

MCUXpresso IDE

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Version 11.6.0 (July 2022)
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- * Upgraded: Newer SEGGER J-Link software (v7.66e).
- * Upgraded: Newer PEmicro plugin (v5.2.6).
- * Upgraded: Newer xPack Windows Build Tools (v4.3.0-1).
- * Upgraded: Update for Ubuntu 22.04 LTS.
- * Upgraded: Eclipse version to 2021.12 (Eclipse Platform 4.22.0 / CDT 10.5.0).
- * Upgraded: GNU ARM Embedded Toolchain to version 10.3-2021.10.
- * Upgraded: Version v12 of MCUXpresso Config Tools.
- * Added: [NPI] IMXRT1040 support.
- * Feature: [Power Profile] Added Power Profile feature aiming to correlate energy/power measurement with SWO trace.
- * Feature: [Energy Measurement][Power Profile] Add analog data traffic statistics information for energy/power based views.
- * Feature: [Zephyr RTOS] Added GDB thread awareness for LinkServer debug connection and Threads view support.
- * Feature: [SDK Integration] Support to allow sub-manifest under the same SDK.
 - Adapted SDK Creator for creating split manifest.
 - Update "Contribute project to SDK Git repository" feature to work with the new sub-manifests.
- * Improvement: [IDE] Ability to control enablement of map/linker parser. Added three options in Preferences -> MCUXpresso IDE -> Editor Awareness which allow users to enable or disable the map parser, the GNU linker parser and the Linker Script template parser. IDE needs restart in order for the changes to take effect. This only works when starting the IDE in clean mode (for example, adding -clean in the .ini file).
- * Improvement: [SDK Integration] Display multiple suggested remote GitHub NXP repos.
- * Improvement: [SDK Integration] Create a unique name for a SDK Git Repository.
- * Improvement: [SDK Integration] Make all project components optional. In this way the user may select any component that goes

in the generated project so "minimal project" can be achieved.

- * Improvement: [SDK Integration] Highlight unsatisfied dependency on core specific component.
- * Improvement: [Energy Measurement] Mark the non-plotable area (suspended or trigger-off) as not available - no plots or lines.
- * Improvement: [Peripherals+] Highlight the field(s) that changed when the register has changed.
- * Improvement: [IDE] strip and symdefs command missing in Preferences -> MCUXpresso IDE -> Utilities.
- * Fixed: [IDE] "Save As" Perspective makes Restart toolbar group to disappear.
- * Fixed: [IDE] IDE freezes for too long if opening the Global Variables View.
- * Fixed: [IDE] Blue debug icon only enabled if QuickStart View is present.
- * Fixed: [IDE] Trying to use QuickStart View debug buttons can easily trigger flash erase when QuickStart View window is smaller.
- * Fixed: [Debugger][LinkServer] Restart of suspended FreeRTOS application fails on LPC55S16.
- * Fixed: [Debugger][LinkServer] Suspend timeout in "all-stop" mode while stepping over assembly loop.
- * Fixed: [Debugger][LinkServer][macOS] Support for simultaneous debug sessions is broken.
- * Fixed: [Debugger] "GDB crash - internal-error: virtual memory exhausted" debugger reported error. This was indirectly fixed by:
 - Fix FreeRTOS SP offset (LinkServer GDB thread awareness reported an incorrect value for the SP register with FreeRTOS applications);
 - Document the LR stack unwind issue on FreeRTOS.
- * Fixed: [Debugger][LinkServer][RT1170] When RT1170 is configured to use CM4 as primary (booting) core, flashing application fails if the default VECTREST is used as flash driver reset handling.
- * Fixed: [Debugger][LinkServer] Sometimes the semihost console does not completely print or is empty.
- * Fixed: [Peripherals+][RT1170] CCM registers incorrect base addresses for GPR and OSCPLLx registers.
- * Fixed: [SWO][Debug console] [LPC812] Wrong ROM base table address.

- * Fixed: [SWO][ITM Console] If "clear console" button is used, a lot of items are then lost.
- * Fixed: [SWO][ITM Console] Output is slow and duplicated on LinkServer.
- * Fixed: [Image Info] Callgraph fails to display information for linked folders.
- * Fixed: [Dark theme] Some table entries in "Heap and Stack Usage" view display light theme colors.
- * Fixed: [FreeRTOS] Failed to populate TaskList View in FreeRTOS when backward compatibility flag is set.
- * Fixed: [Flash Programmer] Flash driver "ChecksumSectors" error Ef(38) using LPC845-BRK board.
- * Fixed: [SDK Integration] Import project wizard option "Use floating point version of printf" does not properly set preprocessor macros.
- * Fixed: [SDK Integration] Incorrect FPU settings in threadx_lib project.
- * Fixed: [SDK Integration][GitHub] A project created from an exported C library project does not build.
- * Fixed: [SDK Integration][SDK 2.11] In certain situations, adding components to project might result in missing header file compile errors.
- * Fixed: [Global Variables] Wrong values (sometimes negative ones) appear on the plot's Oy axis.
- * Fixed: [Energy Measurement] Sometimes, cancelling the measurement export does not work.
- * Fixed: [Energy Measurement] Negative values on t0 label for Ox axis might be encountered after board configuration.
- * Fixed: [Energy Measurement] Channel switch (power -> current) will show wrong scale values.

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Version 11.5.1 (April 2022)
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- * Upgraded: CDT from CDT 10.3.0 to CDT 10.3.3. This is intended to address:
https://bugs.eclipse.org/bugs/show_bug.cgi?id=575903 issue.
- * Upgraded: Newer SEGGER J-Link software (v7.62c).

- * Upgraded: Newer PEmicro plugin (v5.2.0).
- * Added: [NPI] RT1060X (RT1060 phantom) support.
- * Feature: [Flash Programmer][RT1160/RT117x] Add flash driver for QSPI on FlexSPI2 Port A.
- * Fixed: [Debugger] Notifications about new MCU-Link firmware releases may not be shown in the Probes Discovery dialog.
- * Fixed: [Debugger] Debug operations are slow while Peripherals+ window is open on targets with lots of registers (like RT1160 or RT117x).
- * Fixed: [Project Manager][RT1160/RT117x] Flood of the -D__MULTICORE_MASTER in the .cproject.
- * Fixed: [Project Manager][RT1160/RT117x] M7 C++ project failed to load the M4 project (in the case of multicore configuration) on a particular application. Now exdata sections are placed before heap and stack sections in generated linker files (when using Managed Linker Script configuration) compared with previous version where exdata sections were placed before data sections.
- * Fixed: [Peripherals+][LPC546xx] EMC register location/offset is incorrect in Peripherals+ window.
- * Fixed: [Energy Measurement] Instability if Energy Measurement view is used together with SWO Profile.

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Version 11.5.0 (January 2022)
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- * Upgraded: Eclipse version to 2021.06 (Eclipse Platform 4.20.0 / CDT 10.3.0).
- * Upgraded: MCUXpresso IDE integrated with OpenJDK11 (HotSpot engine build 11.0.11+9).
- * Upgraded: GNU ARM Embedded Toolchain to version 10.3-2021.07.
- * Upgraded: Version v11 of MCUXpresso Config Tools.
- * Upgraded: Windows 11 and macOS 12.0.1 (Monterey) support.
- * Upgraded: Newer SEGGER J-Link software (v7.60b, 64-bit version).
- * Upgraded: Newer PEmicro plugin (v5.1.6).
- * Synchronization with SDK v2.11.x and manifest schema version 3.9.
- * Synchronization with FreeRTOS 10.4.3.

- * Added: LPC55S36 support.
- * Added: PN7640 support.
- * Added: IMXRT685-AUD-EVK support.
- * Feature: [FreeRTOS] Added Task Notifications view. Separate FreeRTOS view was added to display task notification list for each task, including status and value properties.
- * Feature: [SDK Integration] Integration with GitHub SDK repository:
 - Support for installing a remote SDK GitHub repository.
 - Support for installing an already cloned repository.
 - Ability to contribute a project back to SDK GitHub repository.
- * Feature: [SVD] User can specify a custom SVD file location inside of a project. This can be achieved from Project Properties -> Run/Debug Settings -> MCU Settings -> SVD Selection. The file will be used by Peripherals+ view when debugging that project.
- * Feature: [Energy Measurement] Extensions and improvements:
 - Data gathering enabled / disabled by trigger signal MCU-Link Pro and on-board probes with energy measurement circuitry can use a GPIO signal as a trigger/enable (input) for the energy measurement.
Note. This feature requires firmware version MCU-LINK CMSIS-DAP v2.249 (or greater).
 - Increase the maximum analog data collection time limit from 5 minutes previously to unlimited time, depending on the available space on disk.
Note. Exported energy measurement session from an older MCUXpresso version is not compatible within MCUXpresso v11.5.0 version.
 - Improve the performance of retrieving measurement data from the probe. This minimizes the chance of experiencing lost data packets which, in earlier versions, sometimes manifested as gaps (of few ms in length) in the data plot when sampling at high data rates. Even in the unlikely circumstances of still missing some measurement data packets, the IDE can now supplement the missing data by reconstructing it from a lower resolution version of the same data (averaged at probe level) to correct the energy/power calculation. When this situation arises the corresponding range on the plot is drawn as a compact area (due to lacking variation between samples normally present in the high resolution measurement data).
- * Feature: [SWO] Target configuration is now optional within SWO functionality. Depending on debug probe type, the user may choose not to automatically configure the target inside the "SWO Trace Config" view, so the user can then make his own registers configuration within the application.
- * Feature: [SWO] A new console named "SWO and Trace Console" displays all configuration and register settings performed while

configuring SWO.

- * Feature: [Debugger][J-Link] Auto-debug secondary project(s) for multicore is now added for J-Link debug session too (now all debug connection types are offering this support). Option is set by default on: Window -> Preferences -> MCUXpresso IDE -> Debug Options -> J-Link Options -> Enable Auto-debug secondary project(s) for multicore projects.
- * Feature: [Flash Programmer][RT1170] Add flash driver for the (non-default) Octal flash device on the EVK board.
- * Feature: [IDE] The IDE does not internally use WMI command line utility anymore (deprecated as of Windows 10, version 21H1). PowerShell will be used instead.
- * Fixed: [Project Manager] "Remove path from __FILE__" option not working for projects with linked sources (not copied into workspace).
- * Fixed: [Project Manager] Project-relative connect and reset scripts do not work.
- * Fixed: [Project Manager][LPC55S69] Changing RAM size from project properties results in build errors.
- * Fixed: [Project Manager] "Restart" or "Terminate and Relaunch" are not enabled for custom made PEmicro launches.
- * Fixed: [Energy Measurement] Unable to export data after terminating current analysis and cleaning up debug processes.
- * Fixed: [Energy Measurement] Cancelling an import data operation is not working.
- * Fixed: [Energy Measurement] Can't start a new measurement session if there is a measurement connection left active in another IDE instance.
- * Fixed: [Debugger] Terminate button throws exception after the debug session using LinkServer.
- * Fixed: [Debugger][CM33] `cmbreakset` doesn't work from redlinkserv console.
- * Fixed: [Debugger][RT1160/RT1170] CPU doesn't halt on faults.
- * Fixed: [Debugger][RT1160/RT1170] CM4 example does not reach main.
- * Fixed: [Debugger][J-Link] Restart not working when debugging an application executing from SRAM (debugger not initializing program counter and stack pointer).
- * Fixed: [Debugger][LinkServer] Debug connection uses excessive host

CPU power.

