



Highlights

- Validate SOA system functionality and scalability for GUI-less web services
 - Accelerate test creation with intuitive scriptless test authoring
 - Achieve performance metrics with flexible workload modeling and real-time reporting of server response time and throughput
 - Simplify service integration testing with automated test creation from WS-BPEL resources
 - Enable advanced data analysis and parsing with flexible test customization through Java code insertion
 - Help improve SOA efficiency with broad platform-monitoring support for deployed web services
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IBM Rational Service Tester for SOA Quality

Functional, interoperability and performance testing of SOA applications and web services

Organizations that adopt service-oriented architectures (SOAs) can increase business flexibility almost immediately by reusing components. This increase in modularity and change requires delivery teams to validate functionality and performance at both the individual service level and the composite application level.

IBM® Rational® quality management tools for SOA testing can help software delivery teams to validate that their SOA applications and web services have the functionality, interoperability and performance they need, when they need it.

IBM Rational Service Tester for SOA Quality software

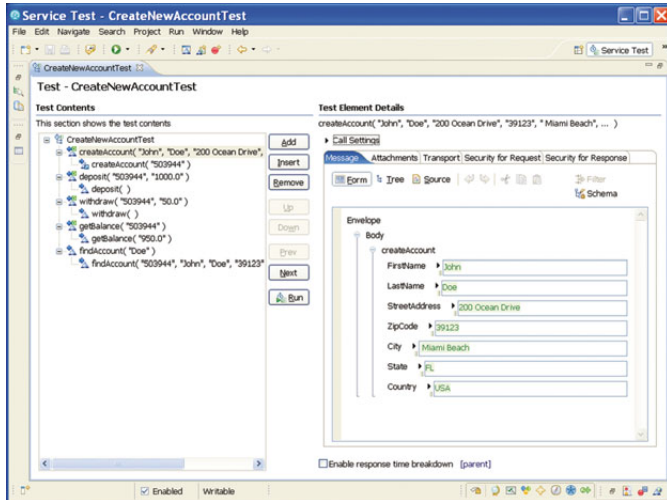
IBM Rational Service Tester for SOA Quality software helps developers and quality professionals to create and execute repeated functional regression tests of GUI-less services.

Authoring web service tests

Rational Service Tester for SOA Quality software offers multiple methods for authoring web service tests. For web services that do not provide a GUI interface, Rational Service Tester for SOA Quality software features a generic service client. The client generates a GUI interface that allows you to connect to a web service under test, invoke the functions on the service, and capture its returned values.



For applications that already have a client to access their web service, Rational Service Tester for SOA Quality software offers a proxy recorder that captures the web service calls sent from the client to the service, as well as the responses sent from the service back to the client.



Scriptless test authoring and editing can help accelerate quality by focusing on test cases, not on test creation

Regardless of the authoring method you choose, the result is a scriptless test, represented as an easily understood and edited tree view of web service calls and responses.

Automating test creation from WS-BPEL resources

In addition to orchestrating the sequence of web services, Web Services Business Process Execution Language (WS-BPEL) can model web services and define how they will interact. Rational Service Tester for SOA Quality software

can automatically generate tests based on the identified WS-BPEL sequences and states. Instead of generating random tests for validating your web services, Rational Service Tester for SOA Quality software leverages the modeling work you have already done, and it automatically generates test cases based on your WS-BPEL and Web Services Description Language (WSDL) input.

Understanding data relationships

The interconnected nature of web services implies that data provided by one service can be passed along to subsequent services. When executing a web service test, you must maintain the integrity of these relationships in order for the test to be successful. Rational Service Tester for SOA Quality software is designed to provide automated data relationship management. Without requiring any mapping, test editing or other interaction from the user, Rational Service Tester for SOA Quality software can trace and maintain data relationships between calls, helping to validate reliable test execution.

Improving test coverage

To help ensure optimal coverage of web service functionality, it is often necessary to call the same web service multiple times to provide different input data. As an example, to test a web service that validates a credit card, you can first call the service to provide a valid credit card; then call it to provide an invalid card; and finally call it to provide an expired credit card. This method of data-driven testing is fully supported by Rational Service Tester for SOA Quality software. The software automatically detects variable data entered during test recording and maps these items to rows and columns in spreadsheet-like data pools. During test execution, these pools are accessed and a service is called once for every row of test data provided, helping to improve coverage of all data combinations for a given service.

