Database) is used. A section of the display is included:

```

Assigning report databases below limits the routing of Abend-AID repo
the report databases specified here. If no databases are listed, rep
be routed to any of the databases attached to the Shared Directory.
Endkey to verify and return. CANCEL command to cancel changes and ret
-----|-----|
Line commands: "i" = insert, | Line command to | = delete
                    | insert (add) new |
                    | Report DB here  |
| e |
|   | Report Database(s)           Message
- v -
i   'AA.RPT.DB1' -----> AA DB (SHRDIR
    
```

Similar to the first Report Database that was set up, the second Report Database is checked to see if it exists and is valid. If it does not exist, then a popup window like that

shown previously for the first Report Database will be displayed to allow Compuware Shared Services (CSS) to be access to create the Report Database.

```

Assigning report databases below limits the routing of Abend-AID repo
the report databases specified here. If no databases are listed, rep
be routed to any of the databases attached to the Shared Directory.
Endkey to verify and return. CANCEL command to cancel changes and ret

Line commands: "i" = insert, "      Report Database      " = delete
                | specified here |
Line  Cmd   Report Database(s)  Message
-----|-----|-----
-     'AA.RPT.DB1' _____|_____ AA DB (SHRDIR)
-     'aa.rpt.db2' <-----|_____
    
```

Similar to that described previously for the first Report Database, upon return to the Abend-AID Dialog from Compuware Shared Services the status message for the new Report Database will be refreshed with its status.

```

Assigning report databases below limits the routing of Abend-AID repo
the report databases specified here. If no databases are listed, rep
be routed to any of the databases attached to the Shared Directory.
Endkey to verify and return. CANCEL command to cancel changes and ret

Line commands: "i" = insert, "      Status message      " = delete
                | of the Report |
                | Database.     |
Line  Cmd   Report Database(s)  Message
-----|-----|-----
-     'AA.RPT.DB1' _____|_____ AA DB (SHRDIR)
-     'AA.RPT.DB2' _____|_____> AA DB (SHRDIR)
    
```

And finally, the same process is done to add the third Report Database. When finished with adding the third Report Database the display will look similar to that pictured below:

```

Assigning report databases below limits the routing of Abend-AID repo
the report databases specified here. If no databases are listed, rep
be routed to any of the databases attached to the Shared Directory.
Endkey to verify and return. CANCEL command to cancel changes and ret

Line commands: "i" = insert, "r" = replicate, "d" = delete

Line  Cmd   Report Database(s)  Message
-----|-----|-----
-     'AA.RPT.DB1' _____|_____ AA DB (SHRDIR)
-     'AA.RPT.DB2' _____|_____ AA DB (SHRDIR)
-     'AA.RPT.DB3' _____|_____ AA DB (SHRDIR)
    
```

Although it is recommended when adding new Report Databases to access Compuware Shared Services (CSS) to actually create the Report Database, it is acceptable to enter the dataset name of a new Report Database but not to access CSS to create it. In this case, the status message for that Report Database will indicate that the file does not exist. It is

important that at some point before dump capture that CSS Utilities be run to actually create the Report Database.

```

Line commands: "i" = insert, "r" = replicate, "d" = delete
-----
Line  Cmd      Report Database(s)      If CSS not
-----  -
-      'AA.RPT.DB1'           _____  accessed, then
-      'AA.RPT.DB2'           _____  status reflects
-      'AA.RPT.DB3'           _____  that file does
                                           not yet exist.
                                           -----> FILE DOES NOT
Message
-----
AA DB (SHRDIR
AA DB (SHRDIR

```

At this point, this completes the setup of the "INVENT" group with its Shared Directory and the Report Databases attached to that Shared Directory that will be used to limit Abend-AID report routing for Inventory jobs to just those Report Databases. Next, the "All Group Names" display will be accessed so that the "PAY" group can also be set up, by pressing the end key.

```

-----
Assigning report databases below limits the routing of Abend-AID repo
the report databases specified here. If no databases are listed, rep
be routed to any of the databases attached to the Shared Directory.
Endkey to verify and return. CANCEL command to cancel changes and ret
Line commands: "i" = insert, "r" = replicate, "d" = delete
-----
Line  Cmd      Report Database(s)      Message
-----  -
-      'AA.RPT.DB1'           _____  AA DB (SHRDIR
-      'AA.RPT.DB2'           _____  AA DB (SHRDIR

