

QUALITY ASSURANCE TESTING TOOLS



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Quality Assurance refers to the steps taken to make sure that a company's products or services are of sufficiently high quality. The University of Minnesota's Office of Information Technology (OIT) offers many tools to make sure this can be accomplished. The Quality Assurance (QA) area within OIT provides services for the support, administration, and maintenance of the University's product suite for testing.

Test Director for Quality Center and Quick Test Professional are two of the software test tools that QA purchased from SQALabs Interactive Corporation. QA manages access to these test tools initiated by a request from a customer.

In addition, QA provides support and assistance to our customers who are using these tools; provides communication to our customers with any issues concerning these tools through a listserv, and tests and implements software upgrades to these two applications.

The Quality Assurance group provides services in the following areas:

- Quality Assurance (QA) Consultation
- Metrics and Process Improvement
- Test Management
- Test Automation
- Testing Tools Support
- Application Performance Benchmarking
- Infrastructure Performance Benchmarking
- Sandbox Laboratory

TEST DIRECTOR FOR QUALITY CENTER

Test Director for Quality Center (QC) is a software tool used to create/document, manage and store issues and test assets related to an application or project. Test assets include Requirements, Test Plans, assembled Test Sets and Execution History, and Defects. In addition, the tool provides a set of standard reports, that are customizable, that show the progress of the testing effort. Test Director for Quality Center is also being used as a tool to create, document, manage, and report project issues.

QUICK TEST PROFESSIONAL

Quick Test Professional (QTP) is an automated functional testing tool designed to capture, verify and replay user interactions automatically to test your application or web site. It is a software tool that creates a test script by recording the operations as a user performs them in the application. The software also enables test scripts to be enhanced to test more than one condition and incorporate decision-making logic. QTP provides for functional test and regression test automation.

SQALabs TestDirector™ is the industry's leading global quality management solution. It enables you to manage the entire quality process to deliver high-quality applications quickly and effectively.

SQALabs TestDirector's five modules—Service Test Manager, Requirements Manager, Test Plan, Test Lab, and Defects Manager—are seamlessly integrated, allowing for a smooth information flow between various testing stages. The completely web-enabled SQALabs TestDirector supports high levels of communication and collaboration among distributed testing teams, driving a more effective, efficient global application testing process. This integrated solution enables real-time visibility to modifications to interrelated application quality elements.

SQALabs TestDirector brings communication, organization, documentation, and structure into every testing project. It becomes the central point of control—storing all information about application requirements, tests, and defects in a central repository. Because team members can use SQALabs TestDirector via the web, they all have access to critical project information—regardless of geographic and organizational boundaries.

By adding structure to every aspect of the testing process, SQALabs TestDirector is beneficial throughout an organization:

- Business analysts use SQALabs TestDirector to define application requirements and testing objectives.
- Test managers and project leads work with SQALabs TestDirector to design test plans and develop test cases.
- Test automation engineers create automated scripts and store them in SQALabs TestDirector's repository.
- Quality Assurance (QA) testers use SQALabs TestDirector to run manual and automated tests, report execution results, and enter defects.
- Developers review and fix defects logged into the SQALabs TestDirector database.
- Project managers use SQALabs TestDirector to create application status reports and manage resource allocation.
- Product managers review the SQALabs TestDirector project to decide whether an application is ready to be released.

HOW IT WORKS

SQALabs TestDirector streamlines the quality process—from requirements management through planning, scheduling, and running tests to defect tracking—in a single browser-based application.

Service Test Management: SQALabs TestDirector for Quality Center, via SQALabs Service Test Management™, allows IT teams to automatically create QA testing requirements and test assets for SOA services and environments. SQALabs Service Test Management enables change impact testing on SOA services, and integrates seamlessly with SQALabs's Systinet offerings.

Requirements Management: Requirements-based testing keeps the testing effort on track and measures the application against business-user needs. Application functional requirements can be specified within the SQALabs TestDirector Requirements Management tab. These requirements can be tied to (or can auto-generate) functional test cases, ensuring a traceable link is established to the corresponding requirement definition. SQALabs TestDirector ensures traceability throughout the testing process for any downstream quality efforts tied to specific requirements. It enables you to easily see what percentage of the application functional requirements are covered by tests, how many of these tests have been run, and how many have passed or failed.

