iRPGUnit for RDi 8.0+

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Overview

iRPGUnit is an open source plug-in for IBM Rational Developer for i. It enables you to develop and execute repeatable unit tests for RPG programs and service programs.

The iRPGUnit plug-in uses a fork of the RPGUnit library, which was started by Lacton back in September 2006. The enhanced library adds an interface that enables RPGUnit to pass test results to the IBM Rational Developer for i. The development of the library as well as the plug-in was started by Mihael Schmidt at RPG Next Gen and is continued by the current developers.

iRPGUnit uses test suites to group test cases. A test case is a method that starts with 'test' and that is hosted and exported by a RPG module. A test suite is a service program that consists of one or more modules that exports test cases. Typically there is a one to one relation between the test suite service program and the module that contains the test cases.

iRPGUnit features are driven from our ideas and needs, but everybody is encouraged to contribute suggestions and manpower to improve the power of iRPGUnit.

Change Log 3.0.0.b002 (09.06.2019)

> **Notice:** Version 3.0.0.r is no longer compatible with V6R1. The save file has been created for 7.1.

> **Notice:** The source files of iRPGUnit have been renamed to more meaningful names to ease development. Source member TESTCASE has been moved from RPGUNIT1 to QINCLUDE. Today iRPGUnit is shipped with a proxy member in RPGUNIT1 to ensure backward compatibility at compile time. Please notice that proxy member TESTCASE and source file RPGUNIT1 will be dropped after 31.12.2019.c

> **Info:** The v3.0.0 plug-in can be used with an old 2.5.* library, but of course the new 'XML stream file' parameter is ignored.

- Merged ILEUnit (Mihael Schmidt) with iRPGUnit.
- Added option to create a XML stream file for capturing the result of a unit test, which can be read by the Jenkins build server.
- Added option to upload the iRPGUnit product library to a named ASP device.
- Added runtime error message to spooled file output.
- Changed A_INSTALL from CLLE to Rexx.
- Changed MK* from CLLE to Rexx.
- Renamed source files to more intuitive names.
- Bug fixes.

Change Log 2.5.0.r (06.04.2019)

> **Notice:** Version 2.5.0.r will be the last version with an iRPGUnit library compiled for V6R1. Upcoming versions will be compiled for 7.1 when there is a need for changing the library.

- Added preference options for capturing job log messages.
- Fixed problem that warning messages "Unit test ended with errors. Check preference option 'Show result view' and …" was shown to often.

Change Log 2.4.3.r (20.02.2019)

- Changed object owner of RPGUNIT library to QPGMR.
- Removed all objects that are not required for running unit tests.

Change Log 2.4.2.r (02.11.2018)

- Fixed compile issue when installing the utility into a different library (RUNRMTSVR, ticket: #1).

Change Log 2.4.1.r (24.11.2018)

- Added parameter ACTGRP to command RUCRTTST.
- Added special value '*BLANK' to parameter 'TEXT' of command RUCRTTST.
- Fixed problem that a job description was required although option "Library list" was not set to "*JOBD".

Change Log 2.4.0.r (23.11.2018)

- Added feature 'iRPGUnit CMOne Integration', which integrates iRPGUnit into the CMOne change management software.
- Added preference option 'Show result view' that specifies whether the result view is automatically display at the end of a unit test.

Change Log 2.3.0.r (21.09.2018)

- Added dialog for uploading the RPGUNIT library from the iRPGUnit preference page. (Button next to "Product library".)

Change Log 2.2.3.r (27.06.2018)

- Fixed CMDRUNLOGT to match the changed report layout.
- Fixed RUACPTST to match the changed report layout.
- Fixed rslvProc() to return procedure pointer for procedure names with trailing spaces.
- Fixed RUPLUGINT1.testAllOK_4() test case.
- Fixed upload_savf.bat.
- Added dummy procedure 'ET_testProc_3   ' to self-test EXTTSTT.
- Changed name of preference page to "iRPGUnit".
- Changed name of help manual to "iRPGUnit".

Change Log 2.2.2.r (08.02.2018)

This version is the first public version of the iRPGUnit plug-in.

