BTC
Embedded Systems AG

Release Notes

IBM® Rational® Rhapsody® TestConductor Add On Version 2.8.0

BTC

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Tool Identification:

IBM® Rational® Rhapsody® TestConductor Add On --- Release 2.8.0 build 5039 for Rhapsody 8.3.0

Media Identification

Rhapsody TestConductor 2.8.0
Windows Windows 7 SP1, Windows 8.1, Windows 10.
Linux Red Hat RHEL 6, RHEL 7.

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- Do you have logs, traces, or messages that are related to the problem?
- Can you reproduce the problem? If so, what steps do you take to reproduce it?
- Is there a workaround for the problem? If so, be prepared to describe the workaround.

Contents

1 IBM® Rational® Rhapsody® TestConductor Add On Product Capabilities

Rhapsody TestConductor supports testing of UML/SysML models for Rhapsody Developer Edition (C++, C, Java, Ada), Rhapsody Designer for Systems Engineers (C++), and Rhapsody Architect for Software (C++, C).

Rhapsody TestConductor provides capabilities for

- automatic and manual creation of test architectures
- test case definition based on Sequence Diagrams, State Charts, Flowchart Diagrams and Code
- execution of single or multiple test cases
- generation of test case execution reports
- generation of requirement test coverage reports, model coverage reports, and code coverage reports.

2 What's New in version 2.8.0 build 5039

- New Features in version 2.8.0 build 5039:
  None
- Enhancements in version 2.8.0 build 5039:
  - Support for testing of private and protected operations: The test architecture can be configured to allow testing of private C functions or private or protected C++ operations.
  - Easier analysis why requirements are not fully covered by tests: TestConductor provides additional information in the model which help analyzing missing requirement coverage. A template for RPE is provided to generate requirement coverage report documents.
- Bugs Fixed in version 2.8.0 build 5039:
  262756: TestConductor - Failed to create test Architechure
  262684: Documentation points to incorrect path.
  214491: Enhance Rhapsody to test a private function in Rhapsody in C project.

3 What's New in version 2.7.1 build 4892

- New Features in version 2.7.1 build 4892:
  None
- Enhancements in version 2.7.1 build 4892:
  - TestConductor supports testing of models using Rhapsody Action Language.
  - Improvements for reusing of sequence diagrams for SD based test cases, the user can define rules for the mapping of the instance lines to the test architecture.

- Bugs Fixed in version 2.7.1 build 4892:

  257453: Wrong fail for recorded TestScenario

  257452: Wrong type name in driver operation for argument/return of file-local type

4 What's New in version 2.7.0 build 4697

- New Features in version 2.7.0 build 4697:

  None

- Enhancements in version 2.7.0 build 4697:
  - TestConductor supports computation of requirement coverage also for OSLC remote requirements.
  - TestConductor supports testing of Ada models also on Linux.
  - TestConductor supports computation of model coverage for Ada flow charts.
- Bugs Fixed in version 2.7.0 build 4697:

  258604: Unexpected occurrence of message during TestConductor sd test execution.

  255080: Referenced interfaces generate incorrect operation signature in test component

  255048: Linux: line "loadEvent=ExternalCG" appears 3 times under
    section [RulesPlayer] in rhapsody.exe.ini

  252774: Unusable (incomplete) test architecture created if test component inherits from
    read only class/interface

  251710: TestConductor fails to build correctly in Rhapsody on Ada on RHEL6.

5 What's New in version 2.6.5 build 4550

- New Features in version 2.6.5 build 4550:

  None

- Enhancements in version 2.6.5 build 4550:
  - Full assertion based testing of classes with parts: TestConductor supports testing of a decomposed classifier (class, object or block) and testing of the interaction between the parts.
- Bugs Fixed in version 2.6.5 build 4550:

  250470: EventReception stubbing in C <<Singletons>> doesn't work

  250468: TestCaseWizard doesn't identify object-architectures as suitable for
          Sequence-diagrams

  250466: TestActions on instance lines for implicit objects are ignored

6 What's New in version 2.6.4 build 4386

- New Features in version 2.6.4 build 4386:

- Computation of requirement coverage: TestConductor supports computation of dynamic coverage of requirements by test cases.
- Enhancements in version 2.6.4 build 4386:
  - Improved support for unit testing of objects: TestConductor automatically creates test architectures which allow stubbing of objects related to the SUT.
  - Improved support for software integration tests: Semi automatic creation of test architectures with multiple SUT instances for testing of an integrated module.
- Bugs Fixed in version 2.6.4 build 4386:
  249511: Problems running TestConductor tests with RhapsodyCL
  247536: Start scripts for TC adapter for RQM contain wrong paths to Rhapsody installation and Share folder.

7 What's New in version 2.6.3 build 4211

- New Features in version 2.6.3 build 4211:
  None
- Enhancements in version 2.6.3 build 4211:
  - TestConductor model coverage reports for activity diagrams.
  - Improved capabilities to analyze failed test cases: When executing SD based test cases, detailed information for failed assertions can be shown in the test execution window for easier analyzing of failed test cases.
  - Support computation of code coverage for 64 bit targets (using MSVC, Cygwin GNU or Linux GNU compile environments).
  - Support computation of code coverage for small targets: When using a target proxy to execute tests on a target with limited resources computation of code coverage is supported.
  - Customizable locations for test results: Option to define a package where test results are stored in the model.
  - Support of remote requirements in TestConductor work flows: TestConductor supports the "Create TestCase..." helper on DOORS remote requirements.
- Bugs Fixed in version 2.6.3 build 4211:
  245558: Incomplete / insufficient calling of rootState_dispatchEvent at the end of processEvent in RiC.
  244888: Need to provide a better solution to user having Cygwin as their compiler when executing testcase.
  243722: DFT Usage of "preconditions" in Rhapsody TestConductor is not well presented in user guide
  242479: RiA test conductor fails
  241447: Timeout for test execution with TC RQM adapter
  240861: Request SD TestCase result also include extra message info only appear on resulting SD

236136: Destination Path for TestConductor Reports

232913: Enhance Rhapsody Test Conductor to be able to generate test results on a
    specific location

8   What's New in version 2.6.2 build 4075

- New Features in version 2.6.2 build 4075:
  None
- Enhancements in version 2.6.2 build 4075:
  None
- Bugs Fixed in version 2.6.2 build 4075:
  243723: Crash when using the "Merge Code Coverage Reports" feature in a
    TestConductor project for IBM Rational Rhapsody

9   What's New in version 2.6.2 build 4051

- New Features in version 2.6.2 build 4051:
  None
- Enhancements in version 2.6.2 build 4051:
  - Improved capabilities to analyze failed test cases.
  - TestConductor support of Variation Points, allowing to create a test architecture for a Variation
    Point and to use Variant test components.
  - Enhanced TestConductor testing cookbook, some more samples and documentation have
    been added.
  - Updated guide me documentation. The "Unit and integration testing" guide me has been
    enhanced to cover also system testing. The "AUTOSAR software development" covers also
    unit testing of AUTOSAR software component types. Updated "Safety-critical software
    development" guide me.
- Bugs Fixed in version 2.6.2 build 4051:
  238445: Erroneous TC warning messages in Rhapsody 8.1
  237562: DFT Rhp 81 TC test execution returns a ERROR result if
    SDTestScenario*_show subwindow is opened
  235332: TestConductor should generate compilable code for bidirection
    association with "qualifier" info for RiC model
  224423: Variation points are not supported by TestConductor
  223373: TestConductor should should rise a warning if model design and
    grey box test architecture are out of sync

10 What's New in version 2.6.1 build 3937

- New Features in version 2.6.1 build 3937:
  None

- Enhancements in version 2.6.1 build 3937:
  - Improved support for CORBA: Improved TestConductor support for testing of models using CORBA types and interfaces, including a sample model and step by step instructions in the TestConductor Testing Cookbook.
  - Improved support of Green Hills Integrity RTOS: TestConductor supports computation of code coverage when testing for the Integrity compile environment.

