Rational® software

IBM Rational Performance Tester Extension for SIP (Session Initiation Protocol)

Highlights

- ■ *Supports test reuse and customization, which reduces the time and effort required for testing*

- ■ *Automates and simplifies functional and performance testing for communications applications that leverage SIP*

- ■ *Accelerates test creation with a GUI that automatically generates the code needed for SIP and HTTP tests*

- ■ *Produces SIP-specific customizable reports that can clearly communicate test results*

- ■ *Leverages a common environment to test a variety of applications that use SIP in addition to other standards/ protocols such as HTTP and Web services*

- ■ *Provides easy-to-read measures and graphs of test results, along with detailed logs of SIP test execution, enabling you to quickly locate problems*

- ■ *Helps ensure that performance testing accurately mirrors your user base with flexible modeling and emulation of diverse user populations*

IBM Rational® Performance Tester Extension for SIP software is for developers, quality assurance (QA) professionals and performance engineers who need to understand, create, modify, execute and automate both functional and stress tests for Session Initiation Protocol (SIP) applications and performance tests for SIP infrastructures. An IBM Rational quality management tool, Rational Performance Tester Extension for SIP helps delivery teams ensure that their SIP-based applications have the functionality, interoperability and performance they need—when they need it.

Enabling you to easily create reusable functional tests for SIP services

Rational Performance Tester Extension for SIP is an easy-to-use tool that enables developers and testers to validate the functionality of new SIP services. It allows you to quickly create scripts for new SIP tests, leveraging SIP message types defined by the SIP standard developed by the Internet Engineering Task Force RFC 3261, including support for custom headers and optional responses.

To help speed test creation, the application is designed to automatically complete required SIP fields using associated defaults, and the software includes built-in test patterns for common SIP functions like `INVITE` and `REGISTRATION`. It also provides detailed logs of SIP test performance, enabling you to quickly identify where failures are occurring and resolve problems fast. Finally, the application enables you to reuse the tests you've created, which reduces the time and effort involved in testing.

Automating testing that validates the performance of SIP services

Rational Performance Tester Extension for SIP helps performance engineers create, execute and analyze automated test cases to validate the performance of SIP-based applications. Further, engineers can reuse previously created tests—and even customize them to include changing data, optional behavior and interaction with other systems.

Engineers can easily schedule complex, large-scale load tests and automate test execution across a number of test agents on various platforms. Test results can then be correlated across nodes to support data-driven testing through a code-free environment.
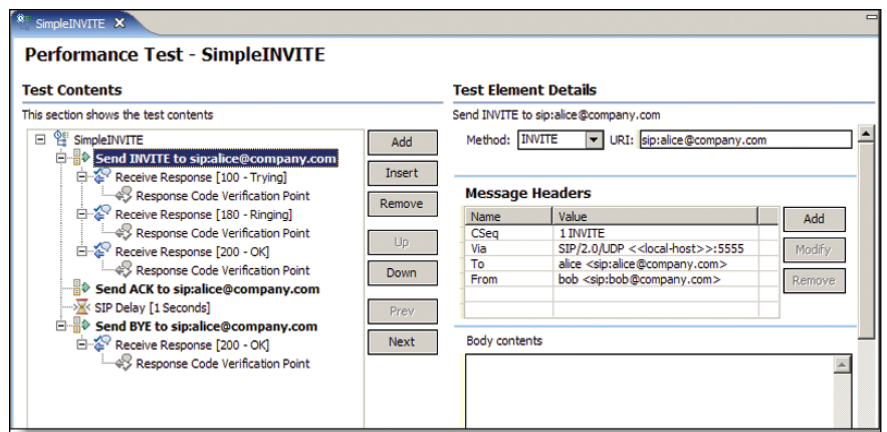
Because it provides a highly scalable environment, Rational Performance Tester Extension for SIP enables you to set up tests for a nearly unlimited number of virtual users (limited only by the amount of resources available). In addition, it provides automated capabilities such as data pools that populate variable fields, which can help speed test creation and execution.

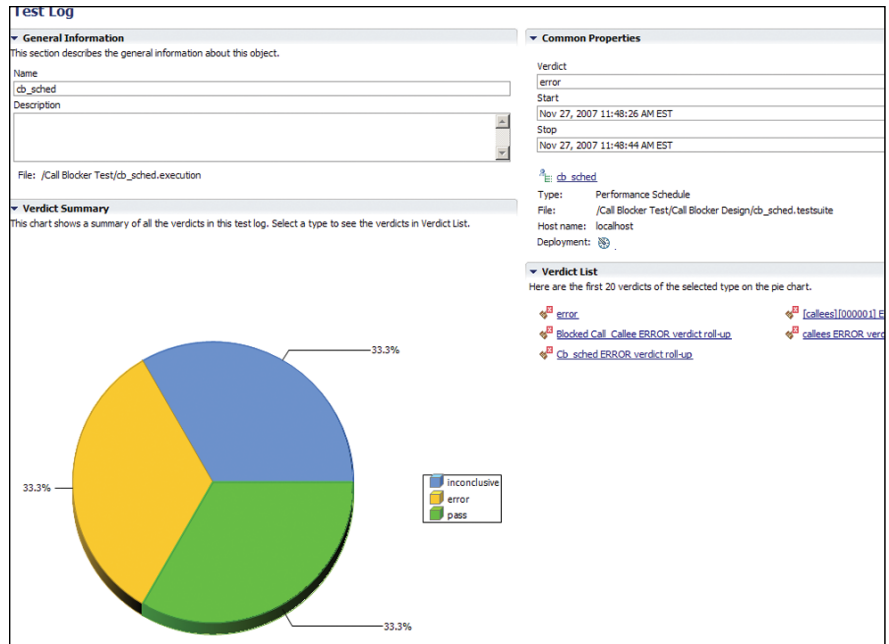**Facilitating regression testing to speed issue resolution**

Rational Performance Tester Extension for SIP allows you to set baselines, and then automatically compare those baselines to your application while running tests. The software then returns with a pass/fail grade to help you quickly analyze the quality status, such as improvement or regression. And because it can help you identify test-log details — for example, which field is different — you can address problems fast.