- Improved error reporting when validating a service program or procedure.
- Changed A_INSTALL to pass the TGTRLS parameter to all called MK* programs.

Change Log 2.2.1.r (14.06.2017)

- Changed RPGUnit view to display the number of assertions.
- Fixed problem, that a test procedure had to start with 'test' in lower case. Now the case is ignored.
- Now errors in setup/teadown procedures properly show up in RDi.
- Added number of executed assertions to RPGUnit view.

Change Log 2.1.0.r (06.12.2016)

- Changed RUCRTTST to validate the combination *EVENTF/*TSTPGM for RPGLE and SQLRPGLE member types.
- Updated copyright notice of LLIST_SORT.
- Updated STRPREPRC header of source member TEMPLATE.
- Added example source member TEMPLSQL.
- Added number of assertions to RPGUnit view.

Change Log 2.0.0.r (29.11.2016)

- Changed length of message text from 256 to 1024 bytes.
- Added unit test RUPLUGINT5.
- Added procedure getAssertFailEvtLong() to retrieve the long message text.
- Added new type definition AssertFailEvtLong_t for procedure getAssertFailEvtLong().
- Fixed hard coded reference to library RPGUNIT in unit test RUCRTTSTT.
- Fixed missing 'Export' keyword of procedure 'tearDown' of unit test 'CRTTSTT'.
- Renamed RUN to CMDRUNSRV.
- Renamed RUCRTTST to CRTTST.
- Renamed RUPGMRMT to PGMRMT.
- Renamed RURUNRMT to RMTRUNSRV.
- Renamed RUSRCMBR to SRCMBR.
- Renamed RUTAGTST to TAGTST.
- Renamed MKRUNRMT to MKRMTRUN.
- Renamed RUCRTTSTT to CRTTSTT.

The following errors are produced by units tests of version 1.10 and lower:

ASSERTT.testAssertWithFailure
   Expected 'assert', but was 'DOASSERT'.
   Reason: Refactoring of module ASSERT. Introduced new procedure doAssert().

ASSERTT.testAssertWithSuccess
   Expected '', but was '

Reason: The new "assertFailEvt" (assertFailEvtLong_t) had to be mapped to the old "assertFailEvt" (assertFailEvt_t) structure, which properly sets the length bytes of "assertFailEvt_v1.msg" to x'0000'. These bytes had been set to x'4040' before. Procedure ASSERT.clrAssertFailEvt() now uses 'clear' instead of '*BLANKS' to initialize the assert fail event structure.

ASSERTT.testBidIntegerEquality
  Expected '', but was '
  Reason: see ASSERTT.testAssertWithSuccess

ASSERTT.testGoodByeIsNotHello
  Expected 'assert', but was 'DOASSERT'.
  Reason: see ASSERTT.testAssertWithFailure

ASSERTT.testHelloEqualsHello
  Expected '', but was '
  Reason: see ASSERTT.testAssertWithSuccess

ASSERTT.testTwoAndTwoEqualsFour
  Expected '', but was '
  Reason: see ASSERTT.testAssertWithSuccess

ASSERTT.testTwoAndTwoIsNotEqualToFive
  Expected 'assert', but was 'doAssert'.
  Reason: see ASSERTT.testAssertWithFailure

RUNT.test_runTestProc_errorInSetup
  Expected 'E', but was 'F'.
  Reason: see ASSERTT.testAssertWithSuccess

RUNT.test_runTestProc_errorInTearDown
  Expected 'E', but was 'F'.
  Reason: see ASSERTT.testAssertWithSuccess

RUNT.test_runTestProc_errorInTest
  Expected 'E', but was 'F'.
  Reason: see ASSERTT.testAssertWithSuccess

RUNT.test_runTestProc_failureInTest
  Expected 'TEST_FAIL', but was 'fail'.
  Reason: Refactoring of module ASSERT. Introduced new procedure doFail().

RUNT.test_runTestProc_tearDownAfterErrorInSetup
  Expected 'E', but was 'F'.
  Reason: see ASSERTT.testAssertWithSuccess

RUACPTST.TESTBIGINTEGER
   Expected 'assert', but was 'DOASSE'.
   Reason: see ASSERTT.testAssertWithFailure

RUACPTST.TESTCHOOSETEST
   Expected 'TEST2 (TESTPGM05', but was 'fail (RUTESTCASE'.
   Reason: Refactoring of module ASSERT. Introduced new procedure
   doFail().