- Bugs Fixed in version 2.6.1 build 3937:
  234491: RPE report generated using the TestRequirementCoverage template looks strange in pdf format

  226658: Enhance Rational Rhapsody TestConductor such that it supports integration with CORBA

11 What's New in version 2.6.0 build 3827

- New Features in version 2.6.0 build 3827:
  None

- Enhancements in version 2.6.0 build 3827:
  - TestConductor RQM adapter for Linux: The TestConductor adapter for RQM is also available for Linux hosts.
  - Improved support for DDS: Improved TestConductor support for testing of models using the DDS profile, including a sample model and step by step instructions in the TestConductor Testing Cookbook.
  - Support of Green Hills Integrity RTOS: TestConductor supports testing for the Integrity compile environment.

- Bugs Fixed in version 2.6.0 build 3827:
  232165: Enhance Rhapsody Test conductor to create test cases for models build using DDS profile.

  227363: RPE templates in installation :testrequirementcoverage.dta sample template was added to Linux install only.

  224079: Easier work flow when updating test code when using multiple CG Configurations.

  223319: Need to have a way to query model to see if the test architecture and model are out of sync.

12 What's New in version 2.5.6 build 3730

- New Features in version 2.5.6 build 3730:
  None

- Enhancements in version 2.5.6 build 3730:
  - TestConductor supports computation of code coverage for VS 2012 environment.
  - Improved support of SysML proxy ports: TestConductor supports testing of operations, events, attributes and flow properties sent via proxy ports.
  - Support of inheritance of stereotypes: TestConductor recognizes stereotypes inheriting from predefined (built in or user defined) stereotypes.
  - Report generation with Rational Publishing Engine: TestConductor provides a template for generating test requirements reports and a schema for the testing profile.

- Bugs Fixed in version 2.5.6 build 3730:
  225178: Executing a TestCase hangs on SuSE Linux.
  224349: Results of the Testcases executed not getting displayed correctly using Rational Rhapsody TestConductor
  223372: Testing initial transition - documentation needed
  223265: CRASH: When trying to Create a New TestCase
  223241: SSEA: Rhapsody test conductor fails to start Rhapsody process for test case execution.
  223164: Rhapsody 8.0.3 can crash when executing a test case that has an empty PreCallAction in it
  219124: ER for Test Conductor to recognize the extended stereotypes and generate correct code
  193558: Rhapsody TestConductor should recognize stereotype, which inherits TestingConfiguration stereotype

13 What's New in version 2.5.5 build 3645

- New Features in version 2.5.5 build 3645:
  - Support of testing on small targets (targets with low memory, no file system).
  - Settings dialog for TestConductor RQM adapter.

- Enhancements in version 2.5.5 build 3645:
  - TestConductor supports computation of code coverage for VxWorks653 environment.
  - Improved support of SysML proxy ports: TestConductor supports creating of test architectures for blocks with proxy ports.

- Bugs Fixed in version 2.5.5 build 3645:
  217756: [Rhapsody] - Merged code coverage report all shows english strings in NL environment
  217642: [Rhapsody] - "Merge Code coverage reports" function doesn't work in TestConductor component

214711: Warnings on build test case(s) in sample CppCashRegister

(ImplementActivityDiagram is only supported in Classic Code Generation)

214154: Eclipse specific/sample C_StopWatch: building test case failure (TestScenario

contains unsupported interaction operator)

210547: Sample C_StopWatch / state chart test case: building warning takes

place - "RTC_ASSERT_IDX" redefined

200973: If administrative privileges are needed to modify rhapsody.ini, ATG/TC entries are

not removed when uninstalling

177178: Eclipse PI / SampleCStopWatch - Compilation warnings take place (unused

variable "argumentCheck"

14 What's New in version 2.5.4 build 3511

- New Features in version 2.5.4 build 3511:

  None

- Enhancements in version 2.5.4 build 3511:

  None

- Bugs Fixed in version 2.5.4 build 3511:

  215562: Unexpected message on code generation (Warning: In assertion based mode,

  a configuration needs TestingConfiguration stereotype)

  214446: Use Rhapsody progress bar also on Linux

  206870: OnlyGrabResults causes Error in RQM-Test Conductor Adapter

15 What's New in version 2.5.3 build 3450

- New Features in version 2.5.3 build 3450:
  - Merging of TestConductor model coverage reports.
  - Merging of TestConductor code coverage reports.
  - Create and link RQM test scripts for TestConductor tests.
  - Enable optional creation of test architecture for testing of SUT self messages (grey box testing).
- Enhancements in version 2.5.3 build 3450:
  - Support unit testing of AUTOSAR 4.0 software components.
  - TestConductor RQM adapter supports executing TestConductor tests with models stored on Rational Design Manager (RDM).
  - Visible feedback during update of TestContext and TestPackage using Rhapsody progress bar (Note: Only on Windows).
  - Use Rhapsody Check Model functionality to provide error messages and warnings regarding errors in test specification.

- IBM Rational Rhapsody Kit for ISO 26262, IEC 61508 and IEC 62304: Guidance documents have been extended how to capably develop safety related software with IBM Rational Rhapsody by meeting the tool qualification objectives described in the safety related standards IEC 62304.
- Bugs Fixed in version 2.5.3 build 3450:

  204867: TestConductor coverage definitions

  198379: TestConductor should support VxWorks653 environment for SXF/SMXF applications

16 What's New in version 2.5.2 build 3238

- New Features in version 2.5.2 build 3238:

  None

- Enhancements in version 2.5.2 build 3238:
  - Improved support for Files in C: TestConductor supports stubbing and driving messages when using Files.
  - Improved support for VxWorks in assertion based testing mode: TestConductor supports the computation of code coverage for VxWorks environments.
- Bugs Fixed in version 2.5.2 build 3238:

  204890: Computation of code coverage for VxWorks (using diab compiler)

  204888: Computation of code coverage for VxWorks (using gnu compiler)

  204886: TC should not use C++ style comments for RiC

  202043: TestConductor: building of TestCase fails if property
  CPP_CG::Class::Embeddable = false

17 What's New in version 2.5.0 build 3115

- New Features in version 2.5.0 build 3115:

  None

- Enhancements in version 2.5.0 build 3115:
  - IBM Rational Rhapsody Kit for DO178B-C: Guidance documents on how to capably develop safety related software with IBM Rational Rhapsody by meeting the tool qualification objectives described in the safety related standards DO178B and DO178C.
  - Improved support for VxWorks in assertion based testing mode: TestConductor supports the automatic execution of tests in assertion based mode for VxWorks environments.
- Bugs Fixed in version 2.5.0 build 3115:

  204509: TC doesn't recognize CG properties UseProtectedNameAndPublicNameInFile, PublicName

  202117: RHP 7612: links in coverage reports not working in Internet explorer 9

  198550: Test Conductor Prompts Twice for "Update Test Package" everytime

18 What's New in version 2.5.0 build 3088

- New Features in version 2.5.0 build 3088:
  - Support unit testing of AUTOSAR software components (AUTOSAR 3.2).
  - Partial migration to new testing mode: For port or interface architectures, an existing animation based TestArchitecture can be upgraded to assertion based mode.
  - Automatically create stub TestComponents: TestComponents can be created as stub or wrapper.
- Enhancements in version 2.5.0 build 3088:
  - Improved multi user support: Allow navigation from model coverage report to model elements when running multiple instances of Rhapsody on the same host.
  - Improved back to back testing: Improved support of testing with multiple CG Configurations, individual test execution results for each testing CG Configuration.
  - Code coverage report contains warnings for not instrumented code in specification file.
  - Support of Rational Design Manager: TestConductor supports Design Manager 4.
  - IBM Rational Rhapsody Kit for ISO 26262 and IEC 61508: Guidance documents on how to capably develop safety related software with IBM Rational Rhapsody by meeting the tool qualification objectives described in the safety related standards ISO 26262 and IEC 61508 Edition 2.0.
- Deprecated Features in version 2.5.0 build 3088:
  RQM 2 is not supported anymore.
- Bugs Fixed in version 2.5.0 build 3088:
  197217: Test Conductor doesnt take namespaces properties into account
  196599: RHP 7611 warning C4355: 'this' : used in base member initializer list
  195786: DFT Rhp 7.6.1.x TestConductor menu is not accessible from Rhapsody
       after installation on non-English env
  175750: TestConductor's portsnooper support for multiple users...
  174722: Command-Line, to return a Pass/Fail value (1 or 0) when returning from execution
  168931: TestConductor generates code twice (1-st time on updating test case,
       2-nd time on building test case)
  165547: TestConductor/sample CppCashRegister: compilation warning takes
       place ('this' : used in base member initializer list)

19 What's New in version 2.4.5 build 2932

- New Features in version 2.4.5 build 2932:
  None
- Enhancements in version 2.4.5 build 2932:
  - Support for SMXF (Simplified C execution framework)
  - Code coverage for C++ and C on Linux (with 32 bit gcc/g++ version 4 compiler for 32 bit targets)

- Bugs Fixed in version 2.4.5 build 2932:

    185181: TC copies TestConductorControl.h to the component build directory
            during the update phase, not the generate phase.

