

LDRA Ltd

C/C++ LDRA tool suite

RELEASE NOTES

For Platform specific configuration, please refer to the Installation Guide.

New Features for 10.5.0

LDRA Testbed Section

NEW

LDRA_EXCLUDE_MACRO annotation added to exclude violations based on the use of a specific

macro name.

NEW

SIR report shows host computer Operating System for non-Windows platforms.

NEW

SIR email shows build Operating System.

NEW

<lang>report.dat can have +DERIVED entries for user created programming standards models,

linking the model name to the model it was derived from.

Sysppvar generation phase - information about invalid preprocessor commands or start in

directories is retained and displayed in the event of further analysis issues.

Reduced possibility of preprocessor errors in sysppvar generation phase resulting from

use of ISO646 operators such as 'not','and'. If necessary, the INI flag

IGNORE_ISO646_OP_MACROS can be set to override the default behaviour.

#pragma once statements can be replaced by comments in the instrumented file, by setting

INI entry REMOVE_PRAGMA_ONCE_FROM_INST_FILE=TRUE

Metpen.dat integer upper limit values can now be 0, causing a metric value of 1 to fail.

The upper limit can be set to -1 to indicate no pass/fail criteria required (LM ref. 11170)

Blanks lines metric is not shown in reporting on source files with no executable code.

Improved consistency when adding and removing files by command line on Linux. (LM ref. 11244)

Corrected storage of long macro values where line has been split by shorten.

Improved handling of very long class names in class metrics processing.

Resolved intermittent issue with creation of STREAM3.DAT during static analysis. (LM ref. 10493)

Coverage updated correctly when LDRA_JUSTIFY_END comment is last line of file. (LM ref. 11392)

TBrun Section

NEW

Coverage Justification (TBjustify) functionality added to context menu of Files and Procedures

in File View.

NEW

Coverage Justification (TBjustify) functionality added to Source Viewer by invoking the context

menu for single or multiple lines within the viewer.

NEW

Change Source Viewer Font added to View menu.

Enhanced call resolution to calls matching a prototype from a dialect.

Profiled sequences display their profile name as well as the sequence name in the explorer views.

If the name of the driver program exceeds the limits of the operating system and the naming

convention uses \$(Modnum) and \$(Stem), then the \$(Stem) portion is removed.

The declaration of local variables can be viewed by double clicking on the entry in the file explorer.

When creating a test case for a function using a trailing type, the trailing type is used as the

type for the return variable.

Stubs enhanced for functions that have trailing types.

Extreme Test User Data file (.tud) now contains comment sections for the start of each procedure.

Enhanced invocation of Test Case Coverage Flow Diagram.

Enhanced coupling to reference macros rather than literals where appropriate.

Enhanced Coverage Justification for multiple lines within the Source Viewer. (LM ref. 11412)

Enhanced test case generation for inline functions.

Enhanced test case Copy/Paste functionality and ordering.

Enhanced selections for Source Viewer during Regression and Extreme Test generation process.

Enhanced coupling from inline functions when the functions are included by multiple translation units.

Adding prefix to enumeration variable declarations for typedefs of enumerations.

Reducing the display of arrays with large numbers of entries in the I/O view.

Double clicking on global constants to open in source code editor. (LM ref. 11350)

Enhanced coupling referring to local variables when there is a member variable of the same name.

Running TBextreme for a class from the Class View generates test cases for the selected class only.

TBvision Section

NEW

Source Viewer Font configuration is now stored in the INI file.

NEW

Source Viewer Font configuration will now apply across TBvision, TBrn and TBgraphics. (LM ref. 11414)

NEW

Double Click to View Code updated for Violations that contain multiple line number references.

View Code dialog will now display "See also" next to additional context lines. (LM ref. 11349)

Enhanced updating of results after running analysis multiple times. (LM ref. 11150)

Enhanced display of Refresh Results button for Class and Namespace reviews.

Enhanced selection of lines in Source Viewer.

Enhanced reporting of templated class metrics.

TBgraphics Section

NEW

Exclusions functionality added to Source Viewer context menu for Programming Standards Call

Diagram and Flow Diagram.

NEW

Programming Standards documentation options for a violation added to Source Viewer context menu

for Programming Standards Call Diagram and Flow Diagram.

NEW

Change Source Viewer Font added to View menu.

Programming Standards Model is restored after Refresh of Programming Standards Call Diagram.

