Rational Integration Tester
Rational Performance Test Server
Rational Test Virtualization Server

Release Notes

Version 8.0.0.3

Note

Before using this information and the product it supports, read the information in "Notices" on page 32.

This edition applies to version 8.0.0 of Rational Integration Tester, Rational Performance Test Server, Rational Test Virtualization Server and to all subsequent releases and modifications until otherwise indicated in new editions.

Contents

Welcome

Thank you for your time and interest in Rational® Integration Tester version 8. We hope that it meets your expectations and provides a new and valuable way to test your complex projects earlier and quicker.

This document describes version 8.0.0.3 of Rational Integration Tester and contains information relevant to the Rational Test Virtualization Server and Rational Performance Test Server when used in conjunction with Rational Integration Tester. This release contains both product enhancements and fault-fixes and is intended for our entire customer base. The following sections provide an overview of the changes and customers are advised to read through them prior to upgrading to ensure that they get the best from the product.

Since the original launch of this software, many new features have been added to help our customers perform testing quickly and efficiently. IBM is able to provide refresher training to organizations to ensure that their test teams are using the product to its full capabilities, giving the best return on the investment that has been made. For further details please contact your IBM sales representative.

This software has been designed to make testing much easier and faster than ever before. Here are just some of the benefits that it provides:

- Different perspectives to suit the task at hand, including Architecture School, Requirements Library, Recording Studio, Test Lab, Test Factory and Results Gallery

- Powerful Recording Studio – *ad hoc* system triggering and capture of results, and generation of tests, test data, stubs and more from recorded events. Record enterprise messaging technologies such as IBM WebSphere MQ without modifying the system under test

- Create tests using Services, Operations and Message Exchange Patterns, a new way of creating tests quickly from pre-configured information

- Automatically generated project layouts from architecture layout simplifies asset organization. Filtering helps you focus on your part of the project without distractions.

- Diagramming of architectural components and their inter-dependencies

- Testing results persisted in a database and archiving policies implemented automatically. Results publishers to send results to email recipients and document hosting systems

- Synchronization of external resources, such as TIBCO BusinessWorks, SAP, Software AG's webMethods Integration Server and Broker, and WSDLs

- Message Switch action allows selection of different paths depending on message type/content, greatly increases the power of simulation capability with zero coding

- Separate iteration over test data and test steps, allowing nesting of iterations

- Test repair wizard and differencing window to make it quick to correct outdated tests or to modify them to suit operational restrictions

- Test coverage reporting for TIBCO BusinessWorks projects and Software AG Integration Server

- Integration with leading SOA Governance products, including Software AG's CentraSite8.0 and 8.2

- Dedicated test stub simulation for high performance scalable component virtualization

- Many useful keyboard shortcuts

- UDDI v3 integration

- Addition of SOAP 1.2 and digital signatures support

- SSL support in JMS

For further information on using the application please consult the Rational Integration Tester Quick Start Guide, Reference Guide and other supporting documentation.

New, Modified and Enhanced Features

New in 8.0.0

This section lists changes and enhancements made to the product since the 5.4 release of the GH Tester suite. Please see subsequent sections for updates made in 8.0.0 fix-packs since the initial release.

> **NOTE:** If you are upgrading from any version of GH Tester, GH Performance or GH VIE then you **must** read the upgrade section at the end of this document before installing the new versions. This details specific steps you must take and issues of which you should be aware.

> **NOTE:** For Performance Testing and Service Virtualization (VIE) you will require Rational Performance Test Server or Rational Test Virtualization Server respectively. These are separately licensed products. Please contact your sales team for detailed information.

General

- This is the first release of Rational Integration Tester since IBM® acquired Green Hat. Product naming and branding has changed. For customers familiar with the Green Hat range of components the following may help orientate yourselves:

GH Tester	is now	Rational Integration Tester
GH Server	is now	Rational Test Control Panel
GH Agent	is now	Rational Integration Tester Agent®

  General configuration and usage of the product has not changed and existing customers should find it a very easy transition to the new product.
- Installation of all products is now performed using IBM's Installation Manager Technology.
- Licensing of all products is now performed using Rational Common Licensing Technology. Licenses are managed using Installation Manager.   Three license types are supported – floating, node (fixed to a host machine) and token.
- Rational Integration Tester, Rational Test Virtualization Server and Rational Performance Test Server now ship and run with the IBM JRE (Java 7) as opposed to the Oracle JRE (Java 6).

Test Results

- It is now possible to view test suite results (including the detailed reports) from within a web browser. To do this Rational Test Control Panel must be installed and configured with details of the Rational Integration Tester results database. Users can then access Rational Test Control Panel and search for test suite results. The information shown in the web pages is the same as shown in the Results Gallery tab of Rational Integration Tester.

Schemas, Formatters and Transports

- Rational Integration Tester now supports the parsing and creation of Google Protocol Buffer messages. To do this a user must import the .proto files into Rational Integration Tester from Schema Library and then use the existing functionality to assign a schema to elements of a message.
- The Message Editors now allow schemas to be assigned to an xsd:any element.

Recording Studio

- Stored Procedure invocation is now shown in Recording Studio when recording JDBC.
- Recording Studio can now create parameterized requirements (requirements that automatically include tags instead of constant values and an associated test data set).
- Chunked HTTP messages are now supported in Recording Studio. The 'chunks' are constructed into a single event in Recording Studio before being shown to the user.

WebSphere MQ

- An APIExit to enable MQ recording is now provided for the following platforms against MQ 7.0.1.x: Windows (32, 64bit), Linux (32, 64 bit), AIX (64 bit), Solaris Sparc (64 bit), Solaris x86 (64 bit).

Usability and Efficiency

- Messaging actions can now be linked to requirements, rather than simply being a copy of the requirement. When a user drags a requirement onto a messaging action they are now prompted whether to create a link or a copy. If a link is created then subsequent updates to the requirement will be reflected in the test. If, for example, a hundred tests use a linked-requirement in a publish action then adding a new element to the requirement will automatically add that element to all one hundred publish action *without a user having to edit the individual test steps*. This can lead to a significant reduction in the amount of test maintenance required.

- Requirements now have their own tag data store. If a tag is added to a requirement's tag data store then it will automatically appear in the tag data store for all tests containing actions linked to the requirement.

- The Recording Studio Save Events wizard can now be used to create parameterized requirements for use with data-driven tests. The generated requirement will have a tag data store and tag mappings set up to match the generated test data set. The requirement can then be linked to a messaging action on a test which uses the generated test data set. This allows recorded traffic to be used to quickly create data-driven tests linked to requirements for ease of future maintenance.

- When a test that uses a test data set is opened or run Rational Integration Tester will automatically compare the column headings (if available) with the tags defined in the test's tag data store. Any matches will be automatically set-up as tag mappings. Along with the other linked-requirement enhancements this means that a user can add tags to a requirement and columns to a spreadsheet that will be mapped and appear in messages without needing to manually edit any tests.

- The report generated from the File Compare action now highlights the specific columns that differed in a row. This makes it much easier for a user to determine the specific items of data that caused the comparison failure.

- Improvements have been made in a number of places to better support multi-byte-character strings.

- Assert and Decision actions now have multi-line descriptions.

Installation

- Rational Integration Tester, Rational Performance Test Server and Rational Test Virtualization Server require a customer to download and configure the open source package *libstatgrab* themselves if they wish to make use of the System Statistics Probe on Linux. Customer may either compile a version from source suitable for their Linux distribution or download a pre-compiled version. The libraries should be available in /usr/lib or /usr/lib64 (for a 64 bit O/S). See the Rational Performance Test Server Reference Guide for details on how to perform this installation.

- On Windows, Rational Integration Tester allows for an (optional) installation of WinPcap to capture network packets. This does not include the RPCAP libraries which allow remote packet capture. If a customer wishes to use this functionality then they must download and install WinPcap separately.

- The Oracle Thin JDBC driver that ships with Rational Integration Tester has been upgraded to 11.2.

Jenkins/Hudson

- Rational Integration Tester ships with a Jenkins/Hudson plug-in that can be used to display the results of a test suite. This allows continuous-integration environments to use Rational Integration Tester to test the build and have the results displayed in Jenkins/Hudson.

Microsoft Team Foundation Server (TFS)

- A new plug-in has been added to allow a user to raise faults (defects) in Microsoft TFS from Rational Integration Tester using the Raise Defect…. controls.

New in 8.0.0.3

8.0.0.2 is the third fix pack for Rational Integration Tester, Rational Test Control Panel, Rational Integration Tester Agent and Rational Integration Tester Platform Pack. The same fix pack updates components on all four offerings. Existing 8.0.0, 8.0.0.1 and 8.0.0.2 installations can be updated to 8.0.0.3 by using IBM Installation Manager's update facility. It is also possible to install 8.0.0.3 directly by checking for updates before starting an 8.0.0 installation within Installation Manager.

A small number of enhancements have been added to 8.0.0.3. Fixes in 8.0.0.3 are listed elsewhere within this document.

- Added a preference to limit the number of optional fields created from a schema to prevent memory issues with huge schemas.

- Support has been added for extended feature codes to enable additional capabilities.

New in 8.0.0.2

8.0.0.2 is the second fix pack for Rational Integration Tester, Rational Test Control Panel, Rational Integration Tester Agent and Rational Integration Tester Platform Pack. The same fix pack updates components on all four offerings. Existing 8.0.0 or 8.0.0.1 installations can be updated to 8.0.0.2 by using IBM Installation Manager's update facility. It is also possible to install 8.0.0.2 directly by checking for updates before starting an 8.0.0 installation within Installation Manager.

A small number of enhancements have been added to 8.0.0.2. Fixes in 8.0.0.2 are listed elsewhere within this document.

- The Stored Procedure action has been enhanced to allow for the assertion of result sets returned by the procedure. This includes both explicit 'out' parameter result sets and implicit result sets, such as the one returned by the 'last' *select* statement in a Microsoft SQL Server stored procedure.

- Added the ability to sign SOAP message parts, optionally using the complete certificate chain.

- It is now possible to configure WS-Security on a Publish action such that WS-x elements (such as WS-Addressing, WS-Security and the body) are individually signed rather than having to sign the whole message. It is also now possible to sign using the certificate chain.

