

Intel® Cross-platform Test Controller Release Notes

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Intel® Cross-platform Test Controller

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Overview

Cross-platform Test Controller (CTC) is an implementation of the Intel Modular Test Architecture framework for Intel Architecture (IA & IPF) platforms and supports both Windows and Linux as a test OS. Intel Modular Test Architecture is a test and validation framework designed for testing Intel x86/x64/IA64 compatible systems. This framework consists of test executives that configure and control test execution flows, enforce the framework requirements, and provide APIs that specify entry points for both executives and test binaries. The test modules use a standard test services library to receive information from the test executive and report status and test results back in a consistent manner. The test modules provide modularity, configurability and reuse. They must link with the test library and comply with the framework requirements. The test executives use a configuration file to describe the tests available and either a Graphical User Interface (GUI) or command line arguments to specify testing options.

What's New?

- ✓ Added new bmc_oob lib to enable out of band BMC operations to support the White River Glassier MFG test strategy.
- ✓ Added new cmdtool oob utility to allow users to send IPMI command through BMC out of band.
- ✓ Re-architect the remote CTC test parameters handling algorithm to support unlimited parameters and improve efficiency with reduced handling time.
- ✓ Updated the iommap driver to support the direct installation on Ubuntu 16 (kernel 4.8), Fedora 25 (kernel 4.12) & customized Yocto image.
- ✓ Removed the IMB driver from the CTC installation process as the driver is being replaced by the open ipmi driver.
- ✓ Updated CTC GUI with Ubuntu 16 to support the White River Glassier MFG test strategy.
- ✓ Updated remote CTC service with customized Yocto image to support the Halo Branch MFG test strategy.

Product Contents

- ✓ Executable files for Cross-platform Test Control (CTC) - Graphical User Interface (GUI)
 - Binaries only
- ✓ Executable files for Test Control (T) - Command Line test control
 - Binaries only
- ✓ User Guides

'How to' Instructions

1. Download the CTC installer to the directory you wish to save it in.
2. Execute the installer.
3. Select the installation language. The default is English.
4. Read the License Agreement, and choose to accept or not accept the license agreement.
Note that the installation cannot continue without accepting the agreement.

5. Specify the directory you wish to install CTC to.
6. If you have a CTC license you wish to copy into the same installation directory, select it. If you wish to skip this, you can select "Skip CTC License Install", and copy the license key to the installation directory manually later.
7. If you have not installed vcredist, you can choose to install a downloaded copy of the file during the installation. If you have already installed vcredist, or wish to install it after the installation, select "Skip CTC vcredist Install".

Note: CTC will not execute without vcredist installed.

8. Initiate the installation.
9. Review the readme file.
10. Verify DEP (Data Execution Prevention) is set to "Turn on DEP for essential Windows programs and services only". If you are concerned with the security of this setting, you can choose "Turn on DEP for all programs and services except those selected", and add CTC and any CTC modules, drivers and libraries as needed. However, we recommend the first option and this second option is untested.

Note: CTC will not execute properly without DEP set to ON.

11. To verify DEP, check setting in Control Panel → System → Advanced → Performance Setting → Data Execution Prevention tab.

Known Issues and Limitations

- Undo feature after cut & paste operation in Flow Tree may not execute the tests.
- CTC GUI may report wt_progress API calls failing in endurance loops.
- Message Header Color does not have prompt message as an option.
- Startup Wizard resizing is not recommended.
- Log Options window does not have a Cancel button.
- New Parameter Array - Numbers above 19 are not clearly visible if more than 19 rows are added.
- New Parameter Array - Columns are not numbered or named.
- New Parameter Array - 'Rename Header' is not yet implemented fully.
- New Parameter Array - <Enter> key may not accept a header name.
- Elapsed time clock display may not get updated if system time is changed during test execution. Daylight savings time modification may impact display of blue diamond heartbeat.
- GUI's font selection is not saved.
- Altering parameter value in left-pane makes nodes in left-pane expand.
- Normal Images, Medium Images and Giant Images do not have any effect.
- Tab order may not cycle on each dialog box.
- Parent window is defocused after autoconfiguration and tab-order sequence. Likewise, parent window is defocused after running 'Re-Configuration'.
- Without using a mouse, a .snx file is not selectable from "Import" dialog box.
- CTC GUI does not preserve Startup Wizard's default states.
- When 'insert row above' is run in array editor, a row is added two rows below selected row.
- No message is displayed if a search string is not found.
- Invoking <Ctl>-U shows test pass on caption bar even if tests are not executed. Status window shows pass.
- <Alt>-F4 will not close the CTC window.
- "Clear" called after invoking <Ctl>-U doesn't clear top status bar, although the status window is not affected.
- CTC interactive help always defaults to "Basic Concept" page.
- CTC does not warn for overwriting existing ptx file.
- <Ctl>+R shortcut key is re-used for "Add Param Group" and "Reconfigure".

- Run and Stop icons may turn grey if a module is looping through "retries" and <F6> is pressed.
- If help file is not specified in the snx file, CTC's error message will not mention missing filename.

