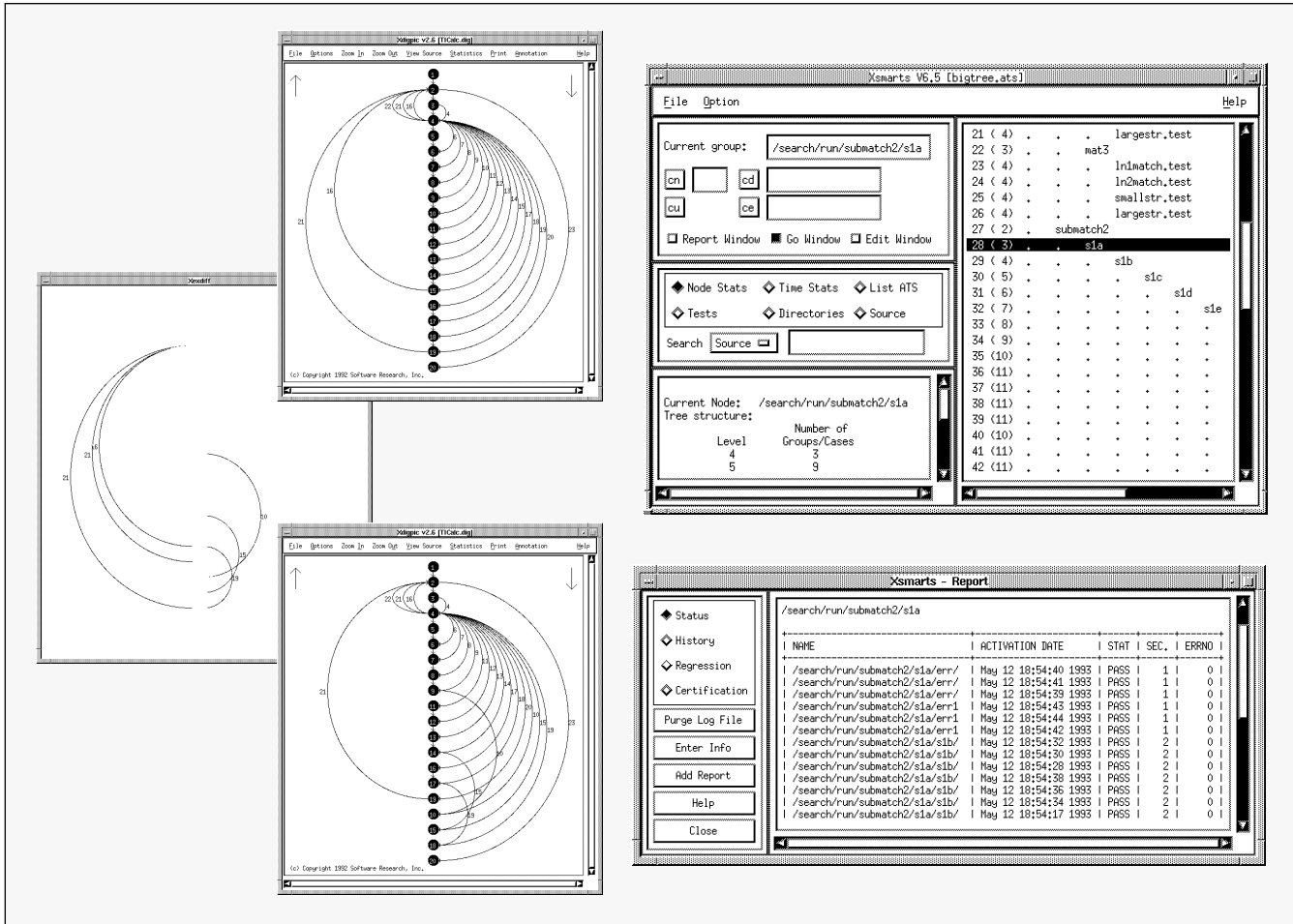




SOFTWARE RESEARCH, INC.

# TestWorks Regression

REGRESSION TOOL SUITE



**TestWorks Regression** captures user test sessions that may include the capture of images (such as those shown top left). These test sessions are then stored in the test management system (upper right) for individual or batch execution. When tests are played back, **TestWorks Regression** automatically compares the images for differences and logs the results into a variety of reports. (The Status report is shown bottom right).

## PRODUCT DESCRIPTION

The useful life of any software product realistically involves multiple revisions. The incorporation of new features and removal of errors, however, often creates new errors. To guarantee that the software still functions as expected after changes have been made, previously designed baseline tests of the system must be rerun. While essential, the manual execution of the regression testing process requires a large investment of time which is rarely available at the end of a development cycle.

**STW/Regression™** is designed to overcome the tedious and error-prone process of manual testing by automating the execution, management and verification of a suite of tests. Three components are included in **STW/Regression**: **CAPBAK™** for automated capture and playback of user sessions, **SMARTS™** for test organization and management, **EXDIFF™** for test verification.