- It is now possible to add in header values for FIX messages in the *Value* and *Store* stabs of a publisher and *Filter*, *Assert* and *Store* tabs of a subscriber. This allows sending and validation of the FIX header structure when using the FIX schema. For a publisher any values specified here will override values that are set according to the FIX transport configuration such as *SenderCompID* and *TargetCompID*. Note that the header fields displayed are the superset from the latest version of the FIX 4.x standard. If a user is creating messages for earlier versions of the standard they must know which headers are appropriate for that version.

  If header values require validation in a subscriber then the root message validation must be enabled and configured to:
  - o Accept fields in any order
  - o Ignore additional fields in received messages

A new field expander (schema) has been added to allow for the parsing of hexadecimal strings into Byte Arrays. This allows, for example, a hex string contained in an XML element to be converted into a Byte Array so that a further field expander such as Copybook can be applied.

New in 8.0.0.1

8.0.0.1 is the first fix pack for Rational Integration Tester, Rational Test Control Panel, Rational Integration Tester Agent and Rational Integration Tester Platform Pack. The same fix pack updates components on all four offerings. An existing 8.0.0 installation can be updated to 8.0.0.1 by using IBM Installation Manager's update facility. It is also possible to install 8.0.0.1 by checking for updates before starting an 8.0.0 installation within Installation Manager.

A small number of enhancements have been added to 8.0.0.1. Fixes in 8.0.0.1 are listed elsewhere within this document.

- It is now possible to install a Rational Integration Tester Agent in a mode that only allows the execution of probes. This type of installation does not require the Agent to be PVU-licensed and is intended for use in Performance Testing scenarios.

- The Recording Studio perspective has a new "Playback" button which will replay recorded publish and send request events. The user can specify the "pacing" speed with which messages are published (as-fast-as-possible, defined interval or as-original). Rules and functions in the Rules Cache may be used to allow basic modifications to message contents as they are published. Playback will work on events that have been exported and re-imported (into the same project).

- A File Publisher has been added to the list of Result Publisher types. This enables a suite report to be published to a specified location on disk. The File Publisher will also write out results in JUnit XML format.

- A complete set of Eclipse Help jar files are now provided with the product installation. These are an Eclipse-Help compatible version of the PDF manuals.

New in 5.4.0

It is anticipated that a number of customers will be upgrading to Rational Integration Tester from GH Tester 5.2.11 and earlier. So that they have a complete picture of what's new in Rational Integration Tester 8.0.0 the enhancements made in 5.4.0 are included here.

Stubs and Virtualization

- Major improvements have been made to stubs, making it much easier to virtualize an entire application, rather than treating it as multiple discrete operations. A new editor has been added to make this possible and existing stubs will, where possible, be displayed using this editor. Users can access the old editor if they wish using the Open With…. option on the shortcut menu in the Test Factory perspective.
- Easy persistent data store support has been added through new data model. These can be created and populated by analyzing recorded messages, by hand and from schemas such as XSDs and SWIFT. Stubs can use data models to store and retrieve information to provide rich application virtualization. Data models can also be used to share information.
- Stubs now support Behaviors, pre-built "patterns" that are used to quickly implement common interaction models without the need to reinvent the wheel, such as market data feeds and trading venues.
- GH Tester can publish stubs to the new GH Server where they can be controlled and managed by a wider community of users (such as developers or less technical testers) using a browser-based UI that does not require an installation of GH Tester. GH Server is a separately licensed product allowing users to see at all times what is going on in their Virtualized Integration Environment.
- Database stubs can be created and run for applications that use JDBC to access Oracle, MySQL, DB2 and SQL Server. Users can then switch dynamically between the real and stubbed database versions. This enables users to create and edit "known"' database configurations for development and testing purposes.
- HTTP-based stubs can now be configured to automatically use a different port if their required IP port is in use. This enables a stub to be run on the same computer as the "live" system as it will automatically find an alternative port. This can be achieved without having to reconfigure the client using the stub.
- Stubs are now created with a debug log level by default to log verbosely about their run-time behavior. This enables speedy identification of any problems during development. Once the stub is operating as required, reduce the log level for optimum performance (e.g. before publishing to the GH Server).

Recording Studio

- A new "Save Wizard" enables users to easily create a wide range of assets from recorded events. Users can select multiple disparate events and create requirements, triggers, tests, operations, stubs and data sets. Data models can be created as part of stub creation.
- The Save Wizard supports creation of data-driven tests and stubs, creating a. Test Data Set for the test/stub automatically which contains the data from the events used by the wizard and a test/stub that iterates over or looks-up content from the Test Data Set.
- SQL statements issued by applications that use JDBC drivers against Oracle, MySQL, DB2 and SQL Server databases can be recorded as events. Tests can be created using these events (as SQL actions) by using the Save Wizard in Recording Studio. To enable this, the new Green Hat JDBC driver, included in this release, must be installed and configured correctly.
- A broad range of events can be captured from transports such as HTTP, MQ, EMS and iProcess without the need for knowledge of specific configuration information (e.g. queue names, operations or schemas). These events can then be used to create a variety of assets including operations, tests, stubs and data sets using the new Save Wizard.
- HTTPS is supported for recording and stubbing. This requires GH Server which is a separately licensed component.
- A new window notifies users about issues occurring during the recording process. A yellow warning triangle is displayed in the bottom left of the screen when there are new issues. Double-clicking this triangle will display the warning messages. These warning messages can be cleared out (individually if required) or copied out. A blue exclamation mark icon is displayed on the Event Monitors panel if there is non-critical information available specific to a particular monitor. Clicking this will also display the window.
- GH Tester can now record both TCP and HTTP traffic without requiring the use of the packet capture libraries used in previous releases. This enables TCP and HTTP traffic to be recorded without requiring GH Tester to be installed locally on either the client or server end of the communication. This includes TCP-based protocols such as FIX.
- Events can be saved and loaded back into Recording Studio at a later time, allowing them to be emailed among users, e.g. between a user and a development team making a new formatter.

- New schemas can be dynamically added to captured events, enabling them to be decoded more easily.

- Attempts are made to automatically content-recognize byte streams in events. In many cases this removes the need for users to select schemas to view the correct content.

- Event monitors can be created on the fly ("Ad hoc Event Monitors"), providing a quick and easy way to start recording, and then create operations from these events if needed.

- When users start a recording in the Recording Studio perspective, they are now automatically prompted to add any dependencies of the selected items to the recording if they wish.

- Recording Studio now supports the concept of Data Masking. This enables the suppression of sensitive data from captured events, such as credit card verification and social security numbers. The feature includes referential integrity so real data can be replaced with realistic-looking data consistently across all captured events, regardless of source.

- Filtering the display of recorded events has been enhanced to include negative filters (i.e. hide any messages that match the filter) in addition to the existing positive filters (i.e. show only messages that match the filter).

- A "Type" column has been added to the Events view and uses icons to indicate the type and direction of an event, including whether an event is a request, reply, publish, or subscribe, or if it came from a database.

- Information from the HTTP header is used to distinguish among different service operations that may be received on a single URL.

Test and Stub Actions

- The Function and Decision actions now support and default to the widely used industry standard ECMAScript (of which JavaScript is an example dialect) rather than the Green Hat script language. This takes effect for any new functions created in the project. The Green Hat script language still exists and can be selected using the "legacy" option in the function action. Other scripting languages, such as Groovy, can also be used by installing an appropriate plug-in into the GH Tester installation directory. Tags and built-in GH Tester functions are available in the new scripting languages, enabling a new era of extensibility and flexibility.

- The Lookup Test Data action screen has been enhanced to make it easier to use. In addition, comparison logic can now be used when looking up values. Just include the comparison in the cell in the test data set, e.g. ">1000" will match a lookup against a provided value of 1001.

- A Generate Test Data wizard is available on the Component Tree and as a toolbar button in the Test Factory perspective. This makes it easy and quicker to create a data-driven test or to edit the data in an existing Test Data Set.

- A "Group data by column" list has been added to the Fetch Test Data action to make it easier when working with test data containing repeating elements. In addition, the "Group data by column" list on the Fetch Test Data and Iterate Test Data actions is now sorted alphabetically.

- A new Create Session action enables stubs to generate session tokens for new sessions without coding. This makes it easier to create stubs for services that manage state through techniques such as session IDs in payloads such as URLs, cookies and other parameter mechanisms. This is available under the 'General' test actions.

- SQL Command Actions now support multi-line SQL commands/scripts.

Executing Tests and Stubs (Test Lab Perspective)

- A "Prompt for Suite Run Archive Policy" check box has been added to the "General" page of the Preferences dialog box. This check box enables users to specify how long they wish to retain the results of a suite execution in the GH Tester results database, which in turn gives users more control over the growth of the results database over time. For example, users can indicate that they wish to keep all suites run today for four weeks after which they will be deleted.

- A user may now use the "Run…" option to schedule a test to run according to a define schedule (for example, once at hh:mm, or every Wednesday at hh:mm, and so on). The test is published to a GH Server installation, which requires a separate license, and it will be run at the defined time. Results are stored in the project database and can be viewed using GH Tester.

- A new test execution mode has been introduced called "Slow Fail". In the past, the behavior has been for a test failure to immediately stop test execution and report the failure. This still remains the default behavior but it can be overridden on a test suite scenario or when running a test suite using the Run… option. When running a test under Slow Fail, execution will continue until the end of that test. Regardless of the status of the last step, the overall status of the execution will still be "Failed". Pass and Fail actions will still stop the test, although a 'Pass' action will not be able to update the overall test status to Passed.

- Tests now output more information to the console, especially for non-messaging-based actions, making it easier for users to understand what has happened.

Message Differencing Window

- In the Message Differences window, after repairing one of multiple errors in a message using the "Overwrite expected field," "Disable field validation," or "Replace with regex match" actions, the next error in the message will be selected automatically.

- In the Message Differences window, if the actual message contains additional nodes not found in the expected message, the extra nodes will be added to the expected message when repairing with the "Overwrite Expected Field" action.

- The Message Differencing window will not overwrite fields that contain RegEx expressions or tags. This is to prevent configured fields being automatically (and probably accidentally) overwritten with static content. The console window in GH Tester will provide feedback to the user indicating which fields were not automatically update warns users if a message/field that they are about to overwrite contains tags. The Message Editor must be used if the intention is to change the field.

Usability and Efficiency

- There is a new user preference that controls whether new "Run Test" actions are created with the run test in parallel or in series with the parent.