- * Fixed: [Debugger][LinkServer] SWD/JTAG pins are now disabled after terminating a LinkServer debug session.
- * Fixed: [Debugger][LinkServer] Launch configurations referring absolute paths of ELF files are considered invalid.
- * Fixed: [SDK Integration] Unable to select UART with single click when using "Import SDK example(s)" wizard.
- * Fixed: [SDK Integration] [RT1170] Project building fails after adding SSARC driver.
- * Fixed: [SDK Integration] Synchronize Semihost/UART option check with library type (semihost/nohost) selection.
Note. This behavior applies to both GUI and CLI. Even if the example description specifies a default IO library type, this will be overwritten by the IDE if the chosen IO model is incompatible with it.
- * Fixed: [SDK Integration] Build fails after removing SDK components that have additional libraries.
- * Fixed: [Azure RTOS ThreadX] Threads view shows odd values for stack usage on all threads.
- * Fixed: [SWO] Profiling counters view displays some wrong values.
- * Fixed: [SWO] Profiling counters are created and accessed even when SWO not configured or available, causing memory access errors.
- * Fixed: [SWO] Statistics (from SWO Trace Config view) indicates wrong information.
- * Fixed: [SWO] IDE freezes for a period when detecting/setting SWO clock.
- * Fixed: [SWO] ITM console does not work.
- * Fixed: [Quick start panel] Copy-paste and multiple selection does not work for project properties.
- * Fixed: [Peripherals+] Most of PWM registers are not shown.
- * Fixed: [Dark Theme] Some of the view names inside SWO Views are not readable.
- * Fixed: [IDE] Sometimes, ConcurrentModificationException exception message is seen when starting MCUXpressoIDE 11.4.1.
- * Improvement: [IDE] Auto-resize columns from Probes Discovered dialog to accommodate length of displayed strings.

- * Improvement: [IDE] Memory configuration editor dialog is now resizable.
- * Fixed: [ImageInfo] Various features indicate files/information from the wrong project in the case of multiple projects having similar names within the workspace.
- * Fixed: [ImageInfo] CallGraph indicates wrong (negative) stack usage value for the "Exception Handlers" virtual node. This field should be empty for virtual (non-existent) nodes.
- * Fixed: [Global Variables] Sometimes the decimal number format displays empty values in the view.
- * Fixed: [Installer][macOS] Re-installing the same MCUXIDE build version results in errors when launching the product.
- * Fixed: [Installer] Uninstall sometimes fails when processes associated with current installation are open.

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Version 11.4.1 (September 2021)
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- * Upgraded: Newer SEGGER J-Link software (v7.54b, 32-bit version on Windows, 64-bit version on Linux/macOS).
- * Upgraded: Newer PEmicro plugin (v5.1.0).
- * Added: MCU-Link Pro probe support.
- * Improvement: [SWO/Energy Measurement] Improved data collection rate. This aims to decrease the rate of lost packets (SWO) and gaps (Energy Measurement) at higher speed rates.
- * Improvement: [LPC55xx] Add support in LinkServer flash drivers for programming data to the last flash sector (up to and excluding the reserved region).
- * Fixed: [SWO] NPE obtained in the case of some SWO error types. This prevents the error dialogs to appear (the exceptions go silently).
- * Fixed: [Energy Measurement] Detect data stream corruption and gracefully terminate Energy Measurement or SWO data retrieval if this situation arises.
- * Fixed: [Energy Measurement] Sometimes stale data remains after clearing the data.
- * Fixed: [Energy Measurement] No energy consumption info is displayed when measuring high (> 1W) power.

- * Fixed: [Energy Measurement] No data is displayed after a while when measuring high currents.
- * Fixed: [FreeRTOS TAD] Heap5 data not shown in Heap Usage view.
- * Fixed: [Azure RTOS TAD] Azure RTOS debug session closes unexpectedly when using non-CM7 devices.

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Version 11.4.0 (July 2021)
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- * Upgraded: Eclipse version to 2020.12 (Eclipse Platform 4.18.0 / CDT 10.1.0).
- * Upgraded: IDE now integrates with OpenJDK11 (HotSpot engine, v11.0.10).
- * Upgraded: GNU ARM Embedded Toolchain to 10-2020-q4-major.
Note that on top of GNU ARM Embedded Toolchain 10-2020-q4-major, gcclib was recompiled using the bug fix from https://gcc.gnu.org/bugzilla/show_bug.cgi?id=99157. This patch prevents the run-time application corruption when using -mcmse support (applied for armv8m only).
- * Upgraded: Version v10 of MCUXpresso Config Tools.
- * Upgraded: Newer SEGGER J-Link software (v7.50, 32-bit version on Windows, 64-bit version on Linux/macOS).
Note that v7.50 comes with a 64-bit version of Windows. This 64-bit version is compatible and can be used if desired, but please note that the MCUXpresso IDE 11.4.0 installation does not include this and only partial testing has been possible due to timing of the release. If you prefer to use the 64-bit version on Windows:
 - Install 64-bit Windows SEGGER J-Link software
 - Go to IDE -> Preferences -> MCUXpresso IDE -> Debug Options -> J-Link Options -> J-Link Server executable and change it from the existing path to the 64-bit version installation path, i.e. for the default installation path:
C:\Program Files\SEGGER\JLink\JLinkGDBServerCL.exe
- * Upgraded: Newer PEmicro plugin (v5.0.4).
- * Upgraded: FreeRTOS TAD synchronization with FreeRTOS v10.4.3.
- * Added: MKE1xZ support.
- * Feature: [Azure RTOS ThreadX] Added GDB thread awareness. The user is able to see threads in Debug view (only when using all-stop debug mode, similar to FreeRTOS usage) and also the register context associated with the current selected thread.
- * Feature: [Azure RTOS ThreadX] Added views, similar to the

FreeRTOS, for: Thread list, Message queues, Semaphores, Mutexes, Event flags, Timers, Memory block pools, Memory byte pools. These views are available under a new menu group called "RTOS", where older FreeRTOS views can be also found.

- * Feature: [Azure RTOS ThreadX] Added the ability to export trace data generated by the application at run-time. Decoding of exported data is done using Microsoft's Azure RTOS TraceX host-based analysis tool. Detailed procedure is described in the Azure RTOS User Guide.
- * Feature: [Energy Measurement] Add measurement/plot capability for MCU-Link probe. Power measurement can be done using:
 - the new MCU-Link double channel measurement capability (current and voltage measured simultaneously);
 - existing capability (used over LPC-Link2 probes) of caching voltage measurement to use on power computation over current measurement.
- * Feature: [Offline Peripherals] Added offline peripheral view. With this view, the peripheral registers can be inspected out off a debug session. A device selector or the current project selection can be used to load register information for a particular device. Additionally, a SVD file can be imported.
- * Feature: [Debugger][MCU-Link] Differentiate MCU-Link product names used when MCU-Link probes enumerate on USB:
 - Example:
 - base model: MCU-LINK (r0FF) CMSIS-DAP V2.219
 - Pro model : MCU-LINK Pro (r0C7) CMSIS-DAP V2.219
 - on-board : MCU-LINK on-board (r0CF) CMSIS-DAP V2.219
- * Feature: [Debugger][J-Link] Added possibility to connect to a remote gdb server. In launch configuration -> J-Link Debugger tab -> GDB Server Settings, use Server execution option to set a remote server.
- * Improvement: [Debugger][J-Link] Add nickname for JLink probes in Probes Discovered Dialog and in JLink Debugger tab.
- * Improvement: [Debugger][PEmicro] Added nickname for PEmicro probes in Probes Discovered Dialog.
- * Feature: [SDK Integration] UART console is the default debug console when importing a project.
- * Feature: [Flash Programmer] External flash drivers for RT500 and RT600 available as examples in <install_dir>/ide/Examples/Flashdrivers/NXP/iMXRT.
- * Improvement: [Peripherals+] Peripherals+ view design was changed to support register group expansion directly into the Peripherals+ view, with no extra Memory View usage. Consequently,

all elements shown before in Memory View are now available directly in the Peripherals+ view: values, bitfields, details. Reset value can be inspected as well together with the rest of the register elements.

- * Improvement: [IDE] Added a link to MCU-Link firmware page in 'Additional resources' menu entry under Help's main menu.
- * Improvement: [IDE] Toolbar naming and grouping: some icons re-grouped to reflect better categories and functionalities.
- * Improvement: [SWO] Adapt SWO trace config error to better reflect possible causes.
- * Improvement: [Flash Programmer] Use probe serial instead of probe index when generating command line.
- * Fixed: [Flash Programmer][Command Prompt] Wrong usage of double quotes in GUI Flash Tool Command Line generates errors in command prompt execution.
- * Fixed: [Flash Programmer][Segger][Command Prompt - Windows] GUI Flash Tool preview command - lower pane script not working when project name contains spaces.
- * Fixed: [Flash Programmer] Cannot program flash from Quickstart Panel if "preview command" is checked in launch config.
- * Fixed: [Flash Programmer] Wrong usage of double quotes in GUI Flash Tool Command Line.
- * Fixed: [Debugger] Modifying from debugger 8-bit or 16-bit data residing at addresses not aligned to 32 bits may alter data beyond the intended range up to the next 32-bit address.
- * Fixed: [Debugger] Cannot relaunch (using "Terminate and Relaunch") a running session.
- * Fixed: [Debugger] Suspend "bubble" project crashes debugger connection on LinkServer when using Non-Stop mode.
- * Fixed: [Debugger] Debugger sets two breakpoints at the same address when debugging with J-Link. This generates a warning when trying to restart the debug session.
- * Fixed: [Debugger] Always meet "Not Responding" issue when clicking the debug button without build first (for larger projects).
- * Fixed: [Debugger] J-link debug button does nothing when load image is set.
- * Fixed: [Debugger] hello_world doesn't read the input from the console.

- * Fixed: [Debugger] "Interrupt failed" pop-up error window during debug with FRDM-K64F and LPC-Link2 for some projects.
- * Fixed: [Debugger] First attempt to manually modify the PC register is ignored.
- * Fixed: [Debugger] Exceptions occurring while closing a project with an active debug session.
- * Fixed: [Debugger] Restart not working in attach mode
- * Fixed: [Debugger][88MW320] Attach to a running target with PEmicro on FreeRTOS projects starts with faults.
- * Fixed: [Debugger][88MW320] Cannot debug twice with J-Link and PEmicro.
- * Fixed: [Debugger][FreeRTOS] Heap and Stack Usage View shall work with FreeRTOS enabled projects.
- * Fixed: [Debugger] Multiple J-Link instances (named as "3rd party CMSIS-DAP") appear in Probes Discovered view: now these are filtered out. If a user still wants to see them, check the option from Preferences -> Debug Options -> J-Link Options -> Enable discovering of "3rd party CMSIS-DAP" probes.
- * Fixed: [Debugger][J-Link] Master core in multicore context will be attached (instead a regular debug session) to target after debugging.
- * Fixed: [Debugger][LinkServer] Modifying from debugger 8-bit or 16-bit data residing at addresses not aligned to 32 bits may alter data beyond the intended range up to the next 32-bit address.
- * Fixed: [Debugger][iMX RT595] Unable to flash application using crt_emu_cm_redlink raw command:
 - Added preconnectscript argument to stub;
 - Added --preconnectscript in the IDE's flash tool preview command window bottom;
 - Note: Preconnect scripts have been changed to use variable a% instead of p% to receive the probe index. The user might need to update custom preconnect scripts.
- * Fixed: [Energy Measurement] Format Y axis using a scale suitable for all displayed values (when having large Oy scale to represent data).
- * Fixed: [Energy measurement] Unable to exit probe discovery for boards with unsupported firmware for SWO.
- * Fixed: [Energy Measurement] The Energy measurement cannot collect if associated with a debug session and SWO is not initialized.