```

The All Group Names display now reflects the "INVENT" group that was just set up. Line commands are available to edit, replicate or delete this group. The next step in the example is to set up the "PAY" group.

```

-----
Abend-AID Report Routing: All Group Names
Command ==>
Commands:"apply"=apply changes
All Abend-AID Report Database Group Names are listed below.
Line commands:"e" = edit, "i" = insert, "r" = replicate, "d" = delete
-----
Line  Group      Shared Directory
Cmd   Name
-----  -
-      INVENT      'AA.SHRDIR.RPT.DB'

```

To add a group named "PAY", a line command of "i" to insert (add) a new group is used. The All Group Names panel shows all of the currently set up routing groups and is used for adding, updating and deleting routing groups. A section of that panel is shown below:

```

----- Abend-AID Report Routing: All Group Names
Command ==>

Enter a line command of "i" (insert) to add a new routing group of PAY
y changes
ort Database Group Names are listed below.
dit, "i" = insert, "r" = replicate, "d" = delete

-----
Line  Group
Cmd  Name   Shared Directory
-----
> i   INVENT 'AA.SHRDIR.RPT.DB'
-----

```

In this example, the Group Name display will be used to set up routing for the Abend-AID reports for Payroll jobs. The same process that was done to set up the INVENT group will be done for the PAY group. A section of that display is shown below:

```

----- Abend-AID Report Routing: Group Name
Command ==>

Group Name      ==> _____
Shared Directory==> _____

Route Abend-AID report to SYSOUT as well as Report Databases? ==> _

Assigning report databases below limits the routing of Abend-AID reports to the report databases specified here. If no databases are listed, reports will be routed to any of the databases attached to the Shared Directory.
Endkey to verify and return. CANCEL command to cancel changes and return.

```

After the "PAY" group has been set up, it will look like the display below with its Shared Directory and the Report Databases attached to that Shared Directory that will be used to limit Abend-AID report routing for Payroll jobs to just those Report Databases listed. (The display below shows a section of the "Group Name" panel.)

```

-----
Assigning report databases below limits the routing of Abend-AID reports to the report databases specified here. If no databases are listed, reports will be routed to any of the databases attached to the Shared Directory.
Endkey to verify and return. CANCEL command to cancel changes and return.

Line commands: "i" = insert, "r" = replicate, "d" = delete

Line
Cmd  Report Database(s)
-----
_    'AA.RPT.DB4' _____ AA DB (SHRDIR)
_    'AA.RPT.DB5' _____ AA DB (SHRDIR)
-----

```

Returning to the All Group Names display after setting up the "PAY" group, the display now reflects the "INVENT" group and "PAY" group. Line commands are available to edit, replicate or delete both groups. At this point, the set up of the routing groups is complete

and the routing criteria now needs to be set up. The end key will go back to the Report Routing selection menu.

```

-----
                          Abend-AID Report Routing: All Group Names
Command ==>

Commands:"apply"=apply changes

All Abend-AID Report Database Group Names are listed below.
Line commands:"e" = edit, "i" = insert, "r" = replicate, "d" = delete

  Line  Group
  Cmd   Name      Shared Directory
-----
  -     INVENT   'AA.SHRDIR.RPT.DB'
  -     PAY       'AA.SHRDIR.RPT.DB'

```

At this point, the two routing groups of "INVENT" and "PAY" have been defined. Now, the routing criteria for selecting which jobs will have their Abend-AID reports routed to the two groups needs to be set up. The second option on the Routing Setup / Maintenance panel will be used. A section of that panel is included below:

```

-----
                          Abend-AID Routing Setup / Maintenance
Command ==>

This option is needed to define routing criteria for INVENT and PAY |
LS routing allows Abend-AID diagnostic reports to be |
Shared Directories and associated Abend-AID Report Data |
lection criteria set up through this dialog.
-----
| | - Learn about routing Abend-AID Reports
| | - Create/Modify Report Database Groups
-----> s Create/Modify Routing Selection Criteria

```

The All Routing Criteria shows all of the routing criteria currently set up for routing Abend-AID reports to the appropriate group. Initially, there are no routing criteria set up and so the display contains one command entry line to allow a new routing criteria to be inserted (added) to start things off.

```

-----
                          Abend-AID Report Routing: All Routing Criteria
Command ==>

Commands:"apply"=apply changes

All Abend-AID Diagnostic Report Routing Criteria are listed below
Use a line command of 'i' below to insert (add) a new routing criteria

  Line  Group      Jobname  Userid  Job  Programmer Name  Accou
  Cmd   Name          Jobname  Userid  CIs  Programmer Name  Info
-----