Change Log

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VERSION:    2.20.1.0087 Windows 32-bit & X64-bit / Linux 32-bit & X64-bit
DATE:      DEC 01, 2017
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```

- Added new bmc_oob lib to enable out of band BMC operations to support the White River Glassier MFG test strategy.
- Added new cmdtool oob utility to allow users to send IPMI command through BMC out of band.
- Re-architect the remote CTC test parameters handling algorithm to support unlimited parameters and improve efficiency with reduced handling time.
- Updated the iommap driver to support the direct installation on Ubuntu 16 (kernel 4.8), Fedora 25 (kernel 4.12) & customized Yocto image.
- Removed the IMB driver from the CTC installation process as the driver is being replaced by the open ipmi driver.
- Updated CTC GUI with Ubuntu 16 to support the White River Glassier MFG test strategy.
- Updated remote CTC service with customized Yocto image to support the Halo Branch MFG test strategy.

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VERSION:    2.19.1.0086 Windows 32-bit & X64-bit / Linux 32-bit & X64-bit
DATE:      DEC 01, 2016
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```

- Added remote probing feature to automatically discover, clone and configure the remote clients over the remote IP addresses range defined by the users.
- Fixed the libts bug seen on tsPutCfgAryStr() API under standalone mode where incorrect string was written to the array file if the input string contains spacing.
- Check for the system log directory before creating the remote ctc log file, create the directory if it is not exist to solve the logging error seen on ARM system.
- Added support for Windows Server 2016 and Windows 10.
- Added support for RHEL 7.3 em64t and SLES 12 SP2 em64t.

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VERSION:    2.18.1.0085 Windows 32-bit & X64-bit / Linux 32-bit & X64-bit
DATE:      SEP 30, 2015
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```

- Fixed tracker EPSP100249614 where remote CTC service crashed with segmentation fault when socket timeout occurred.
- Fixed a CTC bug where the remote test monitor thread on CTC host getting timeout and close the local socket causing the bad file descriptor issue as it is not getting the "SPUP" packet from the remote tests.
- Enhanced the remote CTC execution under stressful environment that required longer response time by adding the network re-polling feature to re-ping the remote service when socket timeout occurred.
- Enhanced the remote CTC execution under poor network condition by adding the network re-connection feature to re-connect the socket if the socket error occurred during remote testing.
- Added the log files archive feature requested by VTD team to automatically generate a folder with timestamp to keep all the log files every time CTC is running.
- Remote CTC service, security lib & libts had been updated to enable the cross-compiling for ARM architecture to support Yerba Canyon.

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VERSION: 2.17.1.0084 Windows 32-bit & X64-bit / Linux 32-bit & X64-bit
DATE: MAY 25, 2015

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- Updated tsinitialize() & wt_initialized() to upload the lib version to env variable to allow test modules to get the version in runtime.
- Revert the security lib compiler back to gcc to resolve the compatibility issues seen on some old modules.
- Extracted & ported over part of the libsmbios code to c and included into security lib.

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VERSION: 2.17.1.0083 Windows 32-bit & X64-bit / Linux 32-bit & X64-bit
DATE: MAY 15, 2015

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- Fixed tracker EPD100028349 the license key with BIOS string will hang & reboot the Silver Pass system with 80W Sky Lake CPU in RHEL7 under UEFI mode.
- Added a new optional "Rmt_Test_Delaysms" parameter to support delay within the remote CTC test cycle to improve the overnight looping test stability.
- Libts & testlib had been updated with L9/L10 system configuration check support with two new APIs, tsDisplayCfgParam & wt_displaycfgstring being added.
- Updated the security lib with g++ compiler to include the libsmbios lib into the build.

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VERSION: 2.16.1.0082 Windows 32-bit & X64-bit / Linux 32-bit & X64-bit
DATE: MARCH 06, 2015

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- Fixed tracker EPD100246349 CTC crashed when force stopping happened under remote parallel mode.
- Fixed tracker EPD100246758 lxCTC crashed when user click at "About" button under the help menu without the license key.
- Restructure the parameters sending / receiving algorithm in remote CTC engine to fix the parameters packet lost issues that induced ~5% NDF.
- Added the remote CTC error & exit handling algorithm when network connection lost occurred during multi-nodes remote testing.
- Added the "Remote" menu pane to allow user to turn on/off the remote CTC files logging option.

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VERSION: 2.15.1.0081 Windows 32-bit / Linux 32-bit & X64-bit
DATE: JAN 09, 2015

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- Official release candidate.
- Supported customized packet data size for remote CTC.
- Updated iommap & imbdrv drivers to support systemd in RHEL7 & SLES12.

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VERSION: 2.15.1.0080 Linux X64-bit
DATE: DEC 27, 2014

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- First official release of CTC X64-bit to support Kernel 3.10 for RHEL7 & SLES12.
- Updated iommap & imb drivers to support Kernel 3.10 for RHEL7 & SLES12.
- Updated with latest Foxlib with Version 1.6.50 to fix the GUI hang issues.
- Fixed Tracker EPD100245198 CTC Not Responding on RHEL 7.
- Fixed Tracker EPD100243082 IOMMAP Driver Installation Failed on RHEL 7.0 during CTC 2.13 installation.