- * Fixed: [Energy Measurement] Making a selection on the plot may loose part of the status line.
- * Fixed: [Energy Measurement] Negative zero (-0.00) values shown.
- * Fixed: [Energy Measurement] Lot of remaining allocated heap after clearing a plot.
- * Fixed: [Energy Measurement] Incorrect representation of individual samples when the probe has been booted for some time: there are multiple values represented at the same point in time.
- * Fixed: [Energy Measurement] Table containing analog sources not empty after terminating analysis session.
- * Fixed: [Energy Measurement] When a view is already connected to a board and the underlying board is changed (without using the Terminate button), a subsequent operation will cause an error dialog with two entries and no useful information. View becomes unusable after this point.
- * Fixed: [Energy Measurement] Export contains much more data than intended.
- * Fixed: [Energy Measurement] Power/energy info in status line does not follow the currently visible part of the measurement.
- * Fixed: [Energy Measurement] IDE now reports an error in the case the connection was interrupted while collecting power measurement data.
- * Fixed: [Energy Measurement] Wrong resistor values displayed for QN9090 measurement circuit.
- * Fixed: [Energy Measurement] Fixed 'None' in Tooltip for Cursor options in the Energy measurement toolbar.
- * Fixed: [Energy Measurement] Export contains much more data than intended (from previous measurements).
- * Fixed: [Energy Measurement] Old recorded values displayed on the graph. This makes a starting graph to look having unexpected data.
- * Fixed: [Energy Measurement] Reading from target never finishes in some situations.
- * Fixed: [Energy Measurement] Not all plotted values are using the same scale. This results into some values being displayed with wrong values.
- * Fixed: [SWO] [RT1010/RT1170/RT1160] Fixed SWO support.

- * Fixed: [SWO] detecting clock feature is not overwriting the value. This is inducing some errors on enabling SWO features.
- * Fixed: [SWO] Misleading error message when trying to enable SWO on slave cores.
- * Fixed: [FreeRTOS] Sometimes cannot suspend FreeRTOS application using LinkServer.
- * Fixed: [FreeRTOS] Modifying a register causes it to be set to 0.
- * Fixed: [FreeRTOS] Attach to a FreeRTOS application returns faults.
- * Fixed: [FreeRTOS] Empty tooltip for "Runtime" column from Tasks list view.
- * Fixed: [FreeRTOS] Queue items incorrectly decoded in the Queues list view.
- * Fixed: [FreeRTOS] No FreeRTOS queue data details shown.
- * Fixed: [FreeRTOS] LinkServer FreeRTOS awareness does not activate in case of secure projects.
- * Fixed: [FreeRTOS] GDB shuts-down when restarting RTOS debug session while stopped at BP.
- * Fixed: [SDK Integration] The 'Open SDK handling preference page' button opens an unexpected option from Preferences.
- * Fixed: [SDK Integration] SDK component replacement options is ignored.
- * Fixed: [SDK Integration] It is not possible to disable "--sort-section=alignment" linker option from SDK generators.
- * Fixed: [SDK Integration][SDK Details Page] Various NPE when using the details in Outline view.
- * Fixed: [SDK Importer] Sometimes, board memory ranges are missing when importing an example project.
- * Fixed: [SDK Importer] MCUXIDE mixes files from different versions of packages while importing examples.
- * Fixed: [SDK Importer] All SDKs are present after clicking on the outside of SDKs image areas.
- * Fixed: [SDK Importer] The linked example from Board SDK Wizard is not visible in Import SDK example Wizard.
- * Fixed: [SDK Importer] Selected SDK, in the case of multiple SDKs using the same device, is not honored when importing or creating

an example project.

- * Fixed: [SDK Importer] SDK Import Wizard gives the wrong selection after it's opened and choose expand arrow.
- * Fixed: [SDK Importer] CMSIS component with "type: CMSIS" is ignored when importing sdk project.
- * Fixed: [SDK Importer] Boards vs device filter doesn't work when clicking in "Available boards" section but outside the board picture areas.
- * Fixed: [SDK Importer] Non-multicore projects of boards with multicore support have master decorator when created.
- * Fixed: [SDK Importer] doc folder is declared as source folder in versions 2.9.x of the RT SDK.
- * Fixed: [SDK Importer] Cannot import multiple projects - importAll fails with OutOfMemory error.
- * Fixed: [SDK Importer] SDK cannot set default launch config options for J-Link.
- * Fixed: [SDK Importer] Fail to use an SDK with "/" included in family name.
- * Fixed: [SDK Importer] Project-specific linker file is ignored for MCUXIDE.
- * Fixed: [SDK Importer] Default components are now displayed for a device project.
- * Fixed: [SDK Importer] "Select SDKs for selected MCU" widget is not correctly populated when 2 SDK are installed for the same device.
- * Fixed: [SDK CLI] project.build command exits with null pointer exception when use.all.components is set on true.
- * Fixed: [SDK CLI] Example.build command not working on multicore projects.
- * Fixed: [SDK CLI] Commandline will generate project name with not allowed character ("(", ")").
- * Fixed: [SDK CLI] Null PointerException when using sdk.validate command.
- * Fixed: [SDK CLI] Null pointer exception obtained when using -help argument.
- * Fixed: [NPW] Creating a project using "Makefile Project using Existing Code" template, fails at debugging with LinkServer.

- * Fixed: [NPW] Device project template is not correctly referred when using NPW to create a project with "selected device without board".
- * Fixed: [NPW] Unable to create a project for the second board when 2 SDK for the same device are installed.
- * Fixed: [Image Info] missing functions from CallGraph building in release build configuration.
- * Fixed: [Image Info] Callgraph doesn't display stack info for c symbols located within cpp sources.
- * Fixed: [IDE] Key binding conflict reported with new workspace.
- * Fixed: [IDE] Tooltips missing for PEmicro Debugger Launch Configuration Startup Tab.
- * Fixed: [Dark theme] Usage in Heap and Stack Usage view.
- * Fixed: [Dark Theme] pop-up hover not readable for longer preference text.
- * Fixed: [Dark Theme] Selection is not visible in the Installed SDKs list.
- * Fixed: [Dark Theme] MCUXpresso Icon in Smart Import Wizard shows white corners.
- * Fixed: [Installer] Uninstaller error in the case of uninstall with a started eclipse session.

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Version 11.3.1 (March 2021)
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- * Upgraded: Newer SEGGER J-Link software (v6.98a).
- * Upgraded: Newer PEmicro plugin (v4.9.0).
- * Added: 88MW320 support.
- * Added: K32W041A support.
- * Added: i.MX RT1160 support.
- * Feature: Added MCU-Link firmware version check in MCUXpresso IDE:
 - When connecting to target, "Probes discovered" will indicate if there are debugger probes that would require update;
 - Each discovered probe will clearly indicate (by a warning icon) if a firmware update is available;
 - Tooltip on the mentioned probes will indicate the firmware's download location and its version.

- * Fixed: [RT1170] Can't download image to RT1170-EVK when SRAM_ITC_cm7 is located as the first item in RAM blocks in Memory configuration editor.
- * Fixed: [RT1170][CM4 boot] Error programming flash in SDP or empty flash situations.
- * Fixed: [RT5xx/RT6xx] wrong image type (at offset 0x24) in generated executable file.
- * Fixed: [KW38] Instruction Trace window does not pull the assembler instructions.
- * Fixed: [K32W041AM] SWO Trace not working.
- * Fixed: SDK cannot set default launch config options for Segger.
- * Fixed: Exception if the IDE is launched right after installation process, having all checkboxes for additional documentation selected.
- * Fixed: Welcome page not appearing at startup.
- * Fixed: Program and Erase Flash shortcuts from Quickstart Panel are also launching an unexpected debug session on the end of their normal operation.
- * Fixed: LinkServer: Modifying from debugger 8-bit or 16-bit data residing at addresses not aligned to 32 bits may alter data beyond the intended range up to the next 32-bit address.

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Version 11.3.0 (January 2021)
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- * Upgraded: Version v9 of MCUXpresso Config Tools.
- * Upgraded: Newer SEGGER J-Link software (v6.88c).
- * Upgraded: Newer PEmicro plugin (v4.8.5).
- * Upgraded: Eclipse version to 2020.06 (Eclipse Platform 4.16.0 / CDT9.11.1).
- * Upgraded: IDE now integrates with OpenJDK8.
- * Upgraded: GNU ARM Embedded Toolchain to GCC9-2020-q2-update.
- * Integrated: GNU test coverage (gcov) and performance analysis (gprof) tools and Eclipse plugins.
- * Added: i.MX RT1170 B0 support.
- * Added: i.MX RT1024 support.

- * Added: RT500 B2 support.
- * Added: K32W061 support.
- * Added: K32W041AM support.
- * Added: LPC55S06 support.
- * Added: MCU-Link probe debug support.
- * Feature: Added Energy Measurement view aiming to replace the Power Measurement view. Main capabilities:
 - The new view comes with the same feature-set as the old Power Measurement view;
 - From a GUI perspective, it offers consistent look & feel with other views that display and controls graphs (e.g. Global Variables, SWO-related views);
 - Compatible with existing LPCXpresso boards having on-board power measurement circuits;
 - Power and energy estimation capability: In order to enable power/energy measurement/estimation the user should add a reference voltage in the Config tab section from Energy Measurement view. For convenience and more precise measurement, the user can press "Read from target" which will automatically generate a reference voltage computed as an average value (of the voltage) measured for the last 500msec. Energy and power will be displayed in the status line of the plot area, showing the min/max/average power values and the energy value for the measurements visible in the graph, or over a particular time range selection.
 - Multiprobe and multiview support: the feature is capable to open multiple views, each view can be connected to a different probe (that is capable to measure analog). The probe can be selected from Probe Discovery feature available in the Energy Measurement view toolbar.
 - Data collecting during an out-of-debug session and also during an active debug session;
 - Data collecting with an active debug session while the core is in debug mode. Behavior is controlled via toolbar buttons;
 - Configuration of the server-side (rltool) and of the IDE using the Config tab within the view;
 - Import/Export data functionality for offline analysis: (buttons on the Energy view toolbar). The user is able to save (Export data, in a zip format) the data collected within the view, having the possibility to load the saved data (Import data) later, in the same view or another one. Loading saved data in the Energy Measurement is not requiring physical connection to the target;
 - Extended LPC-Link2 support for all targets having onboard measurement circuit: LPCXpresso546x8/540xx/54S0xx, LPCXpresso54102, LPCXpresso51U68/54114, QN90x0/JN518x/K32W0x1. As a side note, if there is any other LPC-Link2 board having power measurement capability, the user can use an existing

configuration (and change the resistor value if necessary);
- See MCUXpresso_IDE_Energy_Measurement.pdf (or Help -> Help Contents) for details.

- * Feature: Auto-debug slave project(s) for multicore projects option becomes default option for multicore debug purpose (for LinkServer debug connection only). That means, in the case of multicore projects on which master project refers one or several slave projects, debug sessions will be automatically started for slave projects after initiating debug with the master project. Option is set by default on: Window -> Preferences -> MCUXpresso IDE -> Debug Options -> LinkServer Options -> Miscellaneous -> Enable Auto-debug slave project(s) for multicore projects. If you don't want to have this feature enabled (so if you want to start debug sessions for each core independently), uncheck this option. Similar, Auto-debug slave project(s) for multicore projects option becomes default option for multicore debug purpose for PEmicro too. Option is set by default on: Window -> Preferences -> MCUXpresso IDE -> Debug Options -> PEmicro Options -> Enable Auto-debug slave project(s) for multicore projects.
- * Improvement: Enhance SWO views:
 - SWO Config: added new Tab for data traffic statistics, configuration for ITM Stimulus ports
 - SWO Profile: added samples and details tabs
 - SWO Data: added plot (similar to Global Variables)
 - SWO Stats: moved inside SWO Config
 - ITM Console: added one tab for each stimulus port
- * Improvement: [RT600] Clean up on RT600 flash drivers:
 - Add drivers for MXIC_OPI connected via FlexSPI_A port
 - Add drivers for QSPI drivers (SFDP) connected via FlexSPI_B port
 - Add drivers for QSPI drivers (SFDP) connected via FlexSPI_A port
 - Remove MIMXRT600_SFDP_* drivers generated by the old project (SDK now references the new drivers).
- * Improvement: Drop-down boxes from several tables require two user operations for reaching the actual items from the list. Reduced now to a single operation (single click).
- * Improvement: Extend CLI functionality - Add new command to list SDK info:
 - filter=<string> : filters the available information based on regex expression string. e.g. -filter=K64 will display all data containing K64 stringSee SDK command line documentation within the layout (MCUXpresso_SDK_Command_Line_User_Guide.pdf).
- * Improvement: Added Instruction Trace support for LPC55S69.
- * Improvement: Merge c_include path section into cpp_include path section for cpp project in project settings.

