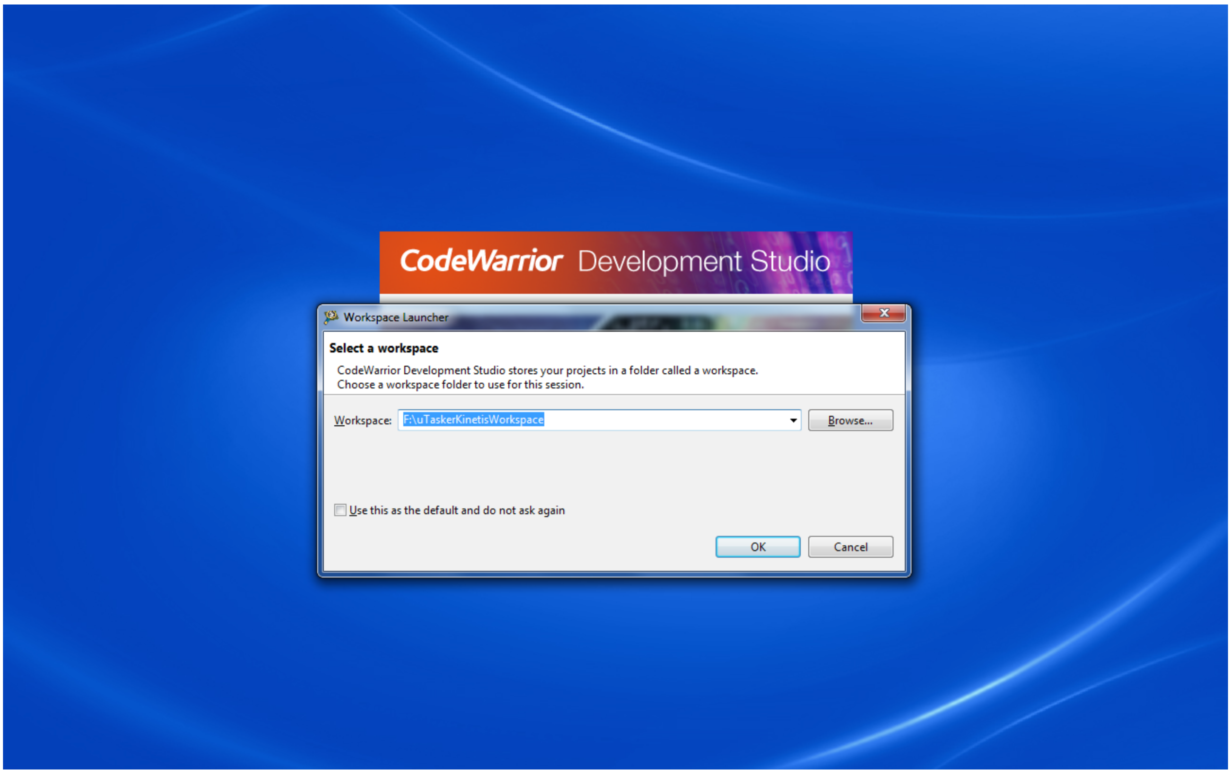
Creating a new uTasker application in CodeWarrior 10.3

Start CodeWarrior and create a new workspace anywhere on your computer.



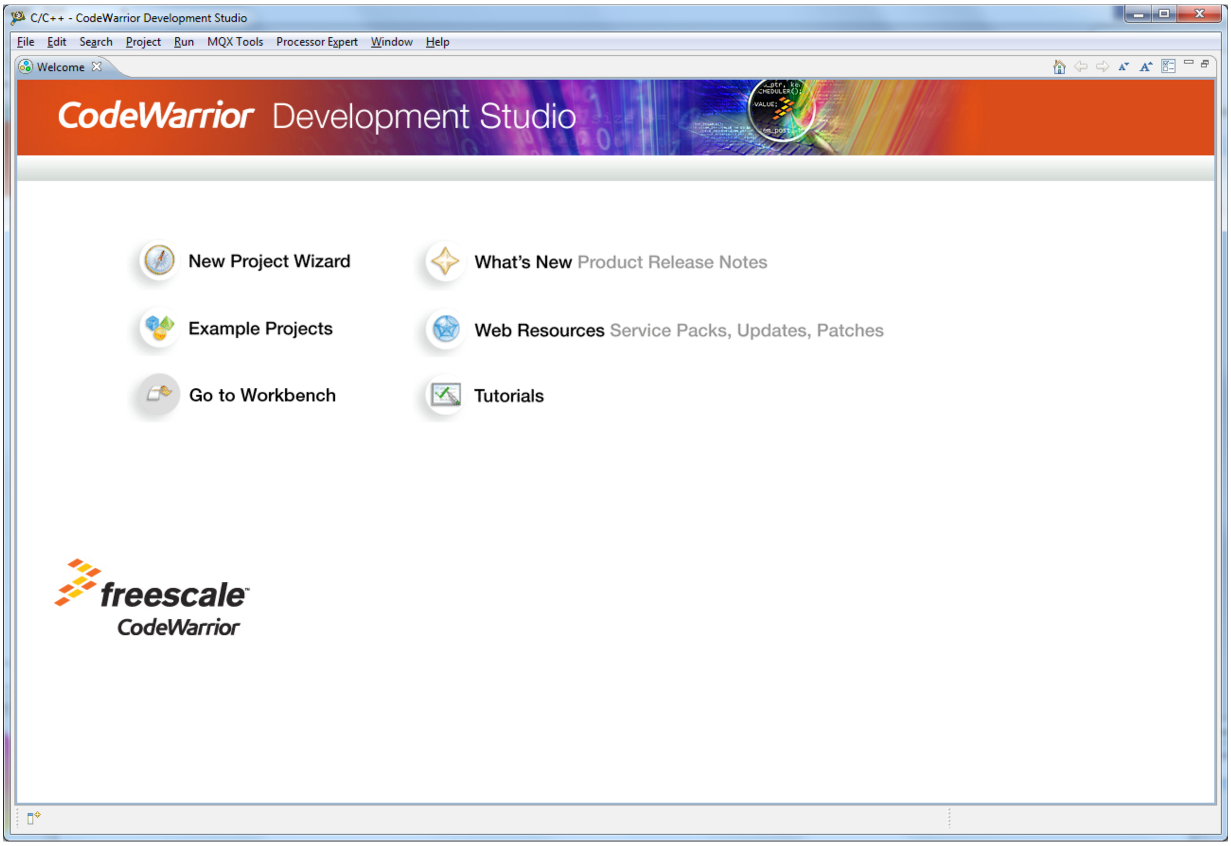
Select a workspace

CodeWarrior Development Studio stores your projects in a folder called a workspace.
Choose a workspace folder to use for this session.

