

## IDENTIFY, SIMULATE AND TEST DATE- AND TIME-SENSITIVE APPLICATIONS

*Xpediter/Xchange* helps developers identify, simulate and test date- and time-sensitive applications with greater speed and confidence.

Electronic commerce and other changes in the way the world conducts business demonstrate the need for thoroughly testing applications, and their time- and date- sensitive elements. Thorough testing can help programmers determine if period processing, conditional processing and other conditions impact an application's ability to run correctly. Testing can also provide the clues needed to track the source of a problem in production.

An industry-leading date and time testing tool, *Xpediter/Xchange* allows programmers to simulate any date and time between 1900 and 2041. *Xchange* provides full support for multiple date access methods without requiring any changes to the program modules or JCL. Programmers can use *Xchange* to test a program's reaction to any date or time without dedicating a separate system, or altering other jobs running simultaneously.

*Xchange* simplifies the process of "rolling the calendar backward and forward" when time-sensitive data applications need to be tested. With the *Xchange* ISPF interface, programmers can specify the date and time for single or multiple jobs, steps, procedure steps and program names. An entire batch application with multiple jobs can be tested with a single *Xchange* request; programmers have the option of setting the date and time for all jobs running under a specified job class, or exchanging the date and time for specific job classes only.

Programmers can exchange entire CICS regions or set individual requests by terminal, transaction, program, job class or CICS user ID. A single request can be used to specify both user ID and asynchronous tasks to be tested. *Xchange* also offers a batch interface that provides date and time simulation for batch jobs that can be conveniently invoked from any *Xpediter*/TSO screen.

### IDENTIFY DATE- AND TIME-SENSITIVE APPLICATIONS

To aid programmer efforts to trace problem paths, *Xchange* saves and stores all date/time simulation requests at user-specified intervals.

### SPECIALIZED SUPPORT FOR ENVIRONMENT-SPECIFIC NEEDS

*Xchange* provides the ability to simulate and test dates and times across multiple environments and languages, including Assembler, CICS, DB2, IMS/DC and LE/370. A single, easy-to-use interface gives programmers an efficient approach to date and time simulation, substituting exchanged dates regardless of the date access method used automatically.

### PROVIDING A COMPREHENSIVE APPROACH TO TESTING

An industry leader, Compuware delivers testing products that can be paired with other products to provide a comprehensive testing approach to IT challenges. Working together, *Xchange* and other mainframe XPEDITER products provide capabilities that can increase testing thoroughness and efficiency. Automatically identifying any errors, *Xpediter* helps programmers trace through logic on a line-by-line basis with its powerful debugging capabilities. After *Xchange* has changed a date or time, programmers can run programs through XPEDITER to confirm that logic is processing correctly. With *Xpediter*, programmers can set breakpoints to start and stop program execution, modify program logic and intercept abends without recompiling. XPEDITER can also provide a count of how many times each line of code has executed, so programmers can determine that code changed has actually been tested.

*Xpediter* also works with Compuware Hiperstation products to provide extensive testing support. To reduce the risk of application failure due to date change problems, programmers combine the capabilities of Hiperstation and *Xchange* to rerun tests, removing any uncertainty as to whether a program failure is the result of an error with data or program logic. When Compuware File-AID/Data Solutions and Abend-AID are also used, businesses are equipped with a comprehensive solution to address all aspects of their testing needs.



## SIMULATE DATES AND TIMES ACROSS MANY ENVIRONMENTS

Programmers can simulate and test dates and times across multiple environments and languages with *Xchange*. Providing an efficient approach to date and time simulation, *Xchange* automatically substitutes exchanged dates and times without requiring changes to program modules or the JCL.

## ASSEMBLER

*Xchange* provides testing support for the two special date access methods Assembler programs use, the store clock instruction and the time macro. Programmers receive automatic support for the time macro, including the LINKAGE=SYSTEM and LINKAGE=SVC parameters. The exchanged date is substituted automatically whenever *Xchange* is running. Since many Assembler programs also use the store clock instruction, *Xchange* has two methods that allow date and time exchanges for this time and date access.