- When a new action is added to a test or stub, it is expanded automatically.

- If a user saves a resource that is currently running (for example, a stub), a prompt is displayed asking if the resource should be restarted automatically.

- In the Architecture School perspective's Schema Library view, users can now collapse the panel that contains the "Binding Properties", "Data Masking", and "Rule Cache" tabs to allocate more screen space for the schemas.

- The shortcut key CTRL+F / "'Find'" has been implemented in actions that use the Message Editor. When dealing with messages containing a large number of elements, this new search facility (which is only available when the Action Editor is docked) makes it much easier to find a specific element.

- To enable users to easily set the default value of a new tag to Null, a "Null" check box has been added to the Create Tag dialog box.

- In the Results Gallery perspective, clicking the resource-type button (under "Test Results") now opens the "Select a Resource" dialog box automatically.

- The New Project wizard and Project Settings dialog box have been changed to group all server names on a single panel and to validate any entered server names automatically.

GH Performance

- GH Performance no longer pauses between transitions to write results to the database. Writing results to the database is now executed in parallel with the start of the next phase. This means that apart from a small delay whilst tests are prepared and the agents confirm they are ready, there are no gaps in load generation. However, the last phase will not complete until all the data is written.

- The System Statistics (SysStat) probe now supports wildcarding of process names and the capturing of statistics from processes started after a performance test has started.

- There is a new probe for JMX.

- The mechanism to install multiple agents on a single computer has been simplified.

- Load generation agents can be configured to stream results to a local file rather than to the results database. Once the test completes the agents will copy the contents of the file into the results database and then delete the file so that analysis can proceed as normal. Using this option can increase the overall amount of load that can be generated because the agents are not affected by the speed with which results can be written to the database. The default behavior has not been changed. This option is enabled using Library Manager to add the JVM argument –Dgreenhat.te.is.file.caching=true on the Performance Test Coordinator machine (the copy of GH Tester which starts the execution of the performance test). This value does not need to be set on the agents. See *GH Tester Installation and Deployment Guide* for more information about JVM arguments in Library Manager.

IBM WebSphere (MQ and Application Server)

- Two new IBM WebSphere MQ recording techniques have been added to GH Tester. These are non-destructive and enable MQ messages to be captured in the Recording Studio perspective from one or more queues without removing the messages from the queues and without affecting the functionality of the system-under-test. This approach eliminates the need for proxy queues and other workarounds.

- An IBM WebSphere Application Server resource has been added to the Architecture School perspective. Currently this is used to enable easy JDBC database stubbing from within WebSphere Application Services but functionality will be extended in the future.
- GH Tester can now apply IBM code pages to IBM WebSphere MQ messages.

IBM Rational
- Integration is provided with IBM Rational Quality Manager (RQM) version 3.

HP Quality Center
- GH Tester's HP Quality Center plug-in now supports HP Quality Center 11.
- HP Quality Center has now been added as a defect and change management integration to GH Tester, allowing the same kind of deep linking previously provided for JIRA and IBM Rational Team Concert.

Software AG Integration (Integration Broker, Integration Server and CentraSite)
- Users of the Software AG webMethods Integration Server should pay special attention to the note above concerning the upgrade process.
- Basic Authentication has been added to the webMethods Broker transport if using Software AG webMethods Integration Server 8.2.1 (or later) is being used.
- Support has been added for the Software AG webMethods Vector type.
- The use of Software AG webMethods Broker transports over SSL is now supported.
- Integration with Software AG's CentraSite prior to version 8 is no longer supported.
- The Result Publisher mechanism has been extended to support CentraSite as a destination when test suites are executed, either for documentation purposes or for Certification purposes. The test suite icon is decorated when it has one or more Results Publishers on it. The previous integration method using menus in the Test Factory and Test Lab perspectives and the "Tools" menu has been removed.
- Support has been added for Software AG webMethods Integration Server service exceptions in Recording Studio, tests and stubs, allowing users to record exceptions, expect them in tests and generate them from stubs. The EXCEPTION_RuntimeException(IData) structure will contain the error from IS.
- webMethods Integration Server streams are supported in tests and in Recording Studio.

Financial Services Formatters and Transports
- A FIX transport and a FIX message schema have been added, in addition to the FIX capabilities added in version 5.2.9. The transport enables users to record FIX traffic and to create tests and stubs that that use the FIX protocol and message formats.
- The Federal Reserve Wire Network (Fedwire) message format is now natively supported. Fedwire messages are recognized and expanded automatically within Recording Studio and the Message Editor, thus enabling Fedwire traffic to be recorded, and tests and stubs to be built for it.
- The CHIPS message format is now natively supported. CHIPS messages are recognized and expanded automatically within Recording Studio and the Message Editor, thus enabling Fedwire traffic to be recorded, and tests and stubs to be built for it.
- Improvements have been made to the way in which GH Tester recognizes SWIFT messages to make it easier to extract SWIFT content from recorded traffic.

TIBCO
- SOAP with EMS bindings defined within Business Works projects are now correctly synchronized as operations within GH Tester.
- Support has been added for direct (non-JNDI) EMS connections in TIBCO BusinessWorks projects.

Web Services, WSDLs, SOAP, HTTP, JSON and REST
- Native support for testing of RESTful services has been added.
- JSON has been added as a supported formatter and schema.
- Support has been added for synchronizing WSDL schemas from servers requiring basic authentication.
- The HTTP client and server transports have been merged together into a single HTTP transport. HTTP client and server transports from earlier versions of GH Tester will be automatically converted to a transport that can act as both a client and server. If a project had a client transport and a server transport then it will still have 2 transports in 5.4 but users could opt to configure operations to use just one of them if desired.

- The HTTP transport behavior has changed so that HTTP request addresses no longer have a trailing forward slash automatically removed at runtime.
- Support for the "SOAPAction" header in HTTP messages has been enhanced and is now consistent in implementation of the standard practice to quote the SOAPAction header.
- A user can now selectively enable/disable HTTP header properties within stubs and operations. When a stub is created from recorded traffic, all of the recorded headers will be copied to the operation but only the SOAPAction header will be enabled.
- Header schemas of HTTP Transport request/reply messages are now editable.
- It is now permissible to send SOAP messages that do not conform to their associated schema to a system under test, further supporting negative testing.
- Security Assertion Markup Language (SAML) tokens can be used as part of WS-Security headers on publish and send request actions.

SAP

- It is much easier to create tests and stubs with large IDocs as Recording Studio now records and displays them.
- The Subscribe action supports the SAP transport in "watch" mode without the need to reconfigure the SAP system to re-route messages.

Formatters and General Transports

- A number of EDIFACT dictionaries are now natively supported as GH Tester schemas. EDIFACT messages are recognized and expanded automatically within the Message Editor and Recording Studio. The Schema Library within the Architecture School perspective lists the supported EDIFACT dictionaries.
- File Schemas can now be applied to string nodes as well as byte array nodes within messages.
- COBOL Copybook schemas can now be applied to text nodes as well as to byte array nodes.
- If a class is encountered that cannot be instantiated when creating a Java object schema, processing now continues to other classes within that JAR file rather than stopping. Users will be warned about the classes that failed to instantiate. In addition, support has been added for the "BigDecimal", "BigInt", and "Enum" types.
- Record Layout schemas now support custom formatters. This enables users to provide their own Java classes for formatting individual fields when expanding and collapsing content.

Other New Features

- Support has been added for operations which use different transports for publish and subscribe. On the "Message Exchange Pattern" tab of the Operation dialog box, clicking "Publish/Subscribe" in the "Pattern" list displays "Publish" and "Subscribe" tabs on the lower half of the "Message Exchange Pattern" tab, enabling users to define separate transports for publish and subscribe.
- From this release onwards, 64-bit JVMs are supported on Windows and Linux. This requires the 64-bit version to be downloaded and installed. 64-bit builds are functionality equivalent to 32-bit builds but 64-bit builds can be allocated significantly more memory. For some third party integrations (e.g. TIBCO), users will also need to install and configure the 64-bit version of the relevant third party application and/or its libraries, as well as updating the configuration in Library Manager.
- Support has been added for the Composite Software JDBC database driver.
- In the Architecture School perspective's Schema Library, it is now possible to apply COBOL Copybook schemas and view nodes for text-based messages.
- Physical Database connections can now be named, which makes it easier to select individual connections.
- Test suite assets in the component tree have a decoration on them if they use a Results Publisher.

Closed Issues

Resolved in 8.0.0.3

- 28016 - The HP Quality Center Change Management integration to allow defects to be raised in QC from RIT has been updated to provide improved compatibility across QC9.2 - QC11 including fixpacks. Please note that this integration can only be used from the Windows 32-bit version of RIT. This is because HP only supply 32 bit integration DLLs which a 64 bit installation of RIT cannot use.
- 29509 - The WSDL Operation parameterOrder attribute no longer causes an error during WSDL synchronization.
- 29388 - A problem that could result in the MIME node formatter constructing corrupt payloads has been resolved.
- 29309 - Tag values used within MQ filters are now honored correctly
- 28679 - Stubs no longer suppress compilation errors occurring within their message cases.
- 28675 - A preference has been added to limit the number of optional fields from the schema definition that will be created during wizard processes to prevent memory issues with very large schemas.
- 28666 - When a Java Object schema contains a java.util.Collection field Tester will use a java.util.ArrayList as the implementation when building an Object instance to prevent errors.
- 28044 - SOAP Headers now show correctly in the Field Properties editor. The editor now allows arbitrary SOAP Headers and attributes to be created.
- Minor documentation updates to: RIT Reference Guide, RIT Integration Guide for HP Quality Center, RIT Reference Guide for Java Objects and RIT Platform Pack Installation Guide.