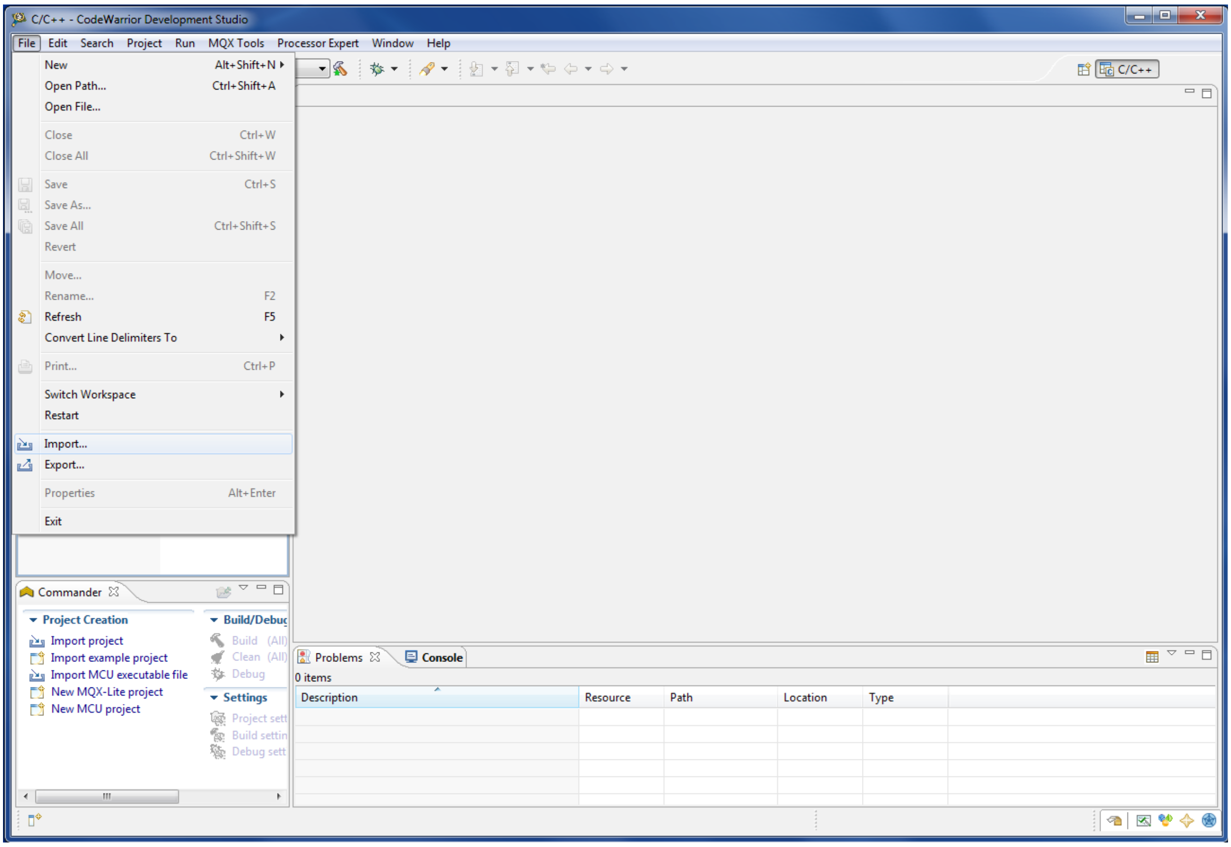
Workspace: F:\uTaskerKinetisWorkspace

☐ Use this as the default and do not ask again

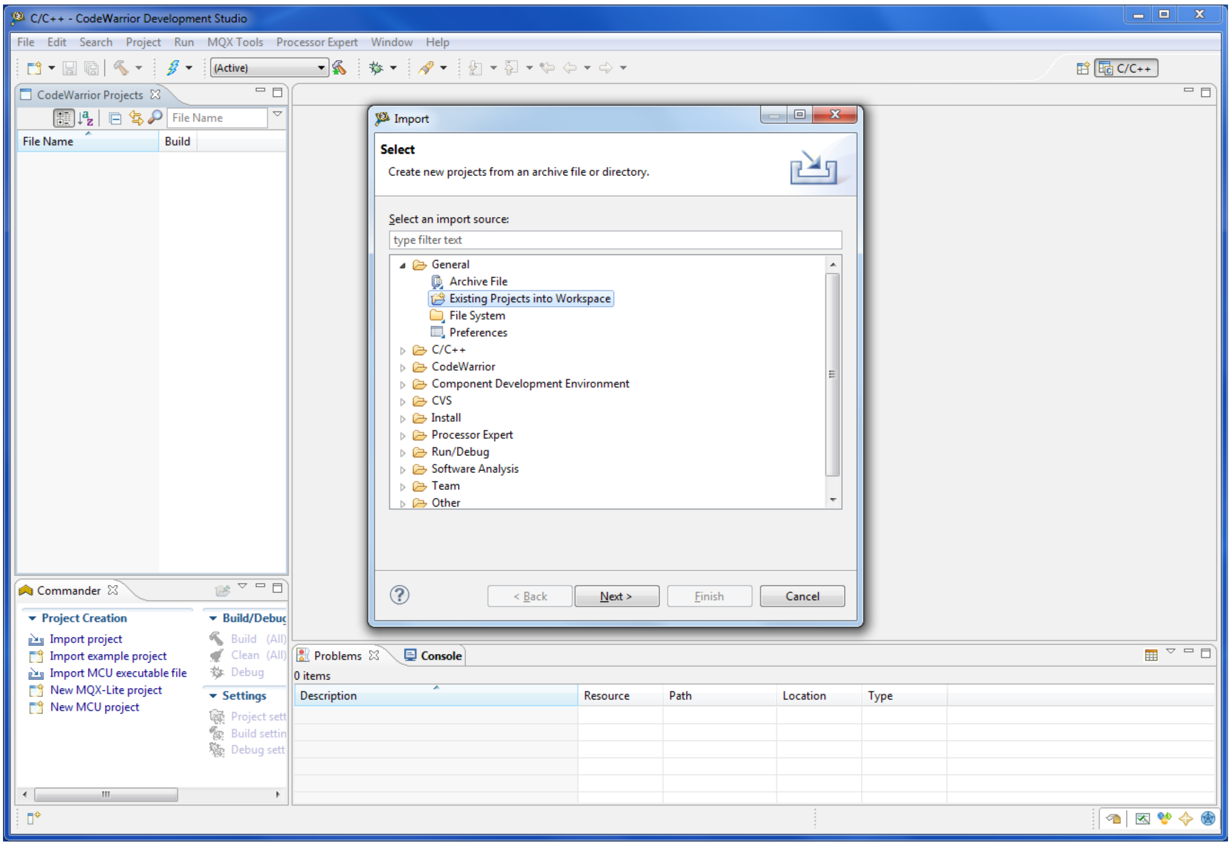
Go to Workbench to import the uTasker project.


