

## CA Date Simulator r2.0

Many applications contain date-sensitive fields or have transactions that require complex testing. For example, manually testing applications for end-of-period, end-of-month and end-of-year behavior is a difficult task. To manage such conditions, testers need tools to “virtually” reset a computer’s system clock. CA Date Simulator gives you confidence by helping to ensure that your time- and date-sensitive applications will execute reliably with future dates. And by simulating sensitive system dates and times during your test phase, CA Date Simulator helps verify that production applications will function as expected.

### Business Value

For date-sensitive business applications, proper time and date handling is critical to ongoing reliability. The results of unexpected system logic could have serious implications, including high costs, system downtime and reduced customer confidence. CA Date Simulator helps your date-sensitive business applications function reliably for both your organization and its customers.

### Product Overview

Many of today’s enterprises rely on applications that perform date-driven processing logic. This requires application tests that simulate production environments for testing across multiple time zones. Through virtual simulation of future system dates and times, CA Date Simulator allows you to test your date-sensitive applications in a production-like environment, without any negative effects to your live systems.

### 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.

## What's New, What's Compelling?

### Mainframe 2.0

CA Date Simulator has adopted a key Mainframe 2.0 feature that is designed to simplify your use of CA Date Simulator and enable your staff to install, configure and maintain it more effectively and quickly.

- **Electronic Software Delivery (ESD):** The Mainframe 2.0 ESD enables you to install CA Date Simulator using standard utilities — without requiring you to reconstitute a tape cartridge. This new procedure helps speed installation and facilitates a consistent install process across CA mainframe products, shortening the learning curve for mainframe staff.

### What's New in CA Date Simulator r2.0

- **Current Time Mode:** In previous releases of CA Date Simulator, the simulated time and date you specified when putting a job or CICS transaction under the product's control was considered its start time. As such, each time the job began, its simulated system clock was reset to the specified time and date. For instance, if you SET a batch job and ran it three times, each time it would appear to have started at the same time and date. The Current Time Mode option in r2.0 allows you to select Current rather than Start when specifying a time and date. This causes the simulated system clock for the job or transaction to include the elapsed time since the moment you did the SET, giving you more simulation flexibility.
- **IMS Date Simulation by User ID:** There is limited support delivered in r2.0 for application programs running under IBM IMS. Programs running in IMS Message Processing Regions (MPRs) and Batch Message Processing (BMPs) regions may have their IOPCB date and time fields, as well as TIME macros and Store Clock instructions, warped on the basis of the user ID associated with the program. Programs running in Fastpath regions are not supported. All versions of IMS from 3.1 and up are currently supported.
- **DB2 Distributed Data Facility Support:** CA Date Simulator has the ability to warp the CURRENT DATE, TIME and TIMESTAMP special registers for remote users of DB2 Distributed Data Facility based on their IDs.
- **Shutdown Utility:** A batch utility, WARPDOWN, is provided as an alternative way of stopping CA Date Simulator.
- **System Management Facilities (SMF) Records:** CA Date Simulator can be instructed to write records to the SMF data sets that allow auditing of all SET and CLEAR commands to place jobs under — or release jobs from — the control of CA Date Simulator.
- **CICS Security Exit:** This new provision allows a user-written security exit to be called by the CICS transaction-level support in CA Date Simulator. When that support has been installed on a CICS system, it attempts to load a user-written exit program called WARPCSEC from its non-APF-authorized load library. If present, the exit is invoked each time a command is received from the DTSM transaction to SET, RESET or CLEAR a user transaction. The exit program decides for you whether the command is to be allowed or disallowed.
- **SET BY Indicator:** Both the CA Date Simulator ISPF dialog and the CICS DTSM transaction display the ID of the last user to have SET or RESET each job or transaction currently under the product's control.
- **Field-Level Help:** Most of the screens of the ISPF dialog contain field-level help. When you place the cursor in an input field and press "F1," a screen explaining the purpose of that field is displayed.