    181105: TestConductor in Rhapsody-in-Eclipse: try to execute SD test case
            tc_check_init - the execution is never finished

    185038: RHP7601, crash after you check-in a test component and double
            click the PASSES test case.

20 What's New in version 2.4.5 build 2835

- New Features in version 2.4.5 build 2835:
    - Code coverage for C++ (not supported for Linux version of Rhapsody)
- Enhancements in version 2.4.5 build 2835:
    - Support for SXF (Simplified C++ execution framework)
    - TestConductor can be used from rhapsodycl.exe (not supported for Linux version of Rhapsody)
- Bugs Fixed in version 2.4.5 build 2835:

    179389: Crash in Testconductor on Linux in Create test context

    177179: Test Execution hangs when messages are not mapped to operation
                in SD test cases

    175903: RHP76 & TestConductor, run update/build/execute from cmd line...

21 What's New in version 2.4.4 build 2536

- New Features in version 2.4.4 build 2536:
    None

- Enhancements in version 2.4.4 build 2536:
    None

- Bugs Fixed in version 2.4.4 build 2536:

    176455: Linux: Install: TestConductor installation fails if user is not owner
                of destination folder

    176402: RHP76,TC warning about const string in TestConductor.h

    176383: RHP76:"const" methods cause problems for TestConductor

    176379: Incorrect code generated for accessor of association with multiplicity greater than 1.

    176151: Show as SD does not contain red error message for specific failed test case

    176150: TestConductor: Show as SD shows blue message for passed test case

    176145: Generated "OMSETParams" in processEvent operation causes warnings

    175366: isPluginCommand5 set to 0 after install.

    175277: 'Add SDInstance' for 'Edit TestCase SDinstances' does not work propery.

    174972: TestConductor generated code fails to include a file causing compilation errors

174971: RHP - TestConductor 7.6, slow performance when executing test case.

174970: In TestConductor, an animated SD is missing last event...

174902: Need to update TestConductor RQM adapter due to change in
RQM integration client (RQM 3.0.1 FP1)

174581: RHP/TestConductor crashes when creating Test Architecture from a class.

174126: TestConductor code generation produces the wrong event id's

172577: Sample TestConductor\CppTestAutomationSample: test script has 2
identical statements "execute
TPkg_CashRegister::TCon_CashRegister::SD_tc_0"

168933: TestConductor in AssertionBased mode/ 'Test Execution' window:
context menu item 'Add to model' does nothing

22 What's New in version 2.4.4 build 2497

- New Features in version 2.4.4 build 2497:
  - Support for SD interaction operators
    - For Rhapsody C and C++, the interaction operators opt,alt,loop,par,break and consider are now supported
  - Support for timing checks
    - For Rhapsody C and C++, time intervals can be used in SD test case specifications in order to specify and check timing constraints, e.g. minimal and maximal response times
  - Support for variables and test data in SD test cases
    - For Rhapsody C and C++, in SD test case specifications one can now directly use attribute names of test components in order to specify input data and expected output data
  - Code coverage computation for Rhapsody C
    - For Rhapsody C, TestConductor can now compute the code coverage (e.g. statement, decision, or MC/DC coverage) of individual test cases and complete test contexts
  - Testing support for Android
    - When running Rhapsody from within eclipse, TestConductor now supports testing of applications running on the Android platform
- Enhancements in version 2.4.4 build 2497:
  - For Rhapsody C and C++, non virtual functions can now be stubbed by using replacement test components
  - For Rhapsody C and C++, operations automatically generated by Rhapsody's code generator can now be used in SD test case specifications
- Bugs Fixed in version 2.4.4 build 2497:

  160244: Linux: TestConductor/adapt_ini.sh should support multiple versions of Rhapsody

  159280: Using auto generated operations in SD test cases

  148812: RFE Enable ignoring running order for specific operations in Test Conductor

  137362: Bool type argument of function leads to test case failure

50062: ER to support Interaction operator in SD Test Case on Test Conductor

19825: Autogenerated operations to be supported on test conductor

23 What's New in version 2.4.3 build 2208

- New Features in 2.4.3 build 2208:

  None

- Enhancements in 2.4.3 build 2208:

  None

- Bug Fixes in 2.4.3 build 2208:

  157730: Sample TestConductor\CppListUsage: 3 first messages have info

  'Check of return value passed' and last message has not got this info

  154847: Localization (Chinese Trad.):Test Conductor window - some text displayed truncated

24 What's New in version 2.4.3 build 2169

- New Features in version 2.4.3 build 2169:
  - Full TestConductor support for Rhapsody in Ada
    - For Rhapsody in Ada, the same testing features as for C,C++, and Java are now available
    - Support for different kinds of test cases: sequence diagram test cases, code test cases and statechart test cases
  - TestConductor support for Rhapsody Architect for Software
    - Enables model driven testing of code developed with Rhapsody Architect for Software
    - Provides full benefits of model driven testing including graphical test architectures, graphical test cases, linking to requirements, result and coverage reports
  - Test Automation Sample
    - Shows how to use the TestConductor API in order to automate testing workflows
- Enhancements in version 2.4.3 build 2169:
  - Offline Testing support for Sequence Diagram test cases
    - Sequence Diagram test cases can now be executed completely without animation
- Bugs Fixed in version 2.4.3 build 2169:

  151855: Rhapsody 7.5.2: Float Type Parameter values in Test Conductor Don't Match

  150835: Support for Test Conductor with Rhapsody in Ada

  50426: Reset and Quit Application checkboxes for Code Testcases

  47652: cannot click on hyperlinks to the states/transitions in the generated

  CoverageResults reports PK83334

  46555: Sequence diagram is the method to create test cases in TestConductor. But it

  needs to be improved.

  46554: The development of test in ADA is only possible with Sequence diagrams

46209: ER: Include Code based test cases with RiA

28052: Strange Test Conductor Dialog

21010: Improve the support of Test Conductor with Rhapsody in Ada

20961: PMR 63351.019.866 - Improve the support of Test Conductor with Rhapsody in Ada

20273: Source code testcase: show assert for Eclipse not working like in 'ordinary' Rhapsody

25 What's New in version 2.4.2 build 1915

- New Features in version 2.4.2 build 1915:

  None

- Enhancements in version 2.4.2 build 1915:

  None

- Bugs Fixed in version 2.4.2 build 1915:

  147783: Inherited flowport should not include owner class name in the flow port

        drop down box on a dataflow within a sequence diagram

  147267: Compilation error when using TestConductor with MicroC / SegmentedMemory

  144348: Test Conductor window: error on applying pull down menu Help->Tutorial

        (ERROR: Failed to open Rhapsody TestConductor tutorial at location ...)

