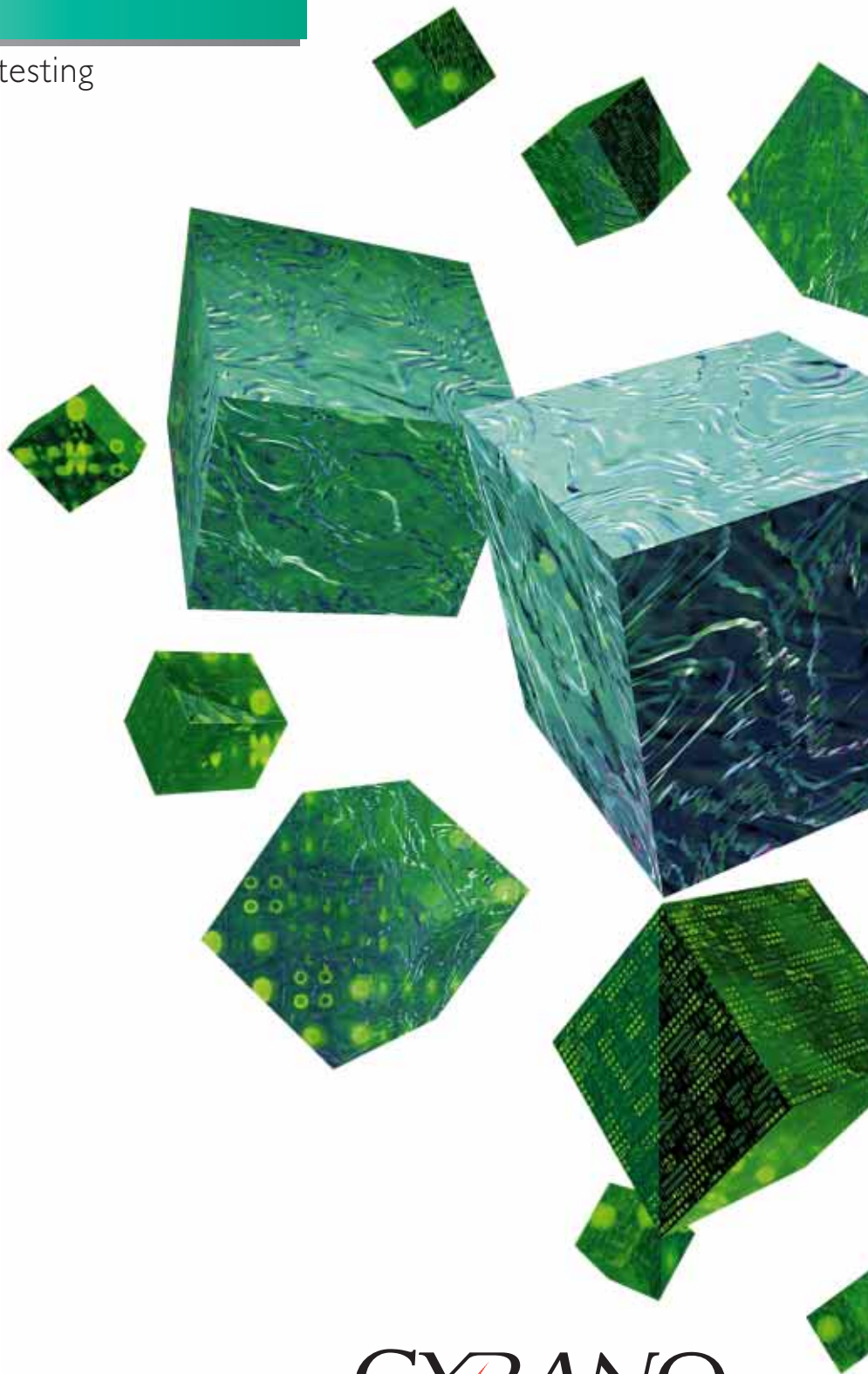


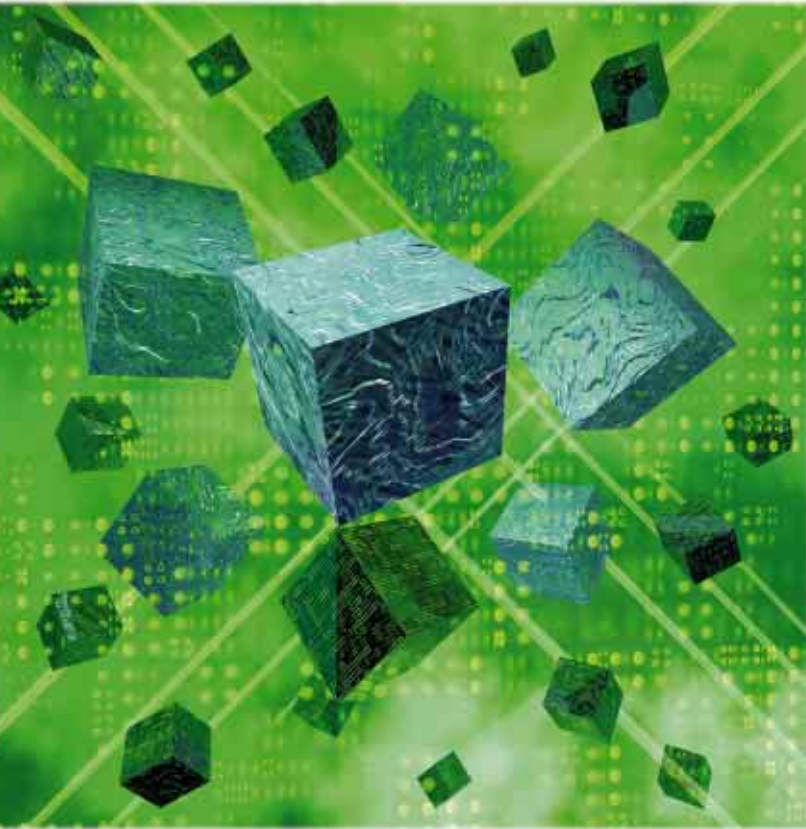
CYRANO Year 2000 Solutions

application Y2K compliance testing



CYRANO

CYRANO Year 2000 Solutions



CYRANO, Inc. offers **CYRANO MillenniumTest**, **CYRANO DateWarp**, and **CYRANO Video** and **CYRANO DataAge** as its **Comprehensive Y2K Testing solution**.

CYRANO DataAge™

CYRANO DataAge allows you to 'age' data in existing files or databases to any future timeframe. Data ageing enables you to repeat the same processes in multiple timeframes and compare the results to ensure they are exactly the same.

- Works on both data files or data files and databases.
- Supports both fixed-period date shifting and logical ageing to compensate for holidays, non-working days, and days of the week/month.
- Rule-base date ageing.
- High performance, server-based ageing process.
- Available for: OpenVMS, HP/UX, Solaris, Windows 95/98, NT, Compaq Tru64 UNIX, IBM AIX.

CYRANO MillenniumTest™

CYRANO MillenniumTest is a host-based suite of automated testing tools designed for validating legacy terminal-based applications. CYRANO MillenniumTest is an enhanced version of CYRANO's award winning product, CYRANO Test, with new features added specifically for Year 2000 compliance testing.

CYRANO MillenniumTest is founded on a simple principle: it automates the manual testing performed by real people. Manual testers are simulated using scripts, which feed characters into the application as if they have come from the keyboard and verify information displayed on the terminal screen. CYRANO MillenniumTest is a multi-threaded engine capable of executing any number of scripts from any number of 'pseudo-terminals'. Tens of thousands of terminals can be driven for system load/stress testing or performance benchmarking.