Resolved in 8.0.0.2

- 28385 – A problem that meant an error could occur when an HTTP based stub received a GET (as opposed to a POST) has been resolved.
- 28302 – HTTPS recording and virtualization is now supported where the server requires a client-certificate to be presented for authentication. HTTPS recording and virtualization is now supported where the client uses HTTP which much be converted to an HTTPS connection in order to establish a connection to the server.
- 28352 - Tester now supports schema mapping where children can have the same name but different types. Comments in XSD elements are also now allowed.
- 28348 - Virtualization and Performance Reference Guides are now included in an installation of Rational Integration Tester.
- 28303 - A problem has been fixed that meant recording of HTTPS traffic could stop if a client dropped a connection.
- 28301 - When configuring a stub to use SSL users are now informed if the settings are invalid due to a list of trusted CAs not having been specified.
- 28299 - HTTPS recording now supports protocols other than SSLv3.
- 28242 - A problem that could cause EBCDIC new line characters from being corrupted within the bytes formatter has been resolved.
- 28220 - Promoted byte[] fields are now displayed correctly in Recording Studio.
- 28222 - A problem that resulted in blank data model mapping panels being shown in the Recording Studio Save wizard has been resolved.
- GHT5-24666 - If an assert action within a failure path is inside an iterator then if the assertion failed once then all subsequent iterations would follow the failure path regardless of whether the assertion passed or failed. The failure path within the iterator is now only executed if the assertion itself fails.
- GHT5-24646 - It is now clearer how to configure Rational Integration Tester to use JMS over MQ if WebSphere Application Server 6 (WAS) JDNI is being used. Previously users had to add entries into Library Manager manually. There is now a new provider section to the "IBM WebSphere Application Server" section of Library Manager to allow configuring of the WAS jar files needed to access WAS JNDI. This is called: "IBM WebSphere Application Server 6.0 (JNDI access)" and allows the 4 jar files required to enable WAS JDNI lookup to be configured. Customers upgrading from 5.x version of GH Tester to Rational Integration Tester will need to reconfigure Library Manager to set-up MQ/JMS jars.

- GHT5-24631 – In certain cases, when using the Message Difference Window with messages containing repeating elements erroneous additional fields could be added to the expected message of the tests. This problem has been resolved.

- GHT5-24654 - Schemas can now be resolved in TIBCO BusinessWorks DesignTime libraries.

- GHT5-24651 – It is now possible to populate the Filler field of INACHA header messages.

- GHT5-24657 – It is now possible to select a specific agent when scheduling a test to run via the Rational Test Control Panel.

- GHT5-24384 - The security configuration dialog no longer appears during a silent installation of Rational Test Control Panel.

- GHT5-24447 - When the Installation Manager is used to install Rational Integration Tester or Agent and the user selects to run the Library Manager at the end of the installation then Library Manager will now run correctly even if Installation Manager is still running.

- GHT5-24597 - If an unknown content type is encountered when processing an MQ message it is now shown as such to the user and can be republished.

- GHT5-24650 – A fix has been made to correct a problem that meant, in some circumstances, messages based on record layout schemas would show red crosses in the message editor.

- GHT5-24714 – Some user experienced problems that meant Log Values from Performance Testing were not shown in a chart's counter tree even though they are present in the database. Changes have been made to the product to try and avoid this problem from occurring.

- GHT5-24694 – The End Timed Section action editor now correctly triggers the dirty flag meaning that a user can save the action.

- GHT5-24698 - Receive Reply Defaults are now saved correctly when a default (non-modified) message is saved.

- GHT5-24673 - Automatically adjust IDoc recording/subscribe date-time values to the server timezone. Note that the IDoc query ABAP interface has changed to support this feature. It will therefore be necessary for existing users of RIT's SAP support to update to the new ABAP source, and create the new interface structure: ZRGTITS_SEL_UPDTIMSTMP. Source files for both these actions, as well as the other dependent structures, can be found under /tools/SAP along with installation instructions.

- GHT5-24661 – The MQ Transport no longer requires access to the command queue for simple put/get messaging operations. Command queue access is only required for recording where PCF messages need to be sent (for Queue Alias, MirrorQ and Record-the-transport recording techniques).

- GHT5-24077 – A fix has been made to ensure that the database stub editor does not show duplicated queries.

- GHT5-24663 – Cancelling an Iterate action now longer finishes and fails a test (but correctly marks it as cancelled).

- GHT5-24362 – Single-Sign-On between Rational Integration tester and Microsoft Windows Active Directory now works correctly.

Resolved in 8.0.0.1

- GHT5-24019 - Publishing SOAP messages using WS-Security headers now works correctly.

- GHT5-24622 - A problem that could cause Rational Integration Tester to freeze when adding an environment has been fixed.

- GHT5-24054 - The Function action now uses multi-line technical description.

- GHT5-24621 - A fix has been made to ensure that subscribe actions using the Fedwire and CHIPS field expanders validate correctly.

- GHT5-24608 - Fixes have been made to delimiter handling when parsing and formatting Fedwire messages to prevent the publishing of invalid transfer messages.

- GHT5-24031 - An XML schema can now be applied to an xsd:any element. This provides support for XML fragments within xsd:any typed elements.

- GHT5-24576 - Improvements have been made to Recording Studio's memory management and it now releases cleared-out events from memory more quickly.

- GHT5-24577 - Correlation IDs are now preserved when messages are exported from Recording Studio and then reimported.

- GHT5-23886 - The "Open" button on the Data Source (file) editor now opens the file specified in the dialog text box instead of the file name with which the resource was last saved.

- GHT5-24075 - When a new schema is added to the Schema Library it is now opened automatically. If multiple schemas are dragged into the Schema Library, the last one in the set will be opened.
- GHT5-24315 - A registered agent is now displayed on Rational Test Control Panel's Agents page even if no domains have been configured.
- GHT5-24453 - To prevent Rational Test Control Panel's dashboard from becoming stuck in the "deploying" state, improvements have been made to how RTCP detects errors when agents and stubs are starting.
- GHT5-24413 - Rational Test Control Panel's domain selection page now displays a "Loading" dialog.
- GHT5-24496 - Changing the ordering of tests within a suite now triggers the "dirty" state, which enables the suite to be saved.
- GHT5-24494 - Improvements have been made to the breadcrumb consistency when searching and viewing results on the Rational Test Control Panel's Results page.
- GHT5-24481 - When editing data from a database stub in an external editor, it is now possible to add a column (by specifying column name in the spreadsheet) when the underlying database is Oracle.
- GHT5-24588 - JDBC Recording has been fixed to ensure that SQL can still be recorded when Stored Procedure parameters are in use.
- GHT5-24583 - The FIX Transport configuration screen now allows "TargetSubID", "TargetLocationID", "SenderSubID", and "SenderLocationID" to be set.
- GHT5-24561 - "Create Test from MEP" now works correctly when using Operations created from TIBCO BusinessWorks synchronization.
- GHT5-24535 - FIX Message groups within groups are now correctly identified.
- GHT5-24534 - There is now enhanced support for Microsoft SQL Server data-types within JDBC Virtualisation. There is also support for the following SQL Server specific types: unique identifier columns, date and time, character and binary strings, numerics and rowversion.
- GHT5-24506 - Added functionality to allow the creation of requirements messages derived from an Operation's MEP type.
- GHT5-24532 - Added check for 'null' string as correlation ID when grouping events in Recording Studio Save Wizard.
- GHT5-24531 - Fixed memory usage indicator bug.
- GHT5-24524 – Fixed a number of JDBC virtualization issues : incorrect upper-casing of MS SQL Server table and column names; display of NULL parameters on SQL calls in recording studio; injection of NULL values into the simulation database during learn processing.
- GHT5-24475 - Fixed red-cross issue when copy and pasting within a message structure.
- GHT5-24158 - Using the Run Command action with a command spanning multiple lines now runs correctly on Unix. Previously the command had to be on a single line. This problem did not exist when running under Windows.
- GHT5-24486 - The File Comparison action now provided additional information when result truncation occurs. The lower limit at which result truncation occurs has also been increased.
- GHT5-24492 - New Message Actions now correctly copy Transport fields from their Operation.
- GHT5-24462 - A problem that could occasionally cause a Concurrent Execution Exception when attempting to open the Message Differencing Window has been fixed
- GHT5-24501 - The wording shown when linking Requirements has been clarified.
- GHT5-24521 - The banner text for Requirements has been clarified.
- GHT5-24566 - It is now possible to call Stored Procedures with parameters in test actions when Rational Integration Tester has been configured to use the Microsoft SQL Server JDBC Driver.
- GHT5-24596 - The various components now register and display 8.0.0.1 as their version.
- GHT5-24604 - A problem that meant uninstalling the Rational Integration Tester could sometimes leave the prunsrv.exe file has been fixed.
- GHT5-24612 - A user must now make a 'license type' selection when installing the Rational Integration Tester Agent. This is to avoid the 'default' installation of a Performance Test Agent occurring when a user (who wants to use stubs) simply clicked Next through the installation process.

Resolved in 8.0.0

- GHT5-24266 - Recording Studio Wizard applies correct schema when generating operations.