  141781: TestConductor/Linux specific: Test case wizard dialog/combo-box

        'Please select test case kind' - has only 1 item 'SD TestCase'

26 What's New in version 2.4.2 build 1887

- New Features in version 2.4.2 build 1887:
  - New execution UI integrated in Rhapsody/Eclipse
    - Test execution UI fully integrated with Rhapsody as dockable window
  - Test Case Wizard for automated creation of test cases
    - Automatic test case creation based on existing operations, requirements or sequence diagrams
    - Allows to create all kinds of test case (SDs, Code, Flowchart, Statechart)
    - Automatic mapping to instances of the test architecture
  - Model level and code level debugging of test cases
    - When a test case fails, the new debug option can be used in order to step through the test case using animation toolbar
    - Graphical and textual breakpoints can be set within test cases
  - Full TestConductor Java support
    - For Rhapsody in Java, the same testing features as for C and C++ are now available
    - Support for different kinds of test cases: sequence diagram test cases, code test cases and statechart test cases
  - Full Testing Support for SysML/Harmony

- Automatic test architecture generation for SysML blocks and parts
- Test specification with SDs, Flowcharts, Statecharts, Code
- Easy reuse of existing sequence diagrams as test cases
- SysML Model Coverage Measurement and Reporting
- Support for Preconditions in scenarios
- Extended integration with ATG: ATG can compute missing scenarios for complete use case coverage
  - Testing support for code centric models
  - Enables model driven testing of compiled libraries (not generated by Rhapsody) when just library specification (header file) is available or existing source code (not generated by Rhapsody)
  - Provides full benefits of model driven testing including graphical test architectures, graphical test cases, linking to requirements, result and coverage reports
- Enhancements in version 2.4.2 build 1887:
  - Improvements for Sequence Diagram based test cases
    - Support for automatically generated enum and struct serialization and unserialization functions
    - TestActions can be used to define complex test data for individual messages, to perform complex checks for out values and to perform complex checks within stubbed functions
  - Extended integration with Rational Quality Manager
    - New RQM Rhapsody TestConductor adapter
    - Customized Rhapsody TestConductor test definition UI integrated in RQM
    - Performance improvements for test case execution from RQM
- Bugs Fixed in version 2.4.2 build 1887:

  135573: TestComponents crash with a segmentation fault on Cppunit testcases

  132575: Cannot handle static methods in Test Conductor

  126969: JP_MKTG: HTML report generates error

  125507: TestConductor in Eclipse: ... it is much more convenient if
           Execute-testcase-dialog is topmost window after execute TestCase

  124563: Test Conductor for Java buttons grayed out when events injected

  50427: Better debugging capabilities with Code TC's similar to SD TC's

  46122: Garbling of Japanese character in HTML

  35636: When Test Conductor runs it should open a window that is just like a diagram window

  27844: Support for creating java source code test cases using Test Conductor

  17060: Execute Test Case diaglog box message inconsistent between test case types

27 What's New in version 2.4.1 build 1549

- New Features in version 2.4.1 build 1549:
  - TestConductor integration with IBM Rational Quality Manager (RQM)

- TestConductor test cases can be referenced and executed from RQM
- Test results can be assessed from RQM
- Enhancements in version 2.4.1 build 1549:
  - Offline Testing can be combined with MicroC target monitoring
    - Enables model level debugging on targets
  - Time intervals for TestComponent life lines
    - Enables SD based specification of timed TestComponent behavior
- Bugs Fixed in version 2.4.1 build 1549:

  Note: The listed numbers refer to Rhapsody TeamConcert Work Items

  123137: code coverage compute failure in Rhapsody in J

  49815: Support for eclipse configuration in Test Conductor.

  49693: Support for eclipse configuration in Test Conductor.

  48124: sendAction - causes test results to show transition taken but indicated
  not covered PK84120

  47205: Delay to kill testcases needs to be sped-up. (PMR 03710999000)

  30627: APAR PK 91336 Code coverage report incorrectly reports that a transition
  is not covered

  21626: An option to change the initial time out property of the Tests in Test Conductor

  21026: XCRASH: Rhapsody crash when trying to create new project with
  name-length 107 chars

28 What's New in version 2.4 build 1437

- New Features in version 2.4 build 1437:
  None
- Enhancements in version 2.4 build 1437:
  None
- Bugs Fixed in version 2.4 build 1437:

  Note: The listed numbers refer to Quintus entries

  225305 [APAR : PK89711]Rhapsody 7.5 does not terminate even after closing the application

  219470 Test Conductor: Rhapsody silently crashes

29 What's New in version 2.4 build 1411

- New Features in version 2.4 build 1411:
  - Support of Flow Ports
    - Automatically created Flow Port TestComponents
    - Ability to specify test case behavior graphically using send and receive flow messages in Sequence Diagrams
  - MicroC Support

- Ability to test MicroC models using TestConductor
- Test Case execution both on host and target
- Integration of cunit and cppunit test cases
  - Ability to import cunit and cppunit test cases into Rhapsody
  - Manage and execute cunit and cppunit testcases directly in the Rhapsody model
- Eclipse Platform Integration
  - TestConductor can be used directly from within Eclipse
- Offline Testing Support
  - Test Cases can be executed without having an online connection between the SUT and Rhapsody
  - Allows test execution on very limited targets (e.g. targets without communication ports)
- Enhancements in version 2.4 build 1411:
  - Improved Gateway/Doors Integration
    - Eases the workflow to link requirements with test cases
  - Support for triggered helpers
    - User defined helpers can be triggered automatically after TestConductor actions like e.g. test architecture creation.
- Bugs Fixed in version 2.4 build 1411:

  224426 TestConductor problem with Singleton object

  222636 Wrong generation of code in RTC

  220846 Property "ExecutionIdleTimeout" does not behave correctly.

  220679 Test Conductor removes the "const" of an operation and so won't compile

  220678 Test Conductor ignores namepaces

  219851 Memory leaks in driver operations

  219469 Incorrect script name to install Text Conductor in the installation documentation

  219399 Improved error/warning messages with Test Conductor

  219276 If user defined types from profiles are used, when updating the test case

        Test conductor prompts an error.

  219133 Invalid code generated for user defined types

  218741 Types are not scoped correctly.

  218258 TC should also take care of data flows

  217832 TestConductor\CppTestConductorAPI - note in OMD "TestConductor API

        Sample Overview" should be corrected

  217735 Linux specific: sample CppSamples/TestConductor/CppTestingExternalFiles

        should be changed

  217729 RTC_ATG_Tutorial.pdf / Executing TestCase_recorded - actual progress

        is 3/3, not 4/4

  216715 To run Test Conductor in the background mode

  216450 Strange error over result files

  212689 Request for a feature using which the execution order for Test Cases could

be changed

210630 Need to be able to navigate from coverage report to the model

100787 Sample AdaSamples\TestConductor\AdaCashRegister - after
command "e" application is suspended

110411 TestConductor fails when referencing elements in another namespace

110357 Test Conductor Documentation is out of date.

110307 TestConductor: ExecutionIdleTimeout is ignored for flowcharts

110223 TC driver operations access via pointer

106691 TestCases order does NOT have any influence on the execution order

105973 Rhapsody RTC should provide th following CLI commands

93514 Would like a way to test performance in Rhapsody

90460 Sample AdaSamples\TestConductor\AdaCashRegister - application tracing is incorrect

30 What's New in version 2.3 build 1057

- New Features in version 2.3 build 1057:
  None
- Enhancements in version 2.3 build 1057:
  None
- Bugs Fixed in version 2.3 build 1057:
  219832 RiA: RTC doesn't start to drive events

31 What's New in version 2.3 build 1020

- New Features in version 2.3 build 1020:
  - Integration of TestConductor and Rational Test RealTime
    - enables application of Rational Test RealTime during TestCase execution
  - Traceability from model coverage report back to the model
    - Model coverage report now contains links that navigate from the coverage report to the corresponding model element in the Rhapsody model
- Enhancements in version 2.3 build 1020:
  None
- Bugs Fixed in version 2.3 build 1020:
  217834 Linux: Rhapsody crashes on operation "Create Code TestCase"
          (on Windows - only errors)
  217526 Linux specific: error takes place on build testcase in sample
          CppSamples\TestConductor\CppListUsage
  217525 Windows specific: warnings take place on build testcase in sample
          CppSamples\TestConductor\CppListUsage
  216070 Sample CSamples\TestConductor\CStopWatch has not got instruction about its use

215115 Reason for test failure not shown

32 What's New in version 2.2 build 954

- New Features in version 2.2 build 954:
  None
- Enhancements in version 2.2 build 954:
  None
- Bugs Fixed in version 2.2 build 954:
  216821 After running the Test Conductor on a number of tests, the computed
  coverage is -1.#J%
  216258 TrigeredOperationTransitionIsNotDeclaredAsCoveredEvenIfItIs
  216198 TestConductor\CppTestConductorAPI: text of the script Windows_runJava.bat is
  in Linux style (without \r)
  216197 TestConductor\CppTestConductorAPI should be corrected (if OMROOT has
  spaces in path)
  216073 TestCase_Purchase_with_remove: execution progress == only 6% (2/30)
  216057 Linux specific/CppTestConductorAPI: execution suspend
  (Linux_runJava.sh TestConductorAPI_ExecuteFailedTests)
  216056 Linux specific: sample CppTestConductorAPI: cannot
  "run Linux_runJava.sh TestConductorAPI_ExecuteFailedTests"
  215136 Linux: file RTC_Release_Notes.pdf is placed (only) into
  <Rhapsody 7.2 root>/Doc/Books
  213250 Should add a Test Plan Matrix to profile and include in reporting
  212308 Error message "Updating TestPackage finished not successfully" is not good english
  212196 Linux: Disable text output during running adapt_ini.sh <RHPDIR>
  109773 When running a test conductor test, a timeout in the first state of the class is
  taken before any message is driven

33 What's New in version 2.2 build 920

- New Features in version 2.2 build 920:
  - Testing Welcome Screen
    - When using IE7 or higher, the Rhapsody Welcome Screen contains a Testing section that
      allows to quickly access Testing Tutorial, Tutorial sample, TestConductor User Guide and
      IBM web site
  - TestConductor API
    - All TestConductor functionality now available via COM and Java API, i.e., one can access
      TestConductor functionality from e.g. VBA scripts, Java programs (using Rhapsody Java
      API) or C/C++ programs (using Rhapsody COM API).

