

CA Verify® Automated Regression Testing for CICS r8.5

CA Verify® Automated Regression Testing for CICS is CA's automated mainframe testing tool for IBM CICS Transaction Server for z/OS applications that use 3270-type terminals or terminal emulation. Using CA Verify Automated Regression Testing for CICS, you can perform unit, regression, stress, concurrency, migration and system testing and resolve issues that occur as a result of these tests. Moreover, CA Verify for CICS helps you streamline the testing of major system changes, such as z/OS or IBM CICS Transaction Server upgrades and maintenance, and log any online CICS application.

Business Value

CA Verify Automated Regression Testing for CICS helps ensure that your IBM CICS Transaction Server for z/OS applications function correctly in both your test and production environments. With the test automation capabilities delivered in CA Verify Automated Regression Testing for CICS, you can be assured of repeatable processes and reduction in the costs associated with assuring the quality of your applications—and the even higher costs arising from production errors and system downtime.

Product Overview

CA Verify Automated Regression Testing for CICS helps you automate and perform several types of tests for IBM CICS Transaction Server for z/OS applications that use 3270-type terminals or terminal emulation. Automated testing capabilities are provided for regression, unit, stress, concurrency, migration and system testing.

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

Mainframe 2.0

CA Verify Automated Regression Testing for CICS has adopted key Mainframe 2.0 features designed to simplify your use of CA Verify Automated Regression Testing 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 Verify Automated Regression Testing for CICS installation, deployment and maintenance and removes SMP/E complexities.
 - > The **Software 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 Verify Automated Regression Testing for CICS installation, which includes a new, streamlined Electronic Software Delivery (ESD) method that allows CA Verify Automated Regression Testing 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 Verify Automated Regression Testing 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 Verify Automated Regression Testing 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 Verify Automated Regression Testing for CICS installation, initial configuration and deployment to shorten the learning curve for staff responsible for the installation and management of this product.

Other Key Features

CA Verify Automated Regression Testing for CICS is comprised of menu-driven, ISPF-like screens for easy automation of testing tasks. This enables you to be confident in your applications, systems and data integrity before migrating to production.

- **Regression Testing:** Regression testing ensures that a change to a system component does not have unexpected effects on the rest of the system. In regression testing, you create a benchmark test and then reexecute the system using the same test data. CA Verify Automated Regression Testing for CICS compares the results with the benchmark results to determine if there are any unexpected differences.

With CA Verify Automated Regression Testing for CICS, it is easy to create and maintain standardized tests for your applications. Whenever you make a change, you can quickly determine whether or not the application performs as expected.

- **Rules Function:** CA Verify Automated Regression Testing for CICS is used to identify changes in a test stream of prerecorded 3270 activities. This test stream can be used over and over again for regression and volume testing against a new software release. However, instead of using the functions typically needed to pinpoint test matches and mismatches during runtime, you can use the Rules Function to identify known changes before running a test stream and specify in advance how CA Verify Automated Regression Testing for CICS is to handle each change.

Simple, automated point-and-click technology enables you to easily specify and predefine changes to a screen, as well as pinpoint inclusions and exclusions on items you do and do not wish to compare as you test. A rule is created accordingly, eliminating manual programming and rule creation.

By predefining expected changes and instructing CA Verify Automated Regression Testing for CICS how to respond to them, it is easy to streamline the testing of applications that have significant screen changes.

- **Unit Testing:** Unit testing is the most common type of testing. You change individual units of work and test each change. A unit of work may be a program, a sequence of events or just an input/output screen.

An example of unit testing includes changing a field on a screen. Using CA Verify Automated Regression Testing for CICS, you can create test streams (a log of captured records) to identify all screens connected with the change you plan to implement. Once you change the field on the screen in the application, you can run the logged test stream. CA Verify Automated Regression Testing for CICS compares the output produced by the program before the modification with the output after the change and highlights all differences. After reviewing these differences and implementing the required changes, you can rerun the logged test stream to ensure that the modified program functions as expected.

- **Integration Testing:** Integration testing determines if a program works with other programs as expected. A program can pass unit testing and then fail when executed in conjunction with other programs that were not part of the unit test. For example, if several programs update the same file, a change to one program may have unexpected effects on the others.

CA Verify Automated Regression Testing for CICS enables you to easily and efficiently perform integration testing. For example, testing a changed field on a screen beyond unit testing can be accomplished by creating a test stream logging all affected and associated programs. By using that test stream and reexecuting it as part of your ongoing application testing, you can be assured that accurate integration testing is performed and make corrections and modifications as needed.

- **Concurrency Testing:** Concurrency testing determines what happens when similar or identical transactions execute at the same time and try to perform the same task, such as processing the same file or database record.