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VERSION: 2.15.1.0080 Windows/Linux 32-bit
DATE: DEC 19, 2014

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- Fixed the bug where CTC running tests will get aborted if dirty nodes/devices are encountered in the flow tree.

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VERSION: 2.15.1.0079 Windows/Linux 32-bit
DATE: NOV 27, 2014

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- Fixed Tracker EPSD100242897 Segmentation Fault when running ilvss 3.6.3 on RHEL virtual machine.
- Fixed Tracker EPSD100244266 LIBTS standalone does not work.
- Fixed Tracker EPSD100244423 Libts standalone Windows extra characters outputted.
- Fixed Tracker EPSD100244267 LIBTS standalone Windows file redirection problem.
- Fixed Tracker EPSD100237149 CTC Developer Guide - tsRemoveGroup input parameter pPath is not defined.
- Fixed Tracker EPSD100240046 CTC Dev Guide - tsCloneDevice and tsCopyGroup overview incorrect.
- Enhanced tsPutCfgParam, tsPutCfgArray, tsGetCfgParam, tsGetCfgArray & tsGetCfgArrayDim to support standalone mode.
- Enhanced tsPutCfgParam, tsPutCfgArray, tsGetCfgParam, tsGetCfgArray & tsGetCfgArrayDim to support path input in standalone mode.
- Enhanced tsPutCfgParam & tsPutCfgArray to support nested devices.
- Enhanced tsCopyGroup to allow user to move back the test handle to root path after copied.
- Updated libxml2.dll for x64 bit to fix the CTC x64-bit crashed issue.

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VERSION: 2.14.1.0078 Windows/Linux 32-bit
DATE: JUL 23, 2014

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- Fixed the Libiommap installation issues.
- Added Snippet support flow, disable the subtests in the flow tree instead of remove it from the flow tree when reconfigure failed.
- Added relevant & absolute path support for tsPutCfgParam & tsPutCfgParamArray APIs.
- Fixed Tracker EPSD100240390: tsPutCfgParam & tsPutCfgParamArray library call doesn't work on Linux in certain cases.
- Fixed Tracker EPSD100238930: CTC should allow "Supports Autoconfigure" checkbox to be changed in the PKX file, disable the auto configures in pkg file, more flexible.
- Fixed Tracker EPSD100238933: CTC - cannot OPEN a snippet then SAVE-AS.
- Fixed Tracker EPSD100236018: SW License Key Failure - The software license key is not functioning correctly due to CTC's requirement to look at SMBIOS tables at addresses not available to ring-3 applications.
- Fixed Tracker EPSD100242378: ilvss 3.6.2 will reports license key invalid (system time/2014/04/04) under RHEL6.5_x64 (UEFI mode).
- Fixed Tracker EPSD100237150: CTC Developer Guide does not fully define RECALC behavior.
- Fixed Tracker EPSD100238359: CTCUsersGuide.pdf is not up-to-date on support OS information.

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VERSION: 2.13.1.0077 Windows/Linux 32-bit
DATE: FEB 13, 2014

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- Updated tracker EPSD100237180: tsDisableSubtest & tsDisableSubtestEx APIs won't affect cloned nodes.

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VERSION: 2.13.1.0076 Windows/Linux 32-bit
DATE: JAN 28, 2014

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Remote CTC features supported:

- EPSD100235881: Define the remote connection failure recovery mechanism. Ability to detect remote connection failure, retry, reconnection. Define message queue and how to ensure that messages do not get dropped during this reconnection process.- use the existing test time out – 300 seconds default.
- EPSD100235883: Port all ts library calls to remote service. All standard message logging supported between service and host (it will look to the user like it does with local tests). All ts-calls must work remotely as they do on the host.
- EPSD100235888: If test is non-responsive past the specified timeout, but the network connection is not lost, host will send a -Kill message to the service. Kill message sent from host may not be received by remote service. Tests on client may continue to run until completion if Kill message is not received because network connection is down.
- EPSD100235894: Add parameter to specify number of times CTC will try to connect to client service at designated IP address/port before failing.
- EPSD100235901: Move multiple parameters into one TCP/IP packet (currently one parameter per packet) to save run time.

Remote Auto configure supported:

- EPSD100235910: First generation: client location defined in host through SNX file. It should be in PKG file.
- EPSD100235911: If client found, host invokes auto-configuration on client.
- EPSD100235914: SNX & PKG files are stored on the host, and binary files are stored on the client.
- EPSD100235931: While walking tree during auto-configuration, nodes may be mixed between local and remote. Even if device isn't set to auto-configurable, the remote/local setting should be checked at every point.