- GHT5-24383 - When an iterator is associated with a looping test data set and specifies a fixed number of iterations, perform all of the iterations rather than stopping when reaching the end of the data.
- GHT5-24340 - Fix an error when comparing files to do with empty column values not being compared properly for assertions.
- GHT5-24300 - Fix an error when logging established connections via the remote logging service.
- GHT5-24284 - Added support for ASCII text messages to the Fedwire field expander.
- GHT5-24124 - Added ability to specify a user/password or to login as Admin to a secured Rational Integration Tester project when running from the command line with and without params file and the GH Tester Ant Task.
- GHT5-24063 - Test Lookup Data actions can no longer be configured to a state that causes an infinite loop when the test is executed.
- GHT5-24188 - Testing a function from within the Function Action editor now works correctly for both ECMAScript and legacy functions.
- GHT5-24171 - Tests created that return database Timestamp fields are no longer off by one hour when daylight savings time changes. Existing tests will have to overwrite the expected field or expected message in order to resolve this problem permanently.
- GHT5-24162 - Fix an error when editing database stubs where the query being used to drive the edit included an ORDER BY clause.
- GHT5-24149 - Prevent exception being thrown when RunTests is executed with no arguments and display usage message.
- GHT5-24070 - The edit Database Stub dialog doesn't reset the list of queries or tables when the back button is used
- GHT5-24283 - SWIFT message type MT306 is now parsing correctly. Field 84a (Calculation Agent in B2 sequence) is no longer lost when the test editor is closed and reopened.
- GHT5-24046 - Improved banner text in Recording Studio Wizard Panels mapping panels.
- GHT5-24049 - Remember Recording Studio Wizard's size and position.
- GHT5-24044 - Provide a default name in for new Recording Studio Wizard field types.
- GHT5-24029 - Fallback to using monitor name if no name can be derived when creating operations in Recording Studio Wizard.
- GHT5-24010 - Fixed NPE thrown when saving paramaterized test in Recording Studio Wizard that mixed expanded xml nodes and unexpanded text nodes.
- GHT5-24044 - The default name derived for field types uses the selected node.
- GHT5-24139 - Made changes to Message Differencing Window to fix issue causing discarded changes to not be properly discarded if the test was open in Test Factory.
- GHT5-24113 - Copy and Pasted Requirement now contains the correct structure.
- GHT5-24111 - HTTP Headers in publish actions can now be deleted.
- GHT5-24041 - The Copybook global defaults are now used when importing copybooks.
- GHT5-23953 - Monitor warnings in Recording Studio are now available in the Global Notifications Dialog.
- GHT5-23932 - Project settings\create new project now shows schema version confirmation table.
- GHT5-22771 - Bug fix for resource restart listener that caused two stubs to be started when selecting to run a stub that was already running.
- GHT5-24018 - Recording Studio Wizard Entity Mapping panel no longer throws IllegalStateException on creation.
- GHT5-24089 – Rational Test Control Panel : Stop All Stubs now correctly tears down agents.
- GHT5-24098 - Restarting a stub that was stopped using "Stop All Stubs" now works correctly.
- GHT5-24084 - Case sensitivity of environment names in Rational Test Control Panel is handled correctly.
- GHT5-24087 - Database settings should not require a user name for JDBC virtualization.
- GHT5-24123 - Improve memory efficiency collapsing XML.
- GHT5-23099 - Automatic creation of domains (and envs) via agent and proxy registration is now consistent.
- GHT5-24117 - Scheduled test with no agents available now provides warning information in the activity log.
- GHT5-24124 - Rational Integration Tester can now get a list of agents from the server.
- GHT5-24131 - Ensure JDBC rules are removed when all stubs are stopped.

- GHT5-24096 - Improved speed when adding many recording rules when using an external proxy
- GHT5-24142 – Rational Test Control Panel will reject messages from incompatible future versions of Rational Integration Tester
- GHT5-24203 - When running a test against RQM3 the agent now uploads the log correctly
- GHT5-24211 - RQM integration now updates test cases within suites when executed

Resolved in 5.4.0

It is anticipated that a number of customers will be upgrading to Rational Integration Tester from GH Tester 5.2.11 and earlier. So that they have a complete picture of what's new in Rational Integration Tester 8.0.0 the fixes made in 5.4.0 are included here.

- GHT5-23806: Irrelevant error messages emitted when the webMethods server components are started up have been suppressed.
- GHT5-23188: The System Statistics (sysstats) probe on Linux and Solaris will now report on processes that are started after the probe has started. Wildcards may also be used within process names in the configuration of the sysstats probe on Solaris.
- GHT5-23096: When a user clears the last task from the Test Lab the console is also cleared to reclaim memory.
- GHT5-23751: Various issues that could cause ConcurrentModification exceptions have been fixed.
- GHT5-23738: A Data source fetch over HTTP now works correctly on the second and subsequent file access.
- GHT5-23574: The SWIFT schema has had numerous updates to bring it in line with changes made to the standard in 2011.
- GHT5-23546: An issue has been fixed that caused an exception in some circumstances when trying to edit publish or subscribe actions created using CTRL+N.
- GHT5-23528: Changes have been made to reduce the amount of memory used when processing XSD files.
- GHT5-23494: It is now possible to set a Byte Formatter on Base64 decoded node in a message.
- GHT5-23492: An issue that could cause GH Tester to select the incorrect failure path following a failing Assert Action has been resolved.
- GHT5-23484: resetTags() used with wildcards no longer causes an error if the provided pattern matches system or environment tags
- GHT5-23429: XML in plain text fields is no longer normalized to allow users to create XML strings with unusual spacing requirements.
- GHT5-22971: Intermittent application hangs when running Test Suites while writing results to the project database have been resolved.
- GHT5-23356: The sudo option in the Run Command action now correctly uses the password that has been entered.
- GHT5-23279: WMIS header fields can now be asserted.
- GHT5-23177: It is now possible to synchronize with a webMethods IS server if there is an invalid package element defined in WMIS.
- GHT5-23168: The System Statistics probe has been modified to work correctly on newer 64-bit Sun machines.
- GHT5-23160: Copybooks with comments that end in a hyphen can now be processed.
- GHT5-23141: A change has been made to allow a higher numbers of Log Measurement counters to be exported to Excel.
- GHT5-23133: A problem that meant it was not possible to test the execution of functions containing list tags indexed by another tag has been resolved. However, when GH Tester prompts the user for 'test' values of the tags so that it can run the function the list tag value must be specified using { }. For example, if you are testing the function eq(%%customers[custNum]%%,"Tom") then the customers tag value must be entered as {Tom, Harry}.
- GHT5-23101: A fix has been made to schema root node validation when the "XML Name Matching" option is set to "Local Name". This corrects a problem where GH Tester was not correctly matching nodes during validation. For example, A SOAP Fault element in expected and actual messages will now match when namespace prefixes would previously have prevented it.
- GHT5-23093: The ne() function no longer causes an errors if the first operand is null().
- GHT5-23067: Improvements have been made to ensure SQL cursors opened by GH Tester are closed properly.
- GHT5-23066: Software AG BPMS tasks now show configuration details in all panels of the Retrieve Task and Modify Task actions.

- GHT5-23065: The default installed versions of the RunTests.ini, Agent.ini and TestEngine.ini configuration files have been modified so that INFO logs will not appear by default.
- GHT5-23060: SOAP Headers were compiled by GH Tester using a SOAP Envelope 1.1 namespace which causes errors when using SOAP 1.2 messages. This has been resolved and SOAP 1.2 messages now work correctly.
- GHT5-23052: Direct iProcess connections can now be made when the Director cannot be reached.
- GHT5-23049: Data entered for values on the Filter tab of a Message Case action is now saved and restored properly even if there is no matching Assert tab value defined.
- GHT5-22478: File and directory names containing spaces now work correctly with Directory Data Sources.
- GHT5-23034: Log Actions running in parallel no longer lose data in output files.
- GHT5-23024: A user is now told if a test has not been saved due to an OutOfMemory error. Previously no indication would have been given to the user that the test had not saved.
- GHT5-23016: Performance tests can now be run on the command line.
- GHT5-22999: Create Test... (from template) no longer allows special characters in test names.
- GHT5-22993: regEx() function now includes all matches subsequent to an empty match when using zero-width look ahead assertions.
- GHT5-22954: QTP integration in the GUI Interaction action now correctly substitutes tag values in the Test Folder.
- GHT5-22830: Scalar types can now be marked as repeating (where the schema allows it).
- GHT5-22878: Dragging a requirement onto a receive-reply no longer clears out timeout and tolerance values.
- GHT5-22948: Linefeeds have been added into the RunTests output (Close to "Running:" in the output) to make it easier to be parsed in scripts.
- GHT5-22940: Stored Procedure actions can now be used in performance tests.
- GHT5-22933: Line feeds have been added to the console output lacks line feeds when output through class StandardConsole.
- GHT5-22915: A bug which could causes repeating elements within the expected results of a test to be duplicated when the Message Differencing Window is opened has been fixed.
- GHT5-22904: When refreshing Excel Test Data Sets GH Tester no longer holds any resources open that prevent Excel from saving the file.
- GHT5-22902: An issue that could cause a Stack Overflow exception when importing Java Objects has been resolved.
- GHT5-22925: A problem which meant that Log Measurement data sometimes wasn't shown when opening a chart has been resolved.
- GHT5-22924: GH Tester now reports path/filename during project load if a corrupt file is found. This can make it easier for support team resolve the problem.
- GHT5-22879: An issue which could cause Failure/Pass paths to "vanish" when the associated action is moved has been resolved.
- GHT5-22864: An issue which could cause a Null Pointer exception when re-synchronizing BW project has been resolved.
- GHT5-22857: An issue has been resolved that meant an Software AG webMethods IS server could become unresponsive if the server is unable to communicate with the GH Tester client used for recording/stubbing.
- GHT5-22840: A problem that could result in "Is Null" validation being automatically added into the Message Differences window after editing an HTTP XML field to use "Not Null" rather than "Equality" validation has been resolved.
- GHT5-22767: An issue that could result in a Send-Request/Receive-Reply pair being created that was not correctly connected when a SR/RR pair was dragged from a test-template into a test has been resolved.
- GHT5-22743: Username/passwords are now correctly stored in encrypted form for all physical connections.
- GHT5-22738: MQ Keystores now work correctly in performance tests.
- GHT5-22736: Improvements have been made to the way in which GH Tester accesses a pool of database connection resources during GH Performance tests to avoid race conditions. Errors referencing "…config.icm already exists" were caused by this problem.
- GHT5-22683: An issue that could result in data that was too big for the Results Database database schema when using the TIBCO EMS Probe has been resolved.
- GHT5-22676: The GH Tester README file was missing from the installed product.

