Release Notes

CodeWarrior™ Development Studio for Microcontrollers v10.3 Update 1.0.0

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1   What's New

Freescale's CodeWarrior for Microcontrollers v10.3 integrates the development tools for the ColdFire®, ColdFire+, DSC, Kinetis, Qorivva, PX, RS08, S08 and S12Z architectures into a single product based on the Eclipse open development platform. Eclipse offers an excellent framework for building software development environments and is a standard framework used by many embedded software vendors.

CodeWarrior for Microcontrollers v10.3 Update 1.0.0 adds new features and addresses a number of defects.

1.1   General

1.1.1   Features

- Added ability to reconfigure Tracepoints during a debug session
- Component Development Environment operates at the Community level if no license is found. The Community license level allows you to create and freely distribute software components for non-commercial use.
- Improved performance by increasing IDE responsiveness.
- Device Initialization replaced by Processor Expert Hardware Perspective.
- Processor Expert automatically restores project upon startup.
- Added ability to disable code generation in Processor Expert for CPU.c and CPU.h files.
- Added new project option for subdirectory Static_Code.
- Added ability to select a different package in CPU Component Inspector and Processor view.
- Added F2 hot key in Project Panel to allow a component to be renamed.
- Added "Open File" command to Processor Expert component popup-menus to list generated files for selected component.
- Added "Remove Component" command in Processor Expert peripheral component pop-up menu in Target Processor view.
- Simplified New Project Wizard's Connections Dialog by listing only one entry for P&E's Cyclone MAX, Cyclone Pro and Tracelink interfaces
- Removed 'USB' from the debug configuration name for P&E: "Cyclone PRO/MAX" and "Tracelink" New Project Wizard projects
- Added Target Power ON/OFF functionality to Launch Configuration Dialog (LCD) for P&E's Multilink Universal FX and Tracelink interfaces.
- Added Windows XP 64-bit driver support for P&E USB interfaces

1.1.2   Bug Fixes

- ENGR00183690: Extended Memory Browser's memory import /export actions to handle word addressable memory spaces.
- ENGR00199441: Updated Register View to display leading 0's in binary and hexadecimal format.
- ENGR00216819: Improved startup performance by optimizing debug database loading.
- ENGR00217573: Ability to export register values in human readable format (CSV ASCII).
- ENGR00218462: Watchpoint instances are persistent after restart.

- ENGR00222130: Ensure service packs install in one step.
- ENGR00227872: Updated processor component hints in Processor Expert Components Library view to list part number, pin count and package information for derivatives supported.
- ENGR00237202: Components in User Folders are no longer moved to Processor Expert Embedded Components folder when they are disabled/enabled.
- ENGR00240738: Addressed Processor Expert CAN component code generation defect. BufferIdx range test in the GetRxFrameState() method has been changed to:

```
if (BufferIdx > DeviceDataPrv->MaxBufferIndex) {
  ...
}
```

1.1.3   Documentation

- Common Manuals
  - CodeWarrior Common Features Guide for Microcontrollers V10.x Quick Start
  - Microcontrollers V10.x Profiling and Analysis Users Guide
  - Microcontrollers V10.x Targeting Manual
  - Microcontrollers V10.x Profiling and Analysis Quick Start
  - Porting Freescale ARM Compiler-based Projects to use ARM GCC
- Processor Expert Manuals
  - Processor Expert User Manual
  - Processor Expert Components Manual
  - Component Development Environment User Guide
  - MQX Lite User Manual
- Application Notes
  - AN3859 – Adding Device(s) to the CodeWarrior Flash Programmer for Microcontrollers V10.x
- Microcontrollers 10.x FAQ Guide

1.2   ColdFire/ColdFire+

1.2.1   Features

- Added Advanced Programming options for V2-V4 ColdFire devices.
  - Preserve FLASH range
  - Choose alternative FLASH programming algorithm
- Added support for MQX 4.0 including MQX New Project Wizard and task aware debug (TAD).

1.2.2   Bug Fixes

- ENGR00174158: Added new Processor Expert method which allows transmit buffer priority to be set for FreescaleCAN.