Supporting tests for composite services, including SIP and other protocols

Rational Performance Tester Extension for SIP enables you to seamlessly coordinate SIP tests with other types of protocols and applications, such as HTTP and Web services. You can therefore perform coordinated testing on composite applications that combine SIP functions with other Web functions. An architect, developer or performance engineer can help verify that the Enterprise Java™ Beans technology on the back end of a composite application and the Web pages on the front end are in sync with the application's SIP messages.

A performance test for a SIP application

Test reporting features easy-to-read graphs and charts.

Delivering simplified analysis and test-result reporting

Rational Performance Tester Extension for SIP provides easy-to-read measures and graphs of test results. The application enables you to generate reports in realtime and also provides multiple filtering and configuration options to facilitate results analysis. Rational Performance Tester Extension for SIP includes a predefined SIP-specific report format that can be easily customized with additional metrics. In addition, detailed test execution logs help you clearly identify where failures are occurring so you can quickly resolve the issues.

Features and benefits of IBM Rational Performance Tester Extension for SIP	
Feature	Benefit
A visual test editor that delivers both high-level and detailed test views	• Understand, create, modify and execute a functional or performance test with virtually no programming knowledge. • View and edit SIP message flow and details.
Automated testing capabilities	• Reuse previously created tests, allowing engineers to focus on designing efficient test scenarios rather than manual testing efforts. • Customize existing tests to include changing data, optional behavior and interaction with other systems.
Full Comprehensive SIP support	• Perform tests leveraging SIP message types as defined by the SIP standard.
Support for functional testing of SIP applications	• Work with execution logs that display incoming and outgoing messages. • Engage an easy-to-use editor for browsing execution results. • Receive support for verification points, which describe the expected contents of received messages. When a verification point condition is violated, a test failure is created in both the test log and the SIP-specific customizable report.
Flexible modeling and emulation of diverse user populations	• Help ensure that performance testing accurately mirrors your user base with a flexible test scheduler that specifies the different groups of users comprising your user population, as well as the activities and usage patterns of each of the user groups.
Support for large, multiuser tests	• Configure test environments to generate user loads from multiple remote machines using an easily deployed execution agent. • Take advantage of additional hardware resources using remote test execution to support large-scale performance tests.
Automatic identification of and support for dynamic server responses	• Automatically detect dynamic server responses and make them accessible for reuse in tests involving subsequent server requests, accurately simulating the system load of a real-world user population.
Automated test-data variation (data pools)	• Leverage automated data pooling that varies the test data set used by each simulated user, creating a population of unique users with unique needs.
Collection and visualization of server resource data	• Collect and display multiple server resource statistics to detect performance and reliability problems caused by hardware, exposing bottlenecks responsible for poor performance.
Realtime reporting for immediate performance problem identification	• Generate performance and throughput reports in realtime to detect performance problems at any time during a test run. • Use multiple filtering and configuration options that can be set before, during and after a test run.
SIP-specific customizable reports	• Exhibit test execution results in a predefined SIP-specific default report format. • Drag and drop additional metrics to view additional information in the final performance report.
Java code insertion for flexible test customization	• Insert custom Java code into your performance tests for advanced data analysis and request parsing (for advanced users).

Easily integrates with your development environment

Rational Performance Tester Extension for SIP can be easily integrated with the broader Rational platform to include project management functions such as defect tracking, change request management and requirements trace-ability. Integrated links with IBM Rational ClearQuest® and Bugzilla software can help you log defects properly and then trace them through to resolution. When integrated with IBM Rational Test Manager software, Rational Performance Tester Extension for SIP can trace SIP tests back to original application requirements and correlate those tests with broader test efforts across applications, which helps identify the potential impact of any changes resulting from test-ing efforts.

Why Rational software?

Why choose IBM Rational quality management solutions? IBM Rational applications enable you to make deci-sions quickly by providing:

- *A single, integrated software quality management platform for improved reliability, predictability and team effi-ciency across the software lifecycle.*
- *Superior functional testing with test automation and data sharing for streamlined, efficient test execution.*

- *Integrated traceability of business and functional requirements, use cases and service-level agreements (SLAs) for accurate test-case planning.*
- *More thorough performance testing both pre- and postdeployment for reduced system downtime.*
- *Integrated Web application security and compliance testing.*
- *A wide range of platform and application support including Web; Java; SIP; Web services; Java Platform, Enterprise Edition (Java EE); Microsoft® .NET; SAP; Siebel; Oracle and IBM mainframe.*

For more information

To learn more about IBM Rational Performance Tester Extension for SIP software, contact your IBM represen-tative or IBM Business Partner, or visit:

ibm.com/rational/siptesting