C/C++ - CodeWarrior Development Studio
File Edit Search Project Run MQX Tools Processor Expert Window Help
Welcome
CodeWarrior Development Studio
New Project Wizard
What's New Product Release Notes
Example Projects
Web Resources Service Packs, Updates, Patches
Go to Workbench
Tutorials
freescale
CodeWarrior

To import the uTasker project select File, Import..



Choose General, Existing Projects into Workspace

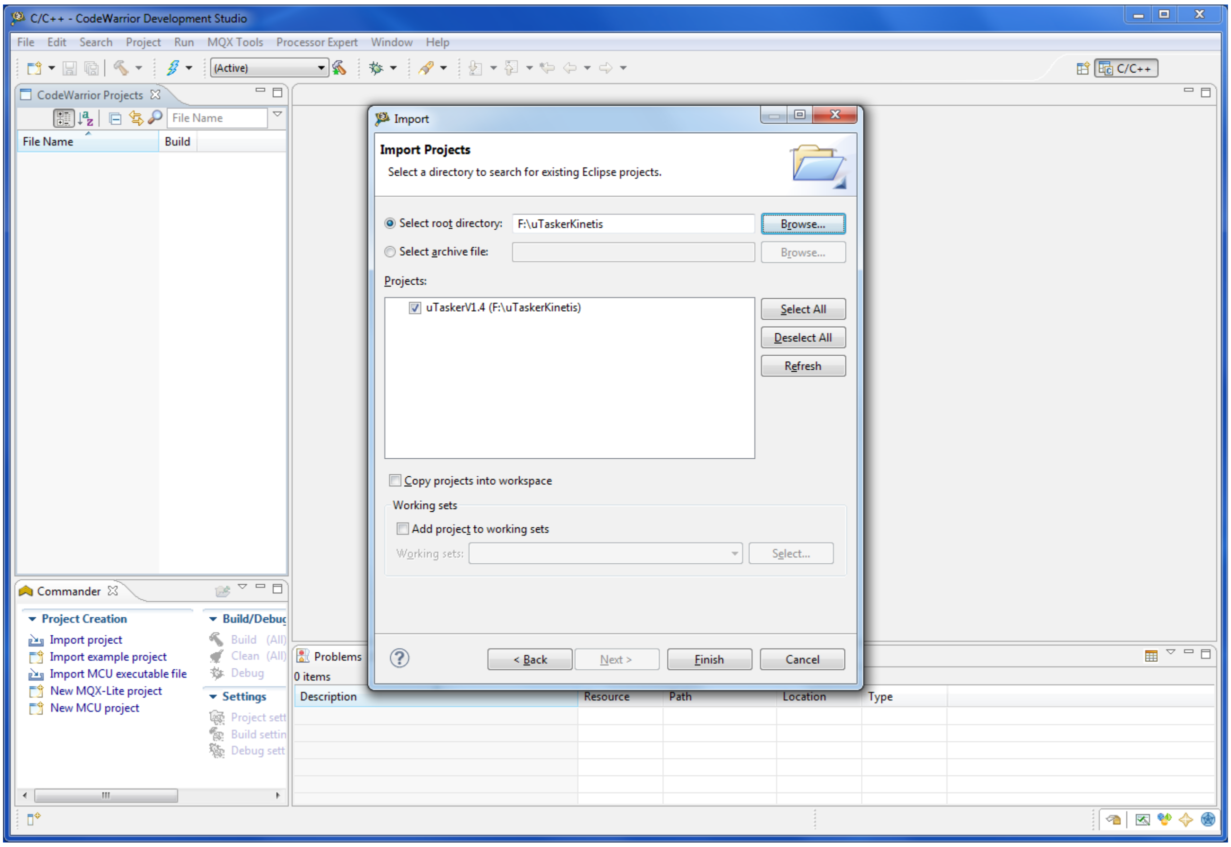

C/C++ - CodeWarrior Development Studio
File Edit Search Project Run MQX Tools Processor Expert Window Help
(Active)
C/C++
CodeWarrior Projects
File Name
Build
Import

Select

Create new projects from an archive file or directory.

Select an import source:

Select the uTasker directory, the uTasker Project should appear and should be selected.



Import Projects

Select a directory to search for existing Eclipse projects.

● Select root directory: F:\uTaskerKinetis

○ Select archive file:

Projects:

☑ uTaskerV1.4 (F:\uTaskerKinetis)