1.2.3   Documentation

- ColdFire Assembler Manual
- ColdFire Build Tools Reference Manual
- AN4316 – Configuring Compiler Options for Optimal Performance of ColdFire Devices

1.3   Digital Signal Controller (DSC)

1.3.1   Features

- Added Advanced Programming options for DSC devices.
  - o   Preserve FLASH range
  - o   Choose alternative FLASH programming algorithm
- Added Processor Expert support for MC56F82xxx devices
- Added static code generation to Processor Expert for MC56F82xxx init components.
- Enabled by default new (-v3) '56800EX' compiler option in MC56F82xxx and MC56F84xxx New Project Wizard projects.

1.3.2   Bug Fixes

- ENGR00229650: Added signed mode for Processor Expert Init_eFlexPWM_VAR0 component with PDD2 static support.
- ENGR235878: Fixed errors when "Clean" is performed with DSC library projects.
- ENGR238318: Fixed linker errors for OBJECT command usage in DSC Linker Command File.
- ENGR240458: Fixed compiler crash issue for test cases with '__restrict' usage.
- ENGR240207: Fixed confusing source code dump issue in the disassembly generation for final elf files.

1.4   Kinetis

1.4.1   Features

- Updated ARM Ltd. GCC compiler to version 4.7.3 and integrated with EWL libraries.
- Improved FSL ARM compiler stability and usability
- Added full support for K11D, K21D and K61F devices including Processor Expert support.
- Added trace and profile support for K11D/K12D 50MHz devices
- Improved MTB trace buffer setup
- Added ability to set/change Tracepoints during a debug session.
- Updated OpenSDA DEBUG application to v1.05
- Added option to ARM GCC compiler to allow users to enable/disable listing file generation.
- Defined a default semi hosting macro (-D__SEMIHOSTING) for a 'Debugger Console' [ARM GCC] I/O project selection.
- Added MQX-Lite support for Kinetis K Series devices
- Added support for MQX 4.0 including MQX New Project Wizard and task aware debug (TAD)
- New Project Wizard
  - o   Added 'Exceptions Support' in [ARM GCC] 'C++' generated projects
  - o   Added ability to disable listing file generation for [ARM GCC] Kinetis projects
- MQX-Lite New Project Wizard
  - o   Added Kinetis K families/devices. Both FSL-ARM proprietary compiler and ARM Ltd.GCC compiler are supported for Kinetis K Series families. The default compiler is ARM GCC.

- Added ability to disable listing file generation for [ARM GCC] Kinetis projects

1.4.2   Bug Fixes

- ENGR00211209: GCC ARM compiler generates correct debug location for local variables at optimization -O1 or higher.
- ENGR00217184: Added support for variables stored in more than one register to complete -O0 support for GCC ARM compiler.
- ENGR00219043: Addressed Processor Expert Serial_LDD component documentation error.
- ENGR00235129: Addressed code generation error for Processor Expert Ethernet_LDD component. A missing condition was added to the component's driver to avoid the use of a disabled clock configuration.
- ENGR00237210 – Debugger able to stop a running K60F device.
- ENGR00239108: Updated Processor Expert serial_LDD component for KL25Z128 to generate correct baud rate code for Uart1.
- ENGR00242264: Correctly passes argc/argv argument to the debugger.
- ENGR00243412: Addressed External Bus configuration error in Processor Expert generated code.
- ENGR00250837: Updated Processor Expert SPIMaster_LDD component for Kinetis 100MHz K Series devices. Generated code sets PCS field of the SPI PUSHR register to correct values, so correct chip selects are enabled.

1.4.3   Documentation

- Kinetis Assembler Manual
- Kinetis Build Tools Reference Manual
- AN4498 – Creating CodeWarrior Linker Command File (LCF) for Kinetis
- AN4416 – CodeWarrior Build Tools Options for Optimal Performance on Kinetis Cores

1.5   Qorivva/PX

1.5.1   Features

- Improved compiler stability and usability
- Support for MQX 4.0. including MQX New Project Wizard and task aware debug (TAD)

1.5.2   Bug Fixes

- ENGR00218184: Added simultaneous debugging of cores with identical register group names but with different content to support heterogeneous multi-core debugging.

1.6   S08

1.6.1   Bug Fixes

- ENGR00174158: Added new Processor Expert method which allows transmit buffer priority to be set for FreescaleCAN.

- ENGR00232471: Processor Expert MCU Target View updated for S08GT16 LQFP and PDIP packages to show the correct location of pin #1.
- ENGR00238908: Processor Expert added Init component support for all S08PT peripherals.
- ENGR00240535: Updated PWM component to remove unnecessary limit on minimal timer ticks, so list of calculated timing values is complete.
- ENGR00243258: Processor Expert generates correct code for S08PT16 FTM module.