Trackers & Bugs Fixed:

- Fixed EPSD100234028: Linux IMTA 32 CTC 2.10.01.0073 - iommap driver not able to be installed during CTC installation in RHEL 7.0 Alpha 2 x64 OS.
- Fixed EPSD100236018: SW License Key failure with BIOS id option in RH 6.1.
- Fixed EPSD100236926: CTC - Cannot run remote CTC in parallel mode by hitting at "RUN" button if the template flow is being set to parallel.
- Fixed EPSD100235528: Remote CTC feature failed in parallel mode, communication breaks. Different length subtests close socket at different times.
- Fixed EPSD100237180: CTC - add PATH to tsDisableSubtest API.
- Fixed EPSD100235661: CTC - tsDisableSubtest should disable all instances of the specified test number.
- Fixed EPSD100211324: CTC vers in Linux T: Copyright message is incorrect.
- Fixed EPSD100237949: T creates malformed mta configuration file.
- Fixed EPSD100238682: T - RECONFIG option removes all but first test module from CFG tree.
- Fixed EPSD100237149: CTC Developer Guide - tsRemoveGroup input parameter pPath is not defined.

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VERSION: 2.12.1.0075 Windows/Linux 32-bit
DATE: AUG 15, 2013

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- Initial release to support remote CTC.
- Vcredist 2010 added to installation package.

Remote CTC features supported:

- Phase 1 features supported (refer to 2.11 PRD).
- Full 1: many supported.
- EPSD100235885: Remote agent must support Linux.
- EPSD100235886: IMTA Client service will allow logging files in parallel, locally and remotely.
- EPSD100235887: Debug log files: If there are differences between TDE & VTD requirements, consider two separate flags for this
- EPSD100235892: Test handler parameter can be set for remote test to avoid conflict with numbers.
- EPSD100235895: In case of network failure, consider adding that this message is CTC-originated and not module-originated so user doesn't expect to find an error message when they review the local files.
- EPSD100235896: All CTC test messages must include IP address and port, as well as regular message including flow and test name.
- EPSD100235936: Remote support for Windows Remote Service.
- EPSD100235937: Validate Linux Host works with Windows Remote Service.
- EPSD100235938: Remote support for Windows CTC Host.
- EPSD100235939: Validate Windows Host works with Linux Remote Service.

Trackers & Bugs Fixed:

- Fixed EPSD100235529: Remote CTC shows incorrect client static IP.
- Fixed EPSD100235528: Remote CTC feature failed in parallel mode.
- Fixed EPSD100235787: tsAPI tsGetCfgParam max character boundaries of 99 characters.
- Fixed Incomplete data logging in the receive log file; send and receive data counts are not matched.
- Fixed license key with BIOS string option crashed in R2 systems.

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VERSION:    2.11.1.0074 Windows/Linux 32-bit
DATE:      MAY 1, 2013
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- Fixed EPSD100226264: multiple header messages appearing in redirect files.
- Visual Studio 2010 conversion.

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VERSION:    2.10.1.0073 Windows/Linux 32-bit
DATE:      OCT 3, 2012
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```

- Fixed T and window CTC klocwork.
- Fixed linux xchm viewer not able to invoke ctc.chm help file when press F1 key.

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VERSION:    2.09.1.0072 Windows/Linux 32-bit
DATE:      Jun 20, 2012
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```

- Updated the CTC user guide and help file for both CTC and T.
- EPSD100226264 CTC - remove redundant header messages, fixed for CTC after 0071 build failed at validation.
- EPSD100227832 T - Allow user to change license expiration notification settings, fixed after 0071 build failed at validation.

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VERSION:    2.09.1.0071 Windows/Linux 32-bit
DATE:      Jun 11, 2012
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- Fixed lommap linux driver load error in Linux Suse 11 SP2.

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VERSION: 2.09.1.0070 Windows/Linux 32-bit
DATE: Jun 1, 2012

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- EPSD100226264 CTC & T - remove redundant header messages
- EPSD100226131 CTC - Please add INFO class messages to the /LF startup feature
- EPSD100227830 CTC - hangs on PKX file with XML error
- EPSD100227832 T - Allow user to change license expiration notification settings
- EPSD100219076 T - Allow auto configuration without starting test running.
- EPSD100228979 Linux CTC - imb and iommap drivers cannot be installed in SLES 11 SP2 x64.
- EPSD100228981 Linux SDK - mydll (x64 bit) cannot be compiled in in SLES 11 SP2 x64.
- EPSD100228982 Linux SDK - mysdk and lxtsAPI x64 modules crash in SLES 10 SP4 x64.
- EPSD100229042 CTC - Fix Libts Linux klocwork

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VERSION: 2.08.1.0069 Windows/Linux 32-bit
DATE: APR 16, 2012

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- EPSD100227933 CTC - User Guide PDF document cannot be opened (index link broken)
- EPSD100227934 T - update t_help.txt with newly added features (/reconfig and return code).
- EPSD100227935 T - Return code does not work in Linux T, all test cases (pass and fail) also return as "0".
- EPSD100227936 CTC - /reconfig consistency for T and CTC.
- EPSD100228169 CTC - No error message is prompted on the occasion of /pc and /flow is used in command line with an invalid config or flow name.
- EPSD100228231 CTC - Windows - Reconfigure break after abort the test package.