□ Copy projects into workspace

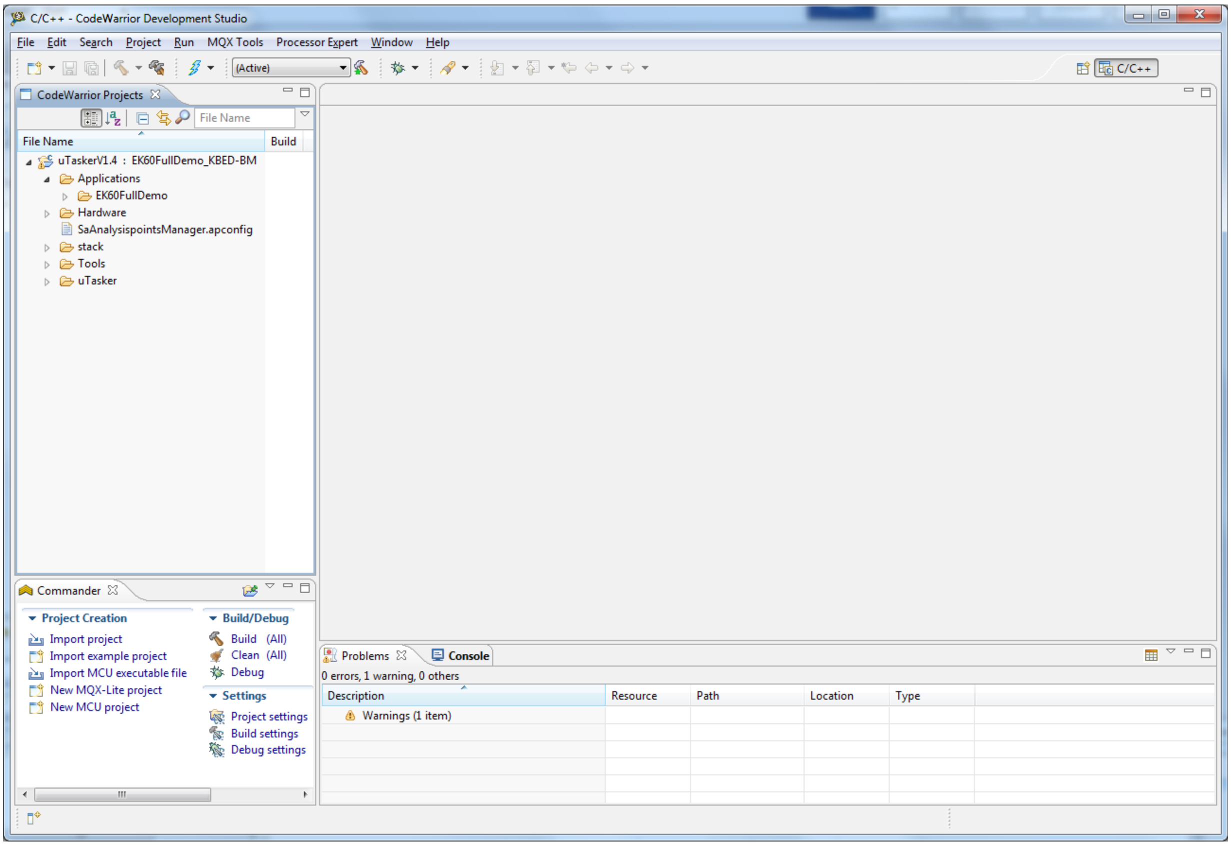
Working sets

□ Add project to working sets

Working sets:

0 items

Now you have imported the project..

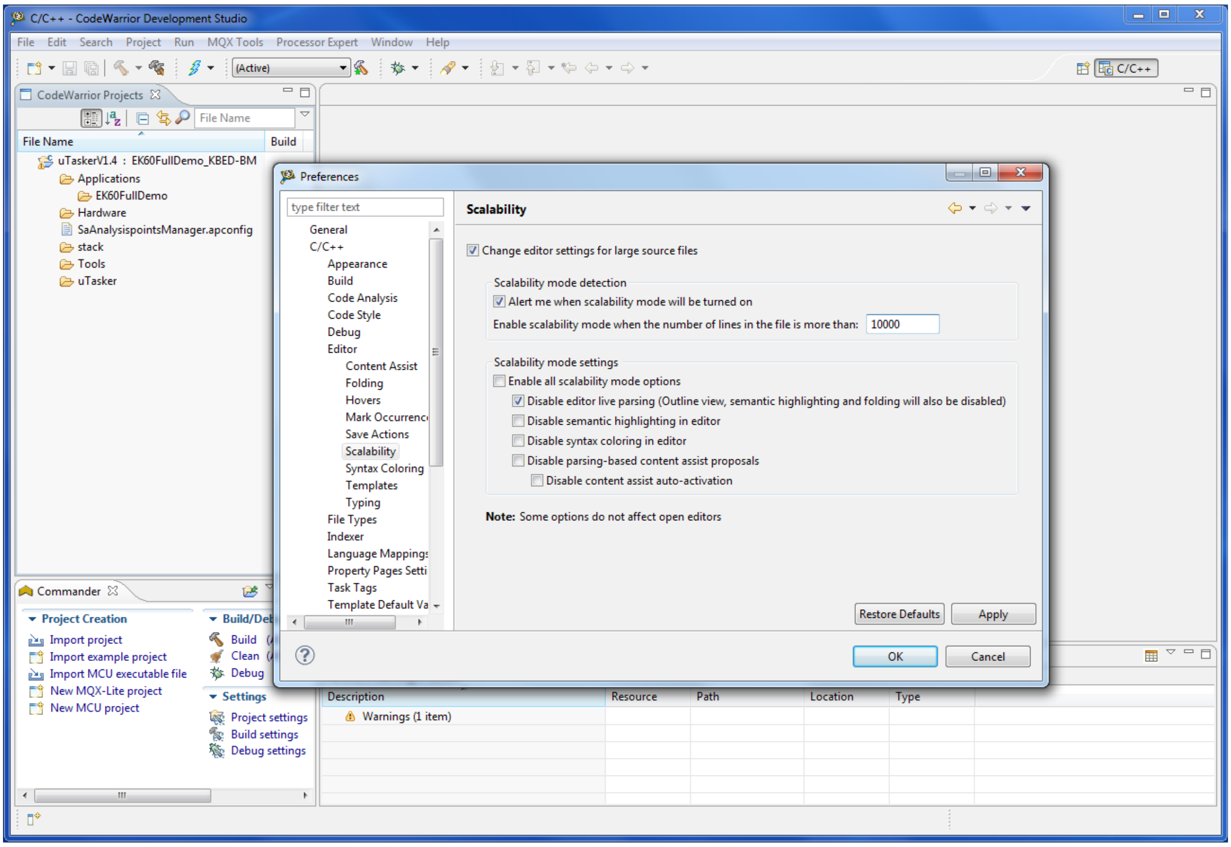


```
uTaskerV1.4 : EK60FullDemo_KBED-BM
    Applications
        EK60FullDemo
    Hardware
    SaAnalysispointsManager.apconfig
    stack
    Tools
    uTasker
```

0 errors, 1 warning, 0 others

Warnings (1 item)

To make better use of the Indexer, enable the Scalability mode at 10000 lines rather then 5000:



Scalability

☑ Change editor settings for large source files

Scalability mode detection

☑ Alert me when scalability mode will be turned on

Enable scalability mode when the number of lines in the file is more than: 10000

Scalability mode settings

□ Enable all scalability mode options

☑ Disable editor live parsing (Outline view, semantic highlighting and folding will also be disabled)

