Outils de test

Ensure optimal operation of Linux applications and Linux Systems

TimeSys's Eclipse-based tools can be used to develop and execute tests for both applications and Linux distributions. TimeSys's testing tools include over 2,200 pre-packaged system tests designed to help you exercise and verify the Linux system that you are deploying.

Built-in wizards make it easy to create custom tests for your applications and critical system functions. These tests are easily edited and debugged using the powerful integrated development environment (IDE) included with the testing tools. Once your tests are completed, The tool's execution framework makes it easy to automatically download and execute selected tests on your target hardware. The testing tools also automatically collects and collates test results and displays a graphical summary.

Whether you are developing application or porting Linux to custom hardware, TimeSys's testing tools save you time and money by providing a robust, repeatable test creation and execution environment.

TimeSys's testing tools provide a complete test development environment. Highly customizable, TimeStorm LVS's workbench consists of views and windows that show different aspects of the test environment. (Click here for a larger view)

Read more:

IDE for Creating and Editing Tests

TimeSys's testing tools include a powerful Integrated Development Environment (IDE) for test and test suite development. Test suites are groups of related tests. The test editor can handle simple or complex test projects with multiple users, large files, or large numbers of files, and provides an easy-to-use interface for the fast creation of application and Linux tests. The IDE makes it easy to:

- Create projects using the integrated Project Wizard
- Use the Import/Export Wizard to bring in or export existing projects
- Perform automatic code formatting
- Highlight matching braces and use color coding to highlight keywords, string literals, and numeric literals
- Perform block operations
- Define macros
- Perform full and incremental searches
- Use bookmarks to mark specific project components or locations

Graphical Support for Managing Multiple Test Projects

TimeSys's testing tools make it easy to create, view, manage and switch between multiple test and test suite projects. The user interface provides a concise, easy-to-use navigation pane that makes it easy to switch between multiple projects, while other panes enable you to simultaneously edit tests from multiple projects.

Project management features enable you to:

- Create multiple test projects and test suites, and revisit them whenever you wish
- Share files between test projects
- Identify, compare, and browse changes between test project source files using integrated diff capabilities
- Reorganize window and pane layout and save customized user interface settings for subsequent re-use
- Associate multiple sets of test compilation settings with single test projects that are being compiled for multiple platforms
- Work on multiple tests and test suites simultaneously

Flexible Support for Any Linux Distribution

TimeSys's testing tools provide over 2,200 precompiled tests for basic Linux system functionality. The testing tools also include the source code for all of these tests so that you can run them on any embedded hardware, not just the embedded system that you are working with today. Similarly, the testing tool is completely interoperable with any Linux distribution for any embedded hardware, as long as that Linux distribution includes a GNU C compiler that can be used to cross-compile those tests on the desktop system where you are running the testing tools.

TimeSys's testing tools can be used to test applications or system functionality on any Linux distribution that features:

- 2.4 or 2.6-based Linux kernels
- Complete GNU cross-compiler toolchain

Easy Cross-Compilation and Test Management

The IDE easily generates versions of your tests and simplifies test management by providing an intuitive process for communicating with the board and downloading and installing applications. Step-by-step prompts identify all of the parameters required for establishing communication with the board, tranferring tests, starting and stopping tests, and collecting test results.

With TimeSys's testing tools, you can:

- Develop and cross-compile your tests on Linux and Windows desktop systems
- Associate different toolchains with different tests and test suites, and easily switch between toolchains in order to recompile your tests for different target systems
- Define customized test execution sequences to run specific sets of tests
- Easily tranfer tests and any associated files to your embedded target hardware
- Easily execute tests on the remote hardware and automatically collect and display test results

Test Automation and Execution Framework

TimeSys's testing tools provide all of the the core elements needed to develop, run, manage, and automate a complete set of tests, including support for importing existing tests and exporting tests for use elsewhere. The framework is extensible to include the custom kernel, drivers or application tests.

Extensive System Test Suites

TimeSys's testing tools include more than 2,200 proven system tests that cover the kernel, compiler, toolchains, and drivers to verify high quality embedded Linux deployments. This full test suite can be used to verify any Linux distribution and are the same tests that TimeSys uses to verify the completeness of our packaged board-specific Linux distributions, which are put through thousands of hours of testing. (POSIX testware is sold separately.)

The test suites include:

- **Linux Test Project (LTP)**Open Source tools, which test the Linux kernel and related features and validate the reliability, robustness, and stability of Linux. The LTP test suite covers basic Linux commands, system stress tests, math functions, system memory and more.
- **POSIX Conformance Test Suite (PCTS)**, which provides conformance, functional and stress testing against the functions described in the IEEE Std 1003.1-2001 System Interfaces specification. The PCTS covers input/output (I/O) functionality, shared memory, memory locking and mapping, and more.
- **National Institute of Standards and Technology (NIST) Test Suite**, which complements the POSIX Conformance Test Suite (PCTS). The NIST test suite checks terminal interface control, environment parameters, filesystems and file descriptor types, library calls and more.
- **Real-Time Operating System Test Suite (RTS)**, which verifies the functionality of Linux on a target board. This test suite contains only real-time tests and evaluates API functionality, mutex tests, networking protocols and more.

- **TimeSys Test Suite (TTS)**, which verifies Linux on a target board. This test suite contains only non-real-time tests and evaluates input/output (I/O) functionality, memory tests, process thread functionality and signaling tests.

These tests validate:

- Latency
- Interrupt control
- IPv6
- POSIX
- Priority
- Load/Stress
- GDB/GDB Server
- KGDB
- Schedulers
- Mutex
- Timers
- Memory
- Signal
- Process

Key Benefits Summary

The key benefits of using TimeSys's testing tools in your application and systems development environment include:

- Reduced cost of testing:
  - More than 2,200 test packages that eliminate building from scratch
  - Intuitive user interface that reduces the learning curve
  - Automated testing that reduces engineering and QA time
- Fast time to market:
  - Automated testing
  - Creation and management of test sequences
  - Support of multiple architectures and processors
- Maximized developer productivity:
  - Detailed test reporting
  - Database integration

System Requirements

Target Requirements:

Operates with any Linux based on Linux 2.6 or 2.4.

Host Requirements:

- **Host Hardware**
  - To install on a Windows or Linux host, your system must satisfy these hardware requirements:
  - Intel Pentium-class processor
  - 256 MB (or better) RAM
  - 163 MB disk space
  - Ethernet connection to the target system
  - Serial port console or terminal connection to the target system
- **Host Software**
  - To install on a Linux host, your system must satisfy these software requirements:
  - Windows®(2000 Professional or XP Professional), Red Hat Linux 9, Red Hat Enterprise WS, SuSE 9.1, Fedora Core 2
    - On Windows systems, TimeStorm uses any HTML browser
    - On Linux systems, TimeStorm uses Mozilla
  - Java Runtime Environment (JRE) 1.4 (automatically installed on the host)
  - JDBC-compliant database (HSQLDB provided)
  - Cygwin 1.5

Powerful Companion Tools

TimeSys's testing tools provide a complete development, execution, and execution framework for testing your applications or embedded Linux systems. To help you develop and debug those applications or custom Linux deployments, TimeSys offers development tools to help you develop, debug, and deploy custom applications, customized

versions of the Linux kernel, support for specialized devices, and filesystems that contain the applications that your embedded systems need to run.

TimeSys's development toolsare also based on the Eclipse framework and are completely interoperable with TimeSys's testing tools. The development tools work with any Linux distribution.