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VERSION: 2.08.1.0068 Windows/Linux 32-bit
DATE: MAR 21, 2012

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- EPSD100219078 T - support reconfigure
- EPSD100211414 CTC - Add /reconfig feature to command line
- EPSD100226262 CTC - In x64 native modules, all ts messages (Info, Verbose, Error, etc) all crashing on Linux when passed a printf style message
- EPSD100226263 CTC - x64 native modules: tsGetCfInt32 doesn't work on negative numbers
- EPSD100226907 CTC - return code
- EPSD100220823 Linux CTC_SDK - makefile needs to support x64 bit system
- EPSD100227797 CTC - Update Static Code Analysis.
- EPSD100227798 CTC - Update Static Code Analysis.

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VERSION: 2.07.1.0067 Windows/Linux 32-bit
DATE: Sep 06, 2011

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- EPSD100219087 CTC - Test in flow tree loses connection to cfg after Property Dialog "OK" is pressed.
- EPSD100223274 Windows CTC - crash after save with very large number of nodes

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VERSION: 2.07.1.0066 Windows/Linux 32-bit
DATE: Aug 01, 2011

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- EPSD100222826 Bitrock - Cannot launch installer & iommap on RHEL6.0 x86_64
- EPSD100219086 CTC reverts to original flow after reconfigure

- EPSPD100211369 CTC_32_release_2_04_1_0033_Linux.tar.gz: ./t: line 4: 16804 Segmentation fault ./texec "\$@"

- Update VC Redist version 2.0.50727.5672

- Update create_license help file for EFI

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VERSION: 2.07.1.0064 Windows/Linux 32-bit
DATE: May 23, 2011
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- EPSPD100220380 CTC: tsPrompt message doesn't display a message on the screen

- EPSPD100219096 CTC: Document how modules can link to a topic within a CHM help file

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VERSION: 2.06.1.0063 Windows/Linux 32-bit
DATE: May 16, 2011
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- EPSPD100220381 CTC - strip symbols out of Linux build

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VERSION: 2.06.1.0062 Windows/Linux 32-bit
DATE: April 25, 2011
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- EPSPD100221148 License - CTC application crash with flag -os windows license key

- EPSPD100220823 Linux CTC_SDK - makefile needs to support x64 bit system.

- EPSPD100221074 CTC Windows - prompts an extra 'License Error' dialog box.

- EPSPD100221085 CTC Windows - no chance to save the package file if user choose not to update license key by click Exit button.

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VERSION: 2.06.1.0061 Windows/Linux 32-bit
DATE: April 15, 2011
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- EPSPD100219634 CTC: create_license OS option is case-insensitive for Linux, but will only work if "Linux" in Windows, "LINUX" or "linux" both create a license but fail on the test system.

- 1123 tsEnableSubtest, New API. Valid in both auto-config and reconfig, not in recal

- EPSPD100211524 Testlib Library should ignore leading space when converting numeric parameters. Original release covered libts8 parameter values. This update also covers testlib8 parameter values, and both libts8 and testlib8 parameter names now ignore spaces before or after the parameter name.

- EPSPD100219085 Parallel or Parallel Exact modes showed "Test Aborted by User" Advisory message. Fixed this.

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VERSION: 2.06.1.0059 Windows/Linux 32-bit

DATE: March 21, 2011

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- EPSD100219924 CTC_Linux BitRock - failed to copy the license.key into "bin" folder
 - EPSD100219918 CTC_Windows - "T" hang on Server 2008 R2
 - EPSD100220379 Allow user to view/edit pkg file in CTC without a license
 - EPSD100211524 Testlib Library should ignore leading space when converting numeric parameters.
- =====

VERSION: 2.05.1.0057 Windows/Linux 32-bit

DATE: June 25, 2010

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- Fixed tracker #EPSD100217035 - CTC - cannot launch CTC with combination of /flow and /quit flags
 - Update Linux Security binary to Lib folder (IPF libverify.a was compiled in RH4.4 2.6.9-42.EL
 - Added help menu in src/exec/makefile
 - Fixed seg fault crash when CTC run in a certain configuration.
 - Updated IMB driver to work on SLES 11 (Tracker 1162)
 - Updated to disable SELINUX while running, then set it back to original value
 - Expiration reminder default set to 10 days instead of 3 days.
- =====

VERSION: 2.05.1.0055 Windows/Linux 32-bit

DATE: June 03, 2010

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- Fixed tracker #EPSD100211149 - text fluctuating from "Create Information File" to "Create Informational File", now standardized
 - Fixed tracker #EPSD100211507 - Remove FILE path from log messages
 - Fixed tracker #EPSD100211094 - "/PASSFILE" command line support working
 - Updated memrwl driver to version 5.4
- =====

VERSION: 2.05.1.0054 Windows/Linux 32-bit

DATE: May 26, 2010

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- Fixed tracker #EPSD100210850. Make the warning date start at least 10 days out
 - Fixed multiple window handle issue.
 - Updated memrwl.dll and memrwl64.dll version 5.4 (driver is still version 5.3)
 - Extensive memory cleanup
- =====

VERSION: 2.05.1.0053 Windows 32-bit

DATE: April 27, 2010

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- Fixed parallel test flow not running if one of the subtest is disabled
 - Fixed subtest is disabled advisory message
 - Fixed CTC command line broken

VERSION: 2.05.1.0052 Windows 32-bit

DATE: April 23, 2010

- Fixed occasional CTC crash when running with .key file
- Fixed substantial memory leak
- Fixed hang in parallel test flow