□ Disable semantic highlighting in editor

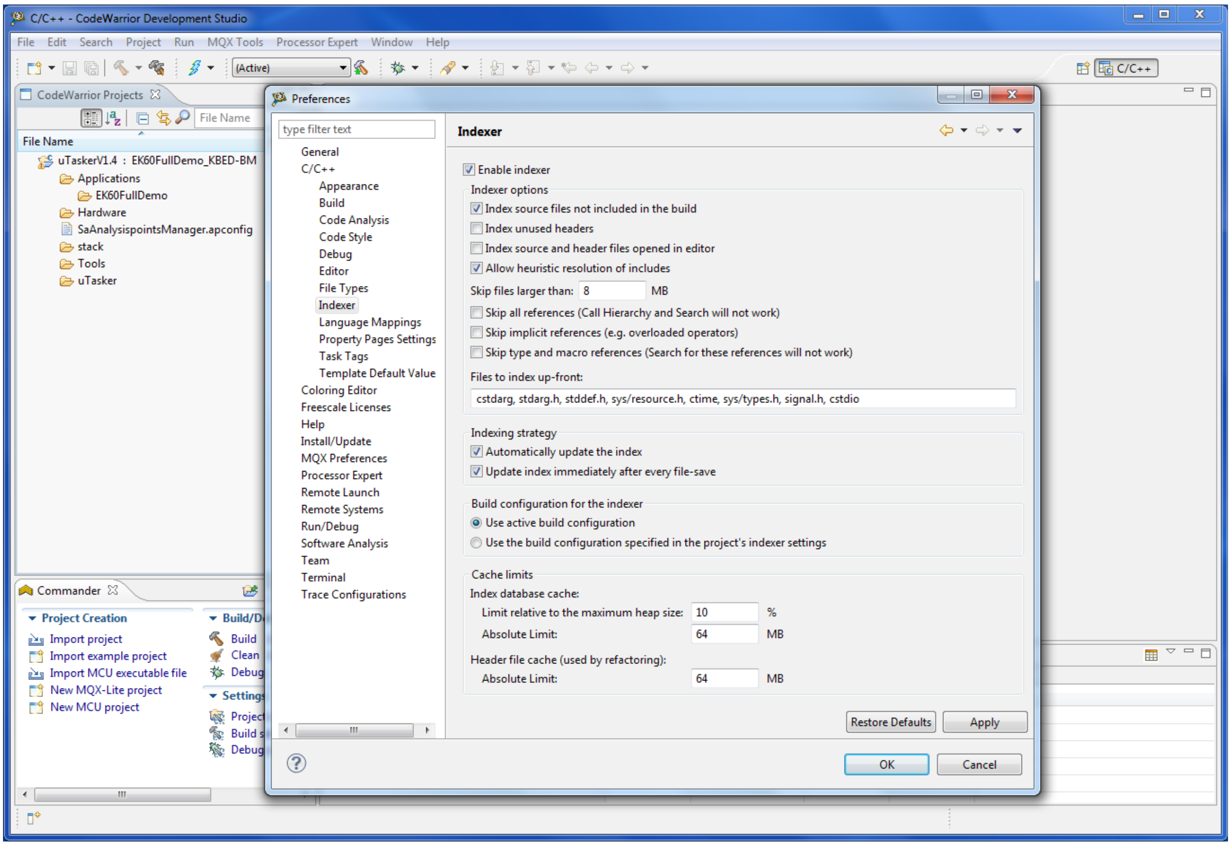
□ Disable syntax coloring in editor

□ Disable parsing-based content assist proposals

□ Disable content assist auto-activation

Note: Some options do not affect open editors

Check the Indexer settings:



Indexer

☑ Enable indexer

Indexer options

☑ Index source files not included in the build

□ Index unused headers

□ Index source and header files opened in editor

☑ Allow heuristic resolution of includes

Skip files larger than: 8 MB

□ Skip all references (Call Hierarchy and Search will not work)

□ Skip implicit references (e.g. overloaded operators)

□ Skip type and macro references (Search for these references will not work)

Files to index up-front:

cstdarg, stdarg.h, stddef.h, sys/resource.h, ctime, sys/types.h, signal.h, cstdio

Indexing strategy

☑ Automatically update the index

☑ Update index immediately after every file-save

Build configuration for the indexer

● Use active build configuration

○ Use the build configuration specified in the project's indexer settings

Cache limits

Index database cache:

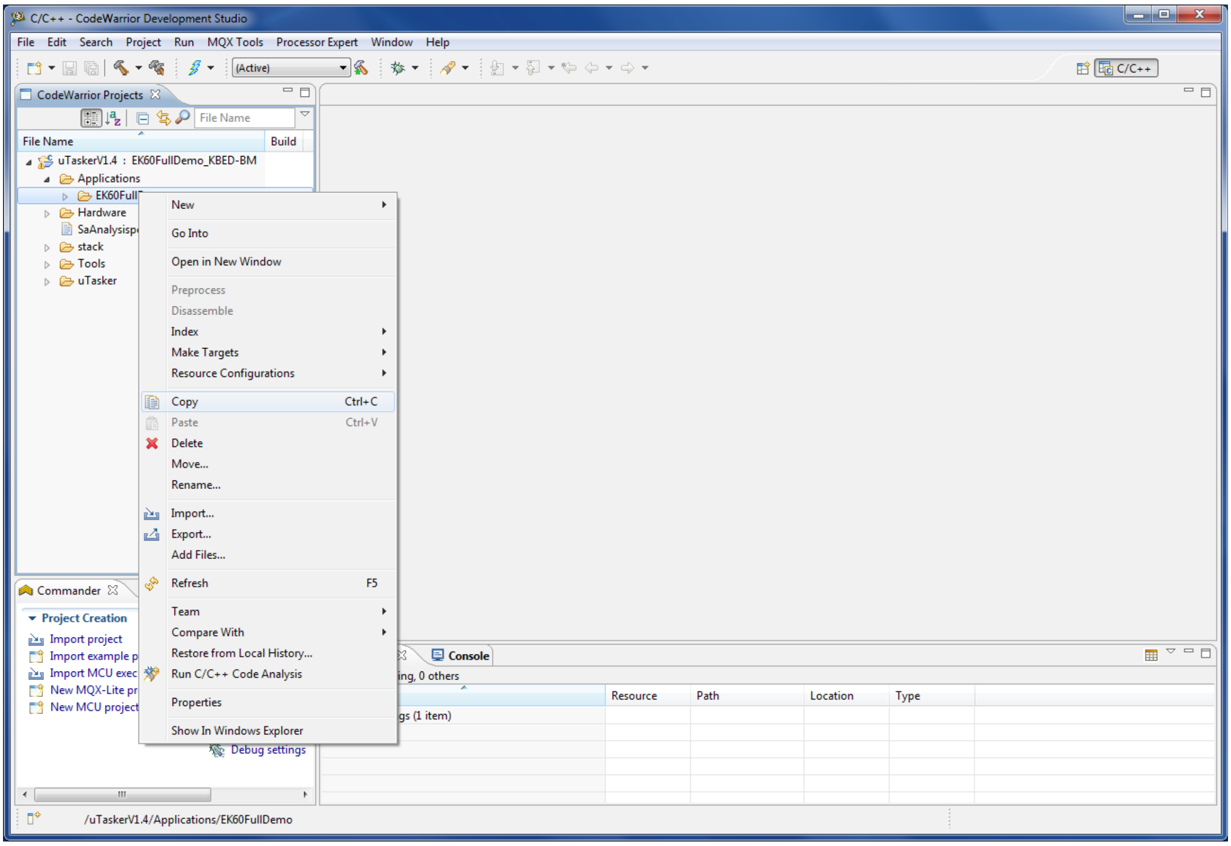
Limit relative to the maximum heap size: 10 %