Clicking a File package now updates the Source Viewer with the File.

Test Case Coverage is now displayed in the Source Viewer when viewing the Test Case Coverage

Flow Diagram. (LM ref. 11354)

Enhanced invocation of coverage Flow Diagrams. (LM ref. 11318)

Improved handling of multiple TBgraphics instances.

Enhanced logging of TBjustify process when running the process within TBgraphics.

Enhanced invocation of Flow Diagrams into new tabs within System Call Diagrams. (LM ref. 11417)

TBreports Section

NEW

Taint Analysis. Added literals used in calls to Taint Sources and Taint Sinks.

NEW

Taint Analysis. Calls following a Taint Source are now highlighted bold in the Taint Propagations

table to distinguish them from the calls they make in the call stack.

NEW

Taint Analysis. Any Taint Sinks that are displayed in the Taint Propagations table are

highlighted in bold and red. They also have a tooltip indicating they are a Taint Sink.

Taint Analysis. Additional Taint Source, Taint Sinks and Input/Output Sources added to TBreportscfg.dat.

Security Review. CWE and CERT category sections now contain links to LDRA Standards documentation.

Error code (and log messages) returned via the command line if a specified .ldra file could not

be located. (LM ref. 11363)

TBextremePLUS. Generation mode for each TBextremePLUS test case added to Regression Report.

TBextremePLUS. Configuration heading added to Regression Report for sequences containing test cases

generated by TBextremePLUS to highlight the configuration used.

Security Reports - Updated comments for format of '22' records in tbreportscfg.dat.

The <model_name> specified contains the CWE model that the category applies to as categories are

different between CWE versions.

Enhanced Report selection for EN50716 SIL 0, 1 and 2. (LM ref. 11393)

Enhanced handling of Object Code segments outside of detected procedures. (LM ref. 10126, 11398)

Enhanced consistency of Regression Report generation from outside of TBrn interface.

TBmanager Section

NEW

IBM ERM DOORS Next Integration. Compatibility with legacy API's for project and module retrieval.

NEW

A(M)C 20-193 Objectives available with the Worst-Case Execution Time (WCET) package.

NEW

DO-278A Standards Package available containing Objectives to import into TBmanager.

NEW

DO-332 Standards Package available containing Objectives to import into TBmanager.

TBmanager Integration Packages. Support added for handling of characters outside the UTF-8 range

when reading in data from an external integration.

SystemWeaver Integration. Enhancements to login process and import/export. (LM ref. 11314)

Kovair Integration. Enhanced connection and connection test. (LM ref. 11315)

Static Analysis Module

CHG

Enhanced Static Analysis. (LM ref. 11239)

CHG

Enhanced Static Analysis. (LM ref. 11384)

CHG

Enhanced detection of 1 S. This may result in fewer reported instances. (LM ref. 11305)

CHG

Enhanced detection of 270 S. (LM ref. 6798, 7128, 7281, 7861, 8233, 10969, 11235)

Enhanced detection of 94 D and 413 S. This may result in fewer reported instances. (LM ref. 5829)

Enhanced detection of 69 D. This may result in fewer reported instances. (LM ref. 9266)

Enhanced detection of 452 S. This may result in fewer reported instances. (LM ref. 10968)

Enhanced detection of 57 S. This may result in fewer reported instances. (LM ref. 11326)

Enhanced Static Analysis. (LM ref. 11325)

Enhanced Static Analysis. (LM ref. 11309)

Enhanced Static Analysis. (LM ref. 11329)

Enhanced detection of 105 D. This may result in fewer reported instances. (LM ref. 7934)

Enhanced detection of 489 S, 618 S and 655 S. This may result in fewer reported instances. (LM ref. 11361)

Enhanced Static Analysis. (LM ref. 11376)

Enhanced detection of 47 S, 598 S and 692 S. This may result in fewer reported instances. (LM ref. 11317)

Enhanced detection of 642 S. This may result in fewer reported instances. (LM ref. 9837, 11381)

Enhanced detection of 49 S. This may result in fewer reported instances. (LM ref. 7575)

Enhanced detection of 44 S. This may result in fewer reported instances. (LM ref. 11212)

Data Flow Module

CHG

Enhanced detection of 128 D. This may result in fewer reported instances. (LM ref. 11349)

CHG

Enhanced detection of 45 D. This may result in fewer reported instances. (LM ref. 9043, 11341)

CHG

Enhanced detection of 43 D. This may result in fewer reported instances. (LM ref. 8105, 11238)

Dynamic Coverage Module

CHG

Enhanced Dynamic Analysis. (LM ref. 11375)

CHG

Enhanced Dynamic Analysis. (LM ref. 11340)

C/C++ Penalties and Standards Mappings

CHG

Penalty 98 S Actual and formal parameters inconsistent (MR).

