

## ABEND-AID PRODUCTS SUPPORT DB2

IBM has designated DB2 as a necessary component of successful IT projects, and an integral part of its new WebSphere platform. As DB2 evolves to meet new IT challenges, developers and DBAs can face increased complexities in finding and resolving faults within DB2.

Businesses wanting to take advantage of the full capabilities of DB2 will need to build new applications, add support to existing applications and convert older applications from other databases to DB2. Each evolution of DB2, however, brings new complexities to the applications that use it — and the IT staffs that must support it.

No matter how carefully you develop DB2 applications or how extensively you test them, you can't protect them from faults — the unexpected conditions or exceptions that cause applications to fail. When a DB2 application fails in production, the resulting downtime can cause loss of revenue, productivity, credibility and customers.

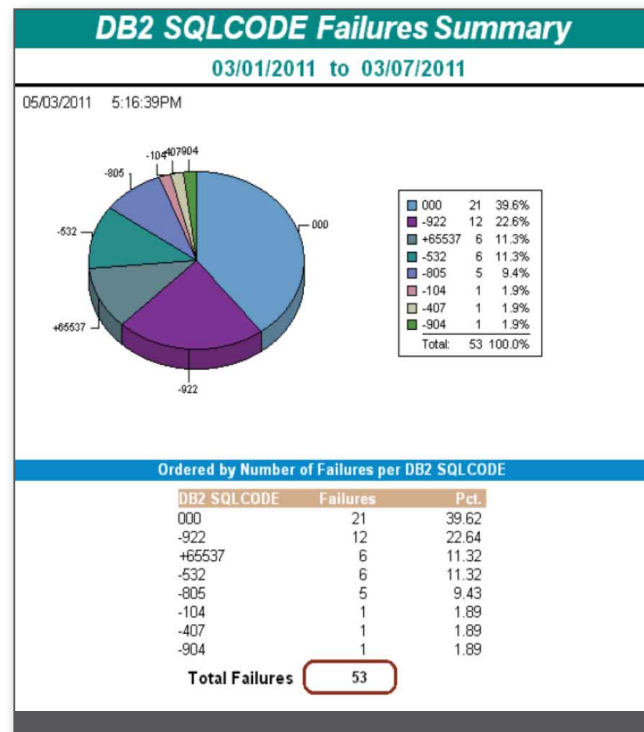
There's a way for you to meet this challenge. Compuware Abend-AID products for DB2 — Abend-AID for DB2, Abend-AID for CICS/DB2 and Abend-AID Fault Manager — offer the most comprehensive DB2 support for proven, scalable and innovative e-business technologies.

By using Abend-AID products for DB2, you can:

- easily detect all DB2, CICS, IMS and batch application faults
- capture pertinent information about the application, system and DB2 environment
- create reports of all DB2 fault activity across multiple IBM OS/390/zSeries, CICS, IMS and DB2 images in a directory
- analyze DB2 reason and SQL return codes along with the captured information to pinpoint problems and recommend corrective actions
- support all DB2 attach methods, including batch support (TSO Call Attach, IMS/TM and DL/I); TSO or Call Attach applications; and RRSAF
- access the DB2 system catalog for complete analysis of the problem
- eliminate recurring DB2 faults through trend analysis reports
- receive real-time reports and graphs reporting all DB2 fault activity levels
- send automatic fault notification to appropriate help desk, DBA and support personnel
- track problems more accurately using automatic help desk integration.

### KNOW WHAT, WHY, WHERE — AND HOW TO FIX IT

When a fault occurs, Abend-AID for DB2 and Abend-AID for CICS/DB2 identify the last DB2 statement executed. The products then locate and capture specific fault-related data, including information within DB2, CICS, IMS, OS/390/zSeries systems and the application itself. By accessing the Abend-AID for DB2 or Abend-AID for CICS/DB2 report, you can tell where the fault occurred, see a diagnosis of why it happened and view suggested actions to fix the problem. Abend-AID Fault Manager automatically notifies appropriate support personnel.



*Fault Manager provides detailed and summary reporting of failures within the DB2 environment.*

Knowing immediately that a DB2 fault has occurred can give you the opportunity to resolve it before it affects application productivity. And knowing exactly where the fault is, why it happened and what steps to take helps speed the resolution process. Whether you use *Abend-AID for DB2* in the batch environment or *Abend-AID for CICS/DB2* in CICS, you have the tools to know about DB2 faults as they occur, prioritize problems by how critical they are and resolve them quickly.

In *Abend-AID for DB2* and *Abend-AID for CICS/DB2*, the directory displays a complete, consolidated report of all fault activity across the entire enterprise, which enables you to identify and prioritize critical DB2 problems quickly. Abends can be prioritized based on a CICS APPLID, transaction name or abend code. This overview also shows you which applications have problems, which problems are most common and how often a problem occurs.