CYRANO DateWarp™

CYRANO DateWarp is a system clock simulation utility for OpenVMS that allows developers/testers to independently perform tests and analyze production problems related to date-sensitive scenarios without affecting other users on the system or manipulating the real system clock.

Go back in time to reproduce problems that occurred in the past, then go forward in time to test how date-sensitive applications will behave in the future. It also features the ability to run multiple test cycles that span a period of time. For example, to perform a week's or month's worth of processing, including day-end and start-of-day procedures.

CYRANO Video™

CYRANO Video provides a powerful set of terminal monitoring and recording facilities. Recording files provide a complete audit trail of Year 2000 testing performed both manually and using automated testing tools. Recording files also provide a powerful mechanism for capturing and analyzing application failures, thus eliminating the need for written or verbal problem descriptions. This significantly reduces the workload of Help Desk resources and the turnaround time for development staff to analyze and correct problems.



Overview

EASY TO USE

Simplifies and automates Year 2000 testing of character-based applications by automatically advancing the dates used during the test phase, to ensure a complete and thorough validation. Operates across computing architectures to test virtually any business-critical application.

GENERIC

Validates applications and layered software without access to source code. Runs on a wide range of operating platforms, including: OpenVMS, UNIX, HP3000 MPE and more. CYRANO MillenniumTest operates exclusively through the application's user interface.