- Improved Target Testing Support
  - TestConductor now supports testing of non-animated SUTs by analyzing the instrumentation scope of the tested configuration
  - Connect/Download integration for fully automated test case execution on targets
- Predefined Matrix- and Table Layouts in the TestingProfile
  - to create TestCase Requirements matrix views and TestResults table views
- Enhancements in version 2.2 build 940:
  None

- Bugs Fixed in version 2.2 build 940:
  215270 Fatal error message when trying to create Test Architecture using TC
  214936 TestCase of Activity Diagram is deprecated - so RTC tutorial and sample should be updated
  214513 Incorrect call of event using Rhapsody in C with files
  214046 TestCase fails because message to an unnamed instance is not recogniced
  213098 RH EL 4 or 5 specific - error on TestConductor installation
  211965 Installation of Test Conductor on Linux requires UUDECODE
  211678 Need a better name than Plain Tutorial in the Testconductor Welcome Page
  211480 Should add a tag to indicate the model coverage for each coverage results
  210317 welcome screen should point to some RTC ATG info
  109485 Test Conductor fails when type arguments in $type const * format
  78400 API for testconductor
- Notes

  Since TestConductor version 2.1, usage of activity diagrams to describe the behavior of TestCases is a deprecated feature, i.e., existing TestCases based on activity diagrams can still be executed. However, activity diagrams should not be used when creating new TestCases since code generation does not support activity diagrams for operations any more.

34 What's New in version 2.1 build 888

- New Features in version 2.1 build 888:
  None
- Enhancements in version 2.1 build 888:
  None
- Bugs Fixed in version 2.1 build 888:
  214031 Fatal error message when trying to Create Test Architecture using TC
  213192 TestConductor\JavaDishwasher has irrelevant for RiJ overridden property CPP_CG:Class:ImpIncludes
  106000 CM properties inside installed sample (cash register)
  81084 "Show as SD" sometimes draws incomplete diagram
- Notes

Since TestConductor version 2.1, usage of activity diagrams to describe the behavior of TestCases is a deprecated feature, i.e., existing TestCases based on activity diagrams can still be executed. However, activity diagrams should not be used when creating new TestCases since code generation does not support activity diagrams for operations any more.

35 What's New in version 2.1 build 852

- New Features in version 2.1 build 852:
  - Full RhapsodyC support of RTC
    - Support of Code/Flowchart TestCases
    - Support of TestComponents for SD TestCases
    - TestArchitecture creation for Files/Blocks/Objects
  - Enhanced Test Reporting with ReporterPlus templates
    - Measuring and documenting requirements coverage
  - Update of TestArchitectures
    - automatically update TestArchitectures according to changes of SUT classes
  - Model Coverage
    - measuring model coverage of SUT classes by individual or sets of TestCases
  - Execution of TestCases on target environments
    - Support for Linux target environment
  - Additional TestConductor Host environment
    - RTC now running on Windows AND Linux
- Enhancements in version 2.1 build 852:

  None
- Bugs Fixed in version 2.1 build 852:

  212457 Test Conductor fails with System Designer

  212273 Test Conductor and Rhapsody crash when running tests

  212240 Error message "No relation named itsRadio" during Test Execution

  212227 Animation failure during TestConductor execution

  210631 Coverage does not seem to be correct

  210447 Building Test Case produces compiler errors

  210329 After running all tests with Test Conductor, the tests stop, but Rhapsody consumes
  	50% cpu

  108808 Sample CppSamples\TestConductor\CppPbx fails on initializing animation

  108117 TestArchiecture can not be created

  106146 Cannot instantiate abstract class error

  106105 Test Case passes but when shown as SD, an error is observed

  105814 Test should pass every time but only passes 25% of the time

  105803 Order of message points of conditions is wrong after editing an SD, notes

105722 Auto update the links of the SUT in the test context after updating the SUT's
relationships and ports in the design mode

105369 Get a warning when trying to update a simple test

98490 Trouble in TC UserGuide V1.6: p5-12

96373 Detailed Report of RTC Testexcution including graphical view of SD's

93222 RTC cuts spaces from expected return values

92640 Testconductor RiC: check return value of functions

89364 Test Conductor as a Coverage tool

88092 Request for TestConductor to run on Linux

82733 Warning appears on TC execution

36 What's New in v2.0 build 694

- New Features in v2.0 build 694:
  None
- Enhancements in v2.0 build 694:
  None
- Bugs Fixed in v2.0 build 694:
  106548 Cygwin: problems when executing test cases

  105807 Test Conductor properties do not have descriptions

  105666 Doing update gives no feedback, it should print out a message to the output window

  98453 Allow for "non-triggered" IsIn activation condition

  81885 timeout handling mismatch

37 What's New in v2.0 build 654

- New Features in v2.0 build 654:
  None
- Enhancements in v2.0 build 654:
  ReporterPlus Template for test reporting

  Test Architecture generation for blocks, objects, files

  Code- and Flowchart Test Case support for RiC

  Model population for reference SDs in RiC++
- Bugs Fixed in v2.0 build 654:
  106885 CG output window:Unexpected message in output after code generation process...

  106717 Test Conductor is not fully uninstalled within Rhapsody uninstallation

  106150 Cannot do anything with Test Case

  106107 current RTC version does not evaluate the DefaultDirectoryScheme property

  105816 test generated by ATG fails but should really pass

  105661 update and build should be done automatically if needed before an execute

105660 Frequently get Warning messages that are difficult to understand why they occur

105656 Error message is mis-spelt "TestCase not up-to-date, Test Case must be updatet first"

105565 Command line documentation issue - Rhapsody does not exit

105376 Documentation on Test Conductor mentions "Strg" instead of "Ctrl" and also side.prp
instead of site.prp

104571 OMD in Ada CahsRegister Sample model needs repairing

92210 C++ strings should be able to be visible within Test Conductor

91464 test fails if a method comes twice in a row and the expected ret values differ

81102 Error message appears when saving if all items are read only

79209 File Names break Joilet File System

38 What's New in v2.0 build 616

- New Features in v2.0 build 616:
  None
- Enhancements in v2.0 build 616:
  None
- Bugs Fixed in v2.0 build 616:
  104042 Test Conductor gives an exception when trying to update Test Context

  104034 Upgrade OSC Testing products to license RC2

  103379 Test Conductor CppCashRegister Sample doesn't use testing profile

  102355 TLS_XR#1335: The size displayed for the installed Rhapsody Add-on's, in the Add or
Remove Programs screen is incorrect.

