

► QualityMate for Load Testing

Anticipate operational problems affecting your critical business applications

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QUALITYMATE FOR LOADTESTING

QualityMate suite of tools enables organizations to industrialize the software development process providing support for different process activities like Requirements Management, Tests Management and Issues Management.

QualityMate solution does not imply you to work in a pre-determined way or apply a specific methodology. QualityMate easily adapts to the way your organization works. Whether your process is highly structured or very agile, QualityMate can be customized to support the way your teams work. You can create an infinite number of entity types and for each one, infinite number of entity attributes. Each entity attribute can be configured to support your own information needs. The workflow process can be completely configured by setting security options and creating constraints, actions and transitions rules for each atomic attribute. By doing this you can be sure your process will be institutionalized.

All the information is stored in the central repository in a hierarchical way and flows naturally between all the different modules, being constantly refreshed without the need of any integration or other process of import/export.

LOAD TESTING PROCESS

Performance, load, and stress testing allow you to pinpoint system bottlenecks. To conduct performance and load testing you need to engage in a carefully controlled process of business transactions measurement and analysis. Stress testing by other hand, tries to break the system by overwhelming its resources or by taking resources away from it. The main purpose behind this approach is to define the limit of system failure and evaluate how the system reacts to failure. Performance and load testing demands a controlled environment and repeatable measurements, while stress testing joyfully induces chaos and unpredictability.

Load testing activities are composed by six different steps. You start to plan and design your load test cases according to your performance requirements. Create virtual user scripts that

simulate human user interaction with the system under test. Create load test procedures specifying the load test cases, virtual user number and load agents. Execute load test procedures, monitor their execution and finally analyze the execution results. Tune the system under test if necessary and repeat the executions until transactions performance time reach performance requirements.

QualityMate for Load testing is the right tool to support all these process activities helping you to anticipate operational problems affecting your critical business applications.

I. LOAD TESTING PLAN DESIGN

Successfully load testing requires you develop a thorough test plan. A clearly defined test plan will ensure that all load test procedures that you develop will accomplish your load test objectives. Design your load test cases by defining transactions to simulate, performance response times, hits per second, acceptable error levels and expected number of concurrent users according to your performance requirements. You start to define and manage load test cases providing all the information needed. Here you can trace your load test cases from your performance requirements.

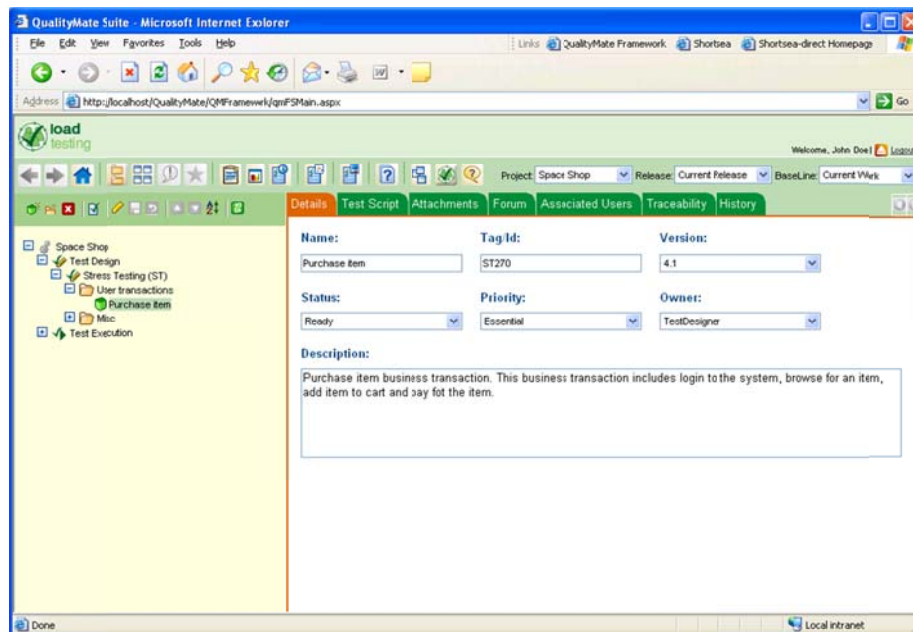


Fig. 1: QualityMate for Load Testing – Test design

2. CREATING VIRTUAL USER SCRIPTS

Virtual users emulate human users interacting with the application under test. A virtual user script contains the actions that each user performs during the load test procedure execution. These scripts are created with QualityMate for Load Testing – Script Editor tool.