VERSION: 2.05.1.0049 Windows 32-bit

DATE: March 15, 2010

Includes these fixes:

- 899 - Updated Developers Guide with version numbering schema
- 928 - Error message on ABORT
- 944 - Handling CTC.chm in another directory, releasing multiple CTC.chm copies
- 964 - CTC File | Recent shows content it should not
- 983 - Releasing testlibc, testlib8 and tslib8 with CTC
- 1063 - Remove FILE path from log message
- 1129 - Flow Tree Enable/Disable feature breaking Autocfg Disables
- 1130 - Flow Tree Enable/Disable property dialog setting property incorrectly.
- 1157 - Bit Rock installer finished installing CTC without loading iommap driver

Include update:

- Fixed T license reminder for 3 days.
- Updated memrw version 5.3

VERSION: 2.05.1.0048 Windows/Linux 32-bit

DATE: March 1, 2010

Includes these fixes:

- 1131 - GUI failure after receiving an advisory or status message

VERSION: 2.05.1.0045 Windows/Linux 32-bit

DATE: September 25, 2009

Enhancements:

- 600 - CTC Log File Enhancements: Log files automatically created with timestamp in filename, Routine
- 712 - CTC - add pop-up msg warning of upcoming license key expiration. Routine.
- 931 - Consider what's happening if the license expires during the test cycle. Routine.

- 1068 - CTC - Support multiple .key files. Enhancement.

Bug Fixes:

- 383 - Windows CTC: Flow tree window messed up with cut/undo - put back on Flow Tree window but no status information, won't run, Routine
- 499 - License Key: generated license.key error message should say that it's expired, not invalid. Routine.
- 771 - CTC Window vanishes when "Template Flow" window is empty, Expedite
- 786 - CTC command line switch /summary not working, Routine
- 799 - CTC - Unable to rename Test Flow in Flow Tree view. Routine.
- 829 - BitRock Installers - Caption at cancel on Setup screen says 'Question', Enhancement
- 836 - CTC.chm shows obscure 'GUI' button in help file leads to 'The page cannot be displayed' page. Routine
- 869 - BitRock® Installers: Consistency testing - Usage of words 'Folder' and 'directory'. Routine
- 877 - BitRock® Installer - Linux™: At invocation over VNC it gives "(main.tcl:28964): GLib-Object-WARNING ***" Routine
- 882 - mysdk.txt file says "mysdd", and the Purpose text is incorrect. Low.
- 883 - Bit Rock® Linux™ - CTC: Readme file has question mark bullets and Tracker data.
- 984 - CTC: Release all supported test libraries with 32 bit Windows CTC. Routine
- 1064 - Create_License: Not specifying value to '-u' switch gives Application Error or Segmentation Fault. Expedite.
- 1070 - CTC - Add vendor name and expiration to STATUS header message. Enhancement
- 1101 - BitRock Installer: Only allow license keys with .key and .reg to be selected. Routine
- 1103 - iommap: Add support for 2.6.29 Linux kernel for Moblin. Routine.
- 1119 - License key - Failed to invoke CTC with -It DELL flag. Routine.
- 1121 - License key: -arch accepts invalid architecture's parameter. Routine.
- 1126 - CTC: Enable Validate(__DATE__) in test library for Windows

Include update:

- Added support to correctly determine which OS architecture (32/x64) is in use and install MemRW files correctly
- Added option to install both vcredist_x64 and vcredist_x86 for x64 OS
- Fixed warning message pop up for window 2008 for #712
- NOTE: SELinux (security extension Linux) behaviour change in kernel 2.6.
 - : if user encounter "cannot restore segment prot after reloc: Permission denied" issue
 - : follow below step:
 - : /usr/sbin/setenforce 0
 - : or
 - : change "SELINUX=disabled" in /etc/sysconfig/selinux

```
=====
VERSION      : 2.05.1.0044 Windows
DATE         : July 17, 2009
=====
```

Changes:

- Enhancement 712 - CTC and T - add pop-up msg warning of upcoming license key expiration.
- Bug Fix 787 - CTC - Modify usage of -bi <string> option.
- Bug Fix 919 - T- Windows: ts_prompt_string does not time out.
- Enhancement 931 - CTC - Allow new license key to be added the license expires during the test cycle.
- Bug Fix 1068 - CTC - Support multiple .key files.
- Bug Fix 1075 - During reconfig, existing flows were deleted and a new flow created
- Enhancement 1076 - Re-implemented Reconfigure with Add New Cfg option so that it keeps all existing Flow Trees and just adds a new default one based on Reconfig.