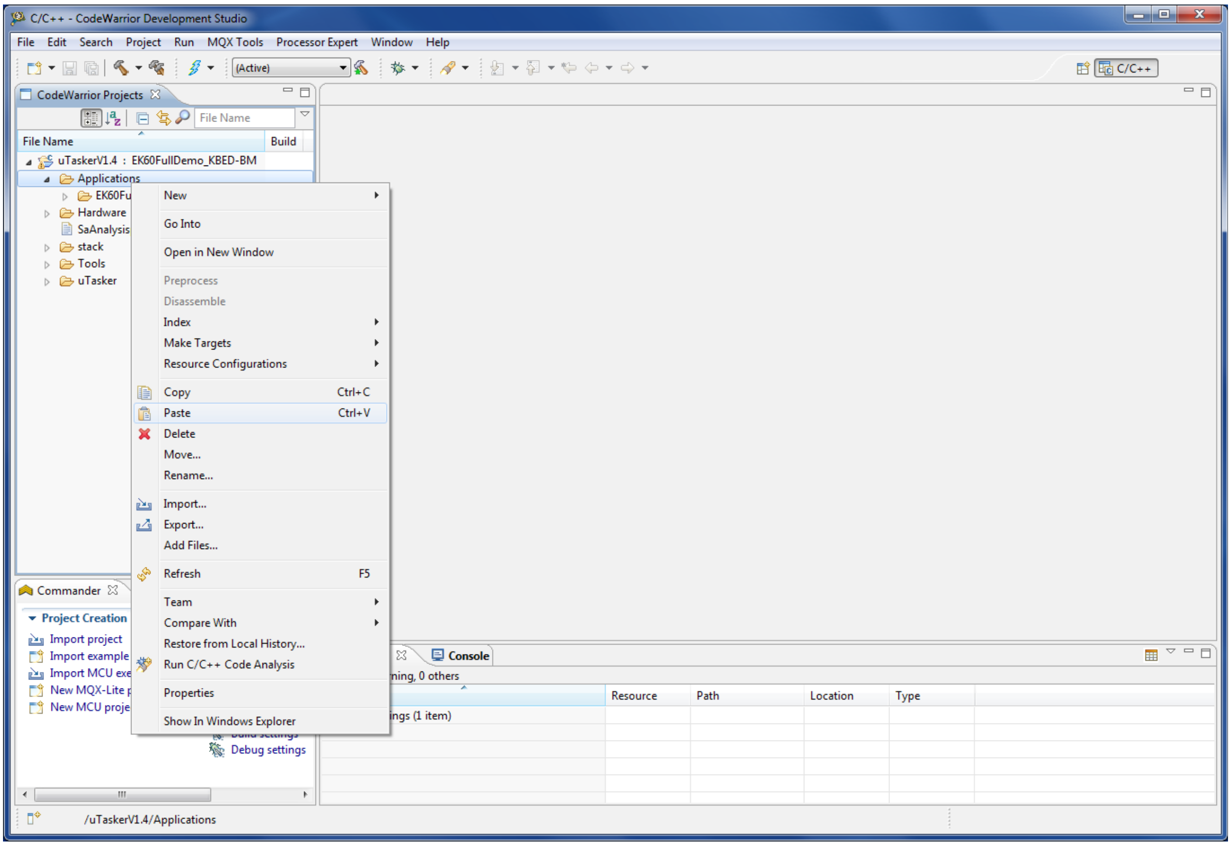
Absolute Limit: 64 MB

Header file cache (used by refactoring):

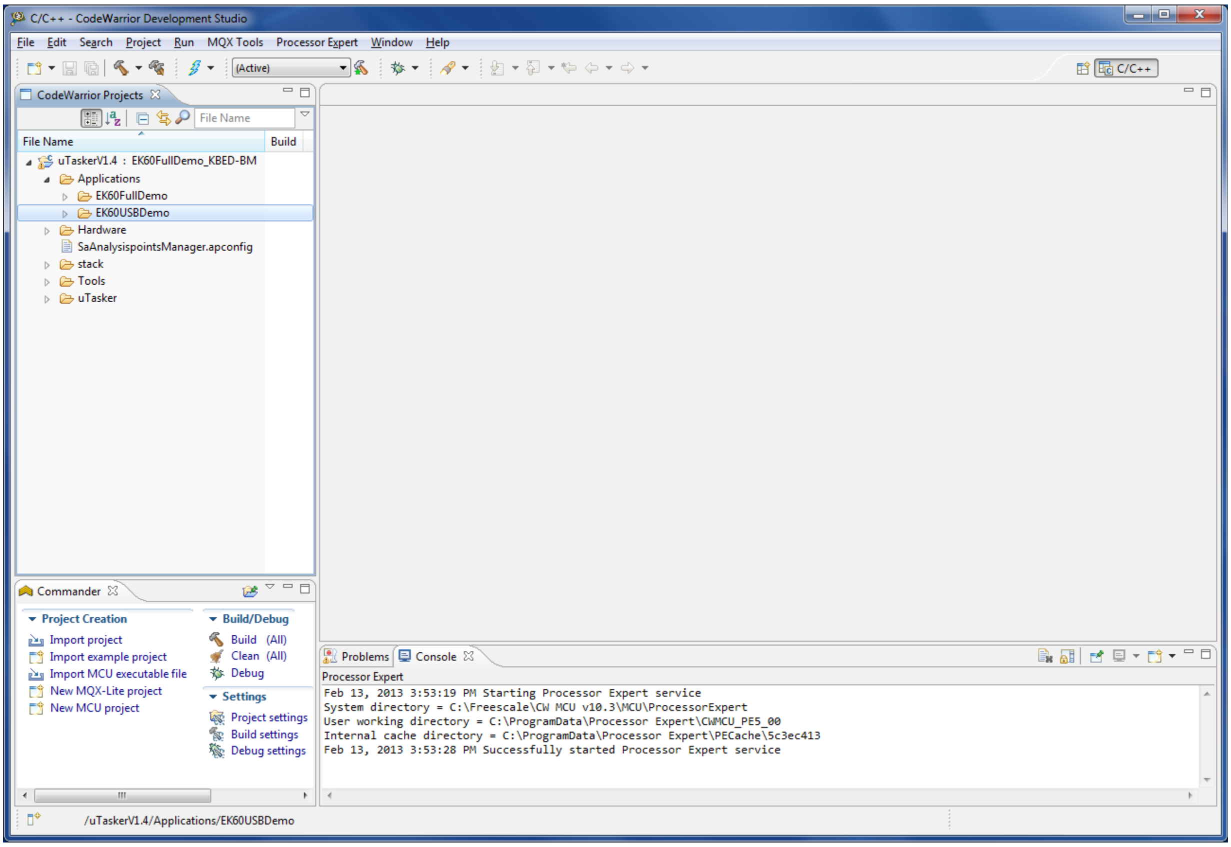
Absolute Limit: 64 MB

To create a new application you can use the EK60FullDemo application as a starting point. Copy the EK60FullDemo directory and rename it to the name of your new application.



