

## ENHANCE CICS APPLICATION QUALITY WITH POWERFUL TESTING AND DEBUGGING

The role of CICS is rapidly changing in today's enterprise. Data and processes on the mainframe are being used by a growing number of internal and external users. As application use and complexity grow, the need for stable, reliable applications also intensifies.

Because CICS is critical to many organizations, companies are looking for ways to improve the agility of their environments, giving them a competitive edge and lowering overall costs. One way that companies are achieving these objectives is by identifying the business processes that run on the mainframe and transforming them to be callable and reusable through Service-Oriented Architecture (SOA).

While SOA introduces new standards and connectivity protocols, much of the required work is similar to what has taken place in CICS environments in the past. Also unchanged is the need for highly sophisticated, yet easy to use, developer productivity tools.

Offering complete control of application code execution, Compuware Xpediter is a powerful testing and analysis tool that accelerates application development and maintenance by streamlining the testing and debugging process.

Providing access to data files and CICS storage, Xpediter/CICS helps locate, identify and eliminate application logic errors, giving developers real-time program control of application code execution and the trapping of abends. The advanced functionality of Xpediter/CICS helps applications move quickly into production-and stay there. Offering capabilities that enhance testing and debugging efforts, Xpediter/CICS provides developers with the ability to:

- view and interact with source code online
- monitor and control execution with added flexibility
- create and edit test data in VSAM, IMS and DB2 databases with a full-function file utility
- intercept abends and storage violations
- access Abend-AID reports from within a debugging session
- verify statement execution
- resolve production abends without impacting program logic or risking data corruption

- trap transactions initiated by a remote source or a non-terminal task
- browse and edit WebSphere MQ data coming into CICS
- access Xpediter/CICS via 3270 web bridge.

Xpediter/CICS is an interactive, source-level testing tool for COBOL, Assembler and PL/I and C programs.

### CHUI OR GUI? YOU CHOOSE.

Xpediter/CICS has an easy-to-use, ISPF-like interface, which greatly reduces the product learning curve and allows developers to use a wide range of capabilities immediately. Now, for the new generations of mainframe developers, who have learned information technology through GUIs (Graphical User Interfaces), Xpediter/CICS has something for them, too. Xpediter/Eclipse is an Eclipse based, alternative interface for driving Xpediter/CICS debugging sessions. It is included at no additional charge and provides a simple, risk-free transition to a modernized user interface for this product.

### STREAMLINE APPLICATION DEVELOPMENT WITH INTERACTIVE TESTING

Xpediter provides automated testing abilities, allowing developers to interactively test source code to understand how CICS programs process data and logic. Developers can even see the impact of program logic changes before any changes are made.

Developers can view source code as it executes. Xpediter/CICS provides complete control of program execution: Developers can suspend program execution, display and change data variables, alter and add logic, set statement execution counts and resume execution from any point in the program.

