

# CA InterTest™ for CICS r8.5

CA InterTest™ for CICS provides testing and debugging of IBM CICS Transaction Server for z/OS applications written in COBOL, PL/I, Assembler and Language Environment. This automated testing solution helps you detect and resolve errors interactively as they occur, without having to recompile or end the test session. As such, CA InterTest for CICS can deliver significant improvement over manual debugging methods for the IBM CICS Transaction Server and z/OS environments.

## Business Value

Testing and debugging is one of the most important and time-consuming phases of mainframe application development. Meanwhile, you are challenged with doing more with fewer skilled mainframe programmers, shorter time-to-market pressures and increasingly stringent industry and government regulations.

The automated debugging and testing capabilities offered by CA InterTest for CICS enable you to meet application development challenges head-on by helping to ensure well-tested programs prior to production. Specifically, it provides automated, reliable and cost-effective debugging.

## Product Overview

Building quality into your mainframe business applications through effective interactive debugging helps your applications meet established service levels. Moreover, CA InterTest for CICS helps you deliver quality applications quickly and improves application stability by detecting errors before they occur.

## Delivery Approach

CA Services provides a portfolio of mainframe services delivered through CA internal staff and a network of established partners chosen to help you achieve a successful deployment and get the desired business results as quickly as possible. Our standard service offerings are designed to speed deployment and accelerate the learning curve for your staff. CA's field-proven mainframe best practices and training lower risk, improve use/adoption and ultimately align the product configuration to your business requirements.



## Features

CA InterTest for CICS r8.5 represents continued CA investment and commitment to the mainframer. This release includes enhancements, such as a new graphical user interface (GUI) and Mainframe 2.0 features. With Mainframe 2.0 and the new CA InterTest GUI, you will be able to leverage your existing mainframe investments and extend your mainframe to better support current and future business and IT needs.

### Mainframe 2.0

CA InterTest for CICS has adopted key Mainframe 2.0 features designed to simplify your use of CA InterTest for CICS and enable your staff to install, configure and maintain it more effectively and quickly.

- **CA Mainframe Software Manager:** The CA Mainframe Software Manager automates CA InterTest for CICS installation and maintenance and removes SMP/E complexities.
  - > The **Product Acquisition Service** enables you to easily move product installation packages and maintenance from CA Support Online directly to your mainframe environment and prepare them for installation.
  - > The **Software Installation Service** standardizes CA InterTest for CICS installation, which includes a new, streamlined Electronic Software Delivery (ESD) method that allows CA InterTest for CICS to be installed using standard utilities. This service also provides standardized SMP/E product installation and maintenance via APARs and PTFs, and simplifies SMP/E processing through an intuitive graphical user interface and an intelligent Installation Wizard.
  - > The **Software Deployment Service** enables you to easily deploy CA InterTest for CICS in your mainframe environment.
  - > **CA MSM Consolidated Software Inventory (CSI)** updates and infrastructure improvements add flexibility to CA MSM processing of CSIs and enable CA MSM to more effectively utilize CPU and system memory.
- **Installation Verification Program (IVP) and Execution Verification Program (EVP):** As part of qualification for inclusion in the set of CA mainframe products released every May, CA InterTest for CICS has passed stringent tests performed through the IVP and EVP to find and resolve interoperability problems prior to release. These programs are an extension of CA's ongoing interoperability certification initiative launched in May 2009.
- **Best Practices Guide:** This guide provides information on CA InterTest for CICS installation, initial configuration and deployment to shorten the learning curve for staff responsible for the installation and management of this product.

### User-Friendly Graphical User Interface (GUI) Based on the Eclipse Integrated Development Environment (IDE)

This enhancement provides an Eclipse IDE-based user interface that ensures a common look and feel and new functionality in both CA InterTest for CICS and CA InterTest™ Batch. While this GUI will not replace the traditional 3270 *green screen* interface, it will serve as an alternative user interface that places the power of graphical controls at your fingertips.

If you do not have the Eclipse IDE but want to take advantage of this new GUI with CA InterTest for CICS and/or CA InterTest Batch, you can easily and efficiently do so without installing the Eclipse IDE. However, if you have the Eclipse IDE you may wish to leverage this enhancement as an Eclipse IDE plug-in. In doing so, you will be able to use CA InterTest for CICS and CA InterTest Batch in conjunction with your other Eclipse IDE-based application development and quality assurance solutions, such as third-party Java and C++ development tools.