- GHT5-22648: The Create Parameterized Test function in Recording Studio now analyses all selected messages when creating the messages used in the test. Previously only the first message was used which meant that elements not present in the first message would not be created automatically.
- GHT5-22639: GH Tester will now re-use client IDs when connecting to Software AG's webMethods Broker.
- GHT5-22626: Errors that occurred when using the message editor for SOAP headers have been resolved.
- GHT5-22624: A problem that could result in inconsistencies in the list of dependent (referenced) services between GH Tester and a Software AG webMethods IS instance have been resolved.
- GHT5-22613: The EMS Probe can now use a direct connection as well as a JNDI-based connection.
- GHT5-22578: The main phase of a GH Performance test can now access tag values set in the Initialise section of the test.
- GHT5-22525: GHTester now supports WSDLs that define operations using mixed message types.
- GHT5-22518: The Assert tab on the Run Command action now correctly refreshes the UI layout when a user switches the action type on a field from equality to regex.
- GHT5-22323: Problems using Run... and Re-Run failures from the Task Monitor have been resolved
- GHT5-22316: An issue that caused incorrect values when reformatting of some copybook fields has been resolved.
- GHT5-22175: Schemas containing a maxOccurs of 9999999999 will now load properly.
- GHT5-22120: An error that occurred when sending MIME content to a server has been resolved.
- GHT5-21460: Excel fields containing links in XLXS files are now read correctly.
- GHT5-21360: If a test in a test suite fails to compile (for example, a transport it uses does not have a mapping in the current environment) then the overall status of the suite is now failed.
- GHT5-21074: The information reported to the user when a Software AG webMethods IS server cannot be contacted has been improved.
- GHT5-20970: When previewing SOAP messages the normalize document setting is now honored when previewing the document. The document will still be normalized when it is published.
- GHT5-20889: The user was being prompted to save changes too often when using the docked action panel.
- GHT5-20886: The Library Manager application on non-Windows platforms did not allow the tibrvjms.jar to be located.
- GHT5-20826: Iterate-While can now be used to iterate exactly once.
- GHT5-20820: The Field Editor will now properly resize to fit Field Action editors if there is not enough room for them to fit.
- GHT5-20649: Deterministic stubs created from Recording Studio by selecting events now generate the correct sequence of message events when the source messages were not simple SR/RR pairs.
- GHT5-20489: It is now possible to synchronize Tibco Business Works service agents
- GHT5-20448: An error that meant it wasn't possible to stop recording if the environment had been switched after recording had started (in Recording Studio) has been resolved.
- GHT5-20428: When setting up Agents and test engines for Performance Tests it is no longer necessary to specify the names of the test engines in the Agent.config file and within GH Tester.
- GHT5-20369: Schemas within Schema Library can now be refreshed when the file on disk is modified.
- GHT5-20343: Test Data Set paths containing project tags now work correctly in performance tests.
- GHT5-20224: Log Measurement counters are now available in Graph probes list.
- GHT5-19758: SOAP types and array sizes comparison now works correctly if (different) namespace prefixes resolve to the same URL.
- GHT5-19136: It is now possible to record an operation with a tag driven destination
- GHT5-19562:The TIBCO BusinessWorks coverage report no longer reports non-completed tasks as missed.
- GHT5-19718: The "Fail" action no longer prints twice.
- GHT5-20490: GH Tester now supports underscores in field names of COBOL Copybook files.
- GHT5-20802: TIBCO BusinessWorks synchronization has been changed to report folder and service component synchronization states consistently. Previously, deletion of a folder in BusinessWorks caused incorrect reporting of synchronization state for other folders in a project. An inline migration will occur the first time when BusinessWorks is synchronized with this release. Until this is done, the reported synchronization state will be: "Source copy updated."
- GHT5-20847: GH Tester's COBOL Copybook schema now parses values for the PIC S9(13)V99 COMP-3 COBOL picture correctly.

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- GHT5-21628: Previously, there could be GUI behavior problems when performance tests that use Externally Defined load profiles were being edited. These problems have been resolved.
- GHT5-21747: In the Recording Studio perspective, Byte, Map, and Text schemas are now applied correctly to TIBCO EMS send reply and receive reply messages.
- GHT5-21821: Several TIBCO iProcess integration issues have been resolved.
- GHT5-21857: An issue has been fixed that could prevent users from being able to select a procedure when creating a Trigger in the Recording Studio perspective.
- GHT5-21896: An issue has been fixed that could prevent users from being able to select the identity created for a WSDL protected by basic authentication (that is, user name and password) when synchronizing with that WSDL.
- GHT5-21907: An issue has been fixed that could cause an Ad Hoc Monitor created for a TIBCO EMS transport to fail to operate.
- GHT5-21917: GH Tester's "SettlementDate" function, which is a working days calendar function, can now generate detailed error messages.
- GHT5-21919: An issue has been fixed that could cause a summary report to exclude a detailed report when reporting the results of a sub-test in a test suite.
- GHT5-21993: An issue has been fixed that could cause GH Tester not to save all the changes on the Message Differences window if any actions or regular expressions are disabled and any fields on the screen are overwritten.
- GHT5-21997: In the Architecture School perspective's Physical View, when using the "Config" tab on the Host dialog box, GH Tester now waits until a host name has been entered fully before verifying the host name and searching for the host's IP address.
- GHT5-22026: In the Architecture School perspective's Physical View, the "Settings" tab on the "Config" tab on the Web Server (HTTP Transport) settings dialog box now enables users to set up single client/server transports. In addition, the new "Client" and "Server" tabs on the "Config" tab enable users to enter additional client/server settings.
- GHT5-22085: GH Performance now releases a floating GH Performance Tester license key after a user quits the GH Performance application.
- GHT5-22101: GH Tester now supports BPMS Complex Types in schemas.
- GHT5-22207: An issue has been fixed that could cause a "conncurrent.ExecutionException" if a quick tag is added to the equality action on a repeating element in a subscribe action and the equality action is disabled.
- GHT5-22209: For any new TIBCO Rendezvous (RV) messages saved from the Recording Studio perspective, GH Tester now ensures that all RV message sub-nodes default to type "RV Message" and that any RV schemas involved do not contain any errors. However, for any RV messages saved from the Recording Studio perspective in earlier versions of GH Tester, message sub-nodes must be set to type "RV Message" manually.
- GHT5-22242: An issue has been fixed that could cause a "NullPointerException" error when attempting to open the results of a failed IBM WebSphere MQ test.
- GHT5-22315: GH Tester now supports leading separate usage clauses correctly.
- GHT5-22324: If multiple asserts are used one after another in a test, they will all be executed by GH Tester as expected. However, any failures will result in a failed test and the result of each assert is displayed correctly in the detailed report.
- GHT5-22326: GH Tester can now trigger, throw, or simulate Software AG webMethods Integration Server exceptions.
- GHT5-22333: An issue has been fixed that could cause Oracle System Statistics probe errors when running Windows Server 2008 R2.
- GHT5-22355: It is now possible to specify GH Tester's HTTP port by using the "-D" argument. In Library Manager (Application section), enter text of the following format in the "JVM Arguments" field: -Dgreenhat.http.port=<*Port Number*>
- GHT5-22369: In the Architecture School perspective's Schema Library, all Software AG webMethods schemas are now displayed according to the project's logical resources.
- GHT5-22370: An issued has been fixed that could cause a File created in the Architecture School perspective's Logical View to appear to have more than one "Name" field.
- GHT5-22389: Valid values entered in COBOL Copybook CP037 (EBCDIC) fields are now saving as expected in GH Tester messages.
- GHT5-22412: An issue has been fixed that could cause changes to Software AG webMethods Integration Servers not to be detected during synchronization.

- GHT5-22414: An issue has been fixed that could exceptions in GH Tester when a test has a log message that contains only a "newline".
- GHT5-22426: For CentraSite 8.2 (and later), GH Tester now supports stylistic formatting of published reports.
- GHT5-22427: For CentraSite 8.2 (and later), GH Tester can now publish stubs that are direct children of service components.
- GHT5-22438: When using the "Iterate Test Data" action, all filter expressions are now applied as expected. Have reversed the sentence order to improve readability.
- GHT5-22447: An issue has been fixed that could cause errors when moving linked actions within tests.
- GHT5-22455: It is now possible to copy SOAP message header values when copying and pasting SOAP messages into text nodes.
- GHT5-22467: GH Tester now supports the use of brackets and underscores in item names of fields of COBOL Copybook file names.
- GHT5-22476: An issue has been fixed that could cause a "RejectedExecutionException" error when using a slow connection to the project results database.
- GHT5-22480: An issue has been fixed that could cause "OutOfMemoryError" errors while running tests that run other tests. From now on, if GH Tester starts to run of memory while executing such tests, it will purge any child tests from memory.
- GHT5-22486: An issue has been fixed that could cause "loader constraint violations" when publishing test suite results by e-mail.
- GHT5-22487: In GH Tester, it is now possible to specify a user ID for each IBM WebSphereMQ publish action.
- GHT5-22499: Synchronizing a large Software AG webMethods package is no longer causing a Java heap space error. System property greenhat.wmis.schemaSync.chunkSize can be used to control the maximum number of services for which schema synchronization data will be pulled back from WMIS in a single request.
- GHT5-21760 - Tag replacement now occurs for all Tag Aware text fields in WS-Security tokens.
- GHT5-22121 - A user can now double-click on the Test Results table for a performance test in order to open the chart.
- GHT5-23257 - WMIS probe now deals with passwords correctly.
- GHT5-23245 - Support expansion of leaves under WebMethodIData nodes.
- GHT5-22501: Control flow is now resumed properly in future iterations of an iteration action after one iteration fails due to an assert action asserting false.
- GHT5-22508: The Schema wizard now takes account of the settings of the "Include Text nodes" and "Include optional fields" check boxes on the "Message Settings" page of the Preferences dialog box. .In addition, an issue has been fixed that could excessive memory consumption by GH Tester while using the Schema wizard and the Requirements Library.
- GHT5-22509: An issue has been fixed that could cause a "NullPointerException" in the Results Gallery perspective when a scenario has no parent.
- GHT5-22511: An issue has been fixed that could cause a "NullPointerException" in the Results Gallery perspective when an iteration count is "Null".
- GHT5-22513: GH Tester reports are now published only when they are configured to publish.
- GHT5-22517: Action statuses are now reported correctly in Results Gallery perspective after an assert action asserts false in one iteration of an iterate action.
- GHT5-22536: GH Tester can now send invalid SOAP messages with schemas to a system under test even if the messages do not conform to the schemas.
- GHT5-22551: GH Tester now supports cancellation of JMS subscribes to Oracle WebLogic queues.
- GHT5-22557: Header schemas of HTTP Transport receive reply messages are now editable.
- GHT5-22562: GH Tester no longer applies time zone offset corrections to date-only columns in databases that are marked as type "Timestamp".
- GHT5-22563: GH Tester's COBOL Copybook lexical analyzer has been enhanced to allow more characters in identifier names.
- GHT5-22578: Tag values set up in the Initialise phase of a GH Performance test are now available in the main test phase.
- GHT5-22589: An issue has been fixed that could cause the "Physical" resource list on the "Bindings" tab on the Environment Editor not to be sorted in alphabetical order.

