

Rational Integration Tester
Rational Integration Tester Agent
Rational Test Control Panel
Rational Integration Tester Platform Pack



Release Notes

Version 8.0.1.4

Note

Before using this information and the product it supports, read the information in “Notices” on page 52.

This edition applies to version 8.0.1 of Rational Integration Tester, Rational Integration Tester Agent, Rational Test Control Panel and Rational Integration Tester Platform Pack and to all subsequent releases and modifications until otherwise indicated in new editions.

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Contents

Welcome	5
New, Modified and Enhanced Features	6
New in 8.0.1.3	6
New in 8.0.1.2	8
New in 8.0.1.1	8
New in 8.0.1	11
Mainframe (z) Support	11
Schemas, Formatters and Transports	11
Stubs and Virtualization	12
SAP	13
Usability and Efficiency	13
WebSphere Application Server	13
WebSphere MQ	13
Integration	14
Test Results	14
Optim	14
Requirements	14
Recording Studio	14
Installation	14
Test and Stub Actions	14
New in 8.0.0	15
Test Results	15
Schemas, Formatters and Transports	15
Recording Studio	15
WebSphere MQ	15
Usability and Efficiency	15
Installation	15
Jenkins/Hudson	16
Microsoft Team Foundation Server (TFS)	16
New in 5.4.0	17
Stubs and Virtualization	17
Recording Studio	17
Test and Stub Actions	18
Executing Tests and Stubs (Test Lab Perspective)	18
Message Differencing Window	19
Usability and Efficiency	19
GH Performance	19
IBM WebSphere (MQ and Application Server)	19
IBM Rational	20
HP Quality Center	20
Software AG Integration (Integration Broker, Integration Server and CentraSite)	20
Financial Services Formatters and Transports	20
TIBCO	20
Web Services, WSDLs, SOAP, HTTP, JSON and REST	20
SAP	21
Formatters and General Transports	21
Other New Features	21
Closed Issues	22
Resolved in 8.0.1.4	22
Resolved in 8.0.1.3	23
Resolved in 8.0.1.2	24
Resolved in 8.0.1.1	25
Resolved in 8.0.1	29
Resolved in 8.0.0.3 (and included in 8.0.1)	32

Resolved in 8.0.0.2 (and included in 8.0.1)	32
Resolved in 8.0.0.1 (and included in 8.0.1)	33
Resolved in 8.0.0.....	35
Resolved in 5.4.0.....	36
Known Issues.....	42
Upgrading from GH Tester, GH Performance and GH VIE	49
General Notes	49
Upgrading From...	50
Database Update.....	51
Important Information	52
Trademarks and Service Marks	54

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 8.0.1.4 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.

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

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 fixes made in these releases.

You are strongly advised to read the Known Issue section on page 42 before attempting to install or upgrade any part of Rational Integration Tester.

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 you will require an installation of Rational Integration Tester Agent from the Rational Performance Test Server or Rational Test Virtualization Server products respectively. These are licensed separately from Rational Test Workbench. Please contact your sales team for detailed information.

NOTE: If you are upgrading **from** an instance of Rational Integration Tester Agent, Rational Test Control Panel or the Rational Integration Tester Platform Pack **that is a version prior to 8.0.1** on Microsoft Windows and you currently have that product installed as a Windows service then you must un-install the current version and reboot before attempting to install the new version. If you are upgrading from version 8.0.1 or later then the upgrade process will operate correctly and the initial uninstallation is not required. See known issues on page 42 for further details.

NOTE: This release includes new versions of the Software AG wmIS server-side Tester components. RIT 8.0.1.4 will operate correctly against the server-side components from any version 8.0.x release so clients and servers can be upgraded in any order. However, to use the full set of sift-and-pass-through capabilities introduced in Tester 8.0.1 you must upgrade the server-side components to at least that level. Existing 8.0.0.x RIT clients will work against the 8.0.1.x server JAR files so you can upgrade the server first, and then upgrade RIT clients.

NOTE: This release of Rational Integration Tester uses the same database schema as version 8.0.1, 8.0.0 and GH Tester 5.4. If you are already using these versions then no database upgrade is required. If you are using an earlier version of GH Tester then please read the upgrade section at the end of this document as a database upgrade will be required.

New in 8.0.1.4

- There are no new features in release 8.0.1.4. The fix pack contains only defect fixes which are documented in the appropriate section of this document.

New in 8.0.1.3

- Each Rational Integration Tester project has a Diagrams subdirectory (on disk), which contains a logical.props file. To make the source code management of this file easier, the ordering of the contents of the file is now preserved between saves. Thus, when a pre-existing logical.props file is saved by Rational Integration Tester 8.0.1.3 for the first time, the order of the contents is changed but subsequent saves will preserve the updated order. This change was implemented in response to RFE ID 28762, which was raised by an IBM client on developerWorks.
- Rational Integration Tester now supports IBM DB2 9.5 (distributed) for table-based database virtualization. However, if you wish to use stored procedure virtualization with DB2, Rational Integration Tester supports only IBM DB2 9.7 or later.

New in 8.0.1.2

- A new step has been added to the Recording Studio Save wizard. This will appear only if the wizard is processing messages recorded on an HTTP or WebSphere MQ transport. It provides users with a finer level of control over which transport-specific headers are removed by Rational Integration Tester when creating messages in stubs and tests. The default selection on this panel matches the decision that earlier versions of Rational Integration Tester would have used automatically, so clicking Next on this new screen will preserve previous behavior. In most cases, the default suggestion that Tester makes for the removal of headers will lead to the desired behavior, (for example, set-cookie values in HTTP). However, sometimes, users may want to preserve specific headers and this new screen facilitates those users. Unless a user specifically requires a header to be preserved, the default selection is likely to result in the correct message being created in the test or stub.
- The Stubbing tab on the IBM WebSphere MQ Queue Manager transport dialog box in Physical View now allows “open” options to be specified on the various queues used by the sift and pass through technologies. The Recording tab on the same dialog box has also been updated to allow “open” options to be specified on the model queue used. These options enable users with non-standard WebSphere MQ deployments to avoid failure conditions by specifying how exactly Rational Integration Tester accesses queues. If sift-and-pass-through technology is being used on a clustered queue, users should select the “Pass Through Queue Is Clustered” check box in the Pass Through Queue Open Options section on the Stubbing tab. This causes Rational Integration Tester to use the MQOO_SET_ALL_CONTEXT flag when opening the queue to pass the message on to the live system if the stub decides not to process it. Without this setting, the message may not be passed on to the live system and Rational Integration Tester will not display any error or other messages about it.
- The Function action in Test Factory now has a scroll bar.
- When using an intercept to record WebSphere MQ queues, Rational Integration Tester filters out Queue Manager administration messages automatically to avoid showing users irrelevant events within Recording Studio. It is possible to show all messages by clearing the “Include Admin Messages” check box on the Recording Studio tab of the logical IBM WebSphere MQ Queue Connection dialog box in Logical View. In earlier releases, if user-messages were moved between Queue Managers in a cluster automatically, Rational Integration Tester would incorrectly interpret them as administration messages and would not display them in Recording Studio unless the “Include Admin Messages” check box was selected. This behavior has been changed; Rational Integration Tester should now correctly identify user-messages in the clustered scenario while still filtering out genuine administration messages.
- Performance improvements have been made to the Recording Studio Save wizard when creating test data from large numbers of recorded messages.
- For intercept-based WebSphere MQ message recording, users can now specify a prefix on the Recording Studio tab of the IBM WebSphere MQ Queue Manager dialog box in Physical View for temporary dynamic queue names that are created by Rational Integration Tester. If the prefix is used, Rational Integration Tester users do not need to be given access to all AMQ.* queues. The default value is blank, which means that no prefix will be used and users will require access to all AMQ.* queues.

New in 8.0.1.1

- Functionality has been added to enable client-side virtualization of calls to the CICS Transaction Gateway. This enables a Rational Integration Tester virtual service to be executed instead of the actual program on CICS. Sift and Pass Through capabilities can be used to enable the stub to pass the message on to the real transaction if it decides not to process it. This feature is supported only for certain specific scenarios and has a number of limitations. Further guidance will be made available in a Technical Note. Customers must be aware that:
 - This functionality is supported only for off-mainframe Java clients of the CICS Transaction Gateway. The client must be using only the CICS Transaction Gateway Java libraries from the CICS Transaction Gateway SupportPac CA5F. No other configurations are supported.
 - The feature supports only synchronous calls from the client to the CICS Transaction Gateway that must be using commareas. Only ECI calls are supported.
 - Extended Logical Units of Work are not supported by the virtual services.
 - If users require client-side recording of messages in Recording Studio (which is required if recording of messages to a stub is desired) then the ctgserver.jar file must also be in the client’s classpath and the application configuration updated. The ctgserver.jar file must be obtained from a version of the CICS TG that the CA5F SupportPac is compatible with.
- It is now possible to record Software AG webMethods IS messages without requiring a wmBroker instance. Although useful in environments where no wmBroker instance is present there is a greater impact on the message throughout of the wmIS server compared to the technique that does use wmBroker. For this reason the

default recording options have not been changed and will continue to assume wmBroker is present. To enable recording without wmBroker edit the GreenHat.properties file in the GreenHat package on the IS Server and change the useBroker setting to False.