  96833 Test conductor shows size of 7066MB in add/remove programs

  62658 emulation of non-implemented method calls

39 What's New in v2.0 build 587

- New Features in v2.0 build 587:
  - Model based test design based on UML Testing Profile
    - Model based design of test architectures
    - Model based design of test cases
  - Automatic and manual creation of test architectures
    - Ability to perform unit tests, integration tests and system tests facilitated by test architectures
  - Definition of test case behavior using code, flow chart diagrams, activity diagrams or sequence diagrams
  - Support for stubbing
  - Ability to perform white box and black box/production code testing

- Configuration Management, Reporting and Traceablility for test architectures and test cases by accessing test data using standard Rhapsody interfaces

- Enhancements in v2.0 build 587:

  None

- Bugs Fixed in v2.0 build 587:

  103403 Upgrade old RTC 1.7 data, batchlists are not upgraded correctly

  103081 Upgrade old RTC 1.7 data, save the model gives errorneous warning messages

  103080 Open a model with old RTC 1.7 data, exit Rhapsody: Crash

  102900 RATG/RTC samples should be cleaned (they have irrelevant profiles like CGCompatibilityPreAquaC)

  102897 Sample Samples\CppSamples\TestConductor\CppCashRegister has obsolete profiles

  102191 SD created with TestConductor shows all messages coming from ENV

  102188 Typo in dialog box

  101934 notifyMethodReturned comes in wrong order and reports wrong caller

  101933 Creating a new SD Instance Test Case causes Crash

  101850 Test Conductor wonm't run.

  101828 TestConductor: errors highlighting not working on build test context

  101819 Sample CppSamples\TestConductor\RTC_ATG_Demo_Model is completely empty

  101814 RTC/RATG documentation should be updated

  100822 animation error with Test Conductor upon port deletion

  100622 Black box testing should not modify the model, but instead change the configuration

  100609 Resulting file from TestConductor has garbage in field "Test Executed on machine"

  100608 referenced sequence diagrams are not promoted to TestScenarios

  100607 Test Conductor should now use TestScenario rather than Sequence Diagram

  100606 Test Conductor should allow use of Flowcharts

  100473 When creating model elements only add _0 to the end of names if a duplicate model element already exists

  100471 When creating test architecture name model elements as per usual Rhapsody naming convention

  100301 Installation splash screen need an updated copyright

  100293 Dialog "Edit Unit" - wrong path to file TestingProfile.sbs

  100233 Test Conductor app does not compile for VxWorks using Diab compiler

  100139 RTC Cannot get the selected element in the GE.

  99808 Is "RTC_receiver" for Rhapsody Test Conductor able to use calling operations?

  99587 New "Rhapsody TestConductor" - cannot create simple testcase in RiC !

  99581 "Rhapsody TestConductor" dialog: select pulldown menu's item ""Tools->Generate MethodBroker"" - nothing happens

  99580 "Rhapsody TestConductor" dialog: select pulldown menu's item "Help->Tutorial" - nothing happens

99579 "Rhapsody TestConductor" dialog - ALL of its checkboxes are disabled

99578 TestConductor: erroneous scenario when user executes testcase in Auto-mode

98574 Message about file site.prp appears during Test Conductor installation

98452 Test Conductor Stops while Running Tests

98163 Test Conductor Fails Test - Operation CAll out of Order

97982 Instructions in file JavaSamples\TestConductor\readme.txt should be corrected

96111 Check Test Conductor's C-models in Rhapasody-in-C++

92346 Test Conductor should have the ability to run scripts against several configurations

92337 I can't export TC informations with the related package automatically nor manually

92107 Two people working on Test Conductor tests in same project don't have an easy way to integrate tests together.

89318 Rhapsody TestConductor Problem

87299 import Test Conductor test from another model

82416 Test Conductor should close automaticly when finished running tests from command line

82302 Enhancement: Map test conductor tests to a specific configuration

81975 Cannot move tests into folders or rename folders from GUI

81786 Tests under Main Folder are not sorted

75454 Test descriptions from TestConductor are not handled by the version control interface

66752   Add ability to turn off RTC on a per project basis

65854 Test Conductor opening every window you've ever had open for that project

65784 Ability to not restart the application between tests in Batch Mode such that tests can be chained together

63741 Integrate test scripts into the Rhapsody browser (For CM, editing, etc.)

62659 Stub support in SDs

62229 be able to copy tests between models - or import/export tests

61417 Drag & Drop Ability in the Test Management Dialog Box

40 What's New in v1.7 build 460

- New Features in v1.7 build 460:

  None

- Enhancements in v1.7 build 460:

  None

- Bugs Fixed in v1.7 build 460:

  99267   Test Conductor error about interaction occurrence

  97863   If model is read-only, then creating a method broker causes a crash

  97082   Link problem when using Method Broker

41 What's New in v1.7 build 453

- New Features in v1.7 build 453:

  None

- Enhancements in v1.7 build 453:

  None

- Bugs Fixed in v1.7 build 453:

  97096 Rhapsody crashes when running testconductor test

  96352 crash when running test

  96351 Can't reorder tests using cut and paste

  96288 You could run TC without starting the Animation first

  96094 Compilation warnings take place in sample

     AdaSamples\TestConductor\AdaCashRegister

  95704 RTC cannot do ShowAsSd when packages are read-only

  90648 really simple test works in C++ but fails for Java

42 What's New in v1.7 build 421

- New Features in v1.7 build 421:

  None.

- Enhancements in v1.7 build 421:

  None

- Bugs Fixed in v1.7 build 421:

  94370 Rhapsody vanishes on creation new project if installation includes ATG/RTC

  94348 RTC leads to crash on open/create a project

  94157 Sample JavaSamples\TestConductor\JavaDishwasher should be updated

  94145 RTC causes to rhapsody.exe remains in Task Manager after Rhapsody has been exite

  94021 Build 738226/Rhapsody-in-Ada - wrong code generation !

  93434 TestConductor hangs when executing test

  93516 Multiple calls of same member op are not monitored if source is a static op

  93434 TestConductor hangs when executing test

  93359 Installation of Test Conductor fails - "Rhapsody Pisces not found. Process aborted."

  92824 Test Conductor Help Needs to correct Tutorial directions

  92784 Multiple calls of the same global function are not monitored correctly

  92674 The test still stay Active even it is finished

  92593 Sample AdaSamples\TestConductor\AdaCashRegister - compilation fails

  92347 Existence of time interval on sequence diagram is affecting non-related event re

  91699 Test Conductor hangs animation when starting a test

  91459 The last primitive operation is not completed

90544 TestConductor works despite absence of lisence (RTC can be invoked from RATG)

88818 TestConductor works without license (if its Name=aaa in the [RTC]-group in rhapsody inifile)

82372 text fields become corrupted. Strange - option : Right to left Reading order ap

82252 Does not launch test case

82233 Request to shutdown Rhapsody automatically after running TC test from command l

43 What's New in v1.6 build 393

- New Features in v1.6 build 393:

    None.

- Enhancements in v1.6 build 393:

    None

- Bugs Fixed in v1.6 build 393:

    86949 Can't compile code for a Method Broker when object is Singleton

    88747 Sample Adms4Atg/testcase classStation:summary of execution contains errors

    88855 Uninstall RTC,then try to open any model - warning arises

    90678 use of OM_RETURN is not mentioned in the user guide

    91004 Cannot compile sample AdaSamples\TestConductor\AdaCashRegister

44 What's New in v1.6 build 384

- New Features in v1.6 build 384:

    None.

- Enhancements in v1.6 build 384:

    None

- Bugs Fixed in v1.6 build 384:

45 What's New in v1.6 build 382

- New Features in v1.6 build 382:

    None.

- Enhancements in v1.6 build 382:

    Old TestConductor program files and samples are deleted before installing a new version.

    Note: Changes in the TestConductor samples folders will be overwritten.

- Bugs Fixed in v1.6 build 382:

    86281 TestConductor test fails when comparing parameter value 60.0 defined in test with value 60 provided by Rhapsody

    87056 select SD instance and press button "Show As SD" a few times - RTC opens identical Sds (**no bug**)

87195 tc_user_guide.pdf/p.3-20: section name (on p.2-14) is "Condition Marks", not "Lo

87281 Missing files DishwasherFrame.java, jbcl3.0.jar in Rhapsody\Samples \JavaSamples\TestConductor\JavaDishwasher\Gui gefixt

88049 In execite-test-case-window press button "Show info" ... oops ... Rhapsody not responding !

88225 \Samples\CppSamples\TestConductor\CppPbx\guilib seems redundant

88226 Need to clarify the Cpp_PBX_with_changes is used only for tutorial

88556 Test Conductor causes crash during load of a model with circular referenced Sequence Diagrams

46 What's New in v1.6 build 371

- New Features in v1.6 build 371:

    None.