Planning Tests: Based on the requirements, testers can start building the test plan and designing the actual tests. Test plans can be created in SQALabs TestDirector or imported from Microsoft Word or Excel. SQALabs TestDirector provides a repository for both manual and automated tests, including the ability to leverage SQALabs Business Process Testing™ for collaborative test design. By maintaining all test planning information in a central repository, team members can easily reuse entire test plans or individual test cases for future application releases.

Scheduling & Running Tests: After test design and development issues have been addressed, the testing team is ready to start running tests. To test the system as a whole, the team needs to perform various types of testing—functional, regression, load, unit, and integration— each with its own set of requirements, schedules, and procedures. SQALabs TestDirector's Test Lab Manager allows scheduled tests to run unattended, overnight, or when the system is in least demand for other resources. By defining dependencies between tests, you can realistically emulate real-life business processes, while making it easier to maintain and reuse the tests. Manual test execution is performed through a browser-based wizard that provides step-by-step guidance to the person executing the test.

Reports and Graphs: The testing process generates large amounts of data. SQALabs TestDirector's customizable graphs and reports help users analyze this data. In a traditional organization, it may take 10 to 20 hours to create a test-execution report or a release-status assessment. With SQALabs TestDirector, all of this information is at your fingertips, enabling an up-to-the-minute decision on application status or team productivity. In addition, SQALabs TestDirector can export any report source to native Microsoft Excel, providing endless data-manipulation by end users.

Defect Management: Analyzing defects is what essentially helps managers make the "go/no-go" decision about application deployment. SQALabs TestDirector's Defect Manager supports the entire defect lifecycle—from initial problem detection through fixing the defect and verifying the fix. This ensures that no defect is overlooked or closed before it has been addressed. Before any new defect is submitted, SQALabs TestDirector checks the database for similar defects, minimizing duplicate defects and eliminating the need for manual checking.

Features And Benefits

- Supports the entire testing process—requirements management; planning, building, scheduling, and executing tests; defect management; and project status analysis—through a single web-based application.
- Allows teams to access testing assets anytime, anywhere via a browser interface.
- Integrates with the industry's widest range of thirdparty applications, preserves your investment in existing solutions, and creates an end-to-end quality management infrastructure.
- Manages manual and automated tests. Helps jumpstart automation projects.
- Accelerates testing cycles by scheduling and running tests automatically, unattended, 24x7. Results are stored in a central repository, creating an accurate audit trail for analysis and enabling consistent quality processes.
- Allows teams to analyze application readiness at any point in the testing process with integrated graphs and reports.
- Enables teams to create quality assurance testing requirements and test assets for service-oriented architecture services and environments.
- Provides analysis and decision support tools: Integrated graphs and reports help analyze application readiness at any point in the testing process. Using information about requirements coverage, planning progress, run schedules, or defect statistics, managers are able to make informed decisions on whether the application is ready to go live.

FUNCTIONAL TESTING: SQLabs QUICKTEST PROFESSIONAL

SQLabs QuickTest Professional™ is an advanced automated testing solution for building functional and regression test suites. It captures, verifies, and replays user interactions automatically, while providing advanced functionality for tester collaboration.

SQLabs QuickTest Professional provides the industry's best solution for functional and regression test automation for every major software application and environment, including next-generation development technologies such as Web Services, Macromedia Flex, .NET, J2EE, and ERP/CRM applications.

SQLabs QuickTest Professional offers a fresh approach to automated testing that deploys the concept of Keyword-Driven testing to radically simplify test creation and maintenance. Unique to SQLabs QuickTest Professional's Keyword-Driven approach, testers can select to build test cases by capturing flows directly from the application screens using robust capturing technology (record/replay). In addition, power users will find full access to the underlying test and object properties through an integrated scripting and debugging environment that is round-trip synchronized with the Keyword View.

With this offering, your QA organization can:

- Empower the entire team to create sophisticated test suites with minimal training.
- Ensure correct functionality across all environments, data sets, and business processes.
- Fully document and replicate defects for developers, enabling them to fix defects faster and meet production deadlines.
- Easily regression-test ever-changing applications and environments.
- Help the organization deliver quality products and services, and improve revenues and profitability. Enable tester workgroups to share automated testing assets across teams.