- The HTTP transport has been changed to use per-remote-host connection pools rather than attempting to create unlimited number of connections. This significantly reduces the number of ephemeral ports created by Tester and also resolves some problems where these ports were not being correctly closed down. This change has also led to an Agent being able to generate a higher *tps* load from a load generation test during a performance test (assuming all other factors are equal). The per-remote-host pool size is specified on the physical HTTP transport. This setting applies per unique host. So, if two transports are defined, each with a pool of 100 then a maximum of 200 connections will be made.
- Tester has been updated with the SWIFT MT 2013 message formats. Because Tester supports only a single version of SWIFT earlier versions of the standard are no longer explicitly supported. However, as Tester allows general SWIFT message construction this means that 2012 (and earlier) messages can still be constructed, edited, published and received but all red-cross validation will be done according to the 2013 standards. Additionally, when using the right-click menu option within a message editor, the child-element choices shown to users will be based on the 2013 standard.

Approximately 63 message types which have been modified (within the categories MT1nn to MT9nn) for this specification release. All of these have a number of modifications to the usage rules and field specifications and thus the semantic content of the messages. The semantic content of the messages does not affect Rational Integration Tester, but users need to be aware of these (details are found in the SWIFT standards specifications). Of these modifications, 29 message types have message format specification that could affect 2012 messages. The impact is limited to red-cross validation and the child-nodes that are displayed to a user as options when constructing a message. These message types are as follows:

MT300, 304, 305
MT370 (new, added)
MT508
MT524, 527, 535, 538, 540, 541, 542, 543
MT544, 545, 546, 547, 558, 564, 566
MT568, 578, 586
MT604, 606, 607
MT920, 941, 942

A Tech Note will be published providing further information on these changes.

- License borrowing has been enabled for Rational Integration Tester on the Microsoft Windows platform. The feature enables customers who are using IBM Rational's floating license server technology to 'check out' a license onto their device (such as laptop) so that they can continue to work when disconnected from the network. The license can be given back to the floating license server at a later date. License borrowing is not supported on other platforms. For further details on how to use license borrowing please contact the IBM Rational licensing support team.
- To enable users to diagnose the cause of load-failures quickly and effectively, Rational Integration Tester now reports the actual filename of any project files that it cannot load (for example, files may be corrupted). In most cases, a dialog box will be shown to users, although in a small number of cases user must still open the JVM console (by clicking Help > About on the menu bar of Rational Integration Tester) to see the filename.
- An option has been added to Recording Studio to enable messages to be displayed in 'received' time order rather than using the timestamp within the messages themselves. This is useful in situations where multiple servers are being recorded and those servers are not time-synchronized. Prior to this change, if servers were not synchronized then Recording Studio could show the reply message before the request which then caused problems when creating tests and stubs from the recording. To enable this feature click the new *Use Received Timestamp in Table* button on the Recording Studio toolbar. The table is not immediately re-sorted if a user wishes to re-order already recorded events they must click the appropriate column heading. Messages will now be displayed in received order. To revert to using the message timestamps simply click on the button again. The Recording Studio Save Wizard and the Playback options will both honor the selected mode.
- Rational Test Control Panel now supports use of the Apple Safari browser.
- A number of usability enhancements and fixes have been made to the Rational Test Control Panel user interface.
- MQEnvironment properties can now be set on a physical IBM Websphere MQ transport in Tester. For example, to set the Coded Character Set Identifier (CCSID) property use the value "CCSID".
- The certificate that is used to sign the LibConfig.exe file (the Library Manager executable) on the Windows platform has been changed to an IBM certificate. When running under User Account Control (UAC) Windows

will display the certificate details as part of the request for elevated (administrator) permissions. This now shows the software author as IBM rather than Green Hat.

- It is now possible to show the JVM console output window by pressing the Ctrl+Shift+J key combination within Tester. When opened using this method the window can be left open whilst Tester is used.
- It is now possible to use tags in the directory path specified for a file-based Results Publisher within the Project Settings dialog of Tester.
- Rational Test Control Panel now includes a number of example services that can be used for training, demonstrator and educational purposes. These are as follows:
 - Calculator - A simple calculator web service offering add, subtract, multiply, divide and modulus
 - Echo - A simple echo web service that sends the supplied string back again
 - Login - A simple login web service that returns a unique token from all login attempts, does not verify the user name or password supplied
 - Phone Book - A simple REST based phone book service

To find out further information about these services, including the WSDLs for the web services, navigate to **Error! Hyperlink reference not valid.** RTCP server (assuming a default RTCP installation).

- The Rational Test Control Panel REST API for controlling stubs now provides additional textual information in error cases.
- The Rational Test Control Panel Agents page now makes it clearer whether a proxy has been configured for HTTP or HTTPS traffic (or both).
- Rational Integration Tester - Agent, Rational Test Control Panel and Platform Pack can now be installed as 64-bit installations on the IBM AIX platform. Prior to this release only the 32-bit version could be installed on AIX 64-bit. Rational Integration Tester itself only exists as a 32-bit installation on AIX.
- TIBCO EMS 7.0 entries have been added to Library Manager. Additionally, three extra JAR file dependencies have been added to EMS 6 and 7 in Library Manager: tibcrypt.jar, slf4j-api-1.4.2.jar and slf4j-simple-1.4.2.jar. These files will exist in the specified directory in a normal EMS installation. In most cases Tester will have found these JAR files by means of one of the other TIBCO product references because it is unusual for a user to only specify EMS. Previously, if only EMS was specified, problems would occur because of the missing references.
- It is now possible to install the HP QC integration such that only specific users have it within their QC environment, rather than requiring it to be rolled out to all HP QC users. This approach means that, although administrative access is still required for the initial client-side installation, users do not need to be a Windows administrator to use the plug-in. A file must still be installed on the QC server but no downloads are made from the server to client machines. The new installation package can be found in \tools\HP\QualityCenterServerDist11-client-only.zip under the Rational Integration Tester installation directory. Please contact the IBM Support team for information about using this approach to install the plug-in.
- For consistency with standard industry practices, and to make it easier to set-up security, the Namelist automatically created by Tester on an IBM z/OS WebSphere MQ Queue Manager (to enable recording) now has an uppercase name.
- It is now possible to install the 4 Tester components (RIT, RTCP, RIT-A and RITPP) without requiring root access on Linux systems or administrator access on Windows systems.

Installing some of the components as non-root (or installing as root and then running as non-root) may require ownership and permissions to be modified on Linux before the components will operate correctly. For more information, please refer to the Known Issues section of this document.

Note that if you attempt to install the components as a non-administrative user on Windows various installation options (such as the ability to install components as Windows services and the installation of pcap) will not be enabled.

- Tester now supports versions 3.0.x of the SAP JCo library (used to connect to the SAP server) up to and including 3.0.9.
- The Agents view within RTCP will now show additional information about the capabilities of the specific agent or proxy when the magnifying glass icon is clicked. This is particularly useful for CICS Transaction Gateway proxies as it is possible to tell whether the proxy is capable of recording messages, routing messages or both.
- When recording or routing rules are created (by starting a stub or starting a recording, for example) additional information is now output to the RTCP Activity Log, the stub console and within Recording Studio specifying how many proxies the information was passed on to. If the rules were not sent to any proxies a reason why is specified. This makes it easier for users to troubleshoot the environment.

- The console output from a stub has been modified to make it clearer to users that a guard expression has been used as a filter when processing a message.
- The Rational Test Control Panel user interface now shows the name of the logged in user.

New in 8.0.1

Mainframe (z) Support

Release 8.0.1 expands the support for the z mainframe. A new document, the z/OS Reference Guide, covering the new functionality has been added to the installation set

- CICS Transaction Gateway Test and Record. A new CICS Transaction Gateway (CTG) transport has been added to the Architecture School perspective (logical and physical views). This allows for functional and performance testing of CICS transactions via the CTG. It is also possible to record transaction invocations made through the CTG in Tester's Recording Studio perspective. These events can be used to create tests and datasets.
- IMS Connect Test and Record. A new IMS Connect transport has been added to the Architecture School perspective (logical and physical view). This allows for functional and performance testing of IMS transactions via IMS Connect. It is also possible to record transaction invocations made through IMS Connect in Tester's Recording Studio perspective. These events can be then used to create tests and datasets.
- The technology that allows Rational Integration Tester to record messages put onto IBM WebSphere MQ queues without requiring any client configuration changes is now supported for Queue Managers running on z/OS. As with the existing distributed support for IBM WebSphere MQ, recording of individual queues or all queues can be performed.

The installation and configuration details in the z/OS should be studied carefully before this is installed and use. The following should be specifically noted:

Every message that is intercepted has an MQPUT1 to the RIT queue. This doubles the CPU cost of a MQPUT or MQPUT1. To reduce the overhead, select only the messages that you are interested in. Avoid intercepting all messages.

To avoid problems with the RIT queue filling up, you should have a low message rate of intercepted messages, for example 10's of messages a second.

Messages are not intercepted when:

- The queue name is SYSTEM.* and AMQ.MQEXPLORER.*
- Messages put to a QALIAS of a topic
- Puts are the result of an integrated publish/subscribe action.

Messages put to a QALIAS queue are recorded against the base queue.

- Tester now supports virtualization of z/OS DB2 databases. The virtual database can run on a separate DB2 instance on z/OS or on the distributed platform. This allows users to create virtual databases that do not require z/OS to run.
- IBM has used Rational Integration Tester to invoke web services hosted on CICS. IBM has also tested that a CICS transaction can successfully call a Tester-virtualized SOAP web service. Details on the CICS configuration used during this testing can be found in the z/OS Reference Guide.

Schemas, Formatters and Transports

- Support for EDI X12 dictionaries has been added. Rational Integration Tester can create new messages from the X12 dictionaries and parse, edit and publish standards-compliant X12 messages. Validations will be applied as per the supported dictionaries. As with other messaging standards, Tester will attempt to parse incomplete or invalid messages and will also allow a user to construct and publish messages that do not comply to the standard dictionary in order to perform negative testing.
- 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. *[released as part of the 8.0.0.2 fix-pack]*
- Support for Data Format Description Language (DFDL) grammars has been added. This allows Tester to import a DFDL-defined message structure and use that information to parse, edit and publish messages compliant to that grammar.
- The http transport now supports message bodies that have been compressed using gzip.