- * Improvement: New project wizard is now capable to handle HW with dual master/slave roles (i.e. RT1170). From SDK Wizard page, any core can be selected according with the slave/master SDK description, plus it can be selected as standalone (application).
- * Improvement: Community forum accessible now from the main toolbar too (together with the older link from Help->MCUXpresso IDE support forum). The default selection will open the community web inside the IDE. If you want to set the default browser as external browser, use Window->Preferences->General->Web browser ->"Use external web browser".
- * Fixed: [RT500] QSPI flash drivers: driver was incorrectly using QSPI DDR instead of SDR.
- * Fixed: [RT500][RT600] J-Link launch config default resets:
 - Re-enable resets in J-Link launches for RT500/RT600
 - The most recent J-Link versions properly handle resets for RT500 & RT600 devices.
- * Fixed: [RT500] Unable to Restart flash-based session on EVK RevC1 board.
- * Fixed: [RT685] "Unsupported or unrecognized format error" dialog when using the installed SDK.
- * Fixed: [LPC55S69] Implemented DWT (Data Watchpoint and Trace) component for ArmV8. This fixes the SWO Data trace not working issue.
- * Fixed: [LPC55S06] SWO support.
- * Fixed: [LPC55xx] LinkServer debug cannot recover LPC55xx from deep sleep.
- * Fixed: [LPC845] Debug fails when SRAM is split into sub-blocks.
- * Fixed: [LPC4337] Flash programming over JTAG not working on the M4 core.
- * Fixed: [LPC54114] SWO Trace is not working with PEmicro.
- * Fixed: [FRDM-K64] Removed unexpected warning reported in map file in a project.
- * Fixed: [JN5189/QN9090/KW32W041AM] Improve OOB experience with (factory) erased devices.
- * Fixed: IDE 'Utility' menu does not work for linked Folders.
- * Fixed: Defined symbols are added prematurely (even when no component is selected in NPW).
- * Fixed: Selection of a driver in NPW makes the Library Type and

Floating Type to become empty.

- * Fixed: "ERROR: fatal error: board.h: No such file or directory" error reported if build a new created project with no board support.
- * Fixed: Library type is not changing correctly when using SDK Wizard.
- * Fixed: SDKs for older LPCs failing to set CRP up correctly.
- * Fixed: Outline view displays empty table header when selecting an SDK.
- * Fixed: Issues when uninstalling an SDK plugin. Now "Installed SDKs" and "Install MCUXpresso SDK" views are in sync and report the right installation status of an SDK.
- * Fixed: On explicit include paths in the project setting, the include paths are mixed between asm and c type.
- * Fixed: Outline view displays empty table header when selecting an SDK.
- * Fixed: Null pointer exception on generating example xml.
- * Fixed: Build error when use MCUXpresso IDE command line with non-existing include.
- * Fixed: SDK command line: pre and/or post build steps options not available in example.xml file.
- * Fixed: J-Link scripts needed by SDK examples are not copied correctly when installing the SDK from a folder.
- * Fixed: MCUXpresso linked projects compile errors on multicore platforms.
- * Fixed: Compile errors reported on a project imported from a generate example.xml. Also fixed the CLI build failing on the same example.xml scenario.
- * Fixed: Unexpected memory usage reported (over 100% occupied memory) by Image Info.
- * Fixed: Programming empty pages for ERASE_WO devices when flash hashing is enabled.
- * Fixed: 'debug interface type' identification shown in the "Debug messages" console.
- * Fixed: "Terminate" operation does not kill the redlinkserv.exe process.

- * Fixed: "Terminate" button appears disabled after the first "Suspend" for PEMicro and J-Link debug connection.
- * Fixed: J-Link auto selection results in not working connection.
- * Fixed: Flash programming using J-Link via JTAG.
- * Fixed: The running environment (PC/SP) for RAM applications is now properly initialized by the debugger when using J-Link/PEmicro.
- * Fixed: Debugger Console output stops working when debugging secure project.
- * Fixed: Error reported when SWO clock speed dialogue cancelled.
- * Fixed: FreeRTOS tasks list not populated correctly in some situations.
- * Fixed: SVD viewer shows-up with empty peripherals list.
- * Fixed: Live Variables: Unable to create expression with casts.
- * Fixed: Global Variables: T0 will remain -0 while moving the Graph to the right.
- * Fixed: [Dark Theme] highlighting makes text unreadable.
- * Fixed: [Dark Theme] Text is not visible for Blocked jobs in FreeRTOS.
- * Fixed: [Dark Theme] Peripherals view - some registers have yellow background making it hard to read.
- * Fixed: [Dark Theme] Line highlighting in editor makes variables text unreadable.
- * Fixed: [Dark Theme] Display issue for the "Probes discovered" window on macOS.
- * Fixed: [Dark Theme] Low contrast on text vs. background when a word is high-lighted by having cursor selection on it.
- * Fixed: [Dark Theme] Manage SDK Components window is not updated.
- * Fixed: [Dark Theme] Various improvements on Disassembly, Memory, Peripherals, headers in views, editor, git plugin.
- * Fixed: [Dark Theme] Install plugin SDKs window shows white rectangles around icons.
- * Fixed: [Dark Theme] Line number background is too bright.
- * Fixed: [Dark Theme] Install MCUXpresso SDK view shows white background while selecting table headers.

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Version 11.2.0 (July 2020)
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- * Upgraded: Eclipse version to 2019.12 (Eclipse Platform 4.14.0 / CDT9.10.0).
- * Upgraded: GNU ARM Embedded Toolchain to GCC9-2019-q4-major.
- * Upgraded: GNU make 4.2.1 is now integrated on IDE on all OS-es.
- * Upgraded: Version v8 of MCUXpresso Config Tools.
- * Upgraded: FreeRTOS TAD synchronization with FreeRTOS 202002.00.
- * Upgraded: newer SEGGER J-Link software (v6.80d).
- * Upgraded: newer PEmicro plugin (v4.6.9).
- * Added RT500 B0 support.
- * Added flash programming support for QN9090/JN5189.
- * Added KW37/KW38/K39 B0 support.
- * Improvement: [RT500/RT600] Extended flash drivers to support boards potentially wired in a different way from the EVKs with regards to the reset pin used for the external flash device.
- * Improvement: [RT500/RT600] Flash erase performance of RT600 rev B0 flash driver (~30% speed increase).
- * Improvement: 'Delete' option added for plugin SDKs. Now the removal option should be similar with the file system SDKs.
- * Improvement: Added Help -> "MCUXpresso IDE Save Info For Support" option intended to gather enough information to help reporting an issue:
 - MCU IDE installation details
 - Files from workspace
 - Information about Installed SDK
 - Workspace log file
 - Content of the Console ViewUser is encouraged to use this option when reporting an issue and to also attach the generated zip file to help development team to easier trace the reported problem.
- * Improvement: added new control to manage the maximum number of child expressions that are evaluated in advance by the Live Variables service. This improves the Global Variables window responsiveness for instance when large structures are displayed. New control available on Eclipse Preferences -> MCUXpresso IDE -> Debug Options -> "Number of subexpressions proactively

evaluated by Live Variables service". Default is 2 set as depth.

- * Improvement: expressions added in Global Variables are now persistent between debug sessions.
- * Fixed: Error reported while importing SDK example and changing to Newlib (semihost).
- * Fixed: LinkerScript awareness reports fails on /DISCARD/ sections.
- * Fixed: IDE freeze and high CPU power consumption while debugging with Segger debug probe and disconnecting the USB cable.
- * Fixed: SDK import project example copies wrong header file in the case of multiple files with the same name.
- * Fixed: Unticking the "Redirect SDK PRINTF to C library printf" does not reset the ticking settings.
- * Fixed: [LPC11U68] A modified register in peripherals view alters other registers.
- * Fixed: [RT600] Debug error using LinkerServer if RT685 previously went to deep sleep state.
- * Fixed: [RT600] Unable to use "Restart" for debug session on RT600.
- * Fixed: [LPC43xx] "Wrong field format" displayed for SPI peripheral registers on LPC43xx.
- * Fixed: [RT1170] breakpoint support for CM4.
- * Fixed: "Hide Installed" within SDK installer view should be unchecked by default.
- * Fixed: Include directory path for the proper newlib.h is missing when newlib-nano spec is used.
- * Fixed: Global Variables showing negative timestamps after "Clear Data" is used.
- * Fixed: Exception thrown after trying to delete a closed project.
- * Fixed: SDK plugins generated with the IDE contains keywords of examples that are missing in the SDK package.
- * Fixed: ELF parsing issue which in some particular circumstances could cause incomplete flashing of programs generated using user-defined linker scripts (for example tfm SDK examples).
- * Fixed: Linker script error related to "OVERLAY" keyword.
- * Fixed: Internal error displayed when creating a new ldt file in MCUX.

- * Fixed: Empty tooltip for "Global Variables" View when adding variables.
- * Fixed: Linker script parsing error reported as: "missing ';' at '}' "
- * Fixed: Exception shown when renaming a project after a debug session ended.
- * Fixed: Missing board picture when an SDK is selected within "SDK installer" on Ubuntu.
- * Fixed: Removed board related memories on "New Project Wizard" when "Empty board files" option is selected.
- * Fixed: issue when Global Variables list is empty when going into debug mode.
- * Fixed: xpsr registers for which the values cannot be changed for Cortex M0 boards.
- * Fixed: null pointer exception shown when displaying Globals Variable view in NonStopMode.
- * Fixed: freeze reported when hovering over a large size symbol.
- * Fixed: empty tooltip for Global Variables View when adding variables.
- * Fixed: various UI widgets to correctly display the dark theme.
- * Fixed: the issue when removed variables were continuing to plot data.
- * Fixed: "Remove Selected Variables" always removes all added global variables. This was happening when global variables were added in Global Variables view using "Add new expression".
- * Fixed: Japanese/Chinese font issues on MCUXpressoIDE - this was fixed by the updated eclipse version.
- * Fixed: issue (hang) when display large structures while debugging.