- Enhancements in v1.6 build 371:

    None

- Bugs Fixed in v1.6 build 371:

    74168 Designer + TC: C and Java samples installed altough Designer supported only for CPP

    81565 Test Conductor Documentation is out of date

    82102 Test Conductor doesn't handle messages to parameterised lifelines correctly

    83314 Test Conductor - Rhapsody crashes on test execution

    84857 Cannot execute Test Conductor's tests

    84887 Rhapsody crashes on test activation

    85641 Sample Pbx_With_Changes::PBX - activate test, progress == 0%

    85644 Sample CPbx::Pbx - when progress is 9% test fails

    85574 Methods/functions generated by code generator are different if the methods/functions are in a file or object

    85634 Incorrect failure of a test case

    85679 MethodBroker doesn't compile if CG::Configuration::GenerateDirectoryPerModel set

    85699 IRPCollaboration::get_messagePoints returns mp with local cond in wrong order

    85735 RTC installation fails with diagnostic "File site.prp not found in folder c:\winnt\Share\Properties\"

    85761 TestConductor crashes when executing test

    85811 event list order is broken by resource (Afx module status) management of TC

    86599 Test Conductor popup menu is available and causes to RER crash after opening

47 What's New in v1.6 build 352

- New Features in v1.6 build 352:

    None.

- Enhancements in v1.6 build 352:
  - TestConductor will ignore Condition Marks if a specified condition expression violates the syntax as expected by TestConductor.
  - TestConductor installs a new profile TestingProfile_C++.sbs, TestingProfile_C.sbs, TestingProfile_Java.sbs TestingProfile_Ada.sbs. It provides tag *RTC_Receiver* that is used to specify message receiver in case of decomposed life lines.
- Bugs Fixed in v1.6 build 352:
  - 82469 RiC MB gives animation failure when driving a test with opcalls
  - 82236 MethodBroker Compilation shows critical warnings
  - 81510 Typo in TestConductor popup
  - 81491 RTC should be able to ignore condition marks
  - 81277 Test Conductor gives a false positive and doesn't test entire scenario
  - 81233 RTC test sometimes crashes Rhapsody
  - 80921 Condition marks on SD's cause failure of tests
  - 80698 Clicking on tolerances causes hang of TC and Rhapsody

48 What's New in v1.6 build 332

- New Features in v1.6 build 332:
  None.
- Enhancements in v1.6 build 332:
  None.
- Bugs Fixed in v1.6 build 332:
  - 80395   Sample CppSamples\TestConductor\Pbx_With_Changes - missing application (*.exe)
  - 80393   Sample CppSamples\TestConductor\CppPbx - a few diagrams should be corrected
  - 77837   get warnings that AnimAllowInvocation property has not been set when using Ada
  - 77267   Rhapsody animation failure during Test Conductor
  - 76282   try and run a TC test on a component that is not animated there is no warning or
  - 76225   Problems with TestConductor on Rhapsody 2004 beta
  - 75710   RTC complains that the event has been consumed out of order
  - 75517   Test Conductor: internal error: not ready to start test conductor
  - 74168   Designer + TC: C and Java samples installed altough Designer supported only for CPP
  - 73885   Loss of synchronization between model and test conductor

49 What's New in v1.5 build 317

- New Features in v1.5 build 317:
  None.
- Enhancements in v1.5 build 317:

None.

- Bugs Fixed in v1.5 build 317:

    74474 (Workaround)   TC halts the application

    74471 (Workaround)   Test Conductor exhibiting erratic behavior

Workaround:

Sometimes Test Execution gets stuck due to the loss of messages between RTC and the tested application. A workaround has been implemented by delaying the communication between RTC and the tested application. This workaround can be turned off for interactive mode by setting the property "TestConductor.Settings.DisableDelayMsgToTomInteractive" and for batch mode by setting the property "TestConductor.Settings.DisableDelayMsgToTomBatch".

50 What's New in v1.5 build 309

- New Features in v1.5 build 309:

    None.

- Enhancements in v1.5 build 309:

    Test compilation might be aborted with the Quit button if it takes too long time.

    Feature to open batch result files has been added

    Settings dialog has been extended:

    * enable Rhapsody "trace #all all" command

    * enable writing of TestConductor log-file into C:\tmp

- Bugs Fixed in v1.5 build 309:

    74554   Silly message: Other messages between source and destination of operation

    74168   Designer/TC: C and Java samples installed although Designer supported only for C

    69545   TC in batch mode needs a button to Open and Save the log, at least not to overwrite previous log

    68442   Test Conductor is causing the application to stall / grind to a halt

    66098   user should be warned that the compilation time may be extreme and give him a chance to cancel

    65856   Test Conductor locked up Rhapsody again

51 What's New in v1.4 build 295

- New Features in v1.4 build 295:

    Part decomposition support for Testing.

    Life line decomposition support for Testing.

- Enhancements in v1.4 build 295:

    None

- Bugs Fixed in v1.4 build 295:

  72812   ATG and TC kits should include a copy of the release notes

  and a txt file with the build number "aside" the kit itself

  72625   Crash when loading a model in architect when RTC is installed

  71855   TestConductor test crashes model

  71829   Release Notes for TestConductor are confusing regarding RiADA

  71572   TestConductor Release Notes inconsistent regarding RiA TestConductor support

  71473   Test conductor eats messages

  71831   TestConductor crashes model

  71036   Crash caused by quitting test definition during execution

52 What's New in v1.4 build 270

- New Features in v1.4 build 270:

  Bug fixes

- Enhancements in v1.4 build 270:

  Option 'Reopen Main Dialog on exiting Test Execution Dialog'

  in the Test Conductor settings window.

- Bugs Fixed in v1.4 build 270:

  ILO Bug #70570 -

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  The Quit button on the Test Execution window should have the option of total quit or quit back

  to Test Management Window

  We added a check box to the RTC settings. If it is checked, the main dialog is opened again (if

  it was open) if the user quits the test execution window. Default is checked.

  ILO Bug #70063 -

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  Test Failing with Tolerances.

  ILO Bug #69585 -

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  Failing Test message "In Parameter values do not match." is not correct.

  Not a bug: The opcall is opPrintKey(int key), in the SD the specification says opPrint(msg).

  The _value_ of the in parameter is ok, but the name is different than in the test specification.

  If you change "msg" to "key" RTC doesn't complain about the opcall opPrintKey.

  ILO Bug #69512 -

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  Multiple Ref Diagrams. TC crashes when its two refs pointing to the same sequence diagram

  i.e., you want the same sequence to happen twice.

  ILO Bug #69503 -

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TC properties do not appear on the properties of the SD.

We now add properties to a rtc.prp file and include it in the site.prp file.

ILO Bug #69214 -

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Rhapsody renames object and RTC does not see it. RTC sends message to the old names. Application fails.

ILO Bug #67460 -

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Test reports an event consumption out of order. If you modify the test sequence and replace the System Border with the Keyboard - the test completes OK!!!!

ILO Bug #71355 -

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Crash during test execution after clicking "show info" and exiting execution window

53 Documentation:

The following pdf documents are installed in folder Rhapsody/Doc/pdf_docs:

- The Rhapsody TestConductor tutorials for C++, C, Java, Ada are part of the installation.
- The Rhapsody TestConductor user guide is part of the installation.
- The Rhapsody TestConductor document "Testing with TestConductor on a small target" is part of the installation.
- The Rhapsody TestConductor document "Testing with TestConductor on an Integrity target" is part of the installation.
- The Rhapsody TestConductor document "Testing with RTC on a Linux target" is part of the installation.
- The Rhapsody TestConductor document "Testing with RTC on a VxWorks target" is part of the installation.
- The Rhapsody TestConductor code coverage limitations document "TC_CodeCoverage_Limitations.pdf" is part of the installation.
- The Rhapsody TestConductor document "RQMTestConductorAdapter_HowTo" is part of the installation.
- The "IBM Rational Rhapsody Kit for ISO 26262, IEC 61508, IEC 62304 and EN 50128" is part of the installation.
- The "IBM Rational Rhapsody Kit for DO-178B/C" is part of the installation.

The following html documents are installed in folder Rhapsody/Doc/html_docs:

- The Rhapsody TestConductor Testing Cookbook is part of the installation.

54 Samples:

Four C++ TestConductor samples are part of the installation

(directory "<Rhapsody-Installdir>/Samples/CppSamples/TestConductor):

- CppCashRegister
- CppPbx
- CppModelCodeCoverage
- CppTestActions

Additional testing cookbook sample models are located in the TestingCookbook folder.

Four C TestConductor samples are part of the installation

(directory "<Rhapsody-Installdir>/Samples/CSamples/TestConductor):

- CModelCodeCoverage
- CPbx
- CSDOperators
- CStopWatch

Additional testing cookbook sample models are located in the TestingCookbook folder.