Validating web service quality

Rational Service Tester for SOA Quality software offers many options for validating web service responses—from static baselines to dynamic data validation using regular expression patterns. These methods automatically parse web service responses to help confirm proper SOA functionality.

Once a test has been run, the software presents a high-level pass/fail grade to help you quickly analyze quality status. And it delivers a full transaction log to help you debug problem situations. To collect low-level and high-level summary data, you can use Rational Service Tester for SOA Quality software to run reports detailing the quality of the web services to the whole software delivery team.

IBM Rational Performance Tester Extension for SOA Quality software

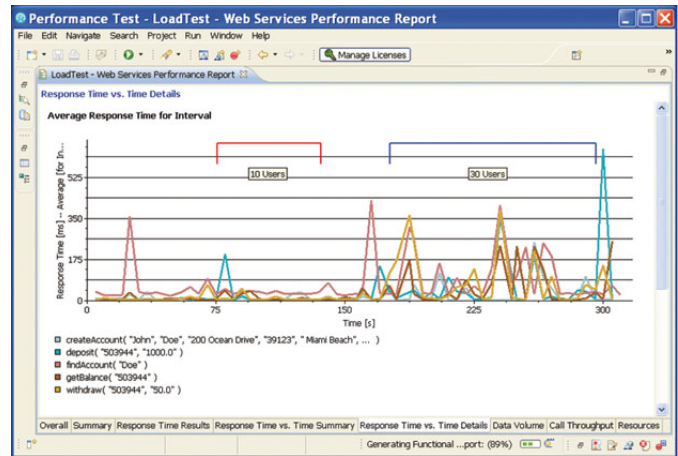
IBM Rational Performance Tester Extension for SOA Quality software allows performance engineers to validate the scalability of their web services. It extends IBM Rational Service Tester for SOA Quality and IBM Rational Performance Tester software to provide load and performance testing against SOA applications.

Accelerating quality through test reuse

Rational Performance Tester Extension for SOA Quality software can execute tests created with Rational Service Tester for SOA Quality software and simultaneously run them to generate load. Reusing functional regression tests for performance testing purposes is an excellent way for performance engineers to quickly establish system scalability.

Testing customization through Java code insertion

Both Rational Service Tester for SOA Quality and Rational Performance Tester Extension for SOA Quality software allow you to add Java™ code instead of using the graphical



As Rational Performance Tester Extension for SOA Quality software tests a web service, it identifies SOA and web service bottlenecks by varying load

editor to define and execute complex and unique tests. With the Java code insertion ability, you can perform advanced data analysis and request parsing using flexible test customization.

Integrating with IBM WebSphere Service Registry and Repository software

Through the Eclipse platform, IBM provides a plug-in to IBM WebSphere® Service Registry and Repository software, allowing you to connect the WebSphere software to your Rational quality management for SOA testing solutions. This connection enables the testing solutions to find the services in the WebSphere software that need to be tested. The service descriptions can then be retrieved from the WSDL file to generate a test.

Finding bottlenecks—root-cause analysis and problem determination

If you're working with an SOA, your composite applications are more complex, response times are more important, and your understanding of response time and service interaction is more critical. To track and understand the response times, Rational Performance Tester Extension for SOA Quality software generates application trace data, and can additionally import IBM Tivoli® monitoring response time breakdown data to help you understand the bottlenecks that may have occurred earlier and at the web service level.

Instrumentation at the web service level maps transaction response times by physical application tier—down to the application source code. This technology goes beyond bottleneck identification and analyzes the root cause of the performance issue. It can also provide development teams with the information they need to resolve performance defects.

For more information

To learn more about IBM Rational Service Tester for SOA Quality and IBM Rational Performance Tester Extension for SOA Quality software, contact your IBM representative or IBM Business Partner, or visit:

- ibm.com/software/awdtools/tester/service
- ibm.com/software/awdtools/tester/performance/ext/soa

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