- 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. *[released as part of the 8.0.0.2 fix-pack]*
- It is now possible to add in header values for FIX messages in the *Value* and *Store* tabs 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:

- Accept fields in any order
- Ignore additional fields in received messages

[released as part of the 8.0.0.2 fix-pack]

Stubs and Virtualization

- Stubs built on the MQ (distributed), http and webMethods IS transports now support additional capabilities to control how they handle received messages. They can be configured to automatically pass-through a message to the real service if it does not match a defined case. A new action has also been added to allow a user to specifically cause the message to be passed on to the live system as part of the normal stub processing if required. An optional delay can be specified before the message is passed to the live system. It is also possible to configure the stub to automatically respond with a transport-specific error if the received message does not match a defined case.
- Database virtualization has been extended to support Stored Procedures on Oracle, MySQL, DB2 and MS SQL Server. When a virtual database is learnt all stored procedure invocations and their responses will be added to the virtual database. The saved responses can be edited and filter criteria defined to control how the virtual database will respond given a set of input parameters to the stored procedure.
- Rational Test Control Panel now allows a user to define a *scenario*, which is a saved set of pre-configured stubs that can be started as a single unit. This saves time and prevents errors when starting up a set of virtual services as each stub no longer needs to be configured and started individually.
- It is now possible for a user to *lock* an environment in RTCP. This prevents other users from making changes to the virtual services that are running. This capability is available from within RTCP itself, via a REST API onto RTCP (also from ANT scripts) and from within RIT. This allows Testers to use RTVS in long-lived test cases without risk of another user changing the stub configuration and affecting the test outcome.
- The support for REST-based virtual services has been significantly extended. The Recording Studio wizards will now automatically create REST-based stubs from recorded traffic and Tester will automatically detect message data in URLs and make this available to the stub without the need for script to process it.
- The Message Difference Window (MDW) has been extended to support stubs. Users may open the MDW from the console output to understand how a message interacted with a stub's filters. This allows testers to easily identify why their stub is responding as it is and allow 'repairs' to be made to quickly change this behavior.
- Microsoft SQL Server virtualization now supports the JTDS driver as well as the MS SQL driver.
- The default installation of RIT and the RIT Agent now includes two JVM arguments to force Java-6 behavior when IP ports are allocated. This means that if an http stub attempts to start on a port that is already in use it will automatically detect this and allocate a different port. This makes it easier to run the real and virtual service on a single machine. In previous 8.0.x releases user has to manually add -D arguments to the GHTester.ini files to get this behavior.
- It is now possible to start a stub on an RTVS server as part of a test suite scenario. Previously all stubs used in test suites had to run locally within the copy of RIT. This allows test suites to run stubs without *tps* restrictions. When you run such a suite the Tester task monitor will show the stubs as individual items even though they are not actually running within RIT. As part of this the way in which stubs show progress has been modified:
 - If a stub is cancelled or fails during start-up (before it is ready to accept messages) it will show 0% complete.
 - When the stub is stopped progress will jump to 99% before the shut-down process begins
 - At the end of the shut-down process the progress will change to 100%, regardless of whether errors occurred in shut down or not.

SAP

- Rational Integration Tester now supports multiple versions of the sap JCO3 library (sapjco3.jar) and does not require a single specific version to operate correctly.

Usability and Efficiency

- The default view in the stub editor has been simplified to make it easier for new users. Users may switch to an 'advanced' view to gain access to all of the features. The advanced view will automatically be used if a stub is opened that makes use of the advanced features.
- A preference has been added to limit the number of optional fields created from a schema to prevent memory issues with extremely large schemas. Typically this problem would occur when using the Create Test from MEP feature on XSDs with broad and deep structures of optional elements. *[released as part of the 8.0.0.3 fix-pack]*
- Architecture School's Schema Library now shows ordered lists of schemas for message protocols such as X12 that contain multiple 'groups' (e.g dictionaries).
- When RTVS Agents register with RTCP it is now possible for them to register with user-defined attributes. These attributes can be used when determining which agent a stub should be run on. This is particularly useful when defining a scenario within RTCP as it removes the need to specify agents by name or IP address, thus making the scenario more resilient to environment change. For example, agent attributes can be used to express geographic location, operating system, performance and capability of the machine an agent is installed on. An agent matching given attributes will then be found when a scenario starts. These attributes can also be used when scheduling a test for later execution.
- The Rational Test Control Panel user-interface has had a number of small improvements and changes made to it to increase usability and consistency.
- The Tag Data Store dialog within Tester now remembers the selection status of environment and system tags meaning that if a user turns them off they will stay hidden.
- When navigating through test results using Rational Test Control Panel's Results Gallery feature *Next* and *Previous* now automatically expand the tree of results.
- The *Project->Refresh* menu option now displays a progress dialog if it takes more than a very short period of time.
- The *Bindings* table in the Environment Editor can be sorted by clicking on the headings.
- When an element is marked as repeating [in the message editor] an icon appears immediately as visual feedback of the repeat.
- The Rational Test Control Panel Agent view now shows the type of agents that are registered. Possible values are RTVS (can run stubs, performance tests and probes), RPTS (can run performance tests and probes) and Probe (can only run probes). This makes it easier for a user to understand the capability of the deployed agents.

WebSphere Application Server

- It is now possible to use the JDBC Virtualization configuration from within Tester for an instance of WebSphere Application Server that has security enabled.
- Changes have been made to Library Manager to make it easier to configure RIT for use with WebSphere Application Server's native JMS implementation. However, see the Known Issues list at the end of this document as a problem will occur if security is enabled in WAS.

WebSphere MQ

- Subscribe actions for MQ-based operations now support the non-destructive watch-mode. This allows Tester to 'watch' for a message being published to an MQ queue without having to subscribe to (and consume) the message. This is particularly useful in integration tests where Tester is being used to validate that a message has been published. As part of this work the UI for the watch-mode configuration across MQ, HTTP and EMS transports has been made consistent.
- The API-Exit to enable MQ recording and sift-and-pass-through now supports MQ 7.1.x as well as 7.0.1.x on supported distributed platforms [Windows (32, 64bit), Linux (32, 64 bit), AIX (64 bit), Solaris Sparc (64 bit), Solaris x86 (64 bit)]. MQ 7.5.x is not currently supported.
- The default number of Queue Manager connections for a physical MQ transport is now 5 (increased from 1). This setting defines the maximum number of connections Tester will make to the Queue Manager for that transport. If a user records, stubs and tests using the same MQ transport then a single connection is insufficient and some processes will block. Note that another workaround is to define separate transports for recording, stubbing and testing that are all configured to the same Queue Manager.

Integration

- Rational Test Control Panel now offers a REST-based API that can be used to start and stop stubs and scenarios and lock environments. The Platform Pack includes example ANT scripts showing how this can be used as part of a build/test environment to automatically start virtual services as part of a continuous-integration test environment.

Test Results

- 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. *[released as part of the 8.0.0.1 fix-pack]*
- Support for Test Cycles has been added to the Rational Test Control Panel Result Gallery view.
- The Rational Test Control Panel Results Gallery date/time search now returns all executions which started between the entered start/finish times, rather than requiring the execution to have finished before the finish time.

Optim

- Rational Integration Tester now offers integration to IBM's InfoSphere Optim product. This integration allows users of RIT to automatically perform Optim actions as part of test or stub start-up. For example, a user can initiate a test data refresh within Optim that causes a test data set used by a RIT stub to be reset to a known state without the RIT user having to understand how to issue Optim commands.

Requirements

- If a requirement linked to tests is deleted then the user is now warned that the deletion will impact tests. A search is run to find all of the tests linked to that requirement. The user is given the option of 'in-lining' the requirement into each test.

Recording Studio

- The Recording Studio perspective has a new "Playback" button which will replay recorded 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). *[released as part of the 8.0.0.1 fix-pack]*

Installation

- DB2 is now supported as a Results Database. The RIT installation includes a DB2 database script which is intended for use by DB2 DBAs. RIT, RIT-A and RTCP installations all include a DB2 driver (which will automatically appear in Library Manager) to avoid the need to download it separately. Note that use of DB2 on Z does require a DB2 Connect license which is not provided with Rational Integration Tester.
- The Library Manager configuration for using WebSphere Application Server's JNDI to access MQ/JMS resources has been made simpler and clearer to set-up.
- The RIT Platform Pack Proxy can now be configured to use a down-stream proxy. This is useful in cases where the system it is sending messages to can only be access via another TCP/HTTP proxy.
- A default installation of the RIT Agent will now output information to a log file and the console window. Previously a great deal of useful information was only sent to the console output which meant it was lost of the Agent was running as a Windows service. If the service is configured to run as the Local System Account then, on Windows, the default directory for this log file will be C:\Windows\System32\config\systemprofile.
- Support has been added for extended feature codes to enable additional capabilities. *[released as part of the 8.0.0.3 fix-pack]*
- 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. *[released as part of the 8.0.0.1 fix-pack]*

Test and Stub Actions

- A new concept of Environment Tasks has been added to Rational Integration Tester. These allow 'actions' to be run prior to starting stubs to configure the environment to a known state.
- 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. *[released as part of the 8.0.0.2 fix-pack]*

New in 8.0.0

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 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 8.0.1 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 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 8.0.1.4