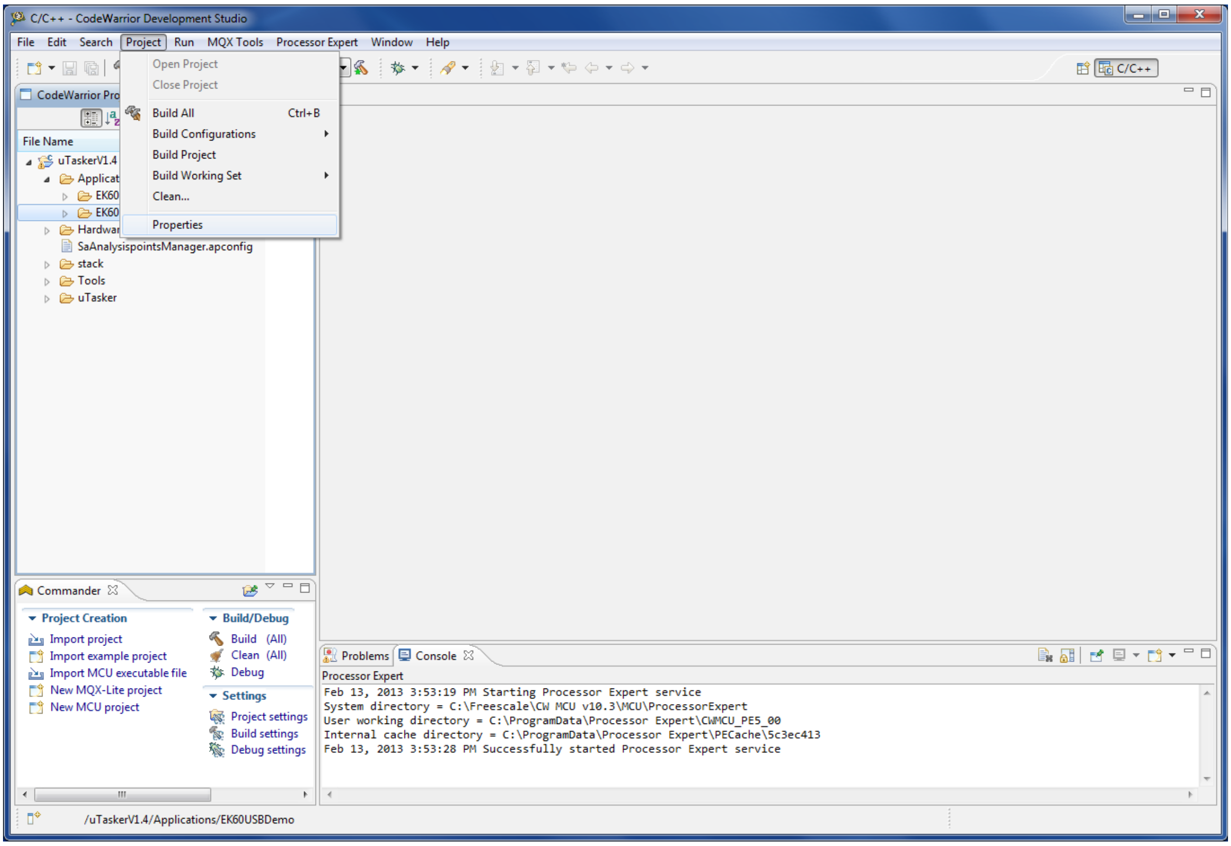


Now you have a new application directory:



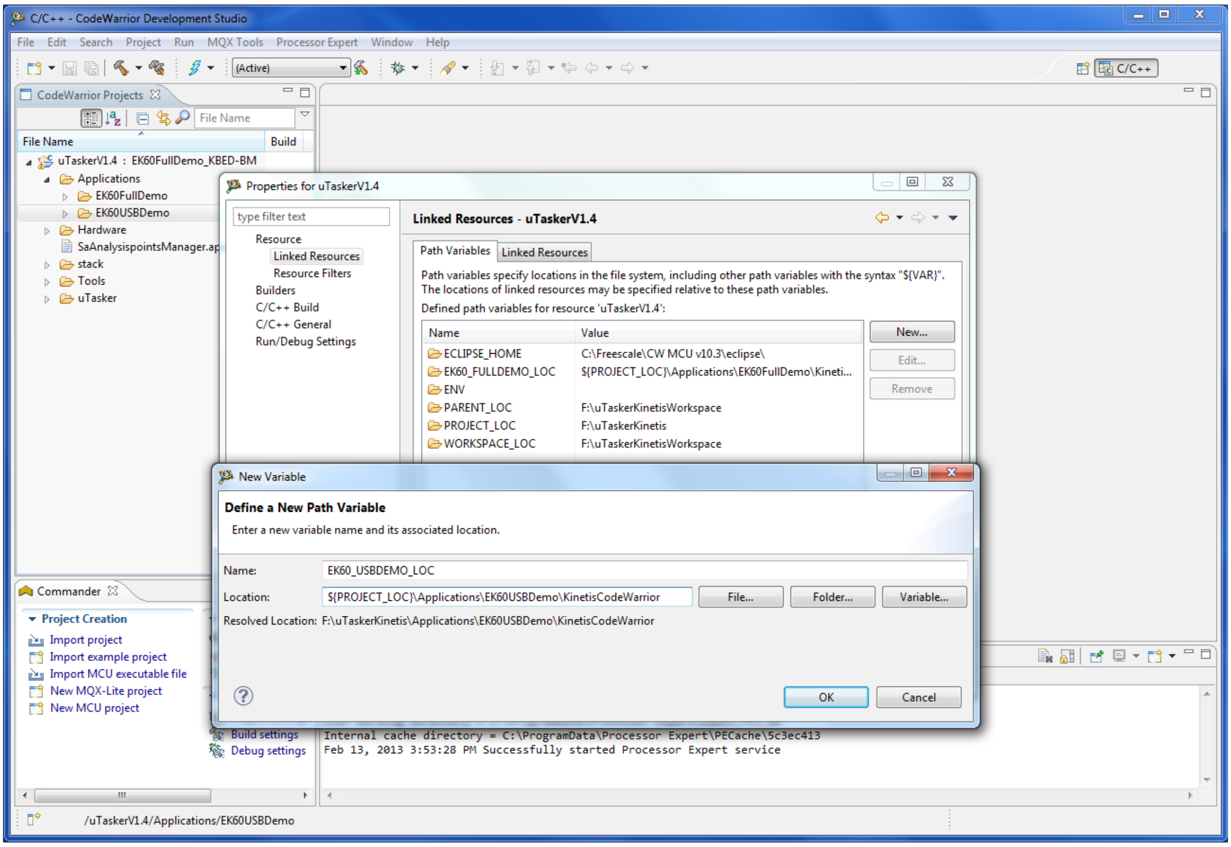
```
Feb 13, 2013 3:53:19 PM Starting Processor Expert service
System directory = C:\Freescale\CW MCU v10.3\MCU\ProcessorExpert
User working directory = C:\ProgramData\Processor Expert\CWMCU_PE5_00
Internal cache directory = C:\ProgramData\Processor Expert\PECache\5c3ec413
Feb 13, 2013 3:53:28 PM Successfully started Processor Expert service
```

Open the Project Properties



```
Feb 13, 2013 3:53:19 PM Starting Processor Expert service
System directory = C:\Freescale\CW MCU v10.3\MCU\ProcessorExpert
User working directory = C:\ProgramData\Processor Expert\CWMCU_PE5_00
Internal cache directory = C:\ProgramData\Processor Expert\PECache\5c3ec413
Feb 13, 2013 3:53:28 PM Successfully started Processor Expert service
```

In Linked Resources create a new variable holding the application location.