*Abend-AID Fault Manager* creates historical archives of DB2 fault activity. These archives allow managers to spot trends and recurring problems. Thus they can assign developers to eliminate the problems. With *Abend-AID Fault Manager*, users are one step closer to their goal of 100 percent application availability.

## STORED PROCEDURE SUPPORT

When a process calls a stored procedure — compiled programs stored at a DB2 server that execute SQL statements — and a problem occurs, it can be nearly impossible to detect what went wrong. *Abend-AID for DB2* can fully diagnose the problem and provide all supporting information to fix it. *Abend-AID for DB2* gives programmers the ability to see what's happening and what's gone wrong, and the ability to fix it fast — without having to go through a DBA. Using *Abend-AID for DB2*, programmers can:

- view reports of the last SQL code in the stored procedure
- view thorough diagnoses of negative SQL codes returned from stored procedures
- support all stored procedures running on the platform where *Abend-AID* resides, including DB2-controlled (CALL attached) and Work Load Manager-controlled (RRSAF) stored procedures
- obtain a complete analysis of the last DB2 SQL statement, which provides the exact SQL statement in error and diagnoses the specific DB2 reason and SQL code
- view the actual text of the statement in error and contents of the related field
- view fault data by field name, picture type, and current contents of the field and the table field values.

```

Abend-AID ----- DB2 Diagnostic Summary ----- Row 000001 of 000045
COMMAND ==> _ SCROLL ==> PAGE

                                SQL Return Code
                                -----

SQLCODE          -310

Decimal host variable or parameter 1 contains non-decimal data.

Corrective action:

Correct the application program or stored procedure. Ensure that all decimal
variables or parameters contain valid System/370 packed decimal numbers.

One or more packed decimal fields used for this SQL statement
contained invalid data. The invalid field(s) are as follows:

Host Variable          Contents          Error
-----
: DCLTEMPL.HIREDATE
COMMAND ==> _ SCROLL ==> PAGE

                                4444
                                0000
                                1...
                                * INVALID SIGN

The SQL statement returning this SQLCODE at preprocessor sequence number
103 in program ' AADBCS1 ' is:

EXEC SQL OPEN TEMPL_CURSOR

The SQL statement that defined the cursor TEMPL_CURSOR at preprocessor
sequence number 94 is:

EXEC SQL DECLARE TEMPL_CURSOR CURSOR
COMMAND ==> _ SCROLL ==> PAGE

FOR SELECT *
FROM TEMPL
WHERE HIREDATE = : DCLTEMPL.HIREDATE

***** Bottom of data *****

Entry=0000048(AA112INS) Code=SNAP H01AC251 AssistMenu=PF24

```

*Abend-AID for DB2 provides a description of the negative SQL code and possible corrective action.*

When you select an individual fault from the *Abend-AID for DB2* or *Abend-AID for CICS/DB2* directory, you receive an analysis that pinpoints the cause of the fault and helps you quickly resolve the problem. *Abend-AID's* unique diagnostic capabilities — unavailable elsewhere — are tailored to the specific DB2 fault. Going beyond basic error messages, *Abend-AID for DB2* and *Abend-AID for CICS/DB2* provide detailed explanations of all DB2 reason and SQL return codes, in plain English. Both products supplement application abend information with specific DB2 information — such as binds, tables, columns and host variables — which reveals how a program accesses DB2.

## SUPPORT FOR DB2 SYSTEM CATALOG DATA

The DB2 System Catalog contains all the information on the database structure, and provides valuable information when tracing a problem. Abend-AID for DB2 and Abend-AID for CICS/DB2 can access the DB2 system catalog to provide as much information as programmers and DBAs need on the DB2 statement they're diagnosing. Both products access the DB2 system catalog to deliver complete statement analysis information, including:

- host variable names and contents
- columns referenced
- pre-compile information
- DB2 PLAN or PACKAGE bind, pre-compile and dependency data
- resource control table (RCT) entries
- plan dependencies, including tables, indexes and views.

```
Abend-AID ----- Host Variables ----- Row 000001 of 000001
COMMAND ==> _ SCROLL ==> PAGE
==>

Host variables referenced:

To expand the Host Variable Name field, select: EXPAND
```

Host Variable Name	Type	Data
DCLTEMPL.HIREDATE	DECIMAL (6,0)	INVALID VALUE
***** BOTTOM OF DATA *****		

```
Abend-AID ----- Bind Information -----
COMMAND ==> _
```

Plan Bind Information	
Application Plan Name..	QADBTM1
Plan Bind Date.....	29 APR 2009
Plan Bind Time.....	14:35:22.41
Plan Isolation Level...	CURSOR STABILITY
Plan Acquire.....	USE
Plan Release.....	COMMIT
Plan Validate.....	BIND
Valid Plan.....	YES

```
Abend-AID ----- Dependencies ----- Row 000001 of 000002
COMMAND ==> _ SCROLL ==> PAGE

Plan Dependencies:

To expand the name fields, select: EXPAND
```

Object Qualifier	Object Name	Object Type
QAD901DB	QAD901TS	TABLE SPACE
QADBA	TEMPL	TABLE
***** BOTTOM OF DATA *****		

Entry=0000048 (AA112INS) Code=SNAP H01AC251 AssistMenu=PF24

Abend-AID for DB2 provides comprehensive DB2 System Catalog information.