- GHT5-22597:When generating tests from the Recording Studio perspective, the "Validate Element Action" is now used instead of the "Validate Message Action" for validating XML.
- GHT5-22613: An issue has been fixed that could cause a "ClassCastException" error when configuring TIBCO EMS probes to connect directly instead of a JNDI connection.
- GHT5-22624: Server-side synchronization of Software AG webMethods now identifies dependency changes in the Architecture School perspective.
- GHT5-22626: Headers of SOAP messages can be edited in the same way as the bodies.
- GHT5-22638: An issue has been fixed that could cause GH Tester not to recognize a data set until it is selected in the Test Factory perspective and Refresh is clicked.
- GHT5-22639: GH Tester now supports reconnecting a Software AG webMethods Broker to an existing Client ID if a connection attempt fails.
- GHT5-22672: GH Tester now supports better error logging from exceptions in (Java) "FutureTasks".
- GHT5-22702: GH Tester now supports vectors within IData instances. GH Tester also now supports Software AG webMethods table objects so that they are viewed as document lists.
- GHT5-22728: When synchronizing with a WSDL with multiple operations, GH Tester now adds the"SOAPAction"for each operation to the HTTP Header and Stub Header filters, which ensures that messages are recorded only for those operations that are executed.
- GHT5-22736: An issue has been fixed that could cause errors when creating resource files for use during performance tests.
- GHT5-22738: GH Tester now transmits key stores to agents when running GH Performance tests, which ensures that transports relying on SSL will operate correctly.
- GHT5-22743: In GH Tester, Software AG webMethods Integration Server passwords are now encrypted.
- GHT5-22744: An issued has been fixed that could cause a "NullPointerException" when running TIBCO Active Enterprise tests on Oracle Solaris and Microsoft Windows.
- GHT5-22748: When GH Tester runs from a command prompt, if there are TIBCO Active Enterprise tests in a project, BusinessWorks schemas are now built at load time instead of waiting until test execution.
- GHT5-22788: When attempting to publish a FIX message, the action now fails if the message cannot be published.
- GHT5-22845: The number of transactions specified in a GH Performance license is now used when calculating the load of a Constant Growth test that specifies the target per minute or per hour.
- GHT5-22851 : If Library Manager is run on a Windows machine with User Access Control (UAC) turned on then it will now prompt for escalated privileges so that it can write the configuration to the installation directory. Previous versions of Library Manager would silently fail to write the configuration if run by a non-administrative user under UAC
- GHT5-22864: GH Tester now supports XSDs that are UTF-16 encoded without a byte order mark.
- GHT5-22865: The "Run Command" action now supports the use of SSH private keys to connect to remote hosts.
- GHT5-22876: The GH Tester system property "com.ghc.ghTester.gui.console.trim" enables control of Test Lab Console window output. If the value is set to "True" rather than a specific size, Console window output will now be trimmed when it reaches 300,000 characters. This can help to reduce the amount of memory used by GH Tester in long-running (or verbose) tests.
- GHT5-21665: The Message Differences window is now correctly remembering the relative divider positions between messages and header/body even when it is fully maximized.

Known Issues

Services Must Be Stopped Before Upgrading Packages

Although in some cases the upgrade process for the various packages will automatically stop any installed services before attempting to upgrade there are scenarios when this doesn't occur. This results in a failure to uninstall the service (for example, the agent.exe file). It is therefore recommended that you manually stop services before attempting to upgrade.

AIX Performance Testing Does Not Support the *sysstats* Probe

The sysstats probe is not provided for AIX. If a user attempts to configure an AIX-based performance test to use this probe then the following error will be shown in the console : [Error] Probe ERROR: http://localhost:4476 -

Probes failed to start - Failed to start probe: System Statistics - java.lang.UnsatisfiedLinkError: ghsystemstats (Not found in java.library.path). You must remove this probe from the configuration of the test.

Stubs Will Not Automatically Detect Port In Use On Stub Start-up

A change made in the Java 7 runtimes means that an exception is no longer passed back to Rational Integration Tester when an attempt is made to bind to an IP port that is already in use. Previously this exception was used by the stub engine to automatically allocate another port and configure the environment appropriately. This automatic use of an alternative port will no longer occur. Instead the stub will fail to start. This problem is most commonly experienced when a user attempts to start a stub on the same machine as the live system is running on. There are two workarounds for this problem.

The first option is to configure the stub to use a different port. Traffic will be automatically routed to the new port so no client-reconfiguration is required.

The second option is to use JVM arguments to try and replicate previous behavior. The Rational Integration Tester products have not been fully tested with these options enabled so customers are advised to use them with caution. The following two –D options must be specified in either the GHTester.ini file (for Rational Integration Tester) or the RunTests.ini file (for Rational Integration Tester Agent) in order for stubs to detect the port-in-use scenario:

```
-Djava.net.preferIPv4Stack=true
-Djava.net.preferIPv6Address=false
```

Stopping an Agent Results In Windows Event Log Error

On some Windows installations IBM has seen errors raised in the Windows Application Event Log when the Rational Integration Tester Agent service is stopped. This error occurs during the shut-down process of the service and does not affect the functionality of the Agent.

User Interface Freeze

Some users have encountered software freezes on Windows, particularly when moving the Rational Integration Tester user interface from a laptop screen onto an external monitor. This is believed to be caused by problems between the Java Virtual Machine and the DirectX video drivers in use on the machine. If this problem affects you then please try to resolve it by adding the following line to the GHTester.ini file in the installation directory:

-Dsun.java2d.d3d=false

This tells the JVM not to use DirectX. This has resolved the problems in all cases IBM is aware of so far although the UI does run more slowly. This issue has been raised with the IBM Java team.

GHDotNetUtils Must Be In the .NET Global Assembly Cache

If you are using Rational Integration Tester's .NET integration then the GHDotNetUtils.dll file (in the root installation folder) must be added to the .NET Global Assembly Cache before .NET objects can be parsed. This is a manual step and is documented in the Rational Integration Tester Microsoft .NET Reference Guide.

Automatic Project Login Doesn't Work on Windows

On the Windows platform the Automatic Login project option does not work correctly. This means that secured projects run from the command line or from QC cannot be opened. Please note that this problem has been resolved in fix pack 8.0.0.2.

Left-to-Right and Right-To-Left Strings

If a message element is a string that contains both left-to-right and right-to-left text *in the same element* then the string may not be displayed properly in the user interface. It will be published correctly.

Date Formatting Strings

Rational Integration Tester uses Java to format date strings for validation purposes. The IBM JRE acts differently from the Oracle/Sun JRE used by earlier versions of GHT Tester for one unusual format string.

Specifically, a date of "123" parsed using an input format of "yyy" with output format MMDDy will be formatted as "0101123" by the IBM JRE. Previous versions of GH Tester (using the Oracle JRE) would have formatted this as

"010123". This is unlikely to cause problems as it is unlikely customers will be using single-character year output format strings.

Library Manager 'Browse For File' dialog

When you first open the browse/edit dialog from the Library Manager application (to select a file) the directory 'up' button will not work. If a different directory is selected the 'up' button will then work. This has been confirmed as bug in the IBM JRE.

Launching the 'Tools Application' (Source Control option on Menu) Displays License Warning

If you are running Rational Integration Tester using an evaluation license then when you launch the "Tools Application", by choosing the Source Control option in the menu or by creating/editing a data model, a dialog will appear warning that you are using a trial license. This dialog will not appear once you have installed a full license.

Silent Install of Rational Test Control Panel

Depending on how the silent installation response file has been generated the "Security Configuration" tool may still be launched at the end of the process. The *imcl* tool is known to work correctly and will suppress the dialog. As Rational Test Control Panel is a server-based product silent installations are not expected to be common but IBM will look to improve this in future releases.

To use *imcl* within the ${IM}/eclipse/tools directory run "./imcl-c", specifying the response file when prompted.

Blank Panel Appears During Solaris Installation

During installation of Rational Integration Tester, Rational Integration Tester Agent and the Rational Integration Tester Platform Pack on Solaris (32 bit) a blank panel will appear during the Installation Manager install process. This has no adverse effects on the installation process and the user can simply click *Next*.

The Agent Can Only be Started From its Installed Directory (Unix)

On Unix, if an attempt is made to start the agent from a directory other than the one it is installed in then it will fail to start. For example:

/opt/GH/RIT-Agent/Agent –consolelog

Whereas if you are within the installed directory then:

./Agent -consolelog

works correctly.

The Full Path to RunTests executable Must Be Given In RQM Configuration When Using RQM to Run Tests on an Linux Based Agent

If integration between Rational Integration Tester and Rational Quality Manager has been set-up such that the Agent that a test is to be run on is running on a non-Windows platform then the full path to RunTests must be provided in the RQM block of the agent.conf file in the RIT-A installation.

To make this change, locate the agent.conf file in the RIT-A installation, open in an editor and locate the rqm element which will contain information similar to the following:

```
<rqm enabled="true">
<username value="rqmconnector"/>
<password value="*****"/>
<url value="https://ghserver.ibm.com:9000/qm"/>
<rqmproject value="P1"/>
<ghtprojectbaselocation value="/opt/GH/workspaces"/>
<runtests value="./RunTests"/>
```

Modify the runtests value to reference the full path. E.g.

```
<runtests value="/opt/GH/RIT-Agent/RunTests"/>
```

Restart the agent.

A test initiated from RQM should now run correctly.

Known Issues From GH Tester Still Relevant to Rational Integration Tester

Test Cycles and Coverage Reports

If you are using Test Cycles and want coverage reports, the applicable tests must still be executed from within a test suite (i.e. coverage reports will not be produced for tests that are executed outside of a test suite).

Column Level Validation Cannot be Displayed in the Message Differences Window

Validation on table rows and cells performed within the SQL Query action works as expected and is displayed in the console accurately. If column-level validation is used, however, any differences are displayed correctly in the console, but they are unable to be displayed in the Message Differences window as it is currently only able to display row-by-row and cell-by-cell validation issues.

Duplicated Physical Resources when Using Source Control

Rational Integration Tester now uses a different method of creating filenames for physical resources. For this reason, source control users may see duplicate items due to the way the project was updated/committed after the resource change. In this case, the newer/newly named resource should be kept.

webMethods Broker Events

When recording webMethods Broker events, some fields may be seen to contain null rather than their actual content. This occurs because elements wired to a byte-array by an IS to publish can only be un-wired by another IS, this is an internal mechanism of IS and cannot be overcome. This has been seen with the MQ adapter notifications for the "MsgBody" and "MsgBodyByteArray" fields, but may affect others. Further information can be found via Software AG support, incident number 5019024.

Logical View

Sometimes adding a service component to the logical view will not add it to the diagram.