1.6.2 Documentation

- HC(S)08/RS08 Assembler Manual
- HC(S)08 Build Tools Reference Manual
- RS08 Build Tools Reference Manual

1.7 S12Z

1.7.1 Features

- Basic 64-bit floating point support (similar to IEEE754 compliance provided for HC(S)12 devices)
- Compiler support for stack consumption estimation.
- Processor Expert support for VML64, VML128, VMC64, VMC128, VM32 silicon version 2.0.

1.7.2 Bug Fixes

- ENGR00174158: Added new Processor Expert method which allows transmit buffer priority to be set for FreescaleCAN.
- ENGR00223835: Flash Programmer provides the ability to unsecure a device via mass erase when using a P&E Microcontrollers Multilink or Cyclone Pro to connect to the device. The mass erase functionality can also be used to unprotect the device.
- ENGR00242040: Implemented Enable/Disable Event optimization in TimerInt, TimerOut, FreeCntr components.

1.7.3 Documentation

- S12Z Assembler Manual
- S12Z Build Tools Reference Manual

2 System Requirements

2.1 Recommended Configuration

- 2.6GHz Pentium® compatible processor or better
- 4GB RAM
- 20GB (When installing full product or updates for all architectures)
- 400MB on Windows system disk
- DVD drive for installation
- USB port for communications with target hardware
- Ethernet port for communications with target hardware (optional)

2.2   Operational Minimum Configuration

- 1.8GHz Pentium® compatible processor or better
- 2GB RAM
- 20GB (When installing full product or updates for all architectures)
- 400MB on Windows system disk
- DVD drive for installation
- USB port for communications with target hardware

2.3   Host Operating System Support

- Microsoft® Windows XP 32-bit and 64-bit (Professional Edition)
- Microsoft Windows 7 32-bit and 64-bit (Home Premium Edition and Professional Edition)
- Microsoft Windows 8 32-bit and 64-bit (Home Premium Edition and Professional Edition)

3   Product WEB page

CodeWarrior Development Studio for Microcontrollers v10.3 is available for download at
http://www.freescale.com/cwmcu10.

4   Installation and Licensing

To install CodeWarrior Development Studio for Microcontrollers v10.3, double-click the installation package and a wizard will guide you through the installation process. An Evaluation license is automatically installed with your product and you do not need to register it. This license allows you to develop projects as Professional Edition during the evaluation period. After 30 days, the license works as a Special Edition license (free permanent, but feature limited) which supports unlimited assembly code, up to 64KB of C code for S08/RS08, V1 ColdFire/ColdFire+, Kinetis L Series derivatives; up to 128KB of C code for V2-V4 ColdFire and Kinetis K Series derivatives; and up to 512KB of C code for Qorivva and PX derivatives.

New functionality including support for new devices can be added to CodeWarrior Development Studio for Microcontrollers v10.3 (CW MCU v10.3) with service packs, updates and patches. Service packs add specific support for new devices. Updates and patches correct software defects and add general functionality affecting more than one device family. New support can be added directly from the Internet or from a downloaded archive. If your computer is connected to the Internet, select Install New Software in the Help Menu and all available updates will be displayed. If your computer does not have Internet access, you can download the archive that contains the service pack, update or patch you need from CW MCU v10.3 Update & Patches and follow the Service Pack Updater procedure posted on the site.

Note: Before installing updates, service packs or patches, select Restart in the File menu to perform a CodeWarrior restart. This will ensure all processes (e.g. debugger shell) are closed. CodeWarrior should NOT be used during the installation process.

5   Technical Support

All CodeWarrior issues are tracked through Freescale's normal Service Request Process. To report feature requests (enhancements) or defects for CodeWarrior Development Studio for Microcontrollers v10.3, please submit a Service Request.

1. Go to http://www.freescale.com/support
2. Log in.
3. On the resulting MyFreescale page, click Enter a Service Request
4. Choose category Software Product Support
5. Choose topic CodeWarrior
6. Click Next.
7. Provide the required information. You may attach a file up to 10 MB in size to the SR. You may also specify email addresses of people you would like to keep notified on the progress of the SR. Separate multiple email addresses with commas. Depending on the nature of the issue (defects require more information) you may need to provide some or all of the information listed below.