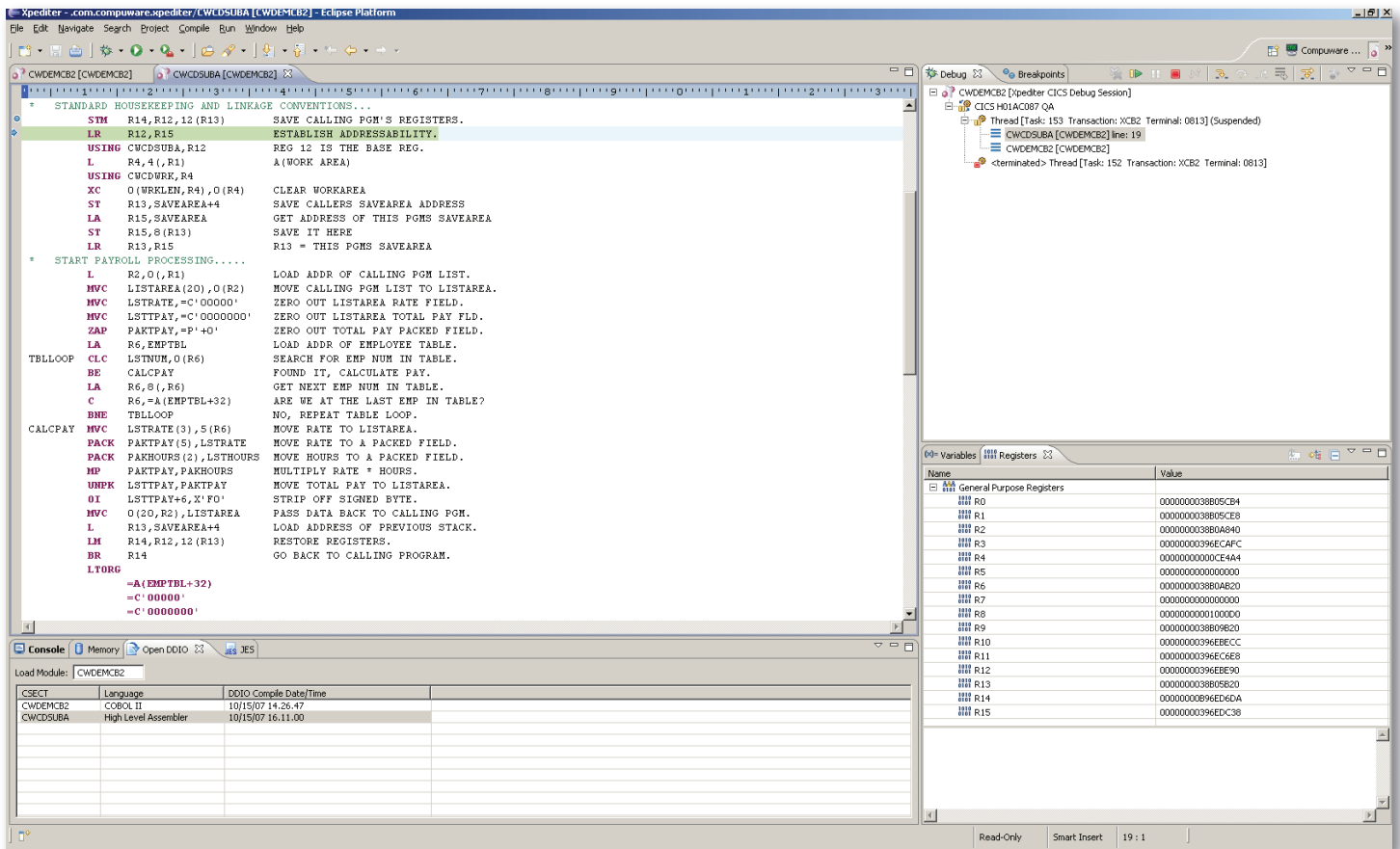


Figure 1: Xpediter/CICS has added an Eclipse Front End, allowing debugging sessions to be controlled inside an easy-to-use, point-and-click GUI.

Xpediter provides the ability to test programs thoroughly, even when those programs include unfamiliar source code. An application runs until an abend occurs or an established breakpoint is reached. At a breakpoint or abend, the following information is displayed: data field names, data field values, the currently executing line of code and a description of any abend. Xpediter/CICS eliminates the need to exit a test session; insert displays or recompile a program to modify code or execution paths; skip lines of code or count executed statements or trace program logic flow. Developers can overwrite data values (to easily correct errors or test conditions), creating test data without going through the time-consuming process of adding data to files and databases. Because Xpediter easily identifies hard-to-find errors, developers can make the necessary changes to ensure the application will run smoothly once it is migrated into production.

## COMPREHENSIVE, RELIABLE COVERAGE AND ANALYSIS

Applications don't always run as expected, and when problems occur in production, they must be resolved immediately. Xpediter/CICS provides developers with a quick, reliable and comprehensive method for distinctly identifying executed code. Developers can discover which individual statement or paragraph was executed with the greatest frequency.

In addition, Xpediter has the ability to locate such hard-to-find problems as loops that cause programs to execute indefinitely.

To confirm code execution, Xpediter can be configured to count how many times specific lines of source code are executed. No longer do untested lines of code get moved into production.

Xpediter provides developers access to multiple resources under CICS, including VSAM and BDAM datasets; IMS databases; DB2 databases; transient data and temporary storage queues; and WebSphere MQ queues.

Developers can track changes made with the File Utility using the Audit Trail Facility. This facility records access modifications made to datasets and transient data queues, and allows developers to tailor the output to meet their business-specific needs. The Audit Trail Facility writes formatted data to a Generation Data Group (GDG) dataset, making backups easy. And logging continues uninterrupted, even if the log is full.