If there are a small number of objects on the logical view then the zoom level may automatically set itself to a very high level.

10905: User Names Containing "#" Character

The Eclipse framework (and therefore Rational Integration Tester) does not support user names that contain the "#" symbol. This issue may result in the deletion of project files as Rational Integration Tester cannot interpret the full path to the user's "Documents and Settings" directory for application preferences.

The workaround for this issue is to create a folder to use as a Rational Integration Tester workspace (for example,C:\RIT) and edit **TestEngine.ini** (found in C:\Program Files\IBM\RationalIntegrationTester, by default) to point to it. The line below "-data" should be changed from "@user.home/.rit8/perf-workspace" to "C:/RIT/..rit8/perf-workspace".

UNC Paths as Current Directory in Run Command Action

Cmd.exe, used by the Rational Integration Tester Run Command test action, may return an error when trying to process a UNC path. More information regarding the resolution is available at http://support.microsoft.com/kb/156276/EN-US.

10766: Various issues with performance tests if running multiple test engines on one agent

10158: Issue with SSL tab referencing one of a number of identity stores

In a project with multiple identity stores the GUI does not always correctly reflect the one selected.

If you select any identity store from the Identity Store drop down menu and click OK to close the transport window, Rational Integration Tester will select the correct identity store when processing the data. This can be seen when opening up the physical files in the Physical folder of the GH Project on your C drive. The HTTP file references the id of the selected Identity Store correctly.
Error scenario

If you select any identity store from the Identity Store drop down menu, **but then reselect the Identity Store drop down menu** it will not retain the selected id store and will default back to the first id store in the drop down menu. Clicking OK on the window will then rewrite the physical files on your drive to reference the first id store in the list. So this should be avoided until fixed.

Simultaneous Modifications

If a message is opened in a message editor (for example, a Subscribe action) and the message differences window at the same time, changes made in one window will be overwritten or reverted when closing the other window. More

specifically, the content of the window that is closed last will overwrite the content of the window that was closed first.

This also applies if the message differences window is used to correct messages used in a stub if the stub editor window is open. Note that this problem can be avoided by selecting the user preference, "*Run from Disk*" as opposed to *"Run from Memory"*.

User Permissions on Linux

The user of the Recording Studio perspective on the Linux platform requires administrative privileges. Before you can run Rational Integration Tester as an administrator, however, you must run the Library Manager as an administrator (this is due to the way the *.rit8* directory is created under the user's home directory). Similarly, if you want to run Rational Integration Tester as a non-admin user, you must first run Library Manager as that non-admin user.

WS Security

Currently only outbound actions are supported within the WS-Security node processor.

Results Rendering

The third party rendering engine has performance issues when dealing with larger reports, this may be alleviated by increasing the amount of memory allocated to the application.

Invalid Schema Messages

Some message fields may be displayed as invalid (red "x"), even though they are valid fields/messages.

SCM

If a newer version of Rational Integration Tester is installed after adding team providers to SCM, the providers will have to be reinstalled unless their installation is outside of the Rational Integration install folder (detailed in *Rational Integration Tester Installation Guide*).

TIBCO BusinessWorks Private Processes

- The BW private process transport uses HTTP as its primary communication method, but Rational Integration Tester's "Publish" test action does not support HTTP. Therefore, the Send Request/Receive Reply action pair should be used for testing private processes.

- Error schemas are not supported (for example, if a process outputs an error schema rather than an end schema, the error schema/output is not supported in Rational Integration Tester).

- Rational Integration Tester does not support the following content in private process schemas:
  - A "Choice" content option at the root of the schema
  - Pointing to an AE message from anywhere (i.e. inner or at the root) causes a known deserialization issue
  - The "Java Object Reference" type is not supported at any level
  - The inline WSDL message content option is not supported

- If you get a connection error when calling a private process, please check the network settings. If you open the Designer Engine Custom Properties in the Physical View of the Architecture School perspective, you will find the host and port number. The host/port in the Physical View menu must match the host/port in the GHEnable.proj design time library in the BW project. The BW host/port can be set when the project is deployed.

Data Transfer Objects (DTOs)

DTO support is currently limited to the following:

- Classes with a default constructor and publicly visible member variables
- Member variables must be primitives, wrapper objects, Strings or other objects within the JAR file
- JMS providers who use the Context Class Loader to obtain message definitions

Upgrading from GH Tester, GH Performance and GH VIE

Special consideration must be given when upgrading existing installations of GH Tester, GH Performance, GH VIE, GH Server and the GH Agent to the version 8 Rational products. Please read this section carefully before attempting to upgrade.

General Notes

- Due to the change in licensing model it is not possible to 'mix and match' components from GH Tester 5.4.0 or earlier with components from 8.0.0 and such a configuration will not be supported. You must upgrade all of the components you have installed. Note also that GH Tester floating (SafeNet Sentinel) and fixed keys will not work in Rational Integration Tester. Customers can obtain replacement license keys from the IBM License Key Center.

- With the exception of the results database schema, which can be upgraded in-place, there is no support for upgrading an existing installation of any of the Green Hat products. You must uninstall the existing Green Hat version before attempting to install the Rational version. This is consistent with Green Hat upgrades.

- The Rational products install into different locations on disk. For example, on Windows the default path for Rational Integration Tester is c:\program files\IBM\RationalIntegrationTester.

- An installation of Rational Integration Tester no longer includes an Agent. Agents are installed from a Rational Performance Test Server or Rational Test Virtualization Server installation which is separately licensed. These Agents are installed into a separate directory structure from Rational Integration Tester and the Library Manager tool must be run separately for the Agent even if they are installed on the same machine.

- Only Rational Integration Tester requires the entry of a license key. Rational Test Control Panel and the Agents (installed from RPTS or RVTS) do not require the entry of a license key. Agents are now licensed by the PVU mechanism. You must understand how PVU licensing works before attempting to install an agent.

- GH Tester stored schema and user data in a user workspace directory called *.ghtester5*. The change to use of IBM's Installation Manager technology means that existing cached files within the *.ghtester5* directory could lead to problems. Rational Integration Tester therefore creates and uses a new directory called *.rit8* for this information.

  The migration works as follows:

    o Configured libraries and application options will be migrated into Rational Integration Tester when Library Manager is run for the first time. This will normally happen at the end of the installation process.
    o User preferences (including the list of recently opened projects) will be migrated when a user runs Rational Integration Tester for the first time.
    o Synchronized schemas are not migrated and must be rebuilt on first use. This is consistent with previous GH Tester upgrades.
    o Once migration is complete you may safely remove the remaining content from the <user home>/.ghTester5 directory.

  If you do not wish for Rational Integration Tester to migrate these settings then remove the.ghTester5 directory before installing it. There is no project data held in this directory.

  If multiple users have used GH Tester on a machine then there will be a .ghTester directory in each of their home directories. Step 2 (user preferences) will happen for each user when they run Rational Integration Tester for the first time.

- You are advised to ensure that you have a back-up copy of a GH Tester project before you attempt to load it into Rational Integration Tester.

- The Results Server functionality of previous releases has been incorporated into the Rational Test Control Panel. Users are encouraged to convert as soon as possible by removing the Results Server URL from project settings. Rational Integration Tester will then generate a new-style of URL that uses Rational Test Control Panel links. In the meantime existing Results Server instances will continue to work against the 8.0.0 results database but this will not be maintained in future releases.

- The ability to generate PDF versions of test results within Results Publishers has been removed. Instead, Rational Integration Tester will generate an email with HTML page attachments representing the report.

- The Help->Create Support Info menu option has been removed.
- A number of open source libraries used by Rational Integration Tester have been changed or upgraded from the versions used by GH Tester. This should not affect the general use of the product.

Upgrading From…

This section provides advice on how to upgrade to Rational Integration Tester v8.0.0 from specific versions of the Green Hat range of products.

5.4.0.x

- It is not possible to upgrade an installation of GH Server to Rational Test Control Panel. Before installing Rational Test Control Panel on a machine you must uninstall GH Server.   The workspace (containing the domains, environments and stubs) can be optionally preserved during the uninstallation. If you chose this option then the installation of Rational Test Control Panel will automatically pick up this workspace meaning that stubs will not have to be republished.
- The URL for a default installation of GH Server was of the form http://machinename:7819/GHServer/. The URL for a default installation of Rational Test Control Panel is http://machinename:7819/RTCP/. You will need to change this setting in the Project Settings dialog of each project that was using GH Server to point to the new installation.
- You will not need to upgrade the results database schema.

5.2.11 (any version) or earlier

- You will need to update the results database schema (also known as the project database). See the database upgrade section below.
- If you are using MySQL as the results database then note that a Rational Integration Tester installation does not include the MySQL JDBC database driver. You must download this separately and use the Library Manager tool to tell Rational Integration Tester or the Agent where the jar is installed.

5.2.11.29 or earlier

- If you are upgrading to Rational Integration Tester from GH Tester versions 5.2.11.29 or earlier then **all** webMethods IS users **MUST** follow the new installation instructions in *Rational Integration Tester Reference Guide for Software AG webMethods.* This will require new JAR files to be deployed and configuration changes to be made on the webMethods IS servers before Rational Integration Tester can be used.

5.2.10 or earlier

- You will need to update the results database schema (also known as the project database). See the database upgrade section below.
- For users of the HP Quality Center integration, the server distribution package will need to be upgraded. The server files should be redeployed into your Quality Center environment from the Rational Integration Tester installation according to the instructions in Rational Integration Tester *Integration Guide for HP Quality Center*.

Database Update

Rational Integration Tester v8.0.0 uses database schema version 1.9.24.d for the results database (also known as the project database). This is the same version as GH Tester 5.4.0.

If you are upgrading to this version of Rational Integration Tester from GH Tester 5.2.11 **or earlier** then you must apply the appropriate update script(s) that can be found in the scripts directory of your GH Tester installation (for example, C:\Program Files (x86)\IBM\RationalIntegrationTester\scripts). See *Rational Integration Tester Installation Guide* for more information.

GH Tester 5.2.11 will operate against schema 1.9.24.d.   If you are currently using a 5.2.11.x installation against schema 1.9.24.c then you should upgrade the database schema first to 1.9.24.d and then upgrade clients. If you are using 5.2.10 or earlier then you will have to upgrade the database and clients at the same time.

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