```

A line command of "i" will be used to insert (add) new routing criteria. This routing criteria will be used in determining whether or not an Abend-AID report is for an



Upon returning to the All Routing Criteria display, the newly created routing criteria for Inventory jobs is displayed. Line commands are provided so that existing routing criteria can be subsequently edited, replicated or deleted.

```

-----
                          Abend-AID Report Routing: All Routing Criteria
Command ==>

Commands:"apply"=apply changes

All Abend-AID Diagnostic Report Routing Criteria are listed below
Line commands:"e" = edit, "i" = insert, "r" = replicate, "d" = delete

  Line  Group          Jobname  Userid   Job   Programmer Name  Accou
  Cmd   Name            Jobname  Userid   Cls   Programmer Name  Info
-----
  -     INVENT      INV*
-----
    
```

Next, the routing criteria for Payroll jobs will be set up. A line command of "i" will be entered to insert (add) routing criteria for Payroll jobs. It is important to note that the search for matching routing criteria is top-to-bottom. Therefore, the order of the routing criteria listed on the "All Routing Criteria" is very important. In this example, the routing criteria for the Payroll jobs will be inserted after Inventory route criteria.

```

-----
Payroll routing inserted after Inventory | s:"apply"=apply changes
-----
nd-AID Diagnostic Report Routing Criteria are listed below
mmands:"e" = edit, "i" = insert, "r" = replicate, "d" = delete

  Line  Group          Jobname  Userid   Job   Programmer Name  Accou
  Cmd   Name            Jobname  Userid   Cls   Programmer Name  Info
-----
  -     INVENT      INV*
-----
  -> i
    
```

On the "Add New Routing Detail" display the group name is set to "PAY" and the jobname to select for routing the Abend-AID report is any job that starts with the characters "PAY". When done, press the end key to return to the "All Routing Criteria" display to make the changes permanent.

```

-----
                          Abend-AID Report Routing: Add New Routing Detail
Command ==>

Enter new routing criteria below. When ----- key to ve
return. CANCEL command to cancel changes |Group name that |
                                         |was set up     |
                                         |earlier.      |
-----
Group Name      ==> pay <-----
Jobname         ==> pay* <-----
Userid          ==> _____
Job Class       ==> _
Programmer Name ==> _____ |Any job that starts with|
Accounting Information: ----- |PAY (wildcard char "*" |
Parameter # Comparison String ----- |used) will be routed to|
                                         |"PAY" group         |
-----
    
```

Upon returning to the "All Routing Criteria" display, the newly created routing criteria for Payroll jobs is displayed. Line commands are provided so that existing routing criteria

can be subsequently edited, replicated or deleted. At this point, the routing groups and routing criteria that were set up for this example need to be made permanent.

```

Commands:"apply"=apply changes

All Abend-AID Diagnostic Report Routing Criteria are listed below
Line commands:"e" = edit, "i" = insert, "r" = replicate, "d" = delete

Line  Group      Jobname  Userid   Job      Programmer Name  Accou
Cmd   Name          Jobname  Userid   Cls      Programmer Name  Info
-----
-     INVENT      INV*
-     PAY         PAY*
    
```

Abend-AID report routing information is made permanent by generating a new CWROUTE load module. To make the changes permanent in this example, the apply command should be issued on the command line.

```

Abend-AID Report Routing: All Routing Criteria
Command ==> apply <-----
Commands:"apply"=apply changes
All Abend-AID Diagnostic Report Routing Criteria are listed below
Line commands:"e" = edit, "i" = insert, "r" = replicate, "d" = delete

Line  Group      Jobname  Userid   Job      Programmer Name  Accou
Cmd   Name          Jobname  Userid   Cls      Programmer Name  Info
-----
-     INVENT      INV*
-     PAY         PAY*
    
```

After issuing the apply command, a popup window will ask for the load library where the new CWROUTE load module will be written to. The load library must already exist, otherwise an error message will display. The CWROUTE load module will contain all of the routing information that was set up for this example. This includes routing groups and routing criteria.

```

Abend-AID Report Routing: All Routing Criteria
Command ==> APPLY

Commands:"          Save Routing Information
All Abend-         Command ==>
Line comma        Enter below the dataset name of the load lib
Line Gro          where the Report and Listing File must already
Cmd  Nam           Information (CWROUTE) will be exist. A new
-----  ---        ==> test.loadlib <----- one will not be
-     INV          Press the enter key to continue. created.
-     PAY
    
```



# Glossary

**abend.** ABnormal END of task. The termination of a job, prior to normal completion, caused by an unresolved error condition.