- 35067 - Previously, HTTP/1.0 messages sent to an Apache Tomcat 7 server by means of the Rational Integration Tester HTTP proxy could cause socket connections to be dropped. This has been resolved.
- 36683 - Previously, if an HTTP message received by Recording Studio by means of the Rational Integration Tester HTTP proxy contained an escaped URL, Rational Integration Tester could, in some circumstances, remove the escaping automatically. This meant that the message could no longer be replayed against the system under test causing failures to occur. This problem has been resolved and Rational Integration Tester no longer removes the escaping.
- 36637 - Previously, an HTTP message captured in Recording Studio by means of the Rational Integration Tester HTTP proxy and containing URI-escaped characters in the URL string (already escaped by the sender) could be escaped again by Rational Integration Tester. This caused failures to occur when attempting to reply to recorded traffic in tests or stubs. This problem has been resolved and Rational Integration Tester no longer escapes message content that it recognizes as being already escaped.
- 36794 - Previously, if the Rational Integration Tester Agent was installed as a service on a computer running Microsoft Windows, stubs could bind to the same port as a “live” service already running on the computer instead of detecting that the port was already in use and moving to a different port instead. This could result in a stub receiving only some messages or not receiving any messages. The problem was caused by IPv4 and IPv6 interaction between Java and the Windows operating system. The problem has been resolved by adding specific “-D” arguments to the Java virtual machine (JVM) used to run the agent as a Windows service. These arguments cause a stub to fail to bind to a port already in use, which means that the stub will allocate a new port and messages will be received correctly.
- 35604 (APAR PM86994) - Previously, both paths of a decision were executed if "Continue on fail" option was enabled for a test suite. This problem has been resolved.
- 35511 - Rational Integration Tester 8.0.1.3 included a fix that re-enabled validation of messages published by Rational Integration Tester. This fix had the adverse side effect of preventing negative testing in some circumstances because it was no longer possible to publish invalid messages. This problem has been resolved, so it is now possible to use Rational Integration Tester for both publish-validation and negative-testing.
- 35603 (APAR PM86925) - Previously, for Linux installations, an <instance> tag was omitted from the Agent.config configuration file. This omission could lead to problems when running stubs. The file now contains the correct tags, so this problem has been resolved.
- 37350 - In Rational Integration Tester 8.0.1.3 or earlier, importing a DER key and certificate into an identity store caused the key to be configured with a blank password. This was acceptable unless the key was being used for mutual authentication or if the Rational Integration Tester HTTP proxy was being used because the proxy requires the correct value of the password. In Rational Integration Tester 8.0.1.4, the import process now results in the use of the password that protects the Java keystore (JKS).
- 37359 – Previously, when using the Identity Store window (in the Physical View of the Architecture School perspective) of Rational Integration Tester, if the importation of a certificate was cancelled, the cancellation did not terminate cleanly and empty window was displayed. This problem has been resolved.
- 37353 - When importing an existing keystore, any certificates with the same password as the keystore are now unlocked automatically, so users do not have re-enter the same password again.
- 37351 - Rational Integration Tester can now import PEM certificates.
- 37404 - The certificate provided with the Rational Integration Tester HTTP proxy server has been updated to include the Basic Constraint extension, which is required by Oracle WebLogic application servers. Previously, the absence of this extension meant that HTTPS communication between a client and an Oracle WebLogic server could not be recorded (in plaintext) by means of the Rational Integration Tester HTTP proxy.
- 37552 - Previously, stub hit counters, which show the number of messages that a stub has processed, in Rational Test Control Panel were not updated for multi-operation stubs. This problem has been resolved.
- 35799 (APAR PM89629) - Previously, if a user installed Rational Integration Tester 8.0.1.1 or Rational Integration Tester Agent 8.0.1.1 on any supported version of Microsoft Windows and another user who was not an administrator attempted to run the application or Library Manager, an error message was displayed. This problem was caused by the installation process setting security on a number of .ini files so that only the user who installed Rational Integration Tester (or another administrator user) could run the applications. This

problem has been resolved in Rational Integration Tester 8.0.1.4 and Rational Integration Tester Agent 8.0.1.4. For more information, see <http://www.ibm.com/support/docview.wss?uid=swg21638548>

Resolved in 8.0.1.3

- 27981 (PM75189) - Validation actions that fail on published messages (Send Request, Publish) are now displayed on the Console window of the Test Factory perspective and will now cause tests to fail. Previously, such actions did not fail, so there was no output about them on the Console window and tests would continue executing. Consequently, tests created in earlier versions of Rational Integration Tester that were previously receiving warnings on a publish action message may now fail.
- 29664 - Previously, custom-delimited record layouts could cause exceptions when viewing recorded messages in the Recording Studio perspective if the messages contained null values. This problem has been resolved.
- 29956 - The behavior of the up and down arrow buttons at the top of the Message Differences Window has been improved to make it more consistent. The arrow buttons are used to select differences for analysis.
- 30457 - The Results (gallery) page of Rational Test Control Panel no longer displays an error if users choose to display the results of one or more tests that include multiple failed iterations.
31497 - To facilitate the successful importation of a greater range of COBOL Copybook files, byte order mark (BOM) detection in Copybook files has been improved when setting the encoding type.
- 32719 (PM81165) - Rational Integration Tester now populates Financial Information eXchange (FIX) groups in the order defined by the FIX data dictionary used.
- 32791 (PM82711) - Previously, the error message “An unexpected error occurred: Invalid column index” could be displayed when Rational Integration Tester executed a database stored procedure with multiple output parameters. This problem has been resolved. However, if any users have encountered this error in Rational Integration Tester 8.0.1.2 or earlier, they must complete the following actions after installing Rational Integration Tester 8.0.1.3: (1) remove all .gsc files from in the .rit8 directory, and (2) refresh the database schemas within RIT. If users need assistance with either of these steps, they could contact IBM Support.
- 32891 (PM82023) - The Results (gallery) page of Rational Test Control Panel now displays correctly in Microsoft Internet Explorer 8.
- 33061 - A number of performance improvements have been made to the Recording Studio Events Wizard when creating test data sets and parameterized (data-driven) stubs.
- 32721 - Previously, a race condition error that could cause application messages to be missed when a FIX stub first establishes a session. This problem has been resolved.
- 32965 – Rational Integration Tester tests can be linked to HP Quality Center. In GH Tester 5.2.11 or earlier, it was possible to display snapshots of linked tests in HP Quality Center and to refresh the tests by clicking the Refresh button on the Test Script tab on the HP Quality Center application window. This functionality did not work properly from GH Tester 5.4.0 to Rational Integration Tester 8.0.1.2 inclusive. This problem has been resolved.
- 33414 - Previously, errors that occurred when importing invalid COBOL Copybook files were displayed to users, so they were not notified that the files were invalid. This problem has been resolved. Thus, file import errors are now displayed when Refresh is selected.
- 33465 - Rational Integration Tester 8.0.1.3 includes an IBM WebSphere MQ API Exit (64-bit) for IBM AIX that will work correctly on IBM AIX 6 (64-bit only) and IBM AIX 7 (32-bit and 64-bit). Previously, Rational Integration Tester 8.0.1.0, 8.0.1.2, and 8.0.1.2 supported only IBM AIX 7. However, 32-bit versions of the Rational Integration Tester IBM WebSphere MQ API Exit are not provided for IBM AIX, and the Rational Integration Tester IBM WebSphere MQ API Exit does not support IBM AIX 5.
- 33661 - Previously, when using the Rational Integration Tester HTTP proxy to record TCP traffic, a “NullPointerException” error could lead to a failure to record any TCP traffic by means of the proxy. This problem has been resolved.
- 33987 (PM83543) - A problem that meant a field editor could not be opened for the root node of a publish action if specific DFDL schemas were applied has been fixed.
- 33783 - Operations created from recorded JavaScript Object Notation (JSON) events now have a schema root set automatically.
- 32932 (PM83522) - Data Format Description Language (DFDL) schemas containing “xsd:choice” elements now import properly into Rational Integration Tester.
- 34143 (PM83942) - Previously, changes to stored procedure test steps were not being saved correctly because Rational Integration Tester was not detecting the changes. This problem has been resolved.

- 34210 - Previously, an HL7 message for a given HL7 DFDL schema was not parsed correctly by Rational Integration Tester. This problem has been resolved.
- 34411 - If a failure occurs during the publication of stubs to Rational Test Control Panel after a domain has been created, the orphaned domain will now be deleted.
- 34494 - The Edit or Create Test Data wizard now correctly adds existing tag names as columns in any spreadsheets that the wizard creates.
- 34468 - The Start Stub ("+" icon) on the VIE Dashboard page of Rational Test Control Panel is now easier to use in Google Chrome. Previously, only the top few pixels responded to a click of the "+" icon. It is now possible to click anywhere on the icon.
- 34499 - The "AddNumbers" sample web service that is implemented within Rational Test Control Panel now looks up and reports its IP address correctly. Previously, it always reported its IP address as 0.0.0.0.
- 34507 - Previously, errors could occur while recording IBM WebSphere MQ messages using dynamic mirror queues if the WebSphere MQ transports had been created in Rational Integration Tester 8.0.0.3 or earlier and the transport was not re-opened before recording started. This problem has been resolved. The migration of Rational Integration Tester project files data has been improved to prevent such errors from occurring.
- 34525 - Previously, when running Rational Integration Tester on Linux, characters could be displayed too low on some text boxes, causing the bottommost few pixels to disappear. This problem has been resolved.
- 34638 - Previously, there could be an error when creating tests from recorded JDBC database events in the Recording Studio perspective. This problem has been resolved.
- 34672 (PM84990) - A documentation defect has been corrected in *Rational Integration Tester Reference Guide for IBM z/OS*. The defect related to how the file containing the IBM WebSphere MQ for z/OS Intercept Exit should be unpacked on z/OS. The updated document is included with Rational Integration Tester 8.0.1.3 (refer to the docs folder in the Rational Integration Tester installation directory after installing the release) and should be the only version of the document used if deploying the exit on z/OS.
- 33231 (PM82216) - Previously, a Rules Cache file of zero bytes being could be written to disk if problems occurred during file write, which would mean that the Rational Integration Tester project would not load.
- 34788- Previously, an error could be displayed when using a docked action editor to save changes to a Switch action. This problem has been resolved.
- 34809 – A problem that meant the Rational Integration Tester HTTP Proxy could not be chained to another HTTP proxy when using HTTPS traffic has been resolved.

Resolved in 8.0.1.2

- 33060 - Previously, Rational Integration Tester integration with RQM failed if the RQM user password specified in the Agent.config file of Rational Integration Tester Agent or on the Quality Management tab of the Project Settings dialog box of Rational Integration Tester contains symbols that require HTTP encoding. This has been resolved.
- 33091 - Previously, a Send Reply action contained within a data-driven stub created by using the Recording Studio Save wizard could have scalar header actions disabled on the Value tab. Unless users edited the Send Reply step to enable the header actions, missing headers could cause transport-level failures to occur whenever a data-driven stub of this type was used. This has been resolved.
- 32267 - X12 segments and loops are now processed correctly into messages.
- 29864 - Additional validation has been added to response delay timings in the Rational Test Control Panel stub launcher to prevent users from entering invalid values.
- 31443 - Improvements have been made to way in which hostnames are extracted from HTTP traffic during recording and stubbing to ensure they are identified correctly.
- 31638 - Changes have been made to the base Oracle results database script to ensure that it creates all tables in a variety of Oracle database tools correctly.
- 31786 - Previously, a WebSphere MQ stub configured to 'discard' a message that it did not process could pass it through (back onto the queue). This has been resolved.
- 32070 (APAR: PM80402) – Previously, recording XML messages with empty nodes (from an operation) could cause failures, high memory or high CPU usage within Recording Studio. This has been resolved. A fix for this issue was previously released as iFix 32070.
- 32353 (APAR: PM80463) - The 8.0.1.1 fix pack of Rational Integration Tester would fail to install on Microsoft Windows XP if three standard environment variables (APPDATA, USERPROFILE and USERPROFILE) were missing. Rational Integration 8.0.1.2 can be installed on Windows XP successfully

without these environment variables being present, although users will not be offered the ability to configure License Borrowing.

- 32380 - In Rational Integration Tester 8.0.1.1, a number of test actions and the Stub Editor would always open in the 'dirty' state meaning that the user would be prompted to save on close even if they had not made any changes. This has been resolved.
- 32419 (APAR: PM80566) - In Rational Integration Tester 8.0.1.1, ECMAScript tag substitution could lead to problems if users had tags with the same name as reserved ECMAScript keywords. For example, if a user defined a tag called "Date", a script containing "var d = new Date()" would cause an error to be raised. This has been resolved and ECMAScript keywords now take precedence. If users requires access to a tag with a clashing name, they should use the `tags["<tagname>"]` syntax. For example, `tags["Date"]` in this case.
- 32539- Previously, there was a race condition that could cause individual stub worker threads to stop responding to messages. A user would experience this by seeing that some messages were never responded to, although the stub generally would appear to be responding. Over a long period of time, with a high volume of messages, more worker threads could get into this condition and the percentage of messages 'lost' by the stub would increase. This problem has now been resolved.
- 32614 (APAR: PM78120) - If a user assigns the root node of an outgoing message (Publish or Send Request) to a tag, the tag value will now contain the full message in the form that it is actually published in. Previously, the tag may have contained the message in an internal format. For example, for SOAP messages, only the `__INPUT__` version of the message was stored in the tag, not the full SOAP message including the headers.
- 32650 - In earlier versions of Rational Integration Tester 8.0.1.x, feature enablement codes were not always being written to file correctly by Library Manager. This has been resolved.
- 32818 (APAR: PM81449) - Further changes have been made to the plug-in JAR file that provides recording and stubbing for Software AG webMethods Integration Server (wmIS) to allow it to operate correctly against wmIS 6 servers.

Resolved in 8.0.1.1

- 25010 - Some functions (such as DBQuery()) are not supported for use within a field in the message editor. In previous versions of Tester an exception would be shown to the user that did not make it clear what the problem is. A proper error message is now displayed advising the user of the problem and the workaround. The workaround is to use the function in a previous step and store the result in a tag.
- 25412 - The Tester Results Database script failed on MySQL if the database's default character set was UTF-8. This is because some columns were 1 character too large for this encoding type. This problem has been resolved.
- 25575 - If a user re-synchronizes Tester with a WSDL file that contains references to other XSD files then Tester will now re-read the XSD files from disk rather than using the previously cached version. Previously Tester had to be re-started to force it to re-read the XSD files.
- 26329 - The Message Difference Window now correctly shows XML elements containing slashes.
- 26598 - Tester now uses POSIX-style separators in project relative paths, meaning that projects are more compatible across Windows and Unix.
- 27479 - Changes have been made to try and prevent problems occurring with webMethods IS subscribe actions after a long-running recording has taken place.
- 27502 - RegEx auto-suggestions in the Message Difference Window now correctly take into account linefeeds in the source messages.
- 28001 - A number of fixes have been made to the logical view diagramming component within Architecture School. These include: new objects no longer appear at the top left hand corner of the diagram, no longer automatically zooming to too high a level, deleting the last child item makes the parent return to a normal state rather than remaining as a container and moving an item between parents no longer causes drawing issues.
- 29533 - A problem that meant Results Gallery in Rational Test Control Panel would not show results correctly if a suite's remote stubs had not started has been resolved.
- 29659 - A problem has been resolved that could lead to a 2052 error code being raised on a z/MQ Queue Manager when recording of queues was stopped in Tester.
- 29760 - Results Publisher reports are now generated even if the test suite failed to run. The generated report will contain details of the failure.
- 29829 - The Message Difference Window now correctly marks an expected message as modified if it is changed with a field editor meaning the change is saved when the window is closed.

- 29842 - The Results Publisher tab on the Project Settings dialog box now makes it clearer that a user is entering a directory to which files will be written.
- 29866 - If a user of RTCP requests that an environment is unlocked whilst another unlock request is already in progress then an appropriate message is now shown to the user.
- 29889 - Problems with the layout of the formatting tab for value fields in a field editor on some platforms have been resolved.
- 29957 - The list of schemas shown by Recording Studio when a user right-clicks on a node in a message and chooses "Show As" is now sorted correctly in an ordered list.
- 29960 - When using the Message Difference Window with stubs the window now correctly updates the differences panel when switching between filter and validate modes.
- 29964 - A bug has been fixed that meant it was possible for a user to get the stub editor event table into a 'locked' state where no changes could be made (although the stub editor could still be closed).
- 29982 - A bug has been fixed that meant, in some circumstances, the Transport was appearing disabled in a messaging action (for example, a Publish action).
- 29983 - It is no longer possible to view the About box before logging in to RTCP. Version information has been added to the Login dialog.
- 29999 - The correct action type is now chosen by Tester when adding a new filter action in a message editor for a stub's input event.
- 30001 - On some platforms root/administrator privileges are required to bind to an IP port less than 1024. If a user created a stub that listened on a port lower than 1024 then it could silently fail to start due to RIT having insufficient privileges. Should this situation occur then an error message is now displayed in the console.
- 30017 - It is now possible to successfully upgrade and rollback service-based components on Windows using IBM's Installation Manager. Previously, service-based components on Windows had to be uninstalled and the new version installed because the upgrade process did not work correctly. Upgrades from 8.0.1 (or rolling back to 8.0.1) will now work correctly. Please note that upgrading from versions prior to 8.0.1 will not work and still requires the older version to be uninstalled first. It is also not possible to rollback to versions prior to 8.0.1. For more information about this, please refer to the Known Issues section of this document.
- 30037 - As part of the switch to the IBM JRE (at version 8 of Rational Integration Tester) the product also changed from using Java 6 to Java 7. The behavior of a UI control widely used by Tester (JTextPane) changed significantly in Java 7. Specifically, the way line breaks were automatically added changed. This adversely affected Tester when messages without spaces in are displayed. Changes have been made in 8.0.1.1 of Tester to work around the change in behavior of JTextPane and restore the previous user experience in terms of word-wrapping and scroll bars. Note that Tester will line-break only on word boundaries (white-space), not in the middle of words.
- 30077 - Protocol Buffer messages are now being expanded correctly.
- 30078 - Content typed into the message editor is now recursively expanded. For example, entering `<foo><bar>foo</bar></foo>` into a text field now correctly expands into two nested XML nodes.
- 30085 - A bug has been fixed that meant a schema could not be selected for an already-expanded text node. This was a regression issue and the functionality has now reverted to the correct behavior.
- 30087 - A regression error has been fixed that meant Tester was allowing users to pick a Schema for a node in a message editor that could not have a schema (such as an integer).
- 30095 - A bug has been fixed that meant an exception occurred when a user tried to create a Test from recorded TCP/IP traffic using the Recording Studio Save wizard.
- 30163 - If an Agent cannot connect to the Results databases then this is reported back in the Performance Test console. Previously it was not clear to the user why the test had been cancelled.
- 30194 - It is now possible to change the type of a message action when the action editor is docked.
- 30197 - Changing the watch mode setting between Watch and Participate in an EMS-based messaging action now correctly triggers the dirty state meaning the action can be saved.
- 30207 - A problem that meant a schema refresh for SAP IDOCS would fail if version 3.0.8 of the SAP JCo library was used has been resolved.
- 30208 - Copybooks containing the characters -- within comments are now correctly parsed.
- 30209 - A bug has been fixed that meant a dialog could be shown to a user multiple times after editing the pass-through properties for a stub if they then pressed Ctrl+S.
- 30247 - The JAR files for the embedded Eclipse help for the RTVS Reference, RPTS Reference, and RPTS Getting Started Guides are now installed.

- 30285 - A bug has been fixed that meant the Find feature was not scrolling the message editor correctly when used with large messages.
- 30372 - RTCP will no longer allow a user to remove a disconnected agent if that agent had been running stubs in a locked environment.
- 30384 - Non-admin users can now save new results database definitions in RTCP.
- 30420 - If a user configures a stub to pass-through the message back to itself then the stub execution will now stop with an appropriate error message.
- 30448 - The Schema Library 'reload' button now refreshes the currently selected schema. Previously users had to navigate to a different schema type and back again to see the changes.
- 30514 - A bug has been fixed that meant if a stub had both a default pass-through configured and an explicit pass-through action was executed then the default could also be executed.
- 30549 - The ByteArray Field Expander now correctly deals with new line characters in entered (or pasted text). Previously they were converted to nulls.
- 30623 - A bug that could cause exceptions to occur when Tester processed a Copybook containing binary types has been fixed.
- 30631 - A bug has been fixed that meant Copybook messages containing tags did not always expand properly.
- 30653 - Recording Studio now correctly recursively expands content.
- 30655 - The character encoding chosen by a user for a copybook within Recording Studio is now remembered and re-used correctly.
- 30763 - A bug that meant it was not possible for Tester to learn a new database table from the database stub editor has been resolved.
- 30813 - The authentication type field on the RTCP Security Configuration page in the RTCP Installer is no longer editable.
- 30829 - A problem that meant HTTP performance tests could fail due to the operating system running out of ephemeral IP ports has been resolved.
- 30891 - Alias types are now correctly interpreted when a user chooses to apply a schema for a node. For example, if a type is an alias for 'String' the appropriate string-based schemas are now offered to users.
- 30935 - The dbQuery(), replaceTags(), textFileContent() and lookupTestData() functions may now be passed as a second argument to the round() function.
- 31015 - The WebSphere MQ JAR files in Library Manager were incorrectly referencing com.ibm.mq.defaultconfig.jar which is not part of the client-side MQ installation. This dependency was not used and has been removed.
- 31019 - The stopScenario Ant task example provided with RTCP (for stopping a scenario of stubs on RTCP) now works correctly. Previously it failed with error : "stopScenario doesn't support the "name" attribute".
- 31020 - A bug has been fixed that meant a messaging action's Technical Description was not being correctly updated when Overwrite Expected Message was used within the Message Difference Window.
- 31031 - A problem has been fixed that meant if an unknown tag had been added to the Rules Cache URI field in the Project Settings dialog box the project could not be reopened. Tester now logs a warning and reverts to the default base URI.
- 31035 - Font style changes (i.e. re-coloring of the tag's name) now occur immediately as the tag's name is typed in to Tag-Aware text fields.
- 31064 - A problem has been fixed that meant stubs started from RTCP would wait no longer than 4,000ms (4 seconds) before replying, regardless of the setting the user had configured. Stubs will now correctly honor response delays of greater than 4,000ms.
- 31082 - In previous versions of RTCP if no security model was selected (i.e. no requirement for users to login) then some administrative tasks would fail. This has been resolved; under this security model all users are administrators and can perform all tasks.
- 31133 - Record Layout editors no longer open in the dirty state. The save icon will now not be enabled until a change is made.
- 31134 - A bug that meant an exception would occur if a stub attempted to send an http reply with a binary payload has been fixed.
- 31135 - The installation script used to install the Tester JDBC driver into IBM Websphere Application Server (WAS) did not work on WAS 6.1. This problem has been resolved.

- 31151 - In the 8.0.1 release of Rational Integration Tester dragging and dropping a folder of XSDs into Schema Library would attempt to import them as DFDL schemas. This incorrect behavior has been fixed and they now import as XSDs.
- 31157 - A bug that meant Tester would only attempt to import the first item found in a PFX file has been resolved. Note that the Oracle and IBM JVMs return a different 'first' item so customers may have experienced this bug as getting a different item from the PFX file when upgrading from Tester 5.x to Tester 8.x.
- 31181 - A bug has been fixed that meant an exception would occur in test execution when an Action Group was used to run subscribe actions in parallel and more than one of the actions time-out. This behavior was not seen if none or exactly one time-out occurred.
- 31182 - The Save icon in the toolbar is now correctly disabled after the user says no to saving changes in schema library (and the changes are reverted)
- 31187 - Tester no longer outputs repeated log file entries stating: com.ibm.rational.rit.CTGRequestIntercept interceptOpen, SEVERE: CTGRequestIntercept encountered exception during gateway opening when problems occur connecting to the CICS Transaction Gateway. The error is now only logged once per connection attempt.
- 31196 - A bug has been resolved that meant stubs could not be saved if they contained Base64 byte arrays (with no schema applied).
- 31233 - A bug has been fixed that meant tests using (empty) Base64 encoded messages would fail when the Run From Memory project setting was selected.
- 31235 - JVM options -Djava.net.preferIPv4Stack=true and -Djava.net.preferIPv6Address=false have been added to the default RTCP start-up scripts to avoid IPv4/6 port-clash problems that could sometimes occur when RTCP and an agent were run on the same machine.
- 31241 - An issue that meant the z/OS MQ exit could sometimesabend on start-up has been resolved.
- 31325 - A fix has been made for an issue that meant it was possible for a user to get a message editor into a state where they cannot close the editor by clicking OK.
- 31331 - Library Manager has been changed to log output by default. This is to assist in error-diagnosis during installation and initial configuration.
- 31444 - A bug that meant some Unicode character sets were not rendered correctly in the message editor has been fixed.
- 30378 - It is not possible to configure LDAP/AD authentication within RTCP so that users and groups can be searched for under different root nodes. A 'User Search Root' field has been added to both the Active Directory and LDAP configuration pages in the IBM Installation Manager screens for RTCP. To preserve existing functionality, if this field is left blank the existing search root value (renamed to 'group search root') will be used for both users and groups.
- 30654 - When tests are created from CICS Transaction Gateway recordings Tester will now correctly use the commarea length and the TPN from the messages.
- 29589 - The Message Difference Window console now correctly shows a "filtering disabled" message instead of a "validation disabled" message when disabling filters.
- 30218 - A bug that meant integration tests created using the Recording Studio Save wizard would have disabled subscribe actions has been resolved. The subscribe actions are now enabled by default.
- 31592 - A change was introduced to the Software AG wmlS components in release 8.0.1 that had the unintended consequence that recording and stubbing no longer worked against wmlS version 6. This was because wmlS 6 uses an earlier version of Java. The implementation of the server components has been modified in release 8.0.1.1 to try and avoid this problem.
- 31631 - A race condition between RTCP and RIT meant that, in some cases, recorded events would not show in Recording Studio even though it appeared to have started recording and the message was successfully picked up by the proxies. This was particularly likely when recording FIX traffic as if the initial session-establishment messages were missed by RIT then no further messages would be shown. This problem has been resolved by enabling Tester to store up messages it receives before it is ready. This will then be processed rather than being lost. This means that there may still be a delay between Recording Studio appearing to be ready to record and events actually appearing (of up to ten seconds). However, events captured during that time will then be displayed.

Resolved in 8.0.1

- 27845 - In previous releases, if an agent registered with RTCP was stopped and then started again in a short space of time then two agents would appear in RTCP. It was not clear to the user which was the running one. This has been changed so that RTCP now recognizes a re-started agent and only shows the one, preventing confusion.
- 25127 - Generating an ANT script from within RIT no longer outputs (irrelevant) error messages to the console during successful processing.
- 26889 - Clicking *Ok* in the Trigger properties dialog is now consistent with the other editors, in that re-running the trigger with the dialog still open will pick up the changes.
- 27235 - Irrelevant Tibco-related exception logs are no longer shown in the Agent console output when running a performance test that is not Tibco-related.
- 27238 - RTCP hover-text help for stub-deployment errors is now displayed if the user is running Firefox 10.
- 27247 - Operation stub filters are now included in HTTP routing rules.
- 27254 - When the last project is removed from an RTCP environment the environment itself is now automatically removed.
- 27281 - Fixing validation issues from the Tester console (for a stub) now works even if the stub editor is open. Previously if the editor was open the 'fix' would be lost when the stub editor was closed.
- 27288 - The Create/Edit Test Data Set test action and wizard are now named consistently. The action's icon has also changed.
- 27358 - The *Edit Environments* dialog's default height is now limited to avoid it being too high for the user's display.
- 27368 - The formatting tab of the Field editor has been re-worked to improve usability.
- 27381 - Changes have been made to the http transport to try and ensure http messages appear in recording studio in the correct order
- 27530 - The SQL Query action no longer allows non-database transports to be selected as the Database Server.
- 27612 - In the Agent list within RTCP the type of an agent is now displayed (RTVS, RPTS, Probe). This allows a user to understand what the agent is licensed to do.
- 27632 - The Create Test From MEP wizard will now prompt for an environment (if none was previously selected) before attempting to execute the generated tests.
- 27637 - On Windows, the Start menu contains new Start/Stop icons and a link to the login page when RTCP has been installed.
- 27638 - Upgrading an RTCP instance now preserves all settings and logs. However, please note that as per the known issues section it is not possible to upgrade RTCP on Windows if it was installed a service.
- 27670 - RTCP URLs have been changed from using the pipe character to using the forward slash in order to improve browser compatibility and readability.
- 27686 - If tag was inserted into an ECMAScript function using the right-click tag-menu then the tag would have %% around it. This is not required for using tags in ECMAScript and would cause the function to fail. The *tags[tagname]* notation is now used. Although in many cases just *tagname* would be sufficient the explicit form ensures failures will not occur if the tagname matches an ECMAScript reserved word or existing variable.
- 27694 - In previous Rational Integration Tester releases a blank page was displayed during the installation process on 32-bit Solaris. This has been fixed.
- 27714 - The JSON boolean field editor claimed to accept a value of "1" as "true" and "0" as false. The only valid Boolean values in JSON are "true" and "false", so attempting to use 1 and 0 would not give the behavior expected. The text has been changed to make this clearer.
- 27715 - A problem that could lead to failures occurring when parsing JSON arrays has been resolved.
- 27716 - Null handling in the JSON schema has been improved. Fields of type long, double and Boolean can now contain null values, the string type works correctly with null values and when data-driving it is possible to map tests-data-set 'nulls' to JSON nulls.
- 28415 - It is now possible to use tags in message editors for all JSON field types, not just string.
- 27719 - The REST schema icon has been changed to avoid confusion with the JSON schema icon.
- 27728 - On Solaris, Library Manager no longer outputs java.lang.UnsatisfiedLinkError exceptions to the console if pcap was not installed.
- 27750 - A number of fixes have been made to resolve memory leaks.

- 27796 - A problem has been resolved that could cause valid FIX Messages created from recorded messages (using Recording Studio) to show red-crosses in messages editors.
- 27809 - On Windows, uninstalling a component that was running as service (e.g. the RIT Agent) will now correctly stop the service first.
- 27846 - Users have experienced difficulty in configuring the RIT Agent so that it logs errors to a file. Additionally, in earlier releases not all information would be sent to a log file. Some important information was only output to the console window which could not be seen if the Agent was running as a service on Windows. A default Agent installation will now log to the .rit8 directory for the Agent. This is controlled by settings in the Agent.properties file.
- 27852 - The Recording Studio New Trigger Wizard now enables the Next/Previous buttons at the correct time.
- 27870 - Changing the "Continue on Fail" checkbox in the Suite Scenario Editor now correctly marks the scenario as 'dirty' meaning that the user will be able to save it.
- 27932 - In earlier release, when deleting nodes using the Field editor a user is warned about removing an XML node even if the content was not XML. This has been resolved.
- 27935 - A more readable error message is now displayed to the user if they attempt to open a test data file (from within the Tests Data Set editor) that does not exist.
- 27944 - Running an empty test or stub now report different messages. Previously both stated "The test contained no test actions"
- 28031 - Changes have been made to the Linux installation to solve some specific cases where Library Manager would not run because pcap could not be loaded.
- 28046 - The SSH setting dialog will now revert changes made if you choose *Cancel* after testing the settings.
- 28066 - A bug that could cause the WS-Security Editor Up/Down Buttons to behave erratically has been resolved.
- 26360 - ANT scripts generated from within RIT now include the HTTP bindings (and other settings) from Library Manager as -D arguments which ensures the Tester instance they start operates as expected.
- 26852 - The HTTP/TCP Proxy registration file has been modified to provide additional information about the meaning of the *forward* element.
- 27292 - When a stub is stopped (cancelled) from within RIT it no longer reports an error message on the cancel, nor ticks up the usage count by 1.
- 27860 - It is no longer possible to set a logical component's parent as itself in the Logical View of Architecture School.
- 28056 - The Logical View within Architecture School no longer allows an operation to have a dependency on itself.
- 27861 - Messaging actions within Test Templates now contain the Linked Requirement UI controls. Previously it was possible to link a requirement to a Test Template (by dragging the requirement on top of the Test Template) but it was then impossible to alter those links from within the test actions.
- 27867 - It is now possible to delete dependencies from within Architecture School's Logical View. Previously the component's properties dialog had to be used to achieve this.
- 29594 - Various usability issues have been addressed during an RTCP installation when a previous workspace already exists.
- 27984 - On non-Windows platforms the full path to the RIT Agent no longer needs to be provided in the Agent.config file. In previous releases the <runtests value="/opt/GH/RIT-Agent/RunTests"/> element had to include the full path.
- 28037 - An error that could cause an exception stating that a string cannot be cast to A3 type whilst running a webMethods test has been resolved.
- 28060 - Changes have been made to the multiple *Save* buttons on Notes tab in Results Gallery to avoid user confusion.
- 28410 - During installation the RTCP Security Configuration panel now correctly remembers the chosen authentication type if the user goes back to it after passing through it.
- 28576 - In previous versions it was possible for a non-administrator user to issue a command against RTCP (using a browser) that would execute an admin-level function. The user would need to know the format of the request to make. This is no longer possible.

- 28674 - Pasting WSDL file paths into Logical View that have quotes around them and that are within the project structure now generate correct paths within Tester. Previously a trailing quote would be left at the end of the path.
- 28676 - A number of errors could occur when pasting XML content into the SOAP header editor have been resolved. Cancel now works correctly if a user backs out of the editor.
- 28802 - A problem that meant importing a .p12 certificate into RIT failed after entering a (correct) password has been resolved.
- 28886 - Due to a change in behavior of a UI control in Java 7 the field viewer in Recording Studio did not automatically add a horizontal scroll bar. This made it impossible to see very wide data. Tester will now automatically turn on word-wrap if it notices the longest string is wider than the dialog.
- 28907 - In previous releases RIT would fail to start-up if Library Manager hadn't already created the .rit8 directory (or there was an existing .ghTester5 directory for RIT to migrate from). RIT will now automatically create the .rit8 directory itself if it is not present.
- 29141 - Changes have been made to the way that Overwrite Expected Message operates to avoid multi-threading issues resulting in Tester appearing to 'hang'. Repair operations that were previously being handled asynchronously are now performed synchronously.
- 29145 - URLs copied from Internet Explorer using the "Copy Shortcut" menu item can now be correctly pasted into Tester.
- 29155 - JDBC recording and stubbing has been modified to try and work more reliably in cases where *localhost* is being used as the database hostname.
- 29218 - A number of fixes have been made to editors to ensure they correctly notice when fields are changed and enable saving.
- 29230 - Default configurations applied to message actions (e.g. transport) are now saved correctly and allow a test to be run immediately. Previously the user had to change a field in the editor in order for the defaults to be used within a test.
- 29259 - Custom FIX messages now contain the correct message type when they are published.
- 29394 - Tester can now import WSDL files containing empty <xs:import/> elements. Previously the import would appear to succeed nothing would actually be imported.
- 29404 - Adding an operation to a service component in Logical View no longer automatically expands all other service components.
- 29430 - The Agents view in RTCP now shows HTTP and HTTP(S) routing and recording rules separately.
- 29508 - A scroll bar has been added to the suite selection view in RTCP.
- 29658 - A bug has been fixed which could result in the Recording Studio Save Wizard failing to complete if the user chose "Add Trigger to menu" option and clicked Finish.
- 29697 - If a Test Suite Scenario was configured the "Allow tests to continue even if step fails" option then this flag was being incorrectly passed into stubs run within RIT defined in the scenario. This could lead to confusing pass/fail results being reported to the user. This was capability is only intended for use in Tests and the issue has been resolved by ensuring that stubs do not use this setting.
- 29735 - If a Results Publisher was configured to use a Custom JUnit report then an error would occur when a suite using this published was run stating "JUnit Report.xml was not found. This has been resolved.
- 29811 - The Agent.config file contained formatting that made it difficult to read using Notepad on Windows. This has been resolved.
- 29832 - The HTTP/TCP proxy registration.xml no longer contains Unix newlines characters when installed on Windows.
- 29862 - The stub editor no longer requires a user to press Enter after changing field values in the output tab before saving.
- 29934 - It is now possible to round-robin route messages to http based stubs. This behavior requires either multiple copies of the same stub to be started via RTCP, or a stub started in RTVS and RIT where the RIT project is registered against the same RTCP instance (including domain/environment) that was used to start the RTVS-based stub.
- 29961 - In Logical View, deleting the last child from a container node now reverts the node to a normal node, rather than leaving it as an empty contained.
- 29986 - A problem has been resolved that meant *Pending Database Writes* were not reported correctly when running a performance test. The 'heartbeat' message on the RIT console would always report zero pending writes regardless of the actual number. This made it difficult for users to realize that the bottleneck in running

the test was the writes to the results database. The correct value is now reported. Tester uses a queue to write performance data to the results database so that the write does not immediately block the generation of load. However, if load is being generated faster than it can be written then the queue depth will increase. The pending database writes value shows the length of this queue. When it gets to a certain size then load generation will slow down. Increasing/high pending values indicate that the database being used to capture results is not fast enough to keep up with the load generation.

Resolved in 8.0.0.3 (and included in 8.0.1)

- 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 (and included in 8.0.1)

- 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) JNDI 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 JNDI 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 JAR files.

- 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: ZRGTTIS_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 (and included in 8.0.1)

- 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 parameterized 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.
- 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 "concurrent.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 issue 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 cause 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 out 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 cause 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 subscribers 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 issue 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

Linux root/non-root Installation Notes

From 8.0.1.1 components can be installed on Linux as a non-root user. Alternatively, components can be installed as root and then run as non-root. The Network Capture (pcap) component of Rational Integration Tester requires root access and cannot be installed as a non-root user.

Most Linux administrators will be aware of file/directory ownership issues when performing these types of installation. The following known issues should be considered.

31329 - All users must be in the same group to be able to run/view reports

When a report is generated in Results Gallery Tester will create a directory called /tmp/ghtester5reports. This directory will be owned by the user that creates it (which may be root). When another user attempts to run a report then, if they're not in the same group, they will be unable to write to the same directory and the report generation will fail. The workaround is to ensure that all users can write to this directory (for example, by making them all members of the same group)

30778 - If RTCP is installed as root but run as non-root then it will fail

This is caused because directories used at runtime for logging information have been created by root and therefore cannot be written into by a non-root user. This problem does not occur if RTCP was installed as a non-root user. If RTCP was installed as root and a user wishes to run it as non-root then directory permissions must be changed. For example, from within the RTCP installation directory issue the commands:

```
chmod a+w logs
chmod a+w logs/*
chmod a+w /var/rtcp
chmod a+w /var/rtcp/*
```

RTCP should now run as a non-root user. An alternative solution that may be preferred by some administrators, is to change the directory that RTCP writes information into. A Tech Note has been published here describing how to do this: <http://www.ibm.com/support/docview.wss?uid=swg21621855>

31538 - Installation of RTCP as non-root requires a change to a suggested directory

When RTCP is installed as non-root user then the majority of the directory names that will be created (and shown to the user during the installation) are pre-fixed with /home/<username>/. However, the installer defaults the *Workspace Path* directory specified on the *Standard Configuration* panel to /var/rtcp. As the user will not be able to create the directory the installation will fail. The workaround is to enter a different *Workspace Path* directory during the installation (e.g. /home/<username>/var/rtcp).

32139 – Use of –clean argument when Tester or Library Manager will not start

Problems can sometimes occur when Rational Integration Tester does not properly resolve multiple versions of the same JAR file correctly. Multiple versions may be present within an installation because third party JAR files may each include a different version. If incorrect dependency information is stored within the Eclipse workspace cache then it will not correct itself. One common symptom of this problem is that when a user runs Tester, the splashscreen appears, then disappears but Tester never starts. The same issue can occur when running Library Manager, although in this case, as there is no splash screen, it will appear to the user as if Library Manager has just failed to start.

Although one workaround is to uninstall and re-install Tester it is possible for a user to force cached dependency information to be removed and re-evaluated and, in the majority of cases, the problem will then correct itself.

To force the Eclipse environment to delete dependency information GHTester.exe must be started from the command line with the -clean argument specified. i.e., from within the installed directory:

GHTester.exe -clean on Windows and *./GHTester -clean* on Linux.

Rational Integration Tester will take longer than usual to start when -clean is specified.

For Library Manager use:

LibConfig.exe -clean on Windows and *./LibConfig -clean* on Linux.

The same problem can occur in RTVS and RPTS installations with the RIT Agent. In this case diagnosis and remediation is more difficult as there are multiple executable files and the correct one must be used. In these cases IBM's Support team should be contacted.

34445 - 8.0.1.3 Installation Warnings

This fix pack requires at least version 1.6.0 of IBM Installation Manager. When Rational Integration Tester 8.0.1.3 was released, 1.6.0 was the most recent GA version of Installation Manager. It is possible that later versions of Installation Manager will display dependency warnings when installing Rational Integration Tester. These are only warnings (not errors) and should not affect the installation.

30017 - Upgrade Installations and Rollbacks (When Products Have Been Installed as Windows Services) Fail

On the Windows platform several components can be installed as Windows Services. These are the Rational Integration Test Agent, the Rational Test Control Panel and the Rational Integration Platform Pack Proxy. For all version 8.x releases prior to 8.0.1.1 it was not possible to upgrade or rollback an installation of these products if they were installed as a service. The 'uninstallation' will appear to succeed but during the installation of the upgraded software (or the previous software in the case of a rollback) errors will occur stating that files are in use or could not be removed.

This problem has been resolved in release 8.0.1.1 of the affected products. However, it has only been possible to fix this problem when upgrades are done **from** 8.0.1 (or later) to a subsequent release. Customers who are upgrading to 8.0.1.1 (or above) from a version **earlier** than 8.0.1 must continue to follow the workaround below. However, they will be able to automatically upgrade to subsequent versions.

Please note that this problem only occurs on the Windows platform and only for products which have been installed as services.

Workaround for upgrades to 8.0.1.1 from versions earlier than 8.0.1

The problem is caused because Installation Manager is not able to completely remove the service during the un-installation phase. The service will remain in the Windows service list in a disabled state until reboot. Whilst it is in this state the upgraded service cannot be installed.

The workaround to this problem is for users to first uninstall the existing version of the software, then reboot the machine, then install the new version. i.e. Do not use the upgrade or rollback capability. It is advised that users stop the service before attempting the uninstall.

When uninstalling Rational Test Control Panel ensure you **do not** select the option to delete the workspace and make a note of the workspace directory. When you install the new version ensure you enter this directory as the workspace location and all settings and published stubs will be preserved.

If you do not know where the workspace directory is then you should open the following file:

<RTCP install location>\webapps\RTCP\WEB-INF\classes\container.server.properties

And look for the line containing the 'workingDirectory' key.

workingDirectory=C:\RTW\RTCP-Workspace

If this advice is not followed and the installation does fail then users are advised to first reboot their machine (to clear out the service). After reboot, confirm that the service has gone from the list of Windows services and then manually clear out the installation directory. It should then be possible to start a fresh install.

If you set the Rational Test Control Panel workspace to inside its installation directory (which is not a recommended approach) then be sure not to delete this directory or you will lose all RTCP configuration.

28408 - Tester does not support WebSphere Application Server's native JMS implementation if security has been enabled

Rational Integration Tester cannot currently access WAS's JNDI (required for JMS) if security has been turned on. IBM is currently investigating how to configure RIT such that this works and expects to issue a TechNote once the problem has been resolved.

29950 - Slow Fail Execution Is Not Supported When Running 'Now' on a Remote Agent

Version 5.4 of Tester introduced the concept of 'slow fail' to Test Suites. When a suite is run with this option turned on tests will not immediately stop when an individual test action fails. Instead they will continue so that users can see if future test steps succeed. Although this functionality is supported (in 8.0.1) when scheduling a test for future execution via RTCP it is not supported if you run a test suite 'now' on a remote agent using the Run... dialog.

27840 - Using the Shutdown.bat file (or shortcut) will not stop RTCP running as a service

Startup and shutdown batch file scripts are provided with RTCP to start and stop it from the command line. On Windows shortcuts to these scripts are provided in the Start Menu. Note that, on Windows, if RTCP is running as a service then the shutdown batch script cannot be used to stop it. You must either use the control panel or issue a *net stop IBMRTCP* statement on the command line.

29672 - Overwrite Expected Field for Filters

Within the Message Difference Window, Overwrite Expected Field only works for filters (within stubs) when updating leaf nodes. Message structures cannot be copied when viewing filter actions. The whole message can be replaced while viewing the filter actions, using overwrite expected message, but overwriting part of a message currently only works for the validate field action.

29494 - WaitForExit messages in Agent log

Changes to the way that the RIT Agent logs information mean that users will now see the internal Java method name from which the log is being generated. This is part of the change to ensure that Agents log information to a file correctly when run as a Windows service. The console output will now show messages as coming from "WaitForExit". The "WaitForExit" statement is not relevant to the actual information provided in the output.

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.

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.

Component Tree Does Not Show Complete Project In Test Factory

Some users have reported instances where the Test Factory Perspective does not show the complete list of project resources in the component tree. Rational Integration Tester has required re-starting to correctly display the tree. This problem has not yet been replicated within IBM's labs and its cause is currently unknown.

27621 - 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.

Note that users who experienced this problem while using computers with NVIDIA graphics cards found that upgrading to the most recent driver for their graphics card resolved the problem.

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.

Users wishing to use the .Net functionality will need to install the .Net SDK from Microsoft and register the dll manually e.g : gacutil /i GHDotNetUtils.dll

.NET 4.5 is not supported

Tester's integration with .NET has not been tested on .NET 4.5 and this is not a supported version of .NET. .NET 4.5 support is available from release 8.5 of Rational Integration Tester.

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.

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.

It is not possible to rename a project resource by simply changing case

Although project resources can be renamed, it is not possible to simply change the case. i.e. A rename that changes "simpletest" to "SimpleTest" will not actually rename. This is because Tester uses the Eclipse framework to manage its files and Eclipse does not recognize this type of change.

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.

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>.

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 non-Windows Platforms

It is possible to perform actions in Rational Integration Tester that require the opening of IP ports less than number 1024. For example, if you create and run a stub configured to listen on port 80. On non-Windows platforms this operation requires the user to be an administrator. 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

- This is the second release of Rational Integration Tester since IBM® acquired Green Hat. Product naming and branding changed after the Green Hat Tester 5.4 release. For customers familiar with the Green Hat range of components the following may help orientate yourselves:

GH Tester	is now	Rational Integration Tester (RIT)
GH Server	is now	Rational Test Control Panel (RTCP)
GH Agent	is now	Rational Integration Tester Agent® (RIT-A)

General configuration and usage of the product has not changed and existing customers should find it a very easy transition.

- 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).
- 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.x 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 to the Rational product set. 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:

- 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.
- User preferences (including the list of recently opened projects) will be migrated when a user runs Rational Integration Tester for the first time.

- Synchronized schemas are not migrated and must be rebuilt on first use. This is consistent with previous GH Tester upgrades.
- 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 .ghTester5 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 v8.0.1.3 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 and Rational Integration Tester v8.0.0 and v8.0.1. 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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