RUACPTST.TESTFAILURES
   Expected 'assert', but was 'DOASSE'.
   Reason: see ASSERTT.testAssertWithFailure

RUACPTST.TESTSTACKTRACE
   Expected 'assert', but was 'DOASSE'.
   Reason: see ASSERTT.testAssertWithFailure

Change Log 1.10.0.r (26.01.2016)

- Restructured the RPGUnit utility for better maintenance.
- Fixed self-test compile errors.

Change Log 1.9.1.r (06.02.2015)

- Enhanced the help text and described the new option that controls
  how the test suite service programs are validated.
- Added warning message, when the user defined attribute could not
  be retrieved.

Change Log 1.9.0.r (05.02.2015)

- Added preference option to select the type of validity checking of
  unit test service programs.

Change Log 1.8.0.r (25.01.2015)

- Changed the plug-in to select unit test procedures from the RSE
  tree.

Change Log 1.7.5.r (16.12.2014)

- Added message box that is displayed, when the statement identifier
  cannot be mapped to the source line number.

Change Log 1.7.4.r (09.12.2014)

- Fixed problem that the LPEX editor did not always position to source statement in error when opening a failed test case.

Change Log 1.7.3.r (26.08.2014)

- Fixed getCallStk() to respect the size of the call stack entry array.
- Fixed runTestProc() to properly set the number of executed assertions per test case.
  (See also: RURUNRMT.fillUserSpace())
- Changed getCallStk() to flag incomplete call stacks with '*INCOMPLETE' on the last call stack entry.
- Thoroughly renamed field 'stmt' to 'specNB'.
- Removed spaces for 'Initialize Printer' and 'Carriage Return' from RUWSCST.
- Changed RUPLUGINT1 to produce a deeper call stack.
  (See also: recursion of procInError())
- Plug-in: Now passing special value *ALL instead of a null parameter to RUPGMRMT to execute all test cases.

Change Log 1.7.2.r (19.02.2014)

- Changed RURUNRMT to restore the library list after the test suite has been run. (System i)

Change Log 1.7.1.r (19.02.2014)

- Fixed RNX0100 in procedure hasSameBeginning() of module EXTTST. (System i)

Change Log 1.7.0.r (07.01.2014)

- Added option to do a RCLRSC at the end of the test suite.

Change Log 1.6.0.r (27.11.2013)

- Added option to open a source member from the RPGUnit view.
- Fixed missing German internationalizations.

Change Log 1.5.3.r (22.11.2013)

- Fixed missing German tooltips of buttons of RPGUnit view.

Change Log 1.5.2.r (20.11.2013)

- Added German translation.

Change Log 1.5.1.r (19.11.2013)

- Added option to use a separate connection for running the unit tests. This way service entry points can be used for debugging unit tests.
  (See: Preferences -> RPGUnit -> Enforce new connection)

Change Log 1.5.0.r (17.11.2013)

- Added Spooled File Viewer to display the RPGUnit test report.
- Changed RUCALLTST and plug-in to accept up to 250 procedure names.

> Note: Please notice that you need to set your preferences again, because I had to change some keys.

Change Log 1.4.2.r (07.11.2013)

- Removed invalid setting of "Bundle-RequiredExecutionEnvironment" of RPGUnit for WDSC 7.0.
- Changed compiler of RPGUnit for WDSC 7.0 to original IBM J9 compiler.

Change Log 1.4.1.r (06.11.2013)

- Added buttons "Collapse All" and "Expand All".
- Added menue item "Remove Selected RPGUnit Test Suite".
- Updated preferences page and added option to specify the product library. The product library is used to find program RURUNRMT, which executes the unit tests.