**CAPBAK** records all user activities during the testing process including keystrokes, mouse movements, widget/object activity and captured bitmap images and ASCII values. The captured images and characters provide baselines against which

future test runs are compared. **CAPBAK's** automatic synchronization ensures reliable playback of these test sessions, allowing tests to be run unsupervised as many times as the tester wants.

**SMARTS** organizes **CAPBAK's** test scripts into a hierarchical structure for execution individually or as a part of a test suite and then conditionally evaluates each test according to the verification method selected.

**EXDIFF** compares bitmap image or ASCII value files, while discarding extraneous discrepancies during the differencing process.



**RECORD/PLAYBACK MODES**

- *True-Time* — Automatically records keyboard and mouse activity into an ASCII-format test script and plays back user input exactly as recorded.
- *Character Recognition* — Tolerates minor application changes to the graphical user interface (GUI), e.g. button locations, menu list orders, fonts and background colors.
- *Widget/Object mode* — Records and plays back actual widget (object) calls, regardless of screen location, color, size, or other setup.
- *Playback Interaction* — Pauses, resumes, terminates, speeds up, or slows down a test session.
- *Playback Editing* — Inserts or appends new test sessions to an existing test script during playback.

**FIVE SYNCHRONIZATION MODES**

- *Automatic Output Synchronization* — Automatically synchronizes on event-sensitive environment differences, such as new windows popping up in varying locations.
- *Image and Window Synchronization* — Waits for the contents of a screen fragment or window to update and match the baseline image.
- *Automatic Event Synchronization* — Automatically handles event-sensitive application differences, such as menus appearing in varying locations.
- *Timing Synchronization* — Playback timing can be adjusted to different values, allowing playback to be slowed down overall or just after events such as mouse clicks and carriage returns.

**VIRTUAL DISPLAY CAPABILITIES**

- *Multiple Test Simulation* — Runs multiple client-application tests on the same workstation for the purposes of load generation, performance assessment and multi-user test sessions.
- *Virtual X-Server* — A modified version of the X-server behaves just like a standard X-server, except it is simulated in memory and not tied to any physical screen. This allows playback activity to run in the background, freeing the screen to continue executing other processes or commands.

**MULTIPLE VERIFICATION MODES**

- *Bitmap Verification* — Images captured during a recording session are automatically compared with the actual images at playback.
- *Character Recognition Verification* — Determines a successful test based on the actual values, extracting the values from bitmap images using Optical Character Recognition (OCR) and translating them into ASCII characters, regardless of differences in font and background color.
- *Widget/Object Verification* — Determines a successful test based on the actual object call made, regardless of the location, size, color, etc. of the widget.

**EXTENSIVE MASKING CAPABILITIES**

- *Positive Masking* — Ignores user-specified areas of an image file.
- *Unrestricted Mask Creation* — Allows unlimited, overlapping positive masks to be set for an individual image.
- *Reverse Masking* — Enables inverse processing of an image file mask, where only the user-specified area is compared during the differencing process.

**TEST SCRIPT MANAGEMENT**

- *User-Designed Test Description File* — Organizes and manages an extensive number of test scripts for the purpose of automating the testing process. The Automated Test Script (ATS) "test tree hierarchy" emulates the modularity and functionality of the tested application.
- *Test Script Augmentation* — Allows test cases to be supplemented with activation commands, comparison arguments, system calls, evaluation methods, and control structures (*if*, *else* and *while* clauses).
- *Including Other ATS Files* — Incorporates other ATS files, allowing for a modular organization of multiple test scripts.
- *makeats Utility* — Based on minimal test case information, the **makeats** utility expedites ATS creation by generating a hierarchical test structure consisting of groups and an unlimited number of sub-groups and test cases.

**TEST OUTCOME MANAGEMENT**

- *Test Outcome Archival* — Saves a detailed record of test outcomes and timing statistics to a default log file and automatically generates a variety of reports.
- *Status Report* — Lists the most recent test execution outcomes.
- *History Report* — Includes current and past test results for every test executed.
- *Regression Report* — Lists only those tests whose outcomes have changed since previous test activation.
- *Certification Report* — Summarizes the total number and percentage of tests that have passed or failed.


**TESTING ENVIRONMENTS**

- GUI Host Based Testing
- Client/Server Testing
- Terminal Emulation Testing
- Remote System Testing

**SUPPORTED PLATFORMS**

- Sun SPARC
- x86 Solaris
- SGI
- IBM RS/6000
- HP 9000 - 700/800
- DEC Alpha
- UNIXWare
- SCO
- MS-DOS/MS-Windows


**TECHNICAL SUPPORT**

- Telephone hot-line assistance for installation and technical questions is available.
- Maintenance contracts provide continuing product support and upgrades. 

For more details on **TestWorks Regression**, contact:

**SOFTWARE RESEARCH, INC.**

1663 MISSION STREET, SUITE 400  
SAN FRANCISCO, CA 94103 USA  
PHONE: (415) 861-2800  
TOLL FREE: (800) 942-SOFT  
FAX: (415) 861-9801  
E-MAIL: info@soft.com  
http://www.soft.com

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