INTELLIGENT

Allows the recording of each business process, identifying date-sensitive input and output. Then, after 'aging' the recording, simulates the process across key future dates. During simulation, all date-sensitive behavior is compared with the original recording to check for correct relative behavior. Recordings may be extended and customized to accommodate specific tests.

VERIFIABLE

Maintains a complete audit trail of all simulations, and provides comprehensive reporting that can be used to prove that systems have been thoroughly tested and that all reasonable steps were taken.

OPEN

Incorporates an open interface that enables users to extend test functions and to integrate them with other components of their Year 2000 tool framework. Supports all types of testing requirements to validate entire systems for complete regression testing.

Why simulate the system date?

To test for Year 2000 compliance, it is essential to test key business processes running in the future. For example: to validate an order-fulfillment system it might be necessary to run order-entry on 1st December 1999, delivery on 4th January 2000 and invoicing on 31st January 2000.

But advancing the system clock presents significant technical and logistical problems, particularly if several test engineers need to test independently, each in their own timeframe. Date simulation also reduces the need to have dedicated test systems exclusively for your Year 2000 project.

The Solution:

CYRANO DateWarp solves the problem by allowing users to simulate the system date and time within any of the following OpenVMS process contexts (or any combination) :

- **PROCESS**
- **JOB** (and its subprocesses)
- **USER**
- **GROUP**
- **SYSTEM**

CYRANO DateWarp is easy to use. It is invoked with a simple DCL command and comes complete with a standard OpenVMS Help file.

CYRANO Video provides a set of terminal monitoring and recording facilities that assist in many aspects of your Year 2000 conversion and help with support and software maintenance for years beyond. Monitoring/Recording facilities are used to generate a complete audit trail of terminal activity during software testing, capturing baseline functionality, security monitoring, analysis of application usage, debugging application problems, user training, demonstrations, and more. Recording files can be played back for review at different speeds and can be printed in hard copy form as detailed listings or a series of screen snapshots.

CYRANO Video allows support staff to watch a user's screen to aid with problem description and then go on to 'take over the terminal keyboard' and show the correct usage even when the user and help desk staff are thousands of miles apart.



Key benefits of **CYRANO MillenniumTest**

- Quick Return on Investment**
 Increases productivity in the validation process and shortens the overall Year 2000 project.
- Any time - All the time**
 Offers benefits in ALL phases of your Y2K project. Provides automated testing capabilities far beyond the Year 2000. Allows you to validate that your applications still function correctly after any further enhancements or modifications are made.

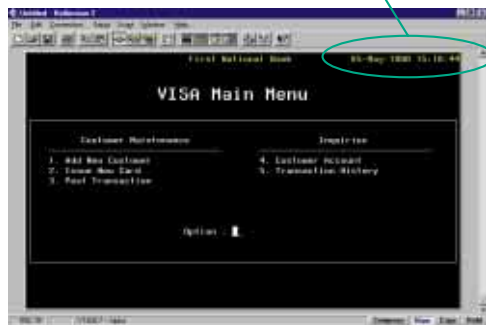


For example:

BEFORE using DateWarp:

```
$ SHOW TIME
05-MAY-1998 15:18:44
$ RUN EXAMPLE.EXE
```

System date displayed on screen

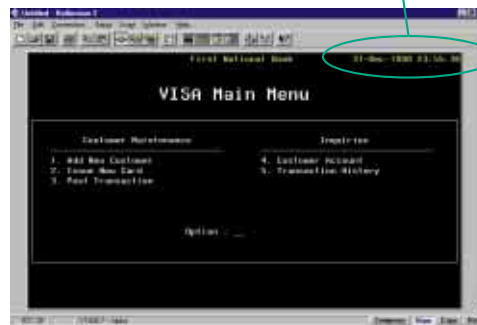


AFTER using DateWarp:

```
$ WARP /USER=JSMITH/SET= 1-JAN-2000:08:00:00
$ SHOW TIME
1-JAN-2000 08:00:01
$ RUN EXAMPLE.EXE
```

User specifies a simulated date

Application date is



```
$ WARP / SET="31-DEC-1999 23:55:30" /USER=JSMITH
sets the simulated time to 23:55 on 31st December 1999 for all processes owned by JSMITH
```

- Provides a complete audit trail of your testing process for proving Due Diligence.
- Allows the capture and documentation of an application's functionality before changes are made.
- Significantly reduces the time required for problem analysis and correction turnaround.
- Provides a complete description of a problem even when it cannot be reproduced.
- Assists Help Desk operators in clearly understanding users' problems by seeing what the user sees.
- Provides training and demonstration capabilities through prerecorded application scenarios.