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Version 11.1.1 (Mar 2020)
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- * Fixed issue with file path handling when importing examples or creating new projects with certain SDKs (previously made available as a hotfix to IDE v11.1.0 via Eclipse update system)
- * Fixed issue that prevented text zooming in Editor View

- * Fixed issue that caused deletion of most compiler defines if the MCU package for a project were changed
- * Updates to linker script file awareness, including
 - Fixed issue handling situation where symbols are quoted
 - Removed requirement for MEMORY command to provide access attributes
- * Updates to map file awareness, including
 - Fixed issue with handling of ld's PROVIDE keyword
- * Fixed issue with linker script generation related to placement of symbols for .ARM.exidx section (which could trigger issue with C++ exceptions)
- * Restructured way eGIT plugin integrated into IDE (to allow updating by the user). Supplied version also updated to v5.6.0
- * Updates to allow LinkServer debug connections (ie CMSIS-DAP) to i.MX RT6xx "rev B" silicon. Note that these changes mean that earlier i.MX RT6xx silicon can no longer be supported
- * Updates to LinkServer debug to provide support for debugging Kinetis KE0x. Note that manual changes to SDK 2.7.0 or earlier are required for this to be enabled
- * Preliminary LinkServer support for i.MX RT1170 devices
- * Fixed sector size issue with LinkServer flash driver for Kinetis KM3x devices
- * Fixed issue that prevented launch configuration creation (and hence debug) for multicore projects for preinstalled parts (LPC43xx and LPC54xxx)
- * Fixed issue with Peripheral View incorrectly handling 32-bit bitfields within peripheral registers
- * Fixed issue with Registers View such that modifying fields in xpsr could incorrectly modify other fields
- * Added mechanism to Preferences to allow default reset settings used when creating SEGGER launch configurations to be overridden for specific devices
- * Updated integrated version of MCUXpresso Config Tools to v7.0.1
 - TEE tool: Displays correctly inaccessible regions in "Memory attribution map" view
- * Upgraded to a later version of the P&E Micro plugin (v4.5.3)
- * Upgraded to a later version of the SEGGER J-Link software (v6.62d)

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Version 11.1.0 (Dec 2019)
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- * Upgraded underlying Eclipse Framework to 4.12.0.v201906 / CDT9.8.1
- * Upgraded supplied GNU ARM Embedded Toolchain to GCC8-2019q3-update
- * Added support for MCUXpresso SDK v2.7
- * Upgraded integrated version of MCUXpresso Config Tools to v7
- * New Welcome View, providing an improved out-of-box experience for new users. The IDE now also opens for the first time at a larger default window size, improving usability without the need for resizing
- * New "plugin SDK" system provides an easy-to-use mechanism for simplified installation and management of MCUXpresso SDKs
- * Reduced code size of debug builds of SDK projects by decreasing the overhead of the assert() function, which is commonly called by SDK functions. This has been done by the addition of "-fmerge-constants" and "-fmacro-prefix-map" compiler options to project compiler optimization settings
- * Added support for more complex specification of dependencies between SDK components. This allows some components (in particular, middleware ones) that previously could only be accessed through SDK examples, to now be added to projects and configured, either as they are created by the new project wizard, or for existing projects via "Manage SDK Components". Note that this functionality requires SDK 2.7
- * Various enhancements to "Installed SDKs" View, including:
 - New tabs provide easy access to the list of boards and devices that are installed into IDE, in addition to the actual SDKs. Right click menu on a board or device also allows new project wizard (and, for boards, import example wizard) to be run
 - Detailed information on contents of selected SDK is now displayed in Outline View
 - Improved loading of SDKs, including refreshing, improving performance and fixing memory leaks
 - Copy/paste of SDKs now allowed between View and OS filer, as well as between different IDE instances
- * Fixed an issue with sorting of boards in SDK wizards
- * Fixed an issue with handling of combined secure / non-secure with multicore projects
- * Fixed issue with "Manage SDK Components" removing " from C++ Symbols in .cproject file

- * Various fixes and enhancements to SDK Editor / Creator, to support "user board SDKs" to act as an extension to a standard MCUXpresso SDK
- * Various fixes and enhancements to Image Info View. In particular:
 - Further improvements to load times
 - Added ability to double-click on memory region in Memory Usage tab and jump to that region in the Memory Contents tab
 - "Load" from project button now provides a drop-down to allow direct loading of info from multiple build configurations into multiple Image Info Views
 - Regular expressions now supported in "Search..." box
 - "Open 'main' symbol" button implemented on toolbar
 - Improved support for projects outside the workspace
- * Various improvements and fixes to map file awareness, including:
 - Improved handling of C++ projects
 - Fixed an issue with handling expressions containing parentheses
- * Various improvements and fixes to linker script file awareness, including improved handling of libraries specified in script
- * Various improvements to the managed linker script system:
 - Standardized set of symbols now generated for sections
 - Fixed an issue with LMA being incorrectly set in some circumstances for sections that do not have a real load address (e.g. .bss). Although this did not prevent the generated image from working, it could cause, for example, erroneous information in Image Info View
 - Plain load image functionality now supported for RT6xx devices
 - LinkServer FreeRTOS debug config rodata now placed by script, when appropriate
- * Increased default java memory settings (-Xms, -Xmx) in mcuxpressoide.ini file. This means the IDE may now use up to 2GB by default
- * Windows build tools now provide 'mv' command
- * Added MCUXpresso Dark Theme, providing better support for IDE's tailored set of Views being used in dark mode
- * Improved organization of MCUXpresso IDE preferences, in particular Debug related ones
- * Project decorators implemented in Project Explorer View to indicate Master/Slave and Secure/Non-secure projects
- * Standardized graphing technology used by SWO Interrupt trace and by Global Variables View
- * Improvements to LinkServer flash driver performance for many devices. In particular, most flash drivers now implement a "verify-same" hashing mechanism to remove the need to

erase/reprogram when the memory being programmed already has the required content. This can provide a noticeable improvement in debug startup time, particularly when repeatedly debugging large, non-changing images

- * Required debug probe can now be selected by double-clicking on it in the "Probes discovered" dialog
- * Global Variables View now uses a check-box system to select variables to be displayed in graphs within the details pane
- * Improved handling of certain variable types, along with signed versus unsigned variables, within the Global Variables View
- * Fixed an issue with display of large arrays in Global Variables View with SEGGER and P&E Micro debug connections, when Live variables are enabled
- * Various fixes and enhancements to the Peripherals View, in particular some registers being marked as inaccessible when single stepping
- * Fixed an issue with Disassembly View going blank after Restart, with LinkServer debug connections
- * Fixed an issue with flash programming with P&E Micro probes when filename or path contains a space
- * Fixed various memory leaks triggered during debugging
- * Fixed an issue with decoding correct stack pointer to be used in Faults View
- * When debugging secure / non-secure projects, you can now set breakpoints in CMSE functions and view source when breakpoints hit
- * Reduced the RAM footprint of the FTFA_1K.cfx LinkServer flash driver, to prevent issues on some smaller RAM devices that make use of this driver (e.g. MKE14Z32)
- * Additional and improved Linkserver connect scripts for RT10xx devices, which in particular reset the FlexRAM sizes to default. Note that for some devices, these will only be picked up by default if you are using an appropriate SDK 2.7
- * Fixed an issue that could prevent LinkServer SWO trace and power measurement from working on Linux platforms in some circumstances
- * Fixed an issue with setting wirespeed in LinkServer launch configurations
- * Cleaned up various layout issues with launch configuration editor
- * Updates to product and installer to allow better compatibility

with newer versions of Ubuntu. Note that our supported Linux platforms remain Ubuntu 16.04 LTS and 18.04 LTS

- * Updates to support new devices, including LPC551x, K32L2A and K32L2B families
- * NXP LPC-LINK2 CMSIS-DAP firmware soft-loaded by IDE updated to v5.361
- * Upgraded to a later version of the P&E Micro plugin (v4.4.1)
- * Upgraded to a later version of the SEGGER J-Link software (v6.54c)

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Version 11.0.1 (Aug 2019)
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- * Updates to allow LinkServer debug connections (ie CMSIS-DAP) to LPC55S6x "rev 1B" silicon and other devices that implement "debug mailbox request" mechanism. Note that these changes mean that some pre-production LPC55S6x silicon can no longer be supported
- * Updates to support new devices, including K32L3A and i.MX RT1010 families
- * Link to <https://mcuxpresso.nxp.com> now provided in New Project and Import SDK example(s) wizards, improving accessibility for downloading additional SDKs
- * Updates to map file awareness, including improvements to loading speed
- * Fixed various issues with Image Info View
- * Fixed issue with floating point options being incorrectly set for SDK example projects with C++ nature in some circumstances
- * Extended "include paths" indexer fix implemented in IDE v11.0.0 to also work with library projects
- * Fixed issue with SDK multicore examples importing with managed linker script settings not being configured correctly in some circumstances
- * Fixed memory leak in Installed SDKs View when regeneration of part support info triggered
- * Managed linker script mechanism now generates references to "CodeQuickAccess", "DataQuickAccess" and "RamFunction" input sections (required by some SDK examples/ drivers) in default .data output section
- * Fixed issue with Debug Shortcuts in QuickStart Panel incorrectly

selecting attach/debug option in some circumstances

- * Fixed various minor issues with GUI Flash Tool
- * Fixed issue with Global Variables View slowing down debug launches with C++ projects
- * Fixed addresses > 0x80000000 issue with Heap and Stack Usage View
- * Fixed issue with Global Variables View graphs updating when target suspended
- * Fixed issue with Peripherals View with LPC17xx devices, particularly effecting display of certain enumerations
- * Fixed issue with Peripherals View refresh. This could cause some registers to sometimes be erroneously displayed as unavailable
- * Fixed issue with LinkServer launch configuration wirespeed setting being ignored in some circumstances
- * Updated the way the IDE autodetects installed SEGGER software. This is required due to changes SEGGER have made to the default options of their Windows installer in v6.46 and later of their software
- * Fixed issue with P&E and SEGGER implementations of live variables service (required to support live update of globals in Global Variables View). This issue could provoke problems in some circumstances when debugging via these probes including slow debug performance and failure to display locals inside the Variables View
- * Fixed issue with display of large arrays when using P&E or SEGGER debug connections
- * Fixed issue which could trigger error when manually creating a J-Link launch configuration
- * Upgraded to a later version of the P&E Micro plugin (v4.2.5)
- * Upgraded to a later version of the SEGGER J-Link software (v6.46k)
- * Fixed build issue with MCUXpresso IDE v11.0.0 User Guide which caused last chapter ("Appendix - Additional Hints and Tips") to be merged into the previous chapter ("Multicore Projects") as section 19.6 onwards. Actual content of manuals provided with IDE v11.0.1 otherwise unchanged from v11.0.0 manuals

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Version 11.0.0 (Jun 2019)
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- * Upgraded underlying Eclipse Framework to 4.10.0v201812 / CDT 9.6.0.
- * Upgraded supplied GNU ARM Embedded Toolchain to GCC8 (2018q4-major)
- * Windows version of product now only runs on Win64 (IDE v10.3.1 and earlier ran on Win32 & Win64 platforms). Note that this change has been driven by the fact that Eclipse framework is now 64-bit only. [Ubuntu and macOS versions of product already only ran on 64-bit platforms.]
- * Updated version of "busybox", used on Windows to provide a Unix-like layer for GCC tools to run under, to "GNU MCU Eclipse Windows Build Tools" v2.12 (64bit)
- * Added support for MCUXpresso SDK v2.6
- * Upgraded integrated version of MCUXpresso Config Tools to v6
- * Revamped Develop Perspective with some new and additional views shown by default. Also decluttered by removal of some less commonly used views. Most of the removed views can be added back via the new 'Analysis' menu
- * New "Image Info" View improves and extends on the functionality previously provided by the "Symbols Browser" view, giving the following analysis of a project build:
 - Overall memory usage
 - Content of memory regions
 - Static call graph, including stack usage information
- * New "Heap and Stack Usage" view provides ability to track heap and stack usage during debug of baremetal projects
- * Implemented "editor awareness" for linker map files, linker scripts and linker script templates, providing syntax coloring as well as navigation of file contents via the Outline view
- * Improved display of components in New Project Wizard and Managed Components dialog. Display of different component types is now tabbed, with an additional summary of the components selected
- * The New Project Wizard will now open the main source file in the Editor view after project creation
- * When importing a single SDK example, the wizard will now attempt to open the main source file in the Editor view after project creation. This functionality can also be enabled when importing multiple examples through a workspace preference
- * Improved support for Cortex-M33 Secure / Non-Secure projects. Improvements include :
 - Secure and Non-Secure projects more closely linked from build / project configuration point of view
 - Debugging Secure project will automatically build Non-Secure

project and program it into flash, before launching Secure project debug session

- Symbols for Non-Secure project automatically loaded into debug session to allow user to step from Secure world into Non-Secure (with source code visibility)