## CICS

Fully compatible with CICS Transaction Server, *Xchange* provides programmers with increased capability and flexibility when testing in complex, large-scale environments. Programmers can specify a time and date at a terminal, user ID, transaction or program level, regardless of which language the program uses. *Xchange* also makes it easy to test a program fully without additional steps: pre-primed EIB fields do not require any additional transactions to make full test coverage possible.

## DB2

Applications that contain DB2 calls can use *Xchange* to test different dates and times automatically. *Xchange* intercepts every DB2 date/time request, but changes the date or time only when a match is found with a request in the *Xchange* setting screen. With *Xchange*, programmers can substitute DB2 calls at any level that the programmer requests: program, transaction, terminal, job, job step, user ID or procedure. Multiple programmers can test CICS and IMS/DC applications with DB2 calls at the same time and with different dates and everyone can rely on the accuracy of their tests.

## IMS/DC

Supporting all date access methods for IMS/DC programs, *Xchange* also provides additional support for date requests through the IOPCB. With *Xchange*, programmers control, input and test different dates and

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XPEDITER/Xchange ----- Simulated Date Time Settings ----- PREFIX SET TO *
COMMAND ==> _ Scroll ==> PAGE

Line Commands: H - Set and Hold P - Permanent R - Reset D - Delete
Status Codes: H - Held P - Permanent C - Completed * - Error T - Threshold

C/S Owner UserID Async Terminal TransID Program YYYY/MM/DD HH:MM:SS TASK NO
- H 0296 *
- C 0296 PFHNDFO 0296 XGCL XGCCOBLE 2020 05 14 18 00 00 41
- C 0296 PFHNDFO 0296 XGCB XGDEMCBL 2020 05 14 18 00 08 42
- C 0296 PFHNDFO 0296 XGCB XGDEMCBL 2020 05 14 18 00 08 42
- C 0296 PFHNDFO 0296 XGCB XGDEMCBL 2020 05 14 18 00 10 43
- C 0296 PFHNDFO 0296 XGCB XGDEMCBL 2020 05 14 18 00 11 43
- C 0296 PFHNDFO 0296 XGPL XGCPLT 2020 05 14 18 00 13 44
- C 0296 PFHNDFO 0296 XGPL XGCPLT 2020 05 14 18 00 18 45
- C 0296 PFHNDFO 0296 XGAS XGDEMASH 2020 05 14 18 00 20 46
- C 0296 PFHNDFO 0296 XGAS XGDEMASH 2020 05 14 18 00 21 46
- C 0296 PFHNDFO 0296 XGAS XGDEMASH 2020 05 14 18 00 23 47
- C 0296 PFHNDFO 0296 XGAS XGDEMASH 2020 05 14 18 00 24 47
- C 0296 PFHNDFO 0296 XGAS XGDEMASH 2020 05 14 18 00 24 47

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PF1 Help PF2 COPYRIGHT/TRADE SECRET NOTICE PF3 END PF7 BWD PF8 FWD
IB 00.1 02/15
  
```

Figure 1: *Xchange* increases testing capabilities, allowing programmers to exchange dates and times by user ID, Terminal ID, transaction or program, in CICS.

times to determine how their applications will perform in the future. Programmers do not need to re-link applications that contain IMS/DC calls; *Xchange* substitutes IOPCB values automatically. Programmers can set different times for IOPCB and other time services, providing realistic test scenarios. Time services are enabled automatically when an IOPCB date and time exchange is specified, so every type of program date and time activity is exchanged in the same manner.

## LE (LANGUAGE ENVIRONMENT)

Applications running in an LE environment can use dates from a variety of sources — from an SVC 11 call, from intrinsic functions in high-level languages or from a Language Environment callable service. *Xchange* provides the information a programmer needs to determine whether a date change should be made, without modifying execution of JCL. Programmers can be confident that the exchanged date is the same throughout the program — without any setup, and without impacting program modules or JCL. Separate test modules are not required, which helps ensure that programmers are testing code in modules containing the latest, up-to-date maintenance fixes. With *Xchange*, all activity, including date-simulation testing, can run against the standard language modules.

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

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