Key Features

- **CYRANO MillenniumTest** employs a true client/server architecture to separate test development from test execution, and can be used to test applications running on a wide range of platforms.
 - A Graphical User Interface is used for test planning, development, monitoring and maintenance. Test execution is performed on the application host machine or from a Windows NT™ workstation.
 - A wide range of servers are supported where a native test engine can be deployed to perform both functional and performance tests directly on the system under test.
 - An interactive script recorder creates test scripts as the application is run. No programming is required to generate comprehensive regression and functional validation scripts. This allows tests to be created by less technical staff or end users.
 - Data-driven testing is implemented with ease. Dates displayed on the screen as well as those entered from the keyboard are extracted from the test script during the recording process. These dates are stored externally from the logic of the script; this allows key business transactions to be performed during multiple future date simulations without requiring any modifications to the test scripts.
 - Time Warping and Time Machine tests can be created, either to simulate a number of key dates for which the application is to be tested or to simulate running the application for each day within a given period.
 - Additional regression testing functionality can be easily integrated into a test script during the recording process. Regression test cases ensure that the application's original behavior is verified and that no undesirable side effects are introduced when an application program is modified or enhanced.
-

- **CYRANO DateWarp** simulates the system clock by intercepting all calls to the system date/time routines and adds, or subtracts, a date/time offset to the real system time. **The REAL system clock is unaffected.**
 - When used in conjunction with CYRANO MillenniumTest, CYRANO DateWarp provides OpenVMS users with a comprehensive Year 2000 test platform capable of supporting both Time Warp and Time Machine test strategies.
 - Run multiple test cycles spanning a specific period of time.
 - Perform data fixes in a production environment.
 - Rebuild transaction sequences chronologically to correct a problem.
-

- **CYRANO Video** allows monitoring, recording and remote keyboard intervention of user terminals.
 - Automatically document/record baseline application functionality prior to Year 2000 changes.
 - Monitor production activity to analyze how real users are typically using applications.
 - Passively capture and document current transaction response times prior to year 2000 changes.
 - Automatically generate an audit trail of testing performed both manually and using automated testing tools.
 - Assists in documenting the testing process for establishing Due Diligence of the Y2K conversion.
 - Eliminate the need to generate written or verbal documentation of problems encountered in testing or production use. Recordings provide full details for analysis, even when the problem cannot be reproduced.
-

CYRANO Suite

CYRANO offers a full suite of Automated Software Quality tools and services. For more information on CYRANO's product offerings, please visit us @ www.cyrano.com.

CYRANO ClientPack

Client/Server and Web development optimizer for MS Windows Clients

CYRANO WinScope™	Application development optimization
CYRANO Standards™	Conventions and rules management
CYRANO Insight™	PC client API/SQL capturing and analysis
CYRANO Robot™	Industry leading automated testing for MS Windows
CYRANO Manager™	Repository-based test planning and defect tracking
CYRANO WebTester™	Web-based application regression testing
CYRANO WebTester Business Edition™	Reliability and availability testing of Web-based services

CYRANO DBPack

Client/Server SQL transaction analysis, performance tuning and monitoring

CYRANO Workbench™	Application and database transaction analysis
CYRANO Production™	Server transaction analysis and alerting
CYRANO Watcher™	Enterprise SQL statistics collecting
CYRANO MigrationPack™	SQL Server migration methodology and tools

CYRANO ServerPack

Client/Server load, stress and volumetric testing

CYRANO Impact™	User simulation, transaction loading, stress testing
CYRANO LoadTest™	Load testing for physical PC clients

CYRANO VTPack

Application development testing and certification

CYRANO MillenniumTest™	Y2K testing tools for character-based applications
CYRANO DateWarp™	User-controlled date/time simulation tool
CYRANO Test™	Enterprise-wide application testing and certification
CYRANO Video™	Terminal/Recorder for automated documentation
CYRANO DataAge™	Age dating for data files and databases
CYRANO Timer™	Live transaction performance measurement analysis
CYRANO TestStream™	Automated application certification

Supported Platforms

Client OS:

Windows 95, NT, 3.1, MS Windows emulator on UNIX

Server OS:

Sun Solaris, SunOS, HP-UX, Compaq Tru64 UNIX and OpenVMS, IBM AIX, Windows NT

RDBMS:

Sybase 4.2, 4.9, 10, 11, MS SQL Server 4.2, 6.5, Oracle 7.0+

Client Database API:

CT-Lib, DB-Lib, ODBC



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