

HCL Software **Z Abend Investigator**



**Production system
abend analysis**



**Comprehensive
Diagnostics**



**Support for IBM
Sub systems**



**Increase developer
productivity**



» Mainframe Backbone of Enterprise Business

Mission-critical enterprise applications run on IBM Z Systems/Mainframe platforms. Extraordinarily scalable, secure and high-performing IBM Z platform has evolved with decades of enhancements. With that, also comes an array of complex architecture and software assets spread across the enterprises.

In an increasingly complex and competitive environment with challenging business demands, application developers must work quickly — with as few errors as possible. The slightest application or system failure can jeopardize goals crucial to business success.

You can meet these challenges more effectively by gaining greater visibility into application abends to help analyse and resolve problems before they can pose a serious threat to your business objectives.

» Introducing HCL Z Abend Investigator

Z Abend Investigator (ZAI) is a robust problem determination tool for the z/OS environment. ZAI provides precise real-time problem analysis to help developers understand failures and swiftly recover failed applications.

When an application fails, ZAI automatically intercepts the abnormal end and collects real-time information about the abend and its environment at the time of failure.

ZAI is a trusted z/OS tool designed for developers to analyse and fix problems in z/OS, CICS®, IMS™, Db2®, IBM® MQ, and UNIX System Services environments.

Z Abend Investigator (ZAI) helps to reduce the cost of recovering from application outages and to increase application availability through its ability to quickly determine the root cause of the failure down to the line of code and state of the variables at the time of the abend.

Problem analysis steps without ZAI

1. Capture CEEDUMP or MVS dump
2. Determine abend offset into program from dump
3. Obtain a matching compiler listing – need to make sure it really matches!
4. Using the listing, identify the matching source line for the abend offset
5. Identify data fields involved and their offsets into working storage
6. Validate the content of each data field in the dump to determine the fields in error
7. Fix the problem

Problem analysis steps with ZAI

```
Synopsis
Command ===>
JOBNAME: BATCH006  SYSTEM ABEND: 0C7      FAE1    2019/10/02 07:50:4

A system abend 0C7 occurred in module BATCH006 program BATCH006 at offset
X'248'.

A program-interruption code 0007 (Data Exception) is associated with this
abend and indicates that:

    A decimal digit or sign was invalid.

The cause of the failure was program BATCH006 in module BATCH006. The COBOL
source code that immediately preceded the failure was:

Source
Line #
000148      ADD QTR1-WRIT-PREM OF WE264 TO QTR1-ENT OF WRITTEN-PREMI

The COBOL source code for data fields involved in the failure:

Source
Line #
000062      10 QTR1-WRIT-PREM      PIC S9(9)V99 USAGE COMP-3.
000092      05 QTR1-ENT           PIC S9(9)V99 VALUE ZEROS.

Data field values at time of abend:

QTR1-ENT OF WRITTEN-PREMIUM = 0.00+
QTR1-WRIT-PREM OF WE264    = X'000000000000' *** Invalid numeric data ***

*** Bottom of data
```

» Z Abend Investigator Value Proposition

Because Z Abend Investigator starts only after an application abend occurs, resource utilization is well thought off. ZAI does not consume any CPU resources until it is invoked, thus minimizing CPU consumption; an important consideration for production systems.



Understand and transform your application failures on production systems with intelligent tools that get to the root cause analysis of ABENDs thus helping to reduce the down-time of business-critical applications and increase developer productivity.

- Z Abend Investigator (ZAI) is a reliable z/OS product designed to determine the root cause of an application abend with real-time information.
- Delivers real-time information about an application abend, to help assess on
 - ✓ What happened and why?
 - ✓ What program module?
 - ✓ What line of source code was executing when the problem occurred?
 - ✓ What source variables were involved?
- Real-Time analysis - Automatically captures abend, gathers data and provides diagnostics report on following environments.
 - ✓ z/OS, CICS, IMS, DB2, MQ, UNIX System Services
 - ✓ Language environment (LE)
- **Interactive analysis:** Point-and-shoot navigation of abend information.
- **Provides source code information for the following languages:**
COBOL, PL/I, C/C++, Assembler, Java.
 - 31 and 64 bit support for COBOL

Learn More here : <https://www.hcltechsw.com/products/zai>



About HCL Software

HCL Software is a division of HCL Technologies (HCL) that operates its primary software business. It develops, markets, sells, and supports over 20 product families in the areas of DevSecOps, Automation, Digital Solutions, Data Management, Marketing and Commerce, and Mainframes. HCL Software has offices and labs around the world to serve thousands of customers. Its mission is to drive ultimate customer success with their IT investments through relentless innovation of its products. For more information, please visit www.hcltechsw.com.

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