## Features

### Key Capabilities

CA Date Simulator provides:

- **z/OS System Clock Intercept:** CA Date Simulator mimics future dates and times by intercepting calls to the z/OS system clock and inserting artificial dates and times. It facilitates system, integration and unit testing to help verify that your applications will reliably execute.
- **Critical Date Simulation in Your Test Environment:** CA Date Simulator allows you to simulate end-of-period (quarter-end, year-end) and other sensitive dates and times during testing, rather than during production. This helps confirm that your business-critical applications will process complex or sensitive dates and times with greater reliability.
- **Common Programming Language, Clock Format and Time Zone Support:** CA Date Simulator supports such common programming languages as COBOL, PL/I and Assembler, as well as decimal, binary, timer units, microseconds and TOD standard clock formats. Additionally, the product supports virtual starting times for testing end-of-day processing and simulating different time zones for inter-zone communication processing.
- **Ease of Use with Low Overhead:** CA Date Simulator does not require the computer's actual time-of-day clock to be reset. Instead, the product uses its own z/OS subsystem to simulate the date and time only for requested applications. A CA Date Simulator administrator communicates with the subsystem using an ISPF dialog and instructs it to warp (alter) the start time and date of specified jobs, started tasks and TSO users. A separate administrator interface is also provided for CICS to allow transaction-level warping of CICS applications. The product runs as a batch job or a noncancelable started task executing from an APF-authorized library that may be terminated with a simple STOP command from the operator's console. When one of the specified jobs begins execution, CA Date Simulator starts a simulated clock for that specific job, which you can initially set to a specific date and time.
- **No JCL Changes:** Jobs under the control of CA Date Simulator require no JCL changes. When a job starts, a log message is written indicating that the product is in control.
- **Added Security:** To help improve security, you can restrict usage of CA Date Simulator by individual user IDs or groups of user IDs. For added flexibility, you can also restrict usage by jobs and job classes.
- **Request Intercept through Macros:** CA Date Simulator intercepts all requests made for the current date and time through the TIME LINKAGE=SVC and TIME LINKAGE=SYSTEM macros, and supports the various formats of these macros. Additionally, you can instruct the product to trap specific store clock (STCK) instructions.
- **CICS Transaction-Level Time Warping Support:** CA Date Simulator supports CICS transaction-level warping, allowing you to specify warp times for individual transactions based on its name, terminal ID, user ID or any combination of these. Transactions that have not been specified for warping receive the actual time and date. CICS support in CA Date Simulator applies to CICS-specific date and time facilities, including EIBDATE, and z/OS or OS/390-specific date and time facilities, including TIME/STCK.
- **Support for Application Programs Running Under IBM IMS for z/OS:** CA Date Simulator simulates dates for application programs running under IMS. Programs running IMS MPRs and BMPs can have their IOPCB date and time fields, TIME macros and STCK instructions warped based on the user ID associated with the program.
- **Support for IBM DB2 for z/OS Applications:** CA Date Simulator can simulate the SQL special registers CURRENT DATE, TIME and TIMESTAMP, as well as the default values for date and timestamp fields. It also supports the Distributed Data Facility, allowing date simulation for SQL calls made by remote users.

## Benefits

Application quality and integrity is more important today than ever before, especially as you strive to meet increasing service-level objectives. To realize these goals for your date- and time-sensitive business applications, you need a product that enables quick and efficient simulation of production-like date and time scenarios in your test environment. With CA Date Simulator you can automate the testing of the applications relying on date and time logic, leading to higher application quality, reduced risk of failure, lower cost and higher resource utilization.

## Why CA

CA Date Simulator is a component of both CA's Mainframe 2.0 initiative and Enterprise IT Management (EITM) vision, which helps you to unify and simplify the management of complex computing environments across the enterprise. CA Date Simulator demonstrates the principles of EITM through capabilities that help you more efficiently test applications that rely on date and time logic.

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