=====

VERSION : 2.05.1.0043 beta Window/Linux
DATE : June 18, 2009

=====

Changes:

- Enhancement 712 - CTC - add pop-up msg warning of upcoming license key expiration.
- Enhancement 931 – CTC - Allow new license key to be added the license expires during the test cycle.
- Bug Fix 1075 - CTC - Test Flows were deleted after reconfigure and name changed to "Test Flow"
- Bug Fix 1070 - Updated to correctly support both license.reg and license.key: Add vendor name and expiration to STATUS header message

=====

VERSION : 2.05.1.0042 beta Window/Linux
DATE : May 30, 2009

=====

Changes:

- Bug Fix 982 - 'Open' should prompt for opening a .snx file in SNX mode.
- Bug Fix 1059 - After renaming configuration, subtests in flow won't run
- Bug Fix 1060 - Cannot import .snx file after opening an existing snippet file.
- Enhancement 1062 - change log header to STATUS instead of INFO
- Enhancement 1070 - Add vendor name and expiration to STATUS header message

=====

VERSION : 2.05.1.0041 beta Linux
DATE : May 18, 2009

=====

Changes:

- Bug Fix 1061 - CTC - key from latest create_license version prevents CTC from starting.

=====

VERSION : 2.05.1.0040 beta Linux
DATE : May 15, 2009

=====

Changes:

- Enhancement 600 - CTC Log File Enhancements: Log files automatically created with timestamp in filename – new log file every time CTC starts.
- Enhancement 610 - CTC Log file enhancements - PKG filename, path, version, timestamps logged.

=====

VERSION : 2.05.1.0039 beta Windows
DATE : May 11, 2009

=====

Changes:

- Internal

=====

VERSION : 2.05.1.0038 beta Windows
DATE : April 20, 2009

=====

Changes:

- Enhancement 712 - CTC - add pop-up msg warning of upcoming license key expiration.
- Enhancement 931 - Consider what's happening if the license expires during the test cycle.
- Bug Fix 941 - CTC - CTC slow with license.key on multiple systems.
- Bug Fix 985 - CTC - Resolve timing issue: .key takes twice the time as .reg under Windows
- Bug Fix 986 - CTC - Does timing issue between keys created under genlic and create_license on Windows also apply to Linux?
- Bug Fix 988 - CTC - License Key - Bios ID field is case sensitive.

=====

VERSION : 2.05.1.0000
DATE : Dec 24, 2008

=====

Changes:

- Bug Fix tracker #383 Windows CTC: Flow tree window messed up with cut/undo - put back on Flow Tree window but no status information, won't run.
- Bug Fix tracker #399 CTC Lx: No summary file is saved if CTC is exited after autoconfiguration. Closing – not an issue if they didn't run anything, all fields are 0 anyway.
- Bug Fix tracker #605 CTC-Windows: Pressing F10 will enable user to do another autoconfigure after the initial autoconfigure.
- Bug Fix tracker #606 CTC-Windows: F8 only works the first time its pressed.
- Bug Fix tracker #650 CTC-Windows: Invoking CTC from DOS Box with cmd line parameters such as /passfile does not work (CTC window won't even launch). CTC does not document supporting /passfile
- Bug Fix tracker #651 CTC-Windows: Vanished when invoked with certain command-line parameters.
- Bug Fix tracker #706 CTC-Windows: CTRL+C was unable to abort test when running autoconfiguration for the iwMemory32 module. Moved to Memory module ownership
- Bug Fix tracker #711 Inconsistencies between CTC & T command line switches (Merged with 146 and 147)
- Bug Fix tracker #760 CTC - One-to-many configuration-to-flow tree relationship.
- Bug Fix tracker #771 CTC Window vanishes when "Template Flow" window is empty. CTC crashes if you run a test when the Template Flow is empty (ie running tests in SNX mode).
- Bug Fix tracker #786 CTC command line switch /summary not working CTC always creates a summary flag irregardless of the /summary flag
- Bug Fix tracker #796 CTC parallel looping test aborted. User integration error – trying to run a bunch of tests in parallel to memory – memory test can use up all the memory and other tests will fail.
- Bug Fix tracker #803 CTC - GUI Window vanishes if a node is cut from Configuration Tree.
- Bug Fix tracker #818 CTC – Linux : A modified & saved .SNX file cannot be re-modified and re-saved
- Bug Fix tracker #842 CTC - Cut-n-paste in Cfg. tree makes CTC window vanish.
- Bug Fix tracker #861 CTCx64 - /DLL switch not working when invoked.
- Bug Fix tracker #864 CTC does not support elapse time in OnTestEnded for DLL extension.
- Bug Fix tracker #898 Release notes to be provided in UTF-8 format to install shield creator (Done, took out pop-up completely and using PDF file instead)

- Bug Fix tracker #927 CTC GUI – test package aborted after 300 seconds; should fail User cfg issue
- Bug Fix tracker #938 CTC / wtlb issue: wt_send_msgex function is not working on CTC
- Bug Fix tracker #942 Cloning with device ending with "32" on libts. Closed because decided not to change because iwDiag works that way.
- Bug Fix tracker #945 CTC unable to close GUI when opening/running a pkg/cfg that has Flow tree with no tests in it.
- Bug Fix tracker #955 CTC - "Run This" option not working.
- Bug Fix tracker #969 CTC - wrong command button's text in Recalc dialog box. Fixed in 2.04 release.
- Bug Fix tracker #982 CTC - 'Open' should prompt for opening a .snx file in SNX mode.
- Bug Fix tracker #983 Release all supported test libraries with 32-bit Windows CTC: testlibc, testlib8, libts8

```
=====
VERSION      : 2.04.1.0037
DATE         : Nov 13, 2008
=====
```