Properties for uTaskerV1.4

Linked Resources - uTaskerV1.4

Path Variables | Linked Resources

Path variables specify locations in the file system, including other path variables with the syntax "${VAR}". The locations of linked resources may be specified relative to these path variables.

Defined path variables for resource 'uTaskerV1.4':

Name	Value
ECLIPSE_HOME	C:\Freescale\CW MCU v10.3\eclipse\
EK60_FULLDEMO_LOC	${PROJECT_LOC}\Applications\EK60FullDemo\Kineti...
ENV	
PARENT_LOC	F:\uTaskerKinetisWorkspace
PROJECT_LOC	F:\uTaskerKinetis
WORKSPACE_LOC	F:\uTaskerKinetisWorkspace

New Variable

Define a New Path Variable

Enter a new variable name and its associated location.

Name: EK60_USBDEMO_LOC

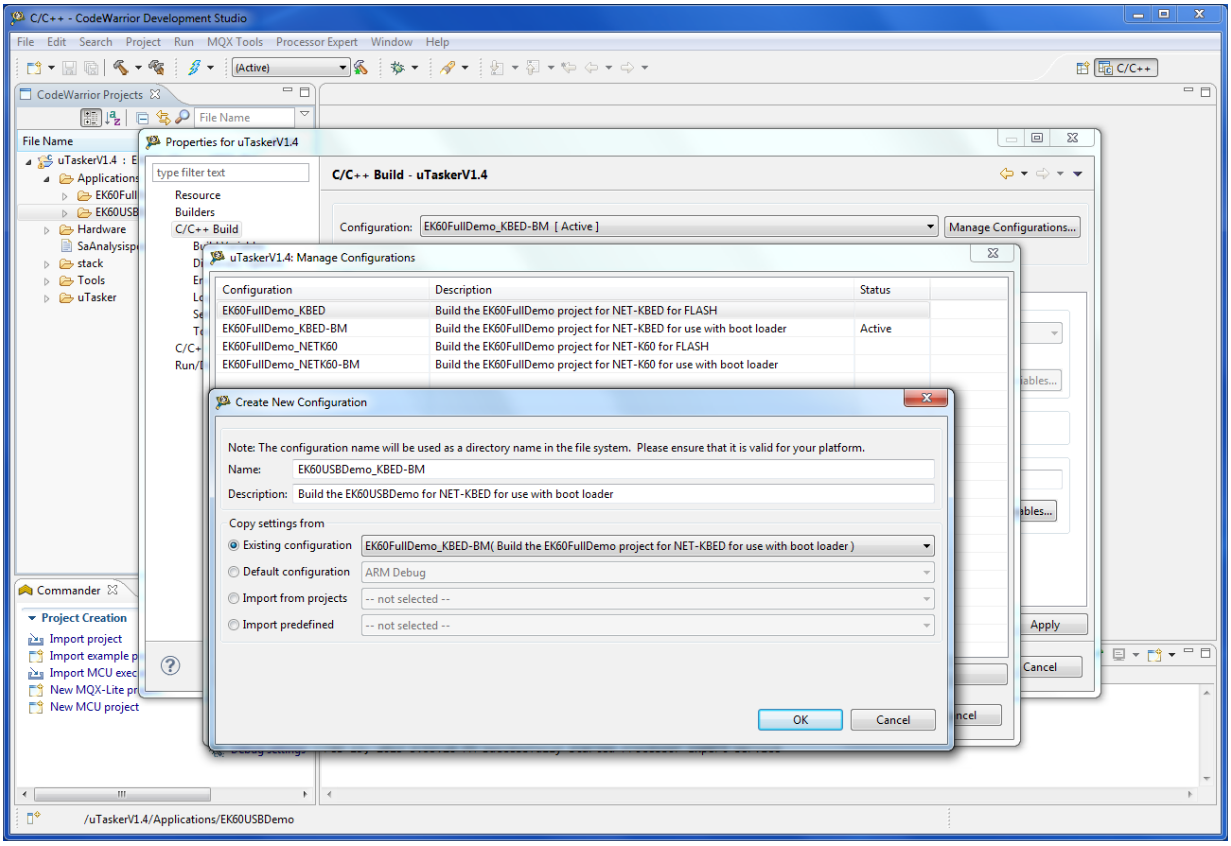
Location: ${PROJECT_LOC}\Applications\EK60USBDemo\KinetisCodeWarrior

Resolved Location: F:\uTaskerKinetis\Applications\EK60USBDemo\KinetisCodeWarrior

```
Internal cache directory = C:\ProgramData\Processor Expert\PECache\5c3ec413
Feb 13, 2013 3:53:28 PM Successfully started Processor Expert service
```

/uTaskerV1.4/Applications/EK60USBDemo

In C/C++ Build, Manage Configurations create a new Project Configuration, copy the settings from an appropriate existing configuration



Properties for uTaskerV1.4

C/C++ Build - uTaskerV1.4

Configuration: EK60FullDemo_KBED-BM [Active]

uTaskerV1.4: Manage Configurations

Configuration	Description	Status
EK60FullDemo_KBED	Build the EK60FullDemo project for NET-KBED for FLASH	
EK60FullDemo_KBED-BM	Build the EK60FullDemo project for NET-KBED for use with boot loader	Active
EK60FullDemo_NETK60	Build the EK60FullDemo project for NET-K60 for FLASH	
EK60FullDemo_NETK60-BM	Build the EK60FullDemo project for NET-K60 for use with boot loader	

Create New Configuration

Note: The configuration name will be used as a directory name in the file system. Please ensure that it is valid for your platform.

Name: EK60USBDemo_KBED-BM

Description: Build the EK60USBDemo for NET-KBED for use with boot loader

Copy settings from

● Existing configuration: EK60FullDemo_KBED-BM(Build the EK60FullDemo project for NET-KBED for use with boot