Note that these improvements also require SDK v2.6 for the MCU being targeted

- * Improved Launch Configurations for LinkServer. Main user impact is that this allows a more friendly way of editing launch configuration settings. Some launch configuration functionality now also provided in "standard" Eclipse/CDT tabs rather than in LinkServer specific manner. LinkServer Launch configurations from older IDE versions will be automatically converted to the new format
- * New launch configuration tab (for all debug probe types) to allow loading of debug symbols from additional images (in addition to the ones from the main image being debugged)
- * Improvements to performance of single stepping for LinkServer debug connections
- * Implemented support for SWO Trace on Cortex-M33 based MCUs
- * "Live Variables" functionality inside the Global Variables view now supported using SEGGER J-Link and P&E Micro debug probes (in addition to LinkServer debug connections)
- * FreeRTOS TAD functionality now directly implemented within the IDE, rather than being a separate plugin
 - Improved look and feel to better match rest of IDE
 - Timeout period for FreeRTOS TAD increased, to help prevent reading of data failing on slow debug connections. IDE preference also added to allow timeout period to be changed
 - Fixed issue with Runtime not showing when compiler optimizations turned on
 - Fixed issue with Timer List with FreeRTOS 10.2 release
- * Fixed issue with IDE losing C library include paths. This did not prevent projects from building but meant that indexer-related functionality reliant on these paths would not work correctly (for instance trying to open a C library include file from the editor). This issue could also cause Newlib projects to sometimes appear to be using Redlib include files.
Note: Existing projects can be "fixed" using Tools->Fixup Parsers option on the Project Properties view's context sensitive menu
- * New projects now compile with the --fstack-usage option by default (needed for callgraph functionality in the "Image Info" view)
- * Quickstart Panel - Quick Settings menu can now indicate current value for Debug Console, Floating Point and Library settings for

current build configuration of selected project

- * New projects now link with `--cref` option by default (increasing level of information provided in linker map files)
- * Improved performance of installing/loading SDKs, largely by re-architecting the way that SVD peripheral definition files from the SDK are processed
- * Installed SDKs view updated so that detailed information on contents of selected SDK is hidden by default, but with new Hide/Show button to display when required
- * SDK default folder mechanism updated to install SDKs into an "02" subdirectory by default. This means that SDKs installed by IDE v11.0.0 will not be visible to older versions of the IDE
- * Improved ability to select debug console type (semihosting vs UART vs any preference specified by example definition) when importing SDK examples. This is particularly useful when multiple projects are selected for importing at the same time
- * Tweaked code generated for `main()` by New Project Wizard for SDK projects such that the infinite loop at the end of the function can be successfully single stepped at the source level
- * Fixed issue with default compiler options set by SDK New Project wizard when creating C++ projects. Such projects now also created with "cpp_config.cpp" file containing minimal implementations of the new/delete operators and the verbose terminate handler for exceptions suitable for embedded use. This brings SDK C++ projects inline with C++ projects created with the New Project Wizard for preinstalled parts
- * Some performance improvements when making a board selection in New Project Wizard and Import SDK example(s) wizard
- * Fixed issue with IDE incorrectly warning about overlapping memory regions when importing some SDK examples, when the memory regions are actually just adjacent
- * Fixed issue with IDE being unable to show the context sensitive menu in the Project Properties view for makefile projects in some circumstances
- * Fixed issue with handling of part support information for MCUs which are supported by internal part support, but for which an SDK exists and has been installed into the IDE
- * Various updates and clean up of icons. In particular, new icon for "LinkServer" now used in various places instead of general MCUXpresso IDE one
- * Fixed issue with various tables displayed by IDE failing to

display "... " to indicate truncation, when amount of text to display exceeds space currently available in column

- * Various fixes to SDK Editor / Creator
- * Fixed issue with managed linker script mechanism when building master projects linking in slave projects containing data with larger than normal alignment
- * Fixed issue with managed linker script mechanism which was causing some sections (such as .bss) to be erroneously assigned unnecessary load addresses
- * Fixed issue with section name wildcards used in managed linker script mechanism , which could prevent __BSS/__DATA macros from working as expected in some circumstances
- * On Managed Linker Script page of Project Properties, IDE now autoconverts any "\" directory separators entered into "Script path" to Unix style "/" expected by the linker
- * Added implementations of inverse hypobolic functions to Redlib (acosh/acoshf, asinh/asinhf and atanh/atanhf)
- * Improved Redlib definition of HUGE_VAL (and other related defines) in math.h. Also updated way float_t defined
- * arm_acle.h header file now on the search path for projects linking against Redlib (providing various ARM C language extension intrinsics). Previously this was only available for Newlib linked projects
- * IDE now prioritizes use of IDE supplied LinkServer flash drivers over any contained in installed SDKs (rather than the other way around). This behaviour can be reverted if necessary using an IDE workspace preference
- * Fixed various issues with creation of multiple launch configurations for a particular build configuration in a project
- * Fixed issue with creation of launch configurations if previous attempt was cancelled
- * "Attach-only" debug sessions no longer trigger a build before starting the debug connection (as long as image has already built)
- * Improved size and layout of Launch Configuration Selection Dialog (displayed when project contains launch configurations for multiple probe types)
- * Fixed issue with display of cycle counters in Registers View
- * Fixed issue with GUI Flash Tool via LinkServer with LPC51U68 and KL28 MCUs

- * Fixed issue with debug restart with QN9080 via LinkServer
- * Fixed issue with LinkServer FreeRTOS thread awareness with Cortex-M33 based MCUs (and CM33 aware versions of FreeRTOS)
- * Implemented preliminary support for carrying out SWO Trace using CMSIS-DAP probes that implement "CMSIS-SWO commands" (as opposed to the bespoke SWO support implemented by NXP's LPC-Link2 CMSIS-DAP firmware). This has currently only received limited testing using ULINKplus probes with CMSIS-DAP v1.x.x firmware. Note : MCUXpresso IDE does not support the use of WinUSB endpoints as provided by CMSIS-DAP v2.x.x firmware
- * New IDE workspace preference to allow debug launch configurations for SEGGER J-Link probes to be created with FreeRTOS thread awareness already enabled (off by default)
- * Upgraded to a later version of the P&E Micro plugin (v4.1.3)
- * Upgraded to a later version of the SEGGER software (v6.44i)

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Version 10.3.1 (Feb 2019)
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- * Improvements to support for i.MX RT600 MCUs
- * Improvements to support for LPC5500 MCUs
- * Added managed linker script and LinkServer debug support for i.MX RT1015
- * Fixed issue with permissions within IDE installation directory on macOS and Ubuntu which could cause failure of FreeRTOS TAD plugin and also prevent installation and update of third party plugins (e.g. from Eclipse Marketplace)
- * Managed linker script mechanism now includes libgcc.a in the list of libraries to be linked against when using Redlib (to resolve any runtime support functions generated by compiler that have no specific implementation in Redlib)
- * Improved error checking in Memory Configuration Editor
- * Managed Linker Script settings in Project Properties now more thoroughly checks alignment / region size when calculating "Default" stack size - preventing potential issues with incorrect stack alignment
- * Fixed issue with handling of "preinclude file" option when importing "Connectivity" example projects available in SDKs for certain MCUs (such as Kinetis KW devices)

- * Fixed issue with the SDK project wizards such that new projects could, in some circumstances, inherit memory configuration information from a previous instance of the project wizard
- * Fixed issue when importing SDK example projects that could cause projects to lose part of their configuration
- * Fixed issue with "Select All" option failing when trying to add SDK Middleware components to a project with some SDKs
- * Improved handling of incorrect SDKs
- * Fixed issue with Project Properties right-click menu which could cause it to fail to display for non-SDK projects
- * Various fixes to SDK Editor / Creator
- * Binary Utilities options are now disabled in certain cases for "CDT virtual nodes" in the Project Explorer view (when such nodes are pointing to "files" that don't actually exist in the file system)
- * Fixed issue in Fault Views which could cause certain fault registers to be displayed when they were not valid for the current fault
- * Fixed issue with the display of registers in their "natural" format in the Register view. This in particular means that floating point registers will now be displayed in floating point format by default instead of hex
- * Fixed issue with display of Registers View when the target is running
- * Fixed issue with the handling of Peripherals View for SDK-based multicore MCUs
- * Fixed issue with "Resume All" button being enabled even when all debug sessions are already running
- * Enhanced Global Variables view to allow live variables update to be started/stopped whilst target is paused
- * Fixed issue with LinkServer debug which could cause connection failures when debugging MCUs (such as LPC8xx) which use the "-vc" debug option by default
- * Fixed issue with LinkServer flash driver handling causing unnecessary memory accesses to be made, which could cause flash programming failures with some very RAM limited MCUs
- * Fixed issue with LinkServer related to debugging applications in RAM, which could prevent correct setting of breakpoints

- * Fixed issue with LinkServer attaching to projects running in RAM
- * Improved LinkServer debug connections to RT10xx devices to avoid occasional "wire ack" fault that could occur when resetting MCU at the end of flash programming
- * LinkServer debug connections now default to using the same Peripheral View service as used by SEGGER and P&E debug connections. The LinkServer native service can currently be reenabled via a preference, though this functionality will be removed in a future release
- * Fixed issue that could cause LinkServer debug to occasionally slow down
- * Improved LinkServer command line programming stability
- * IDE now displays double precision registers in Register View with SEGGER and P&E Micro debug connections by default (where available on MCU)
- * Upgraded to a later version of the P&E Micro plugin (v3.9.9)
- * Upgraded to a later version of the SEGGER software (v6.42b)

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Version 10.3.0 (Dec 2018)
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- * Major restructure of product installation structure to allow future minor product updates to be potentially delivered via Eclipse Software Update mechanism
- * Upgraded supplied GNU ARM Embedded Toolchain to GCC7 2018q2-update
- * Added support for MCUXpresso SDK v2.5.0
- * Upgraded integrated version of MCUXpresso Config Tools to v5
- * IDE now provides a workspace preference to allow the location of the SDK Drag&Drop installation folder to be changed. However by default a central 'mcuxpresso' folder is still used. Current install location label displayed in the "Installed SDKs" View
- * IDE now generates part support information from installed SDKs into the workspace rather than into a central 'mcuxpresso' folder, improving behavior when multiple IDE instances are being used
- * New implementation of the "Registers" View, allowing categorisation of certain registers groups, as well as providing access to additional CPU registers for P&E and SEGGER debug connections

- * New "Faults" view compatible with LinkServer, P&E and SEGGER debug connections implemented (replacing the previous "vectpc" pseudo-register in Registers view for LinkServer debug connections). This view provides a decoding of the Cortex-M cpu's fault registers and stack backtrace to assist the user in tracking down the cause of hard faults and other processor exceptions
- * SWO Trace now supported via SEGGER J-Link and P&E Micro debug probes (in addition to LinkServer LPC-Link2 debug connections). Note that only recent versions of P&E probes support SWO
- * NXP LPC-LINK2 CMSIS-DAP firmware soft-loaded by IDE updated to v5.224, providing noticeable performance improvements over previous v5.183. For standard (debug+SWO) firmware, flash programming speed increases of typically >10% along with increases in SWO trace speed. For Non-bridged firmware (debug only), flash programming speed increases of typically >20%
- * Project Explorer View enhanced to emphasise currently selected project, along with displaying its current build configuration
- * Editing Memory Configuration for projects is now done in place rather than spawning separate editing dialog
- * IDE now only creates a debug launch configuration for the current build configuration when a project is debugged (if one does not yet exist), rather than for all build configurations
- * New SDK creator wizard to create a "board SDK" from an existing project (with settings modified using the MCUXpresso Config Tools). This "board SDK" can then be used to create new projects for custom boards
- * Package associated with an SDK project can now be modified via the MCU entry of the project's "Project Settings" virtual nodes in the Project Explorer view
- * IDE now supports additional build configurations being specified in SDK example definition files
- * Added Linux Tools Libhover to preinstalled plugins (providing tooltips for standard C library calls)
- * Upgraded to a later version of the P&E Micro plugin (v3.8.3)
- * Upgraded to a later version of the SEGGER software (v6.40)
- * Updated FreeRTOS TAD plugin to v1.0.8
 - Support heap using Newlib (identified as heap #6)
 - Support FreeRTOS 10.1.1
 - Fix highlight of free section in Heap Usage view