Changes:

- Bug Fix tracker #968 CTC - wrong command button's text in Recalc dialog box.

```
=====
VERSION      : 2.04.1.0036
DATE         : Oct 29, 2008
=====
```

Changes:

- Bug Fix tracker #963 CTC - Open & Insert Test dialog boxes no text.

```
=====
VERSION      : 2.04.1.0035
DATE         : Oct 21, 2008
=====
```

Changes:

- Bug Fix tracker #605 CTC - Pressing F10 will enable user to do another autoconfigure after the initial autoconfigure.
- Bug Fix tracker #606 CTC - F8 only works the first time it's pressed.
- Bug Fix tracker #622 CTC Itanium Linux Port.
- Bug Fix tracker #771 CTC - Window vanishes when "Template Flow" window is empty.
- Bug Fix tracker #938 CTC and testlib linking issue.
- Bug Fix tracker #CTC - "Run This" option not working.

```
=====
VERSION      : 2.04.1.0033
DATE         : July 14, 2008
=====
```

Changes:

- Bug Fix tracker #811 CTC corrupts PKX file when you cancel a NEW GROUP dialog.
- Bug Fix tracker #795 CTC and Library version string error.

- Bug Fix tracker #801 CTC autoconfig failure when config tree renamed to single letter.
- Bug Fix tracker #781 CTC - wt_remove_group2 removes group incorrectly.
- Bug Fix tracker #748 CTC - set param error during auto-configure for iwDeviceCheck.
- Bug Fix tracker #746 tsPromptConfirm() does not change status or yes no choice value correctly.
- Bug Fix tracker #743 Progress not updating State correctly - when sending Progress(0) repeatedly - tests timing out intermittantly.
- Bug Fix tracker #744 tsPromptList causes software exception.
- Bug Fix tracker #752 CTC - Main CTC Dialog window disappearing leaving the running tests zombied.
- Bug Fix tracker #753 CTC - Test failed with "test never sent a done message".
- Bug Fix tracker #614 CTC - Ability for a module that internally loops to control the Executives Loop Count indicator.
- Bug Fix tracker #637 CTC - add ability to import SNX files into both SNX file and PKX file.
- Bug Fix tracker #638 CTC - PKG file ability to manually configure the Cfg Tree (Add Device/Tests)
- Bug Fix tracker #646 CTC - Add ability to rename devices and tests in flow and cfg trees.
- Bug Fix tracker #647 CTC - Add ability to cut/copy/paste a Cfg Branch from one Snp/Pkg to another.
- Bug Fix tracker #707 CTC - Add ability to assign parameters at subtest level in addition to module level.
- Bug Fix tracker #709 CTC - fix Parallel Exact to halt test branch immediately on error.
- Bug Fix tracker #241 TS Test Library bug: using tsSetCleanup() will cause tsDone() not being called when user aborts a test.
- Bug Fix tracker #306 T Exec: Pressing <Ctrl+C> at prompt to 'Enter CONFIG name:' appears to hang the executive until the user presses any key.
- Bug Fix tracker #385 Windows CTC: doing a recalculation will do endless multiplication of a module/subtest (NOTE: this was a user error)
- Bug Fix tracker #388 Windows CTC: GUI's Tools | Options status message field shows "Intel(R) Modular Test Executive" thrice.
- Bug Fix tracker #504 Verbose mask uninitialized.
- Bug Fix tracker #505 TS Test Library: State message does not reset timeout timer.
- Bug Fix tracker #578 Create_License.exe - Windows version can't generate a valid Linux(TM) CTC License.key.
- Bug Fix tracker #666 WT Test Library: wt_prompt_List failed to call cleanup after timeout in CTC-Windows.
- Bug Fix tracker #668 WT Test Library: wt_prompt_Confirm failed to call cleanup after timeout in CTC-Windows.
- Bug Fix tracker #669 WT Test Library: wt_prompt_String failed to call cleanup after timeout in CTC-Windows.
- Bug Fix tracker #671 WT Test Library: Pressing the stop button while a wt_prompt call is invoked will not terminate the test, only stopping the CTC clock in Windows CTC.
- Bug Fix tracker #672 WT Test Library: wt_prompt_List does not time out as expected for Windows T.
- Bug Fix tracker #673 WT Test Library: wt_prompt_String does not time out as expected for Windows T.
- Bug Fix tracker #685 CTC-Windows: Invoking a second instance of CTC.exe gives an application error. Change to show user-friendly error message, or allow multiple instances to be invoked.
- Bug Fix tracker #718 Create_License.exe: utility only works on laptops used for module development but not on regular systems with Windows XP sp2 or Windows Server 2003 (sp1 and sp2).
- Bug Fix tracker #720 Windows(R) CTC: exec will continue looping after the license key has expired. However, once the exec is closed, it cannot be re-opened with the expired key.

- Bug Fix tracker #722 CTC Windows: can't be invoked with a valid license.key in Vista.
- Bug Fix tracker #742 CTC and T: DLL flag not working with UHCA.dll