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TECHNOLOGY

Offenburg (Germany) / Tampere (Finland), 21 August 2014

Please be informed that a new
Testwell CTC++ version 7.3 has been released.

This version contains some enhancements and bug fixes. Mentioning the
following:

* Now also the following kind of assignment statements are instrumented
  for multicondition coverage (enabling MC/DC coverage reporting):

    variable = ...boolean_expression_with_&&_and/or_||_operators;

  Now, e.g. with a later 'if(variable){...', the program logic coverage
  measuring can not be circumvented here.

* Enhancements in the HTML report, e.g. in its graphical presentation.

* Enhancements and bug fixes in the ctcxmlmerge utility.

See below the CTC++ v7.3 VERSION.TXT excerpt for more detailed info.

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This file describes the changes in successive versions of CTC++.
The latest version is described first.

Version 7.3 (15 August 2014)

This revision 7.3 of CTC++ has the following version numbers in its
components:

    Preprocessor   7.3 (was: 7.2; seen by -h option)
    Run-time libraries   7.3 (was: 7.2; seen by 'ident'
                                  command applied on the library
                                  in some environments)
    Postprocessor   7.3 (was: 7.2; seen by -h option
                                  and in the listings)
    Header file ctc.h   7.3 (was: 7.2; seen in the file)
    Configuration file ctc.ini 7.3 (was: 7.2 seen in the file)
    CTC++ to HTML Converter 4.0 (was: 3.5; seen by -h option)
    CTC++ to Excel Converter 3.0 (unchanged; seen by -h option)
    CTC++ XML Merger utility 2.1 (was: 2.0; seen by -h option)
    ctc2dat receiver utility 3.2 (unchanged; seen by -h option)

and the following version numbers in its Windows platform specific
components:

    Visual Studio IDE Integration
                            4.2 (unchanged; seen by clicking the
                                 Tw-icon in the dialog program
                                 and selecting "About...")

    CTC++ Wrapper for Windows 3.2 (was: 3.1; seen by -h option)

and the following version numbers in its Unix platform (Linux, Solaris,
HPUX) specific components:

    CTC++ Wrapper for Unix   1.4 (unchanged; seen by -h option)

This CTC++ v7.3 version contains enhancements and bug fixes:

In the CTC++ preprocessor (ctc):

- Enhancement: Extending the multicondition instrumentation (-i m) to
  apply also to assignment statements in function bodies, if there are
  operators && or || in the expression. For example:
    v = a > 5 && b <= 6 || c;

- Bug fix: Under certain (very special) conditions, with mixed use of
  C++ template instantiation and ternary-?:, CTC++ lost a space between
  ':' and '::', yielding ':::', which did not compile. For example:
    T< ... (... ? ... : ::X::Y ...) ... >

- Change: The ctc.ini setting SOURCE_IDENTIFICATION=... is now honored
  in all generations of file names. Previously, some file names could
  remain in the form as the C-preprocessor had determined them. The net
  result is that now the ctcxmlmerge utility works better.

- Enhancement: Made the ctc.ini handling more robust; specifically
  against a user error that option(s) in OPT_COMP_OUT were not properly
  introduced in PARAMS or PARAMS_SEPARATE. (A crash could occur.)

- New: Introduced '#pragma CTC TESTCASE testcasename' as an alternate
  way for the explicit ctc_set_testcase("testcasename") call.

- New: Now properly handling (not instrumenting as a function) the
  Visual C++ extensions '__if[_not]_exists(identifier) {code_lines}'.

In the CTC++ run-time library:

- Functionality unchanged, but assumes a v7.3 compliant ctc.ini file.

In the CTC++ postprocessor (ctcpost):

- New: In the XML report, in the <file_summary>...</file_summary>
  element, added the number of lines and number of measurement points
  per that source file.

In the CTC++ Wrapper for Windows (ctcwrap):

- Change: The verbose outputs of "ctcwrap -hard ..." are now prefixed
  with "ctcwrap: ..." for more clearly seeing who wrote what.

- Change: Dropped-off the old Symbian-specific build specialties.

In CTC++ to HTML converter (ctc2html):

- New: Introduced ctc2html.ini file. It can be used to set your
  favorite values of the advanced --enable-XXX=value options. They
  affect some graphical properties of the generated HTML.

- Enhancement: For the statement coverage TER% at summary HTML pages
  there is now similar graphical histogram as there was already for the
  structural coverage TER%. You can set the threshold for the statement
  coverage TER percent in the ctc2html.ini file or by a command-line
  option, e.g. --enable-stmtthreshold=85.

- New: In the detailed Execution Profile page, at the end brace of each
  function, added the function TER percentages in a tooltip.

- Change: Simplified, made more peaceful, the color usage in the HTML
  pages.

- Change: Removed the deprecated option '-p prefix'. Instead, use the
  option '-o outputdir'.

In the CTC++ XML Merger utility:

- Enhancement: The options -f these_files and -nf not_these_files apply
  now also on the #included header files. Previously, they applied only
  on the primary code files.

- Bug fix: Actually thanks to the CTC++ Preprocessor change where the
  SOURCE_IDENTIFICATION=... is honored more pedantically, the bug
  vanished where a file could appear with different directory names
  in the merged coverage report under certain circumstances.

- Bug fix: When in multicondition instrumentation there were many
  variants of "if()" (or similar, i.e. like "if (a==1 && b==5)" and
  "if (a==1 && b==6)"), now the similar looking evaluation alternatives
  ("T && T" etc) are summed up, displayed and TER-calculated
  individually per each different decision.

In the ctc2dat receiver utility:

- Functionality unchanged, but as the new CTC++ run-time library is
  linked to the utility, assumes a v7.3 compliant ctc.ini file.

General:

- CTC++ User's Guide upgraded to v7.3 level (ctcug.pdf).

Version 7.2 (13 March 2014)

For this version, please have a look to
http://www.verifysoft.com/ctcpp72.pdf