HOW IT WORKS

SQLabs QuickTest Professional allows even novice testers to be productive in minutes. You can create a test by simply declaring the test steps using the script-free Keyword View. QuickTest Professional also enables you to capture test steps via an integrated Record capability. The product documents each step in plain English, and combines this with an integrated screenshot via the ActiveScreen.

Unlike traditional scripting tools that produce scripts that are difficult to modify, SQLabs QuickTest Professional's Keyword-Driven approach lets you easily insert, modify, data-drive, and remove test steps.

SQLabs QuickTest Professional handles new application builds. When an application under test changes, such as when a "Login" button is renamed "Sign In," you can make one update to an XML-based Shared Object Repository (within the new Object Repository Manager), and the update will propagate to all tests that reference this object. You can publish test scripts to SQLabs Quality Management, enabling other QA team members to reuse your test scripts, eliminating duplicative work.

SQLabs QuickTest Professional supports functional testing of all enterprise environments, including Web Services, Windows applications, web (Internet Explorer, Firefox, Netscape), .NET, Java/J2EE, SAP, Siebel, Oracle, PeopleSoft, Visual Basic, ActiveX, mainframe terminal emulators, and Macromedia Flex.

DESIGNED FOR WORKGROUP COLLABORATION

SQALabs QuickTest Professional 9 has been designed for test automation collaboration among tester workgroups. It includes a new technology for managing application definitions or objects in the new Object Repository Manager. Based on an open XML format, the Object Repository Manager enables QuickTest Professional users to collaborate and share application object definitions. QuickTest Professional keeps object-level changes synchronized among users throughout test creation efforts. In addition, it now offers the ability to define object repositories before an application is available to Quality Assurance. In addition, users can share function libraries, application asset definitions, and data-driven spreadsheets across tester workgroups.

SQALABS FUNCTIONAL TESTING

SQALabs Functional Testing™ combines SQALabs QuickTest Professional and SQALabs WinRunner® into a single integrated solution. Functional Testing leverages the integration between WinRunner and QuickTest Professional, where each product can call scripts of the other, and test results are reported into a common reporting interface.

SQALABS BUSINESS PROCESS TESTING

SQALabs Business Process Testing™ is a complete system for functional test case design for both automated and manual testing. Business Process Testing enables non-technical subject-matter experts to become an integral part of the quality optimization process, automates the creation of test-plan documentation, and streamlines test maintenance for application change. SQALabs Business Process Testing reduces the overhead for automated test maintenance and combines test automation and documentation into a single effort. It enables subject-matter experts and business analysts to measure the quality of application deliverables from abstract business definitions defined within the Business Process Testing framework. SQALabs Business Process Testing also improves productivity by enabling business analysts and quality engineers to collaborate effectively. With this role-based solution, subject-matter experts focus on creating high-level test flows that mirror actual business process, while quality engineers concentrate their efforts on areas that enable automation.

PART OF SQALABS QUALITY CENTER

SQALabs QuickTest Professional is part of SQALabs Quality Center™, an integrated set of software, services, and best practices for automating key quality activities, including requirements management, test management, defect management, functional testing, and business-process testing.

Features and Benefits

- Helps provide immediate ROI through industry-leading ease of use and pre-configured environment support.
- Operates stand-alone, or integrated into SQALabs Business Process Testing and SQALabs Quality Center.
- Enables collaboration between workgroups, with shared function libraries, robust object management, and flexible asset storage within SQALabs Quality Center.
- Features next-generation “zero-configuration” Keyword- Driven testing technology — allowing for fast test creation, easier maintenance, and more powerful datadriving capability.
- Identifies objects with Unique Smart Object Recognition, even if they change from build to build, enabling reliable unattended script execution.
- Handles unforeseen application events with Recovery Manager, facilitating 24x7 testing to meet test projectdeadlines.
- Collapses test documentation and test creation to a single step with Auto-documentation technology.
- Easily data-drives any object definition, method, checkpoint, and output value via the Integrated Data Table.
- Provides a robust, highly configurable IDE environment for QA engineers.
- Preserves your investments in SQALabs WinRunner test scripts, by leveraging TSL assets from SQALabs QuickTest Professional/WinRunner integration.
- Rapidly isolates and diagnoses defects with integrated reports that can be exported to XML and HTML formats.
- Enables thorough validation of applications through a full complement of checkpoints.
- Provides Unicode support for multilingual application testing.



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