Manual concurrency testing is extremely difficult, if not impossible, given differences in network and access methods that greatly affect how CICS transactions are processed. And having multiple users simultaneously enter the same transaction on different terminals is impractical. With CA Verify Automated Regression Testing for CICS, concurrency testing is both easy and accurate because CA Verify Automated Regression Testing for CICS automatically ensures that the transactions are processed simultaneously.

- **Stress Testing:** Stress testing lets you discover and evaluate how your system behaves under heavy load levels, and how increased transaction volume affects response time. Using the results of stress testing enables you to effectively tune your applications and systems. Your organization's capacity planners can also employ stress testing to determine when and how to improve your systems to meet projected growth estimates.

Because CA Verify Automated Regression Testing for CICS utilizes virtual terminals, you can simulate system activity without consuming valuable system resources. It allows you to edit and rerun test streams for multiple terminal application testing, repetitive application testing and system-wide testing. In addition, you can log the terminals for an application without specifying terminal names and without incurring the overhead associated with logging all the terminals in a network. Optionally, you can perform large-volume or stress tests in batch.

In addition, full exploitation of the z/OS architecture provides virtual storage constraint relief in multi-terminal environments. This enables you to be confident that you can perform large-scale stress testing without encountering system storage constraints.

- **Migration Testing:** Migration testing ensures that existing applications perform as expected when you anticipate major hardware or software changes, including upgrading from one release of CICS to another, adding disk packs or migrating among releases of z/OS.

For example, if you have applied maintenance to IBM CICS Transaction Server, you will want to ensure that your production work is not negatively affected. You can simply use the test stream creation process in CA Verify Automated Regression Testing for CICS to log several critical hours of activity for as many terminals as you believe are necessary to provide a realistic perspective of production activity. To assess the effects of migration, you can re-execute this test stream post migration, making adjustments as needed.

- **Secure Test Data:** System data security is an important consideration given industry and government requirements. Because CA Verify Automated Regression Testing for CICS is a CICS application, it is subject to whatever IBM CICS Transaction Server security system you are using. In addition to this IBM CICS Transaction Server security, CA Verify Automated Regression Testing for CICS performs its own internal checking based on operator ID to ensure that test streams are accessed only by authorized users.

CA Verify Automated Regression Testing for CICS provides important safeguards to protect against unauthorized use, and is compatible with external security systems, such as CA ACF2™ Security for OS/390 and z/OS, CA Top Secret® Security for OS/390 and z/OS and IBM RACF. These interfaces can be used to restrict access only to authorized users.

Additional security features include the ability to specify read, write and print protection for test streams and rule sets. You can specify that CA Verify Automated Regression Testing for CICS not display the contents of dark (non-display, password-protected) screen fields. Specific applications can be globally excluded from CA Verify Automated Regression Testing for CICS test streams. Moreover, when you create an individual test stream, you can specify which applications to include or exclude.

- **User ID Logging:** User ID logging facilitates inclusion or exclusion of screens captured during logging by a specific user or users. This feature allows for more secure testing by restricting screen access to only certain users. Through user ID logging, only those users who should be working with sensitive data are permitted.
- **Test Data Generation:** CA Verify Automated Regression Testing for CICS generates random test data and/or any fields specific to a single screen or screens for user-specified fields.
- **Support for Current Releases of IBM CICS Transaction Server AND IBM z/OS:** CA Verify Automated Regression Testing for CICS supports the latest releases of IBM CICS Transaction Server, as well as z/OS.



Benefits

Despite your best intentions, manual testing can be error prone and resource intensive. CA Verify Automated Regression Testing for CICS reduces this complexity through the use of test streams that enable you to utilize them later with no need to re-key information or manually compare “before and after” results. Tests that are repeated can be executed accurately and consistently with minimal effort. And by capturing CA Verify Automated Regression Testing for CICS test streams, you can later modify those test streams directly or establish rules that model and handle expected changes as your testing needs dictate.

CA Verify Automated Regression Testing for CICS allows you to simulate production conditions, one of the most critical types of testing. For example, you can use production-like data instead of contrived test data, execute similar or identical transactions simultaneously and simulate high-volume activity without consuming system resources or affecting response time. By utilizing virtual terminals, CA Verify Automated Regression Testing for CICS allows for simulation with minimal resource overhead, reducing the cost to you and your organization.

Why CA

CA Verify Automated Regression Testing for CICS is a component of CA's Mainframe 2.0 initiative, which helps simplify your use of CA mainframe products. It is also part of CA's larger vision of Enterprise IT Management (EITM). EITM helps you to unify IT and simplify the management of complex computing environments across the enterprise.

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