Change Log 1.4.0.r (31.10.2013)

- Fixed: Now "Runs:" displays the correct number of executed test cases.
- Changed RPGUnit view to get closer to JUnit.
- Added: Special thank to Michael Calabro who enhanced RUCRTTST to compile SQLRPGLE source members.
- Added procedure: MsgInfo_t = getMonitoredMessage(*ON|*OFF)

Usage:

```
monitor;
  a = 10;
  b = 0;     // Attempt made to divide by zero for
  c = a / b; // fixed point operation. (MCH1211)
  fail( 'Division by zero did not raise an error.' );
on-error;
```

```
    msgInfo = getMonitoredMsg(*ON); // remove message
  endmon;                           // from job log

    aEqual( 'MCH1211': msgInfo.Id );
```

Change Log 1.3.0.r (15.08.2013)

- Fixed errors in 'upload_src.bat'.
- Fixed selftest unit test cases. The unit test cases had to be fixed because of internal changes that were required for the plug-in:

Changed: 'assertFailEvt_t'.
Changed: Prototypes of setLogContext() and logCompMsg().
Changed: 'ExcpMsgInfo' references 'Msg_t', now.
Changed: Now, handleSuccess() is called regardless of the value of 'detail'. Affects: 'logIdx'.
Changed: Formatting of call stack entry.
Bugfix: Close spooled file after error (RUACPTST).
Changed: Prototypes of getCrtRpgModCmd() and getCrtSrvPgmCmd().
Changed: 'TestResult_t'.

Affected unit tests:

ASSERTT   RUACPTST
CMDRUNLOGT   RUCRTTSTT
CMDRUNT   RUNT
PGMMSGT

New selftest unit tests:

LIBLT   STRINGT

New demonstration unit tests:

RUPLUGINT1   RUPLUGINT3
RUPLUGINT2   RUPLUGINT4

Change Log 1.2.2.r (12.08.2013)

- Replaced 'MKRPGUNIT' with 'A_INSTALL' in 'readme_first.txt'.
- Removed unused code from plug-in.

Change Log 1.2.1.r (28.06.2013)

- Now the plug-in correctly passes parameter 'procedure' as a VARYING field to program RUPGMRMT.
- Now the plug-in correctly enables/disables actions 'Rerun All Unit Tests' and 'Rerun Selected Unit Tests' when the view is opened.

- Now the plug-in checks for job description 'RPGUNIT' when parameter 'LIBL' is set to '*JOBD'.
- Ported plug-in back to WDSC 7.0.
- Refactored plug-in as suggested in 'templates' by the original author and replaced 'ExcpMsgInfo_t' with 'Msg_t'.

Change Log 1.2.0.r (24.06.2013)

- Added call stack entries to the RPGUnit view, when the result of a test suite is displayed.

Change Log 1.1.2.r (21.06.2013)

- Compiled plug-in for RDP 8.0.

Change Log 1.1.1.r (21.06.2013)

- Added parameters LIBL and JOBD to the preferences page.
- Removed unused program code.
- Added parameter 'fieldName' to aEqual(), iEqual() und nEqual().
- Added parameters LIBL and JOBD to RUPGMRMT and RURUNRMT.
- Changed RURUNRMT to save and restore the library list.
- Added utility procedures waitSeconds(), displayStatusMessage(),restoreStatusMessage() and clearStatusMessage().

Change Log 1.1.0.r (20.06.2013)

- Added screen shot to update site.

Change Log 1.0.6.r (08.06.2013)

- Now the character cases are correctly ignored when comparing the specified 'test procedure' name.
- Added parameters LIBL and JOBD to command RUCALLTST.

Change Log 1.0.5.r (07.05.2013)

- Added parameter MODULE to command RUCRTTST.

Change Log 1.0.4.r (06.05.2013)

- First release of the 'RPGUnit Test for IBM Rational Developer for Power Systems 8.0' plug-in.

iRPGUnit
Unit Tests for i

IRPGUnit On The Internet

Homepage	https://irpgunit.sourceforge.io/
SourceForge	https://sourceforge.net/projects/irpgunit/
Help	https://irpgunit.sourceforge.io/help/
RDi 8.0+ Update Site	https://irpgunit.sourceforge.io/eclipse/rdi8.0/
Eclipse Marketplace	https://marketplace.eclipse.org/content/irpgunit
Help Beta	Not yet available
RDi 8.0 Beta Update Site	Not yet available