- **Type:** pick from Question, Defect Report, Feature Request
- **Subject:** be short and descriptive
- **Description:** details your question, defect or feature request
- **Severity:** choose from Medium, High, or Critical
- **Target:** specify the hardware microcontroller/microprocessor family involved
- **Reproducibility:** choose from Always, Rarely, Sometimes, Unknown
- **Steps to Reproduce:** be precise so we can reproduce the problem
- **Expected Result**: what you expected to happen
- **Observed Result**: what actually happened
- **Product:** CW for Microcontrollers
- **Root Cause/Nature:** enter root cause (e.g. software defect)
- **RTOS:** enter the RTOS being used (e.g. NA)
- **Major:** 10
- **Minor:** 3
- **Patch:** N/A
- **Component:** enter component (e.g. Debugger)
- **Host:** enter host operating system

Please note:
The Product field must be set to CW for Microcontrollers. This will allow the appropriate Freescale personnel to find SRs related to this project very easily, follow up as needed, report on them, and gather statistics on how the product is doing.

8. When finished, click Submit.

After Submit is selected, a confirmation page will be displayed with the SR number. You will also receive a confirming email sent to the address specified in your Freescale account.

Appendix A: Known issues and Workarounds

Issue ID	Description
General	
ENGR00243590	**Description:** Update existing breakpoints option does not work as expected when importing breakpoints. **Workaround:** Remove existing breakpoint(s) before importing exported breakpoint(s).
ENGR00250596	**Description:** When selecting Filter Trace, an incorrect dialog box appears. **Workaround:** None. This feature is not functioning at this time.
ColdFire/ColdFire+	
ENGR00231314	**Description:** Compiler exits with no error messages when including a file which recursively includes itself without #ifndef…#define sequence. **Workaround:** Properly guard header files and includes in header files with #ifndef...#define sequence. #ifndef _MY_HEADER_FILE_H_ #define _MY_HEADER_FILE_H_ /* header file content here, with potentially other includes */ #endif /* _MY_HEADER_FILE_H_ */
ENGR00236318	**Description:** P&E Tracelink captures very little trace data for MCF52259. **Workaround:** None. Due to a hardware issue with MCF52259, trace does not operate properly with P&E Tracelink.
ENGR00243189	**Description:** Clean project fails with "Exec" project. **Workaround:** Disable option 'Cache symbolics between sessions' from launch configuration (Debug tab-> Symbolics)
ENGR00243601	**Description:** The correct values are not displayed for Avg Inclusive, Percent Callee, Percent Caller in the Performance View when Time Unit is changed from cycles. **Workaround:** When changing time units in Performance View, use the pie charts tooltips. They display the correct percentages.
ENGR00243932	**Description:** Data Trace is collected and shown in Trace View even when Trace Data Values are disabled for Read Data and Write Data with P&E Tracelink. **Workaround:** None
ENGR00252260	**Description:** MCF51AC256 project occasionally hangs after software reset. **Workaround:** Comment out the "setReg8(MCGC3, 0x86U);" source line to avoid occasional deadlocks in the Processor Expert __initialize_hardware() function (located in CPU component module, typically Cpu.c).
DSC	
ENGR00226381	**Description:** Reading a word from external RAM (memory space above 0x7fff) does not work correctly with Small Data Model. **Workaround:** Small Data Model only allows access up to 0x7fff. Use Large Data Model if extended data access is required.
ENGR00231323	**Description:** Compiler exits with no error messages when including a file which recursively includes itself without #ifndef…#define sequence. **Workaround:** Properly guard header files and includes in header files with #ifndef...#define sequence.