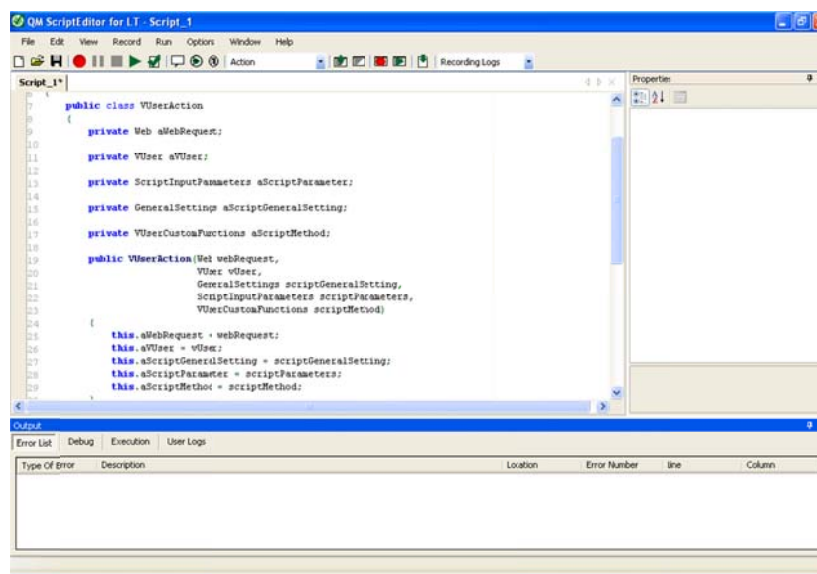


Fig. 2: QualityMate for load Testing – Script Editor

3. CREATING LOAD TEST PROCEDURES

A load test procedure includes a list of load test cases that will be executed from specified machines (where QualityMate Load Agent's installed) simulating a predefined number of virtual users.

4. EXECUTING LOAD TEST PROCEDURES

The load is emulated during the load test procedure execution by instructing multiple virtual users to perform tasks simultaneously. Before executing the load test procedure you must determine how the virtual users will behave during the simulation.

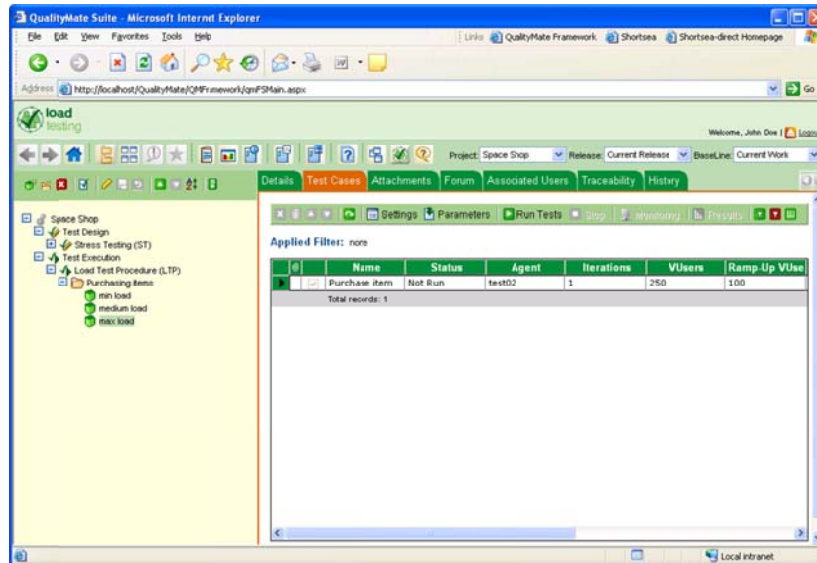


Fig. 3: QualityMate for Load Testing – Test Procedure execution

5. MONITORING LOAD TEST PROCEDURE EXECUTION

While executing a load test procedure you can monitor transactions performance times, errors, and machines performance counters, like operating systems, databases, web servers and application components.

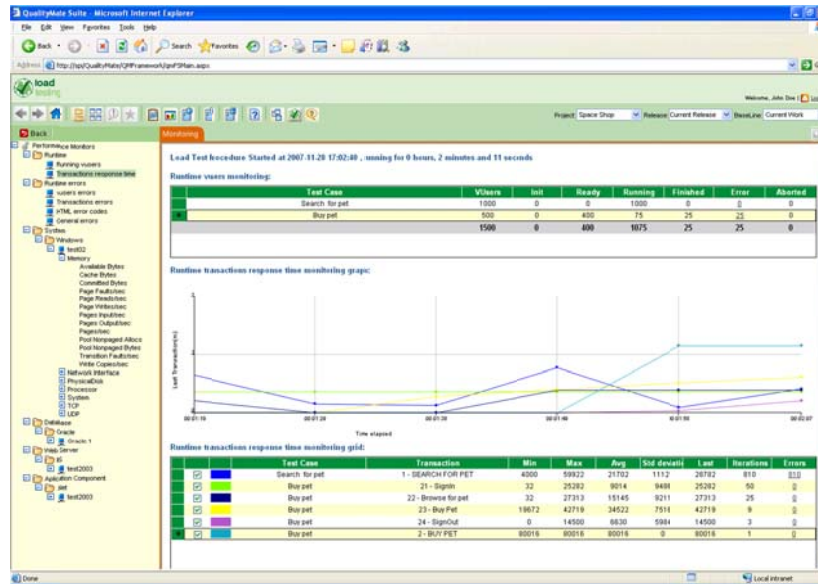


Fig. 4: QualityMate for Load Testing – Test procedure execution monitoring

6. ANALYSING LOAD TEST PROCEDURE EXECUTION RESULTS

During load test procedure execution QualityMate for Load Testing stores all data in a central repository. Later on you can use available graphs and reports to analyze your load test procedure execution results.