## NEW CA INTERTEST GUI

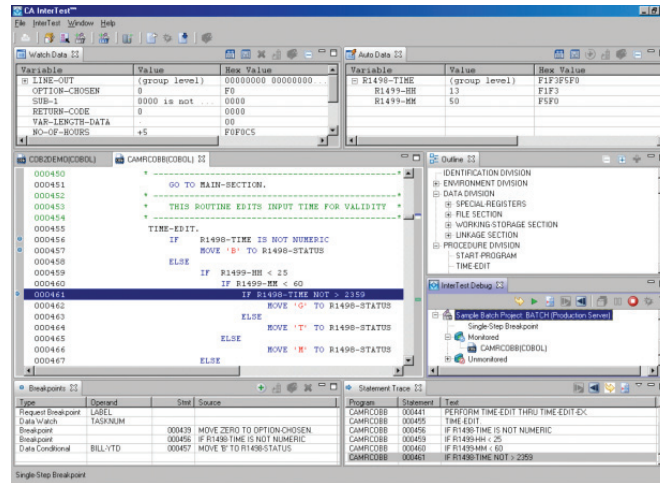


FIGURE A: The new CA InterTest GUI provides an easy-to-use interface for the traditional mainframe user and the new generation of mainframe programmers.

### Other Key Features

- **Test and Debug Directly From the Source:**
  - > Initiate program monitoring
  - > Set and remove breakpoints
  - > Correct problems from any program location without interrupting your testing session
  - > Single step and trace backward through code
  - > Display and modify main storage, files and databases
  - > List the number of times that each verb was executed
- **Abend Prevention by Trapping All Application Errors:** CA InterTest for CICS monitors all program statements during execution. When an error is detected, CA InterTest for CICS automatically suspends program execution, using an automatic breakpoint, before the program fails or the IBM CICS Transaction Server for z/OS region is corrupted. When an automatic breakpoint occurs, the system is protected and interactive debugging can begin immediately.

- **Set Breakpoints to Interrupt Program Execution:** You can set numerous types of breakpoints to interrupt program execution at any point. At each breakpoint, the source listing is displayed. You can then perform debugging tasks, including changing program variables or data areas in storage, setting or removing other breakpoints, dynamically changing or retracing the program's execution path and inspecting files.

CA InterTest for CICS also allows you to decide if whether breakpoints should interrupt program execution before or after your statement executes. After breakpoints allow you to view updated field values in the Keep Window, which is fully scrollable for you to view large group and data items.

- **Control Program Execution to Test All Program Paths:** You can control program execution by stopping and resuming execution from any point. Such flexibility makes it easy to test particular program sections or circumvent errors.
- **Easily Display and Update Data Values:** You can display and update any data values from the convenience of the CA InterTest for CICS source code display without having to interrupt your session view.