	#ifndef _MY_HEADER_FILE_H_ #define _MY_HEADER_FILE_H_ /* header file content here, with potentially other includes */ #endif /* _MY_HEADER_FILE_H_ */
ENGR00239949	**Description:** Cannot search in multi-byte addressable memory spaces (e.g. "Program" or "Data Word") **Workaround:** Use "Data Byte" memory space to search for data in memory
ENGR00251463	**Description:** When using P&E MultiLink with MC56F83xxx, the MultiLink will fail to debug after performing "Protect All" in Target Task. **Workaround:** P&E MultiLink cannot program/debug a MC56F83xxx device with previously protected FLASH memory. Do not use "Protect All" in Target Task. This issue will be addressed in a future release.
ENGR00252619	**Description:** "Check Inline Assembly for Pipeline" function does not work with V3, 56800EX core **Workaround:** None. Do not use option ' -chkasm ' on command line or 'Check Inline Assembly for Pipeline' in IDE for V3 / 56800EX core (-V3)
Kinetis	
ENGR00214463	**Description:** FSL ARM compiler exits with no error messages when including a file which recursively includes itself without #ifndef…#define sequence. **Workaround:** Properly guard header files and includes in header files with #ifndef...#define sequence. #ifndef _MY_HEADER_FILE_H_ #define _MY_HEADER_FILE_H_ /* header file content here, with potentially other includes */ #endif /* _MY_HEADER_FILE_H_ */
ENGR00238462	**Description:** Enabling MTB trace does not work through project properties. **Workaround:** Set the trace/profile options though the debugger settings.
ENGR00244296	**Description:** When building a Kinetis project for the K20 and the Freescale USB Stack, there is an internal compiler error generated, "constant value not in range for Thumb2 instructions." The project is for K20DX128VLH5 and uses the Freescale USB Stack 4.0.3. **Workaround:** Disable optimization, use –O0.
ENGR00251403	**Description:** Timestamps greater than zero are reported in Trace Data View when Timestamps are disabled for ITM trace. The development platform is a Tracelink connected to a K21DN512 board. **Workaround:** None. When timestamps are disabled, the timestamps in the Trace Data View should be zero. This issue will be fixed in a future release.
ENGR00251512	**Description:** Timestamps are reset to zero in Trace Data View when a breakpoint is hit and the debug session is resumed. The development platform is a Tracelink connected to a K21DN512 board. **Workaround:** None. When a debug session is resumed, the timestamps in the Trace Data View should not be reset to zero. This issue will be fixed in a future release.
ENGR00251760	**Description:** Unable to build the CMSIS libraries as delivered from the web. The build system is limited to an 8KB command line length. When including the CMSIS library, this line length is exceeded. **Workaround:** List all the objects being linked in a @argument file or split the library into several sub-archives.

	Description: Large Kinetis projects take a long time to build with ARM GCC compiler. **Workaround:** Disable the Freescale GCC error parser in Project Proprieties ->C/C++ Build->Settings->Error Parser Tab. This will prevent the parser from processing build console output and redirecting error messages to the "problems view."
Qorivva/PX	
ENGR00229909	**Description:** Can't access core_0 after issuing a single core reset via the on demand dialog when the project is configured for single (core_0) operation. **Workaround:** When the project is configured for single (core_0) operation, RESET causes the entire processor to be RESET. The core_0 reset occurs and core_1 is also held in RESET. To utilize single core debug functionality configure the project in Launch Configuration Dialog to debug both cores.
ENGR00233491	**Description:** During RAM debug sessions on multi-core Qorivva devices, an issue arises when a software breakpoint is set and only enabled for one core. The PC is not properly updated following resume and halt commands. **Workaround:** Ensure that a given software breakpoint is enabled in both cores, which is the default setting.
ENGR00238029	**Description:** Breakpoints/debugger stepping functions do not work when code is located in Shadow Flash. **Workaround:** The Shadow Flash is meant for silicon and system configuration storage. The ability to run code from this memory space is possible, but not recommended. The Shadow Flash does not have the appropriate hardware support to allow single stepping or setting break points.
ENGR00242360	**Description:** Debugger is not able to run a debug session out of external MRAM. **Workaround:** None. CW MCU v10.3 does not support debug sessions with code executing from MRAM.
ENGR00243417	**Description:** Enabling a hardware breakpoint fails when selecting "All Context" command in the right click context menu. **Workaround:** Setting MPC56xx hardware breakpoints using "All Context" is not supported. Set standard breakpoints by double clicking on a given line in debugger or by right clicking on a line in source editor view and then selecting "Set Breakpoint."
ENGR00252060	**Description:** The debugger will lose connection, if "Step Over" an MQX infinite loop. **Workaround:** When debugging MQX projects, do not step over functions with infinite loops. Use Resume instead.
RS08/S08	
ENGR00184839	**Description:** Debugger Flash programming will fail if the application downloaded has overlapping memory ranges. The debugger will display a "Failed to resume target process" error. **Workaround:** Check the linker options and remove the -WmsgSd1100 - WmsgSd1912 options so the linker reports overlapping memory ranges.
ENGR00243112	**Description:** Function chart in Performance View doesn't update when clicking next/previous function buttons. **Workaround:** Select the desired function directly from the functions table.
ENGR00252493	**Description:** CodeWarrior stops working when select Start/Stop Trace button with P&E Full Chip Simulation. **Workaround:** None. Software Analysis does not support simulators. Do not enable trace when using P&E Full Chip Simulation.