C Mapping removed: CERT-C:2008 EXP37-C

C Mapping removed: CERT-C:2014 EXP37-C

C Mapping removed: CERT-C:2016 EXP37-C

CHG

270 S Description updated in html documentation.

**C
H
G**

Penalty 458 S Implicit conversion: actual to formal param (MR).

C Mapping added: CERT-C:2008 EXP37-C

C Mapping added: CERT-C:2014 EXP37-C

C Mapping added: CERT-C:2016 EXP37-C

1-14 M Description and examples updated in html documentation.

Utilities Section

NEW

TBbuildimport. The build log is now checked for unopened compiler/linker data files and if found, updated

with their contents. This can be disabled by setting TBBUILDIMPORT_CHECK_BUILD_LOG=FALSE in the ini file.

NEW

TBbuildimport. Settings option "Generate Listing of BTF/PTF Files". Writes the list of generated BTF/PTF files to

tbbuildimport_btfs.txt and tbbuildimport_ptfs.txt in the build start-in directory.

NEW

Enabled Dynamic Analysis in the Visual Studio Code Plugin.

Added option to select a pre-existing TCF, BTF or PTF to use in the Visual Studio Code Plugin.

LDRAlauncher. Extensions added to support Guidance and Questions functionality.

LDRAlauncher. Extensions added to support display of Web Content.

LDRAlauncher. Added TBexec to the list of applications. Requires a TBexec license and the installation

of the WCET Package.

LDRAlauncher. Added more documentation links when selecting applications on the Add/Open page.

Guidance additional installation package available.

Questions additional installation package available.

Worst-Case Execution Time (WCET) package updated to include Requirements (.tbmspec) file.

Worst-Case Execution Time (WCET) package updated to change execution defaults to use \$(Sourcedir)

for enhanced sample program compatibility.

Worst-Case Execution Time (WCET) package updated to use Structure Bitmap instrumentation in the

event of white box testing due to the number of repetitions performed.

LDRAvault. Updating of application return codes in the event of retries due to network failures.

LDRAvault. Uploading of TBrn Sequence Documentation as part of the upload process.

LDRAvault. Uploading of TBextremePLUS information for Sequences and Test Cases.

LDRAvault. Support added for relative paths to .ldra files via the command line. (LM ref. 11362)

LDRAvault. Error code returned via the command line if a specified .ldra file could not

be located. (LM ref. 11363)

LDRAvault. Addition of further procedure information such as return type and parameter details.

Tunnel 5.1 Runtime Example updated to illustrate Taint Analysis and Robustness Testing.

Use Existing TCF option added to the Plugins Options page in the Eclipse Plugin.

If this is checked, the Plugin will not overwrite the TCF created in the Eclipse Workspace.

This is also controllable via the ECLIPSE_USE_EXISTING_TCF INI flag.

CHG

GenerateXML. Updated makefile on Linux. (LM ref. 11344)

CHG

GenerateXML. Updated main.cpp on Linux (LM ref. 11394)

CHG

Enhanced locale detection in TBprocessmonitor. (LM ref. 11390)

C H G

Cpp17 Cashregister example project updated to include TCFs to demonstrate Robustness Testing.

Integer_to_ascii workshop updated to include .tud file for Requirements Based Testing.

Cpp17 Cashregister example project Unit Tests updated. (LM ref. 11430)

Enhanced support for Unix based OSes in the Visual Studio CODE plugin. (LM ref. 11420)

Enhanced communication between Visual Studio CODE plugin components. (LM ref. 11406)

Licensing Section

NEW

LDRA External Coverage Add-In Package available for Productivity Packages.

NEW

LDRA Execution Timing Add-In Package available for Productivity Packages.

CHG

Enhanced license error handling for OCV installations.

Documentation Section

NEW

LDRA Exclude documentation updated to show where to place LDRA_EXCLUDE comments for violations

that contain multiple line number references. (LM ref. 11349)

CHG

Enhanced TBextremePLUS documentation. (LM ref. 11368, 11369, 11370)