## STORAGE PROTECTION SIMPLIFIED

Developers can watch for storage violations, catching them as they are entered by transactions or programs, with the comprehensive storage protection provided by Xpediter/CICS. Storage protection validates each entered instruction before execution. CICS storage areas can be viewed, allowing verification of table entries and viewing of the program in dump format. Xpediter lets developers use storage protection by program, transaction and groups of both, delivering an incredibly efficient executing environment. Xpediter offers added flexibility by allowing developers to set storage protection using a wild-card character identifier.

Developers can specify different levels of monitoring; storage protection can even be globally enabled, to ensure the security of the entire region.

## COMPREHENSIVE PRODUCTION SUPPORT

Xpediter helps developers find the problem and make any necessary changes to the application in a secure environment. The production support of Xpediter includes the ability to bring a file utility into production to log any changes. This file utility allows developers to browse, edit and map records from CICS files.

Using Xpediter to view CICS resources online, developers can step through program statements and instructions, stop execution, set breakpoints and watch data values change through the program to quickly understand the problem. Administrators can limit access; in one mode, developers can set breakpoints to step through code but cannot change program logic or data; they can only view the execution.

Developers have the ability to trap transactions not associated with terminals, initiated from an outside source, such as distributed or web-based applications, with the Xpediter remote trapping capability. In this newer CICS workload, not only is the Terminal ID long gone, but often USERID and even the TCP/IP address associated with the task are generic, and can't be used for unique trapping purposes. Xpediter/CICS now provides enhanced data-trapping capabilities that let users intercept programs or transactions based on data values found within the initial COMMAREA values or within an initiating WebSphere MQ message.

## ENHANCE TESTING SCOPE WITH INTEGRATED PRODUCTIVITY PRODUCTS

Compuware productivity tools are designed to integrate with other Compuware products, enhancing testing range and scope by providing a comprehensive approach. Thorough, comprehensive testing is especially beneficial for applications developed or modified for e-business use, since a large number of users often access them. Compuware's expansive, integrated testing helps ensure application reliability and usability.

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“Xpediter simplifies the debugging process ... on one project, what would normally have taken me two to three days of work to put dumps in took me only two hours. I walked through the program with Xpediter and changed some values as it went through — on the fly. You can do that with Xpediter — you don't always have to have the exact data conditions.”

— Ron Tschida, Software Engineer, Pentagon Federal Credit Union

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Developers using Xpediter/CICS can quickly access and easily use the fault diagnosis capabilities of the Compuware Abend-AID product within the Xpediter/CICS session. And when the file management capabilities of Compuware File-AID are added to testing efforts, businesses possess an integrated find-and-fix solution. Other components of the Xpediter product suite supplement Xpediter/CICS activities with specialized testing functionalities.

Developers take theabend report generated by Abend-AID, bring up an Xpediter session and step into the erring code. They can step through a program line by line, giving them insight into the actual execution. Code stepping can also be used to verify that an application performs as expected.

With Abend-AID, details on how and why an error occurred are available by simply pressing a PF key. Since Xpediter and Abend-AID share a common source listing file, organizations only need to perform a single compile procedure to gain the powerful problem resolution capabilities of both products.

Developers using Xpediter/CICS can also access Xpediter/Code Coverage to identify the percentage of an application that was exercised, and how often. Code Coverage also measures relative risk points in a program, based on testing to date. This capability is especially useful when testing complex applications and systems used for electronic commerce. Code Coverage provides advanced analysis functionality and assists in identifying any unused code.

Xpediter/CICS easily integrates with Xpediter/*Xchange* to thoroughly test applications and their time- and date-sensitive elements. Thorough testing helps developers determine if period processing and conditional processing affect an application's ability to run correctly. Testing also provides the clues needed to track the source of a problem in production.

When Xpediter integrates directly with Compuware Program Analyzer, users can see structure charts of the program and the paragraph while they are in a debugging session, promoting application understanding. For additional high-level application and discovery, Xpediter/DevEnterprise includes a complex metadata analysis component and a complete application analyzer.

To learn more about Xpediter, visit:  
[www.compuware.com/xpediter](http://www.compuware.com/xpediter)

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**Compuware Corporation World Headquarters** • One Campus Martius • Detroit, MI 48226-5099

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12.01.11 20374pcg