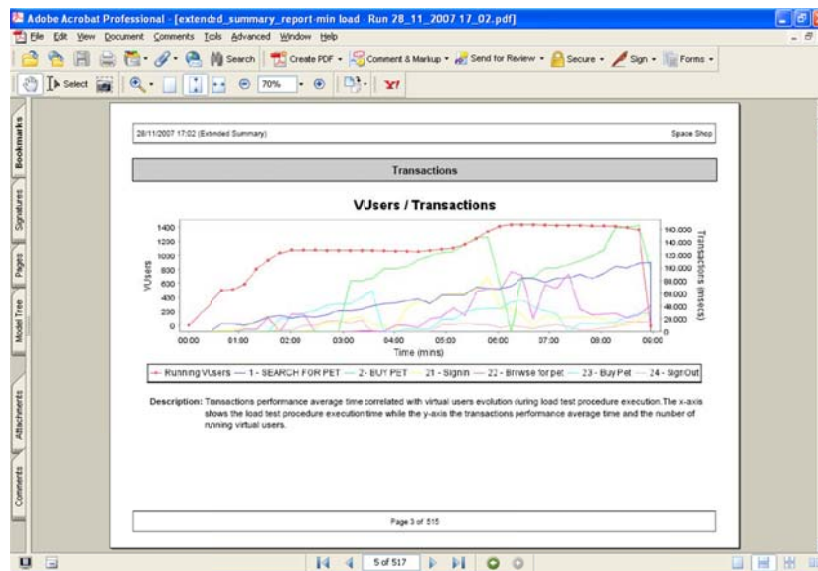


Fig. 5: QualityMate for load Testing – Reports

QUALITYMATE FOR LOAD TESTING – BENEFITS

QualityMate for Load Testing allows you to manage all your testing artifacts including load test cases and load test procedures executions. While the application is under load testing, QualityMate for Load Testing accurately measures, monitors and analyze system performance. QualityMate for Load Testing is the right tool to support and facilitate your load testing process by providing the following benefits:

COMPLETELY ADAPTABLE

QualityMate for Load Testing does not force you to work in a pre-determined way or use a specific methodology. QualityMate easily adapts to the way your organization works. Whether your process is highly structured or very agile, QualityMate for Load Testing can be customized to support the way your teams work. The workflow process can be completely configured by setting security options and creating constraints, actions and transitions rules for each atomic attribute. By doing this you can assure your load testing process will be institutionalized.

DATABASE CENTRIC

QualityMate for Load Testing guarantees that the most current data is available to the people who need it, whenever they need it. Each load test can always be associated with any requirement type allowing you to draw conclusions about your project.

ACCESS INFORMATION FROM ANYWHERE

QualityMate for Load Testing is a complete web-based four tier solution. The client layer is supported by a web browser, the presentation layer is developed using .Net technology, the business layer was developed using Java technology and the data layer which can be stored in Microsoft Access or Microsoft SQLServer databases. This technology allows you to access the information from anywhere without installing any extra software on your desktop.

EASY-TO-USE INTERFACE

Intuitive user interface allows you to guarantee a short learning curve for all stakeholders.

AUTOMATIC NOTIFICATION

Users can receive automatic notifications every time a defined condition is met.

IMPROVE COLLABORATION

Forum discussion allows stakeholders to provide important input regarding load testing information.

AUDIT TRAIL AND CHANGE HISTORY

Every change is automatically audited. Each change creates a unique history record, highlighting the differences between one version of a load test and another, including the reason for the change.

PARALLEL DEVELOPMENT

Different project releases allow different teams working on the same project but in different releases of the product. Baselines can be created for each project release. By comparing baselines and respective releases you can see where volatility, modifications, additions, and deletions have taken place.

SUPPORTED PROTOCOLS

- E-Business: this protocol allows you to record any HTTP/S web application emulating the communication between a browser and a web server.
- ERP/CRM: using this protocol you can create virtual user scripts for Siebel Web applications. This protocol performs automatic correlation of the Siebel data.



ONLINE MONITORING

QualityMate for Load Testing enables you to view and analyze data gathered during load test procedure execution. A primary factor in a transaction's response time is its resource usage. By monitoring resources during a load test procedure execution, you can determine why a bottleneck occurred on a particular machine. There are four different monitors category available: System (Windows and Unix), Database (MS SQL Server and Oracle), Web Server (IIS), Application component (.NET).