- * Windows version of IDE now uses "busybox" (from "GNU MCU Eclipse Windows Build Tools" project) , to provide a Unix-like layer for GCC tools to run under, rather than the "msys" package used by previous releases
- * Modified order of entries added to local shell's path when building projects under Windows - providing small improvement in build speeds
- * Additional LinkServer flash drivers provided for RT1060 and RT1064
- * Preliminary LinkServer support for LPC55xx devices
- * Added basic support for Cortex-M33 secure projects
- * Added support for Cortex-M33 No DSP variant
- * LinkServer debug executable now allows probe selection by serial number (mainly intended for command line flash programming operations)
- * Redlib updates
 - Fixed snprintf() / vsnprintf() to prevent hard fault when NULL buffer passed
 - Fixed issue with number sequences generated by rand()
- * Made ordering of C Libraries in drop down lists consistent across various menus
- * Allow user to only choose valid FPU settings in the Architecture tab of Project Settings
- * "Quick Settings" option now allows reconfiguring multiple projects (where projects have compatible settings)
- * Fixed issue that could cause a project to lose modifications to its memory configuration
- * Grouped SDK actions under new "SDK Management" entry of Project Explorer popup menu
- * Fixed issue that could cause a project's list of associated SDK components to be lost
- * Fixed issue with sorting of boards in SDK project wizards not taking any current selection into account
- * Fixed issue with default peripherals.c/h files being automatically (and incorrectly) added during SDK example import
- * Fixed issue with Import of >1 SDK examples sometimes failing to correctly pickup some IDE default settings
- * Fixed issue with SDK Project Component Manager when adding

components with conditional sources to an existing project

- * Improved handling of C library family setting when importing multiple SDK examples
- * Fixed issue that could cause the IDE to block if requested to change the SDK associated with a project
- * Fixed issue with SDKs become unusable after cancelling an unzipping operation
- * Fixed issue with SDK New Project Wizard when no board selected which could cause wrong header files to be generated
- * Fixed issue with SDK New Project Wizard such that main.c file always included the BOARD_InitDebugConsole() call even when the debug console component is not selected
- * Fixed issue with handling of derived peripherals containing '_' in name
- * Implemented partial workaround for underlying Eclipse issue that can cause a "Target Not Available" dialog if starting a debug session with the Disassembly view open
- * Fixed issue with SEGGER launch configurations failing to reset MCU after programming flash
- * Fixed issue with launch configurations created using standard Eclipse functionality, as opposed to automatically created using MCUXpresso IDE
- * Enhanced handling of additional bespoke launch configurations
- * Fixed issue with sorting in Probe selection dialog
- * Fixed long standing issue with LinkServer launch configuration tabs changing order every time the launch config editor is open
- * Fixed issue that could cause the launch configuration selection dialog to be displayed twice in some circumstances
- * Fixed longstanding issue with that prevented Instruction Trace and SWO Trace being used together
- * Fixed issue with Instruction Trace Config view not correctly loading saved configuration files
- * GUI Flash Tool will now automatically select the highlighted binary file from Project Explorer View

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Version 10.2.1 (Jul 2018)

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- * Fixed issue in New Project Wizard when switching between a board and a generic device (or vice versa)
- * Fixed issue with floating point settings when importing SDK example projects for Cortex-M7 based MCUs
- * Fixed issue with notification of missing dependencies when Add/Remove Component used with SDK v2.4.0 packages
- * Improved options to handle part selection when project importing in cases where associated SDK is not installed
- * Fixed issue which could prevent a renamed project from being debugged in some circumstances
- * Resolved various issues with user interface of GUI Flash Tool
- * Resolved issue with workspace preferences when trying to configure the Debug perspective to be used for debugging projects (instead of the default Develop perspective)
- * Improved reliability of LinkServer debug sessions via enhancements to the way the IDE connects to the server process, as well as enhancements in the server itself
- * Improved the IDE's display of the LinkServer "RedlinkServer" console
- * Fixed issue with LinkServer "Disconnect behavior" always using "cont", even when configured to use another disconnect option
- * Option to terminate debug session added to IDE's LinkServer error dialog
- * Fixed issue with handling of number formats for entries in Global Variables view
- * Live Global Variable graphing no longer inserts spurious zero entry when target paused
- * Fixed issue with enumerated bitfield handling in the Peripheral Register viewer
- * Fixed issue with display of PriMask, BasePri, FaultMask and Control special registers in Registers view for LinkServer debug sessions. This change also now allows these registers to be edited
- * Fixed issue with LinkServer erroneously setting VTOR in some circumstances after programming flash
- * Fixed issue with zoom function on SWO Interrupt Trace view

- * Fixed issue with Instruction Trace view, which could prevent profile information being displayed in source and disassembly views in some circumstances
- * Fixed issue with Instruction Trace Config view, which prevented a modified configuration being saved
- * Preliminary LinkServer SPI flash drivers that self-configure using JEDEC SFDP information read from the device are now included for i.MX RT1020 (QSPI) and RT1050 (QSPI and Hyperflash)
- * Example device specific flash driver projects provided for i.MX RT1020 and RT1050. These can be used as a starting point for writing flash drivers for custom boards fitted with flash devices that do not support SFDP information
- * Updated FreeRTOS TAD plugin to v1.0.6
 - Fixed issues with Pause button
 - Added more verbose log for determining heap type
 - Removed problematic heap identification from available variables
- * Fixed issue which prevented the P&E Micro plugin updating from the P&E update server
- * Upgraded to a later version of the P&E Micro plugin (v3.5.6)
- * Upgraded to a later version of the SEGGER software (v6.32h)

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 Version 10.2.0 (May 2018)
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- * Upgraded Eclipse to Oxygen.3a / CDT 9.4.3. Amongst other improvements, this typically delivers a noticeable increase in build speeds
- * Upgraded supplied GNU ARM Embedded Toolchain to GCC7(2017q4-major)
- * Upgraded integrated version of MCUXpresso Config Tools to v4.1
- * Pro Edition discontinued. All IDE functionality now enabled out of the box without any further activation or purchase
- * macOS version of product now fully 64-bit
- * Quickstart Panel redesigned and now provides direct access to various operations for specific debug solutions
- * Added support for project Virtual Nodes in Project Explorer View, providing improved access to project information and settings

- * Added support for MCUXpresso SDK v2.4.0
- * Improved handling of relationship between a project and its associated SDK package, for instance allowing user to select an appropriate, alternate installed SDK package if the originally associated SDK is no longer installed
- * Fixed issue with handling of non-Latin characters in username when creating SDK support folders
- * SDK-based projects can now be converted to have 'local SDK part support', allowing improved project sharing (such projects no longer require the full associated SDK to be installed in order to build/debug)
- * SDK Documentation now accessible from within Installed SDKs View
- * Enhanced accessibility of SDK Manifest information directly from within IDE Views
- * Naming scheme used when importing SDK example projects simplified, leading to shorter, more legible filenames (also helping to avoid filename length issues when building projects on Windows)
- * Include paths added on SDK project creation are now created project relative (reducing the size of the -I options passed to gcc), except in the case where "copy sources" is deselected.
- * Projects can now be imported into a Workspace by dragging and dropping a folder (or zip) containing one or more projects into the Project Explorer View
- * Projects can also be exported by dragging from the Project Explorer View directly to an OS filer window
- * Added support for refreshing projects to pull in files from a newer SDK than the one they were created with
- * Enhanced display of SDK components in dialogs such as the New Project Wizard by allowing full-height scalable columns
- * Fixed a minor issue with semihosting hard fault handler generated by project wizards, failing to set return value correctly
- * Fixed an issue with the SDK new project wizard failing to set some compiler options correctly, meaning that project build size increased, as unused functions in project sources were not removed by the linker by default
- * Projects created against SDK v2.4.0 packages will now link with the "--sort-section=alignment" option (generally, unless overridden by SDK settings)
- * Improved structure and content of static library projects created

by the SDK new project wizard

- * Enhanced support for project local LinkServer debug scripts
- * Added support for project local LinkServer flash drivers
- * Global data placement override added to Managed Linker Script properties, allowing global data to be located in RAM regions other than the first listed in the memory configuration
- * Managed Linker Script properties enhanced to allow user-specified input sections to be listed in specific memory regions in the generated linker script
- * Managed Linker Script page in Project Properties reorganized to give better layout of related options
- * Fixed an issue with validation of heap and stack region sizes on the Managed Linker Script page in Project Properties
- * Support for "Plain load images" added to the managed linker script mechanism - for use with LPC540xx MCUs. This allows an image to be placed into flash but relocated to RAM by the bootrom for execution
- * Instruction Trace functionality now available with P&E Micro and SEGGER debug connections, as well as with LinkServer connections
- * New "GUI Flash Tool", replacing and extending the functionality previously provided by the LinkServer GUI Flash Programmer. This also supports use with P&E Micro and SEGGER debug connections, as well as LinkServer connections
- * Global Variables View now offers the ability, with LinkServer debug connections, to display a live trace of values, either as text or graphically
- * Memory addresses can now be added as expressions to the Global Variables View
- * Fixed various issues with the Peripheral Register viewer, including incorrect display of peripherals defined using the SVD "cluster" tag, and failure to display certain bitfields correctly in some circumstances. Also, bitfield display ordering within registers is now identical for all probe types
- * Enhanced filter mechanism provided by the Peripheral Register viewer
- * For LinkServer and SEGGER debug connections, a hardware breakpoint is now used by default (where Cortex-M hardware allows) for the default temporary breakpoint on main(), improving support for debugging images that are relocated into RAM at boot time
- * Fixed an issue with LinkServer debug connections, which caused the

IDE's Debug View to always display "(Stopped)" in thread status (even when running) when FreeRTOS thread awareness was not in use

- * Fixed an issue with LinkServer's "vectpc" pseudo-register in the Register View (used to provide CPU status information when exceptions such as hard faults are triggered)
- * Further improvements to the performance of standard LinkServer semihosting
- * "Mailbox semihosting" mechanism now available for images linked with the Redlib C library and debugged via a LinkServer debug connection. This offers a major increase in bandwidth / performance compared to standard, breakpoint-based semihosting, as the target is no longer halted to transfer data. It requires the image to be linked against a new Redlib variant, and comes at the cost of a small increase in code size and RAM requirements
- * New Terminal View available, allowing UART output from target MCU to be displayed within the IDE rather than requiring a separate host terminal application
- * Removed automatic definition of bitband memory aliases in the LinkServer debug connection on Cortex-M3/M4/M7 parts, as these could prevent debugging in situations where a project contained similar regions in its memory configuration
- * LinkServer SPIFI flash drivers that self-configure using JEDEC SFDP information read from the device are now included for the LPC18xx, LPC43xx, LPC546xx, and LPC540xx families
- * LinkServer QSPI flash driver provided for MIMXRT1050-EVK and EVKB boards. Note that these boards require modification to use QSPI device rather than default Hyperflash device
- * Upgraded to a later version of the P&E Micro plugin (v3.5.3)
- * Upgraded to a later version of the SEGGER software (v6.32a)
- * Updated SEGGER gdbserver detection on macOS / Linux to take into account changes made by SEGGER to filenames on these platforms (in J-Link v6.30 and later)
- * Added the LPC804 MCU to pre-installed part support
- * Extended the Eclipse headless build mechanism to use the environment variable "MCUXPRESSOIDE_SDK_INSTALL" to point to the SDK install directory (primarily to support use of build servers)
- * Optional, anonymous usage information is now collected by the main IDE, as well as the integrated Config Tools
- * Updated the FreeRTOS TAD plugin to v1.0.4. Changes include:
 - Fixed Heap 5 issue with displaying large free blocks