**abend code.** A three-digit, hexadecimal system completion code or a four-digit, decimal user completion code for an abnormal end.

**ACB.** VSAM access method control block.

**ATE.** Language Environment's Abnormal Termination Exit. LEAID is the Abend-AID provided exit.

**Abnormal Termination Exit (ATE).** Language Environment's Abnormal Termination Exit. LEAID is the Abend-AID provided exit.

**basic direct access method (BDAM).** File access method that directly retrieves or updates specified blocks of data on a direct access storage device.

**basic language support.** Abend-AID reports without source information. Compare to extended language support. Abend-AID Release 9.4 and more current require Extended Language Support.

**batch.** Processing in which jobs are grouped (batched). The jobs are executed sequentially, and each job must be processed to completion before the following job can begin execution.

**batch file utility (CWDDSUTL).** A utility used for the preparation of report and source listing files.

**BDAM.** Basic direct access method.

**BL cell.** Base locator cell. Contains the base address used by the computer to reference data within storage. These cells are used by COBOL programs to provide addressability to data within the working storage section of a program.

**BLL cell.** Base linkage locator cell. These cells are used by COBOL programs to provide addressability to data within the linkage section of a program.

**CAA.** Language Environment's Common Anchor Area.

**CA-IDMS.** Computer Associates' Integrated Data Management System that runs on IBM computers and provides a natural language query language.

**CEEDOPT.** Language Environment's default batch option control table.

**CEEROPT.** Language Environment's option control table for IMS regions.

**CEEUOPT.** Language Environment's user option control table.

**CIB.** Language Environment's Condition Information Block.

**CLIST.** Condensed listing of the Procedure Division for a COBOL program.

**COBOL.** Common business-oriented language. A high-level programming language, based on English, that is used primarily for business applications.

**Compuware language processor.** A component that accepts COBOL, PL/I, and Assembler compiler output, builds sort work records, sorts and merges the records, and merges the records with the output listings to produce processor control blocks for use as input to Abend-AID.

**Compuware Shared Services (CSS).** Storage, retrieval, and maintenance capabilities provided for reports and source listings by components shared among mainframe Compuware products.

**Compuware Viewing Facility (Compuware/VF).** A menu-driven, online viewing facility used by Abend-AID.

**Compuware/VF.** Compuware Viewing Facility.

**CSECT.** Control section.

**CSS.** Compuware Shared Services

**CWDDSUTL.** The main program for the batch file utility and Compuware/VF.

**data name.** The name of a data item in the Data Division of a COBOL program.

**DB2.** DATABASE 2. IBM's database management system that provides a relational model of data. DB2 runs as a subsystem of MVS.

**Distributed Viewing Support.** A means of accessing Abend-AID report and source listing files on remote MVS systems that do not share DASD.

**DL/I.** Data language one. IBM's database management facility provided by the IMS/VS database program products.

**DMAP.** Data Division map for a COBOL program.

**DSECT.** Dummy control section. A control section that an assembler can use to format an area of storage without producing any object code.

**dump.** Hexadecimal representation of storage that may contain data useful for diagnosing an error.

**EDB.** Language Environment's Enclave Data Block.

**enhanced compiler listing.** A convenient source of quick reference information and program documentation that merges MAP/DMAP and OFF-SET/CLIST information, in addition to error and diagnostic messages, with a source listing.

**Enterprise Common Components (ECC).** The shared components of mainframe Compuware products, that provide Compuware Shared Services.

**entry-sequenced dataset (ESDS).** VSAM dataset whose records are loaded in sequence. Unlike a normal sequential dataset, ESDS records can be accessed randomly by their addresses.

**ESDS.** Entry-sequenced dataset.

**Extended Language Support (XLS).** An Abend-AID facility that utilizes a language processor and Compuware/VF components to provide source information in the Abend-AID report.