## USER INTERFACES

### 3270 — “GREEN SCREEN”

Abend-AID continues to support the traditional “green screen” interface which is most familiar to today’s users.

### ABEND-AID WEB BROWSER INTERFACE

Abend-AID now has a web interface for tomorrow’s users who will be more comfortable with a GUI interface. The Abend-AID Web Interface only requires a browser on the client machine, and NO intermediate server is required.

### ECLIPSE

Abend-AID also provides an Eclipse plug-in for the Abend-AID Web Browser Interface for those customers who are working in an Eclipse workbench environment.

## THE COMPUWARE PRODUCT SUITE FOR DB2

The Compuware Abend-AID suite of products has provided comprehensive support for DB2 from the first release of DB2. The suite provides three powerful solutions to the challenge of fault management in DB2: *Abend-AID for DB2* for batch environments; *Abend-AID for CICS/DB2* for CICS environments; and *Abend-AID Fault Manager* for enterprise-wide fault management.

### ABEND-AID FOR DB2

*Abend-AID for DB2* works in your batch environment to intercept and analyze application program failures. It provides comprehensive fault diagnostics and reacts 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 in printed form or online, presents only the data necessary to solve the problem — and the most important data first. The specialized diagnostics for the DB2 environment enable programmers to resolve errors independently of the DBA staff.

### ABEND-AID FOR CICS/DB2

*Abend-AID for CICS/DB2* provides comprehensive, up-to-the-minute information on all DB2 fault activity. When an abend occurs, agent-based technology within DB2 is activated, permitting *Abend-AID for CICS/DB2* to detect faults automatically. The tool provides diagnostics for all DB2 DSNB abends and non-zero SQL codes. With *Abend-AID for CICS/DB2*, programmers quickly become more proficient in resolving DB2 application failures, eliminating the need to analyze complex dumps and consult DB2 messages and code manuals.

## ABEND-AID FAULT MANAGER

Abend-AID Fault Manager’s advanced technology provides a high-level view of fault activity within a system, as well as the tools to pinpoint and resolve problems. Designed for enterprise-wide fault management, *Abend-AID Fault Manager* provides a central location for IT managers, project leaders, production support teams, testers, QA groups, developers and technical support personnel to view all application errors, identify trends and problem areas, and manage the entire process efficiently and effectively. *Abend-AID Fault Manager* extends fault analysis to include faults detected in batch, IMS, CICS and DB2 environments. By publishing fault information to *Fault Manager*, *Abend-AID for DB2* and *Abend-AID for CICS/DB2* enable managers to receive real-time and historical reports — information they can use to take charge of their IT problem management.

*Abend-AID Fault Manager* provides:

- timely web-based reports and graphs on DB2 fault information
- archived reports for trend analysis to assist in reducing recurring abends
- automatic notification of faults by pager or e-mail to the appropriate personnel
- automatic feed into helpdesk systems for accurate problem tracking.
- integration with File-AID.

*Abend-AID for DB2* allows you to link directly into File-AID — Compuware’s tool suite to quickly and easily find, create, extract, transfer, fix, convert, load, edit, age and compare data — through a simple keystroke. From an *Abend-AID* report, you can keystroke directly into *File-AID for DB2*, *File-AID for IMS* or *File-AID/MVS*. Once the abend is displayed, the file or object can be directly browsed or edited, by simply entering an Edit or Browse command.

### INTEGRATION WITH XPEDITER

A dynamic link between *Abend-AID* and *Xpediter* — Compuware’s powerful tool for analysis and testing functionality across multiple platforms — allows you to instantly access additional diagnostics needed to resolve abends. Once the source code is fixed, you can use *Xpediter* to recompile and move the application back into production.

*Abend-AID* and *Xpediter* share a common source listing file. This allows programmers to thoroughly test programs within a single compile procedure. From an *Xpediter* session, you can link directly to an *Abend-AID* report to receive *Abend-AID*’s complete analysis. Fewer compiles mean less setup and management time and less demand for CPU and DASD.

To learn more about *Abend-AID*, visit [compuware.com/abendaid](http://compuware.com/abendaid)

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