- Fixed Heap 5 issue with calculating wrong size of heap
- Fixed issue with task stack showing overflow when usStackDepth is greater than 2048
- Fixed a heap identification issue
- Fixed an issue with Queue View when no queue has been registered

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Version 10.1.1 (Dec 2017)
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- * Fixed an issue seen when importing a single SDK example, in which example-specific settings could in some circumstances be overridden by IDE defaults
- * Fixed an issue with SDK example import failing to set the correct memory definition in a generated project, in a situation where there is an example-specific memory configuration and also one in the manifest for the board itself

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Version 10.1.0 (Nov 2017)
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- * MCUXpresso Config Tools now integrated within the IDE, for use with SDK based projects
- * Upgraded supplied GNU ARM Embedded Toolchain to GCC 6 update 2
- * Increased default max heap space of Eclipse environment requested by the IDE
- * Additional Eclipse Features supplied within IDE installation:
 - Eclipse Marketplace Client
 - Eclipse XML Editors and Tools
 - Eclipse XPath Developer Tools
 - Eclipse XSL Developer Tools
- * Fixed issue with Memory Configuration Editor when all memory blocks deleted
- * Parallel building of projects now also enabled for "release" build configuration (previously this was only done for "debug" builds)
- * Managed linker scripts now generate `_HeapSize` and `_StackSize` symbols when configured for "MCUXpresso Style" Heap and Stack placement
- * Managed linker scripts now generate `_image_start`, `_image_end` and `_image_size` symbols giving location and size of main text block (including initial values of RW data sections)
- * Added "Information" option to Binary Utilities menu to run `arm-eabi-readelf` utility

- * Enhancements to IDE's SDK handling for SDK v2.3.0 packages and manifests
- * SDK default folder mechanism updated to provide a versioning subdirectory, to prevent clash of installed SDKs if IDE v10.0.x is used after SDKs are installed into IDE v10.1.0
- * Improvements to Installed SDKs View. IDE will now show which manifest is in use and the handling of decorators (icons) to reflect SDK state has been enhanced
- * Improved handling of imported project when no matching SDK part support installed
- * Provided Delete option for when a newer version of a specific SDK is imported and replaced an older version
- * New SDK Add/Remove Component Manager allowing addition and removal of drivers, RTOS and many Middleware components to existing projects. Note some functionality only available when used with SDK v2.3.0 packages
- * SDK new project wizard now provides Middleware component selection (for use with SDK v2.3.0 packages)
- * IDE now supports SDK component categorization (where provided by SDK)
- * Projects using linked references to SDKs sources now export with only relative include paths (to an environment variable) so simplifying project sharing
- * Improved interaction between SDK and IDE over project settings (for SDK v2.3.0 packages). This allows, for instance, better synchronization in the Advanced setting page when importing examples. Also allows for projects which require specific settings such as Newlib or floating point printf
- * Enhancements to the SDK Wizard Advanced Setting page, including
 - Redirect printf/scanf to ITM option now disabled for Cortex-M0+ cpu in multicore MCUs
 - C++ project selection in project wizard now prevents selection of Redlib
- * Improved multicore SDK project handling, including enhancements within the SDK new project and import example(s) wizards
- * Enhancements to SDK handling allowing removal of "Reload" part support function, leaving only "Recreate"
- * Filter functionality for Importing SDK Examples enhanced so that now filters on any part of the example path, not just the leaf name of the example

- * New Project Wizard improved to better handle situation where user uses "back" button
- * Fixed issue with export of examples.xml file
- * Fixed issue that in some circumstances importing multiple examples could cause some projects to fail to build
- * Changes made to the SDK new project wizard's default board button position and its selection
- * Pressing SHIFT at same time as clicking on the Quickstart Panel's Debug option will now force a debug probe re-discovery
- * Fixed issue with IDE failing to display Peripheral View for a peripheral which is enabled but where some, but not all, of the registers are not accessible (for instance SPI peripheral in slave mode on Kinetis parts)
- * Added alternate ("non-enhanced") Peripheral View service for use with LinkServer that works in the same way as the Peripheral View services provided for SEGGER and P&E debug connections. This is disabled (via a preference) by default, as it is largely intended for internal testing purposes.
- * Fixed issues with Peripheral View for SEGGER and P&E debug probes, plus LinkServer in non-enhanced peripheral mode:
 - LPC17xx and LPC12xx peripherals can now be displayed
 - Display state no longer lost when execution restarted
 - Selecting peripheral register value no longer triggers an error
- * Semihosting HardFault handler now automatically included in new/imported SDK projects. This allows semihosted applications to continue execution without debug tools attached
- * AllStop mode option is now saved if a LinkServer launch configuration is created manually for the connected probe (as opposed to using the Quickstart Panel Debug option)
- * LinkServer multicore debug auto-core select now works correctly for Cortex-M0+ core on LPC541xx MCUs (using pre-installed part support)
- * Fixed issue with deleting JTAG/SWD configurations (for LinkServer connections, typically to multicore MCUs) actually deleting the launch configuration files.
- * Fixed issue with IDE's Register View when debugging multicore MCUs such that it displayed Cortex-M4 registers, but referenced them as being for the Cortex-M0+
- * For LinkServer debug sessions, failed debug sessions now report specific session that failed (useful when debugging more than one target)

- * Various functional enhancements to LinkServer GUI flash programmer. Dialog window also now resizable.
- * Fixed LinkServer (redlinkserver) script TIME function on macOS and Linux. Also corrected time resolution for this function on all 3 host platforms
- * Fixed clock setup issue with LinkServer LPC5411x and LPC546xx flash drivers, which could occasionally cause programming failures. This fix also provides noticeable increase in programming performance on these parts
- * Upgraded to a later version of the SEGGER software (v6.20d)
- * Upgraded to a later version of the P&E Micro plugin (v3.1.8)
- * Enhanced gdbserver console for SEGGER debug connection to quote invoked J-Link command when path contains spaces
- * Added support for Environment variables in JLink options
- * Improved SEGGER server handling to link consoles created to project being debugged
- * Improved SEGGER debug reset handling
- * Improved automatic LPC MCU part matching mechanism for P&E Micro debug launch configurations
- * Added LPC802 MCU to pre-installed part support
- * Added LPC8N04 MCU to pre-installed part support

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Version 10.0.2 (Jul 2017)
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- * Fixed an issue where an MCU provided in both SDK and pre-installed support (e.g. LPC5411x) could in some circumstances erroneously reselect part support for a project from the wrong source
- * Solved an issue with attempting to install a non-IDE-compatible SDK into a non-default location
- * Solved some issues with creating projects in non-default locations
- * Fixed an issue with the Properties View displaying information for the wrong device in some circumstances (for pre-installed parts)

- * Fixed an issue with incorrect dependency selection in project wizards in some circumstances when switching between boards
- * It is now possible to create makefile projects for SDK MCUs
- * Enhanced the Memory Configuration Editor to give an error if there is no RAM defined for a project
- * Enhanced the Heap & Stack Editor to allow heap size to be set to zero
- * Added a "Create Srecord" option to the Binary Utilities menu
- * Implemented a port auto-discovery mechanism for LinkServer, SEGGER and P&E Micro debug sessions, to improve concurrent debug session behavior
- * Improved editing of launch configurations via double-click, and also improved their presentation in the Project Explorer
- * Fixed some issues with manually generated launch configurations (including non-stop setting)
- * Added probe icons in the "Launch Configuration Selection" dialog
- * Fixed a failure to display registers for certain peripherals in Peripheral View for SDK-based MCUs
- * Resolved an issue with Peripherals failing to display if a '_' character was used in a register name
- * Fixed some issues with the semihosting console:
 - Space/newline characters were occasionally lost when printing only a single character
 - Empty strings were sometimes mishandled
- * Fixed an issue with "Terminate All" in some circumstances when multiple debug connections were active
- * Improved synchronization of the state of MUCXpresso IDE's blue debug button on the toolbar with the one on the Quickstart Panel, particularly when moving between tabs
- * Stopped the Registers View triggering a null pointer error when an n/a value was clicked
- * Fixed a LinkServer issue with the setting of watchpoints when debugging Cortex-M0/M0+ based MCUs
- * Fixed an issue with auto-core selection when debugging triple-core LPC43xx devices
- * Fixed an issue with display of performance counters in LinkServer SWO Trace

- * LinkServer FreeRTOS Thread Aware Debug is now only available in all-stop debug connections, not in non-stop. However, FreeRTOS TAD Views are still available for non-stop connections
- * Fixed an issue with LinkServer debug connections losing target control when an attempt was made to use more hardware breakpoint units than were implemented by the MCU
- * Fixed an issue where peripherals could fail to be displayed in LinkServer debug connections in some circumstances
- * Enhanced LinkServer support for debugging RAM-only projects
- * Reduced the startup time for LinkServer debug sessions
- * Improved the performance of LinkServer semihosting
- * Enhanced LinkServer to allow restricted parsing of the MCU debug AP bus, allowing support for MCUs with incomplete Coresight implementations
 - Debug of Kinetis KL28 MCUs is now supported via LinkServer
- * Fixed an issue with MCUXpresso IDE mistakenly attempting to use JTAG instead of SWD connections for certain CMSIS-DAP probes with multicore MCUs that have no JTAG support in hardware
- * Fixed an issue with MCUXpresso IDE in some circumstances trying to make a LinkServer multicore debug connection to a slave core without correctly selecting the core
- * Fixed the Save button for the LinkServer SWO Trace ITM console
- * LinkServer no longer leaves the MCU's CPU in debug mode when terminating a debug connection (so semihosted I/O will now hard fault, rather than causing the CPU to enter debug)
- * Made various improvements to the LinkServer GUI flash programmer
- * Upgraded to a later version of the SEGGER software (v6.16b)
- * Improved SEGGER support, including:
 - Support for concurrent debugging via multiple SEGGER probes
 - Improved SEGGER launch configuration UI, providing more options directly and adding a new Startup tab
 - Fixed an issue with terminating a debug session when multiple SEGGER debug sessions are active
 - Enhanced automatic part selection for SEGGER debug connections of pre-installed MCUs
 - Changed the SEGGER device dropdown to accept free-form text
 - Fixed an issue seen when debugging with an external SEGGER GDB server, which triggered telnet console issues
 - SEGGER server errors now appear in the dialog when debug

- connections fail
- Fixed a server shutdown when a debug session was terminated to leave the board in a running state
- * Upgraded to a later version of the P&E Micro plugin (v3.0.3)
- * Improved P&E Micro support, including:
 - Support for concurrent debugging via multiple P&E Micro probes
 - Fixed an issue with the Quickstart Terminate/Build/Debug button when used with P&E Micro debug connections
- * Various other bug-fixes and UI tweaks, including:
 - Quickstart Panel floating point options made device specific
 - Added a link to the Error Log View in the invalid SDK exception error dialog
 - Fixed a LinkServer semihosting input issue (e.g. scanf needing extra carriage returns)
 - Fixed an issue with handling the LPC5411x SDK versus preinstalled support board selection
 - Removed non-stop Probe Discovery options that had been presented for the LinkServer GUI Flash Programmer Mass erase function
 - Added an option to the Project Wizard to allow import of "miscellaneous" files from SDK project structure and SDK components into the generated project
 - Fixed an issue with library project creation pulling in startup code
- * Changed the name of the Linux installer from .run to .bin to avoid issues with the Flexera download system
- * Fixed the Linux P&E Micro udev rules setup for users who have Kinetis Design Studio installed
- * Documentation fixes and minor enhancements to reflect product changes
- * Enhancements to LPC84x support, including ROM divide support in the new project wizard
- * Added PN7xxxx to the list of pre-installed MCUs
- * Added QN9080-specific LinkServer debug support

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 Version 10.0.0 (Mar 2017)
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- * First release