S12Z	

ENGR00251371	**Description:** S12Z compiler generates incorrect ASM code with opt=2 or opt =3 when an inline assembly code function accesses local variables.
	Workaround: Disable dead-store-elimination optimization by either of the following methods:
	
	1) Do not compile using opt=2 or opt=3.
	2) Place the following pragma sequence around the inline assembly function with the incorrect generated code.
	
	#pragma dead_store_elim off
	StatusType OS_GetResource(ResourceType resId)
	{
	   /* ... */
	}
	#pragma dead_store_elim reset

MQX	
ENGR00195659	**Description:** When importing MQX v3.8.1 projects for ColdFire boards, some sub files may not be located and cause an error message to be displayed **Workaround:** Locate the file(s) or edit the source lookup path to include the correct path to the MQX installation.
ENGR00210485	**Description:** MQX 3.8.1 projects for PXN2020, PXS2010 and PXS3020 boards may not operate correctly (e.g. not stop at main function). **Workaround:** Manually set the path to the initialization files in the CW installation - {MCU10.3Beta2Dir}\MCU\PA_Support\Initialization_Files\px. This issue is addressed in MQX 4.0.

Appendix B: MQX Integration

1   MQX v3.8 was developed to work with CW MCU v10.1. It is not supported in CW MCU v10.3.

2   MQX v3.8.1 was developed to work with CW MCU v10.2. It has been tested and confirmed to work with CW MCU v10.3.

3   MQX v4.0 was developed to work with CW MCU v10.2 and CW MCU v10.3.

4   MQX Lite RTOS is integrated with CW MCU v10.3. It supports Kinetis L Series devices. To create a new project with MQX-Lite RTOS do the following:

- Select **New MQX-Lite Project** in the Commander View.
- Name the project.
- Select a Kinetis device in the Devices dialog
- Select a connection in the Connections dialog
- Select preferred language and build tools options
- A Processor Expert project will be created with the **MQX-Lite** component.
- Configure the **MQX-Lite** component.
- Add and configure other peripheral components to the project.
- Select **Generate Processor Expert Code icon** in the Components View.
- Add your application code to the project.

5   MQX 3.8.1 task-aware debug is integrated with CW MCU v10.3 and will be automatically installed.

6   MQX 4.0 task-aware debug is integrated with CW MCU v10.3 Update 1.0.0 and will be automatically installed. This plug-in can be used with MQX or MQX-Lite.

Appendix C: Performance Considerations

CodeWarrior Development Studio for Microcontrollers v10.3 is a powerful tool chain. The following suggestions will help keep the CodeWarrior tools running at a respectable performance level.

1   To maximize performance, the CodeWarrior tools should be installed on a computer with the recommended system configuration. While the tools will operate on a computer with the minimum configuration, the limited hardware will restrict its ability to function at desired performance levels.
2   Close unused projects. Eclipse caches files for all open projects in the workspace. If you need multiple projects open, try to limit the number of projects to no more than 10.
3   The Eclipse IDE provides several options that provide user assistance tools. These options, however, use memory and cpu bandwidth. If performance is slow and you do not need these options, turn them off.
- Scalability options configure how eclipse deals with large source files.
    - o Scalability options
        - ▪ Editor live parsing – impacts parsing while typing, Outline view, semantic highlighting, folding, etc.
        - ▪ Semantic highlighting – C/C++ identifiers are colored
        - ▪ Syntax coloring – coloring of keywords, comments and literals
        - ▪ Parsing-based content assist proposals – content assist proposals which require parsing the file
        - ▪ Content assist auto activation – content assist activated automatically on trigger sequences, like '.', '::' or '->'.
    - o To disable:
        - ▪ Click menu 'Windows' -> 'Preference'
        - ▪ Expand 'C/C++' -> 'Editor' -> 'Scalability'
        - ▪ Uncheck 'enable scalability options'
- Content Assist Auto Activation can reduce the number of keystrokes a developer must type to create code. The Content Assist plug-in consists of components that predict what a developer will type, based on the current context, scope and prefix.
    - o To disable:
        - ▪ Click menu 'Windows' -> 'Preference'
        - ▪ Expand 'C/C++' -> 'Editor' -> 'Content Assist'
        - ▪ Uncheck all the options for 'Auto Activation'