**Heap Segment.** LE heap storage is comprised of one or more segments. A heap segment contains both allocated and free storage elements.

**Heap Storage.** An internal storage structure used by LE storage management services.

**HELP.** Primary command that requests Abend-AID's interactive Help facility.

**HLASM.** High-level Assembler

**IAM.** Innovation Access Method

**IDMS.** See *CA-IDMS*.

**IMS.** Information Management System. IBM's DB and TM database systems capable of managing complex databases and networks.

**ISAM.** Indexed sequential access method.

**JCB.** Journal control block.

**JCL.** Job control language.

**key.** Code used to locate a record and establish its position in an index. The key can be part of a field, a full field, or multiple fields duplicated from the record.

**key-sequenced dataset (KSDS).** VSAM file type whose records are loaded in key sequence. Records are retrieved by key or address using an index. New records are inserted in key sequence by means of distributed free space.

**KSDS.** Key-sequenced dataset.

**Language Environment.** The run-time environment of IBM's z/OS operating system.

**LEAID.** The ATE provided by Abend-AID for Language Environment error handling.

**linkage section.** A section of a COBOL program used to describe data that is passed to it from MVS or another program.

**MCH.** Language Environment's Machine State Information Block.

**Multiple Virtual Storage (MVS).** Actual name is OS/VS2-MVS. Operating system for large IBM mainframe computers.

**MVS.** Multiple virtual storage.

**OCB.** Language Environment's runtime Option Control Block.

**offset.** A relative location or position within a data area.

**operating system.** Software that controls the execution of jobs. It may provide resource allocation and scheduling.

**paragraph.** A set of one or more COBOL sentences, making a logical processing entity, and preceded by a paragraph name or a paragraph header.

**PCB.** Language Environment's Process Control Block.

**PCB.** DL/I Program Communication Block.

**PL/I.** Programming language one. A programming language designed for numeric scientific computations, business data processing, systems programming, and other applications.

**Procedure Division.** The section of a COBOL program that contains executable instructions.

**program communication block (PCB).** A control block used by DL/I to define the databases that can be accessed by a particular PSB.

**program specification block (PSB).** DL/I control block that defines a set of DL/I databases that can be accessed from a program.

**program status word (PSW).** An operating system control block defining the current status and location of a program that is executing.

**program storage.** A class of storage used for application programs.

**PSB.** Program specification block.

**PSW.** Program status word.

**register save area.** A group of 72 contiguous bytes used for saving registers when one program calls another.

**relative record dataset (RRDS).** VSAM dataset whose record locations are specified by a number that represents a record's location in the dataset relative to the beginning of the dataset.

**report dataset.** A dataset used to route report output and referenced when viewing reports using Compuware/VF. Specifically, report datasets are report shared directories, report databases attached to a shared directory, and DDIO report files.

**RRDS.** Relative record dataset.

**RRSAF.** DB2 Recoverable Resource Manager Services Attachment Facility.

**RTLS.** LE Runtime Library Services.

**search segment argument (SSA).** A control block used by DL/I to access a segment within the hierarchy of a database.

**SNAP-AID.** Abend-AID facility that displays Abend-AID output during program execution without forcing the program to terminate.

**snap dump.** A dump that is taken at a specific point during execution of a program. Processing is generally continued after the dump has been taken.

**source listing.** A compiler listing and other information about a program stored in a source listing dataset and accessed by Abend-AID.

**source listing dataset.** A dataset used to store source listings and referenced when viewing reports using Compuware/VF. Specifically, source listing datasets are source listing shared directories, source listing databases attached to a shared directory, and DDIO source listing files.

**SQL.** Structured query language.

**SSA.** Search segment argument.

**statement numbers.** Sequence numbers provided by compilers and assemblers to give the programmer an easy means of identifying statements within a program.

**TGT.** A COBOL control block that is also known as the memory map. Contains information about COBOL internal operations and essential information for COBOL debugging.

**U4039-8.** The abend code issued by the Abend-AID ATE (LEAID) when a system dump is requested in addition to the Abend-AID report.

**virtual storage access method (VSAM).** File access method whereby the records in a file on a direct access storage device can be accessed in key sequence (KSDS), entry sequence (ESDS), or relative record sequence (RRDS).

**VSAM.** Virtual storage access method.

**Working-Storage Section.** A section of a COBOL program used to define the data items that are used in a program.

**XLS.** Extended Language Support.



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