- **View and Modify Storage:** The CA InterTest for CICS CORE facility allows you to easily display and modify data in storage by simply overtyping the displayed data.
- **Automatic Program Variable Display (AUTOKEEP):** shows the contents of program variables referenced in the active statement and allows these items to be modified. In addition, these contents can be displayed in the traditional hex+character format or in DISPLAY Format, making it easier to view and modify numeric fields.  
You can also view historical data values for COBOL program variables while stepping backward through previously executed statements.
- **Trace Program Execution:** The trace facility enables you to retrace a program's path of execution and understand its logic. Specifically, statement-by-statement tracing capabilities allow you to understand how you got a certain point in time.
- **Source Code Coverage:** CA InterTest for CICS lists the number of times that each statement was executed directly on the source listing. This information may be used to identify untested code and helps you verify that test data is adequate and that all program paths have been tested prior to implementing your changes in production.
- **Common Symbolic Support Facilitates Cross Product Integration:** To speed error resolution, CA InterTest for CICS allows you to identify program locations symbolically using a common symbolic file (the PROTSYM file), without computing addresses or displacements and without worrying about address changes after recompilation. This is true even for modules that consist of separately compiled programs that are link-edited together.  
The PROTSYM file is utilized by CA InterTest™ Batch, CA InterTest for CICS, CA Optimizer®/II, and CA SymDump® for CICS and CA SymDump® Batch. In addition, CA InterTest for CICS integrates directly with CA's Change and Configuration Management products. Source listings can be easily transferred from CA Endeavor® Software Change Manager (SCM), CA Librarian® Base for z/OS and CA Panvalet® for z/OS to the PROTSYM file.  
If you are a CA Endeavor SCM customer, the CA Endeavor SCM Footprint feature is exploited to enable CA InterTest for CICS to dynamically locate and format symbolic information, eliminating all program-level setup requirements for symbolic support.
- **Synchronized Processing:** To help confirm that the correct version of the source code is used, CA InterTest for CICS provides PROTSYM file and load module synchronization. When a program is selected for testing, CA InterTest for CICS compares source listing and load module dates and times. If no matching files are found, a selection list is displayed from which you can choose the correct listing.
- **Structured File Display Makes Data Easy on the Eyes:** The CA InterTest for CICS FILE facility presents the records of a file, transient data queue, temporary storage queue or DL/I segment in a field-by-field manner—mapped to the data structure to which you are accustomed—providing an immediate frame of reference. Structured fields are shown in either hexadecimal or character format, and data can be changed by overtyping the contents directly on the screen.
- **Interactively Debug Applications That Access DB2:** In addition to performing SQL functions, CA InterTest for CICS provides facilities for testing and debugging CICS applications that access DB2. The DB2 return code and its related message are available online at any breakpoint.
- **Helpful Diagnostic Information:** When CA InterTest for CICS detects an error (for example, a storage violation), it provides diagnostic information to help find the error and determine why it occurred. The HELP facility provides context-sensitive explanations of each ABEND and suggestions on how to use CA InterTest for CICS to correct the error. You can define your own ABEND codes with associated problem descriptions to identify the cause of a preprogrammed ABEND. An ABEND code can be associated with a particular program or it can override the CA InterTest for CICS default description.

- **Support for IBM CICS Transaction Server for z/OS:** CA InterTest for CICS supports all currently IBM-supported versions of IBM CICS Transaction Server for z/OS. Immediate support helps your IT managers implement successful migration projects, while enhanced support for IBM CICS Transaction Server for z/OS allows you to easily debug application programs that utilize the new features.

Support for IBM CICS Transaction Server for z/OS includes exploitation of the following IBM CICS Transaction Server for z/OS features introduced in release 3.1:

- > **Channels and Containers:** When debugging programs that use the new IBM CICS Transaction Server Channel and Container feature, CA InterTest for CICS displays channel and container information at a breakpoint. This supports a new IBM CICS Transaction Server application programming feature that addresses a 32K COMMAREA limitation. The CA InterTest for CICS Request Breakpoint (RBP) feature also supports the new IBM CICS Transaction Server Channel and Container commands.
  - > **New Web API Command:** The CA InterTest for CICS RBP feature recognizes new IBM CICS Transaction Server outbound web API commands during a debugging session.
  - > **LE Enabled Assembler:** CA InterTest for CICS supports LE Enabled Assembler programs that are invoked as the main program in a transaction.
- **Debug Production Applications Symbolically From any CICS Region:** Even the most thoroughly tested program can abend in production. CA SymDump for CICS, a complementary product to CA InterTest for CICS, enables you to diagnose transaction ABENDS symbolically without having to analyze dumps.
  - **CICSplex Exploitation:** CA InterTest for CICS exploits the CICSplex environment by monitoring a program wherever it executes in the CICSplex. CA InterTest for CICS also supports non-CICSplex MRO/ISC configurations.
  - **Key Storage Area Display:** This feature allows you to display details of program storage, base locators, global tables and communications areas.
  - **Numerous Usability and Technical Currency Features:**
    - > Debug the full set of 64-bit instructions and monitor and display 64-bit registers
    - > Display data items from the IBM Enterprise COBOL compiler LOCAL STORAGE data section

## Benefits

CA InterTest for CICS enables you to test and debug directly from your source and prevent ABENDS by trapping application errors online. Additionally, it allows you to set breakpoints to interrupt program execution and utilize the latest capabilities found in IBM CICS Transaction Server for z/OS and CICSplex. All these features combine to help you effectively reduce application downtime and improve quality.

## Why CA

CA InterTest for CICS is a key component of CA's Mainframe 2.0 initiative. In addition to being a component of the CA Application Quality and Testing Tools, CA InterTest for CICS is also part of Enterprise IT Management (EITM), CA's larger industry vision. EITM helps you to unify IT and simplify the management of complex computing environments across your entire enterprise for better business results.

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