Two Java TestConductor samples are part of the installation

(directory "<Rhapsody-Installdir>/Samples/JavaSamples/TestConductor):

- JavaDishwasher
- JavaStopWatch

One Ada TestConductor samples is part of the installation

(directory "<RhapsodyInstalldir>/Samples/AdaSamples/TestConductor):

- AdaStopWatch

55 Supported Platforms and Hardware/Software Requirements

- Supported Host Platforms:

Rhapsody TestConductor version 2.8.0 runs on the following host platforms:

- Windows 7 SP 1
- Windows 8.1
- Windows 10
- RedHat Enterprise Linux (RHEL) 6
- RedHat Enterprise Linux (RHEL) 7

56 Hardware/Software Requirements:

Refer to the HW/SW requirements as listed in the release notes of the Rhapsody 8.3.0 release. TestConductor 2.8.0 requires as minimum 1 GB main memory.

57 Supported Rhapsody Versions and framework variants

Rhapsody TestConductor supports testing of UML models developed with

- Rhapsody Developer Edition (C++, C, Java, Ada) 8.3.0
- Rhapsody Designer for Systems Engineers (C++) 8.3.0
- Rhapsody Architect for Software (C++, C) 8.3.0

Rhapsody TestConductor supports the following Rhapsody framework variants

- OXF (standard framework)
- SXF (Simplified C++ execution framework)
- MXF (MicroC framework)
- SMXF (Simplified C execution framework)

58 Testing Performed

Full interactive and automated regression test suites have been performed on the entire tool with RhapsodyInC++, RhapsodyInC, RhapsodyInAda and RhapsodyInJava 8.3.0.

The following combinations of host System and compilation environment have been tested:

- Windows 7 SP 1, Microsoft Visual Studio 2008
- Windows 7 SP 1, Microsoft Visual Studio 2010
- Windows 7 SP 1, Microsoft Visual Studio 2012
- Windows 7 SP 1, Cygwin 1.7.32 with GNU g++/gcc 4.8.3
- Windows 8.1, Microsoft Visual Studio 2008
- Windows 8.1, Microsoft Visual Studio 2010
- Windows 8.1, Microsoft Visual Studio 2012
- Windows 10, Microsoft Visual Studio 2008
- Windows 10, Microsoft Visual Studio 2010
- Windows 10, Microsoft Visual Studio 2012
- Windows 10, Cygwin 2.6.1 with GNU g++/gcc 5.4.0
- Linux RedHat 6, GNU g++/gcc 4.4.7
- Linux RedHat 7, GNU g++/gcc 4.8.5

Additional tests have been performed with the following IDEs and compile environments:

- Wind River Workbench 3.3, VxWorks 6.9
- Wind River Workbench 3.2, VxWorks 653 2.3

- Green Hills Software MULTI 6.1.4, Integrity 11

59 Limitations

The following limitations are known to exist in Rhapsody TestConductor 2.8.0:

Limitations for assertion based testing mode:

- Assertion based testing mode is not supported for Ada.
- Assertion based testing mode not supported for Java.
- MicroC: TestCases can not be executed in TestArchitectures with ports.
- MicroC: Segmented memory is not supported for Statechart TestCases.
- Cpp/SXF: TestArchitecture for file needs additional include path.
- MicroC: Replacements for associations with multiplicity>1 for initialization compile-time.
- Computation of code coverage is not supported for AUTOSAR.
- Using statechart TestCases is not supported for AUTOSAR.
- Using TC from Rhapsodycl.exe is not supported for Linux.
- Navigation from model coverage report to model elements in Rhapsody is not supported for Internet Explorer 6. Supported are Internet Explorer 7 or higher and Firefox 3 and higher.

Limitations for animation based testing mode:

General limitations

- Flowchart test cases are not supported for Ada
- Flowchart test case are not supported in Java
- Navigation from model coverage report to model elements in Rhapsody is not supported for Internet Explorer 6. Supported are Internet Explorer 7 or higher and Firefox 3 and higher.

Sequence Diagram Features

Some of the standard SD features are not yet considered for test execution.
These SD features are ignored during testing with TestConductor, but test
cases are still executed.

The following SD features are ignored:

- Create Arrow
- Destroy Arrow
- Timeout
- Canceled Timeouts

- Time Interval (only supported to specify delays for the test driver, i.e on environment instance lines or on TestComponent instance lines)
- Constraints
- Reply Messages
- Execution Occurrences
- Interaction Operators
- Lost Messages
- Found Messages
- Destruction Events

If these features are used in SDs referenced in a test, then TestConductor generates a warning and continues with test execution.

Test Execution and test management

Driver SD instances with partial order:
Using partial order for the interpretation of SD instances to drive an execution can lead into stuck situations, where TestConductor waits forever to monitor the message. Such a problem does not exist for SDs used as monitors and for linearly ordered drivers.

Drawing of SDs with the Show-as-SD button:
When users specify SDs they can use parameters as instance names and bind these parameters to concrete object names when configuring tests. After test execution TestConductor generates SDs graphically showing the event traces, but the created SDs still show parameter names as instance names.

Short-cuts in SD conditions:
Rhapsody SD conditions support short-cuts to specify conditions for a particular instance, because the full object name in such a condition can be derived from the context (the instance name). Currently, TestConductor does not support these short-cut specifications.

*Activation condition*s:
It is necessary to specify both sender and receiver of events and method calls. Anonymous senders and receivers are not supported. Activation Conditions are case sensitive.

Predecessor ordering of SD instances:
SD instances with multiple iteration can not be predecessors of other SD instances.

Modification of Rhapsody SDs:

If you change the list of parameters of an SD involved in a test description, you have to delete the SD instances referring the changed SD and describe it again to get the actual list of parameters.

SD constraints are ignored, but no warning is generated for the user.

Enumeration values for message arguments are not supported, e.g. for type color={gr,ye,re} and E(a:color) one can not specify E(a=ye), but one has to write E(a=1).

TestConductor starts test execution when the executed model has reached its first idle state. If the model never enters an idle state, then tests are not executed.

Some memory leaks still exists. The memory space allocated during test compilation phases is not released after test execution. When using TestConductor a while on a project, it can be necessary to exit and re-start Rhapsody to release the memory.

Test compilation for tests with more than 2000 events can lead to a crash. Users are notified about such a situation by a generated warning. If the tool crashes, please contact support to get a patch for this problem or use the following workaround. To implement this workaround you need to have administration rights!
Do the following:

       0. start the cmd.exe program

       1. go into your Microsoft Visual Studio installation directory

       2. there, go into your VC98/bin directory

       3. execute the program vcvars32.bat

       4. go into your Rhapsody 8.3.0 installation directory

       5. create a backup copy of rhapsody.exe

       6. execute "editbin /STACK:4000000 rhapsody.exe"

       7. Done. Execute your tests!

Messages with string parameters can be driven and monitored, e.g. evE(char array[4] para). If GEN(evE("abcd")) is called, it will be displayed in the animation as evE(para = 4;a;b;c;d). If SDs contain messages like evE(para = "abcd") or evE(para =), then TestConductor can not monitor these messages. This can be done only if para's type is set to String.

Activation Conditions and parameter mappings are syntactically checked, but no static semantics check is executed. This may lead to test executions that show no progress.

Class names as values of parameters are only supported if the full object name syntax is used. E.g. "evE(par = building)" will not work while "evE(par = building[0]" is correctly processed.

Avoid to insert additional leading or trailing spaces on parameter values, because TestConductor can not distinguish between spaces belonging to a string value and spaces used for other purposes. E.g. do not specify "evE(par1 = 1 , par2 = 2). The space after digit one ('1 ') prevents the tests to pass.

Don't care specifications are not yet applicable to Black-Box tests. Work around is to use * in the sequence diagram specification.

Copy, paste, and tab do not work in the Edit TestCase SDInstances dialog.

One can select a SD instance in the Edit TestCase SDInstances dialog and at the same time a SD in the Rhapsody browser. Both items are high-lighted. Pressing the delete key deletes the Rhapsody SD even if Edit TestCase SDInstances dialog is in the foreground.

60 Training

IBM offers training on Rhapsody, UML, Rhapsody TestConductor, and related topics. This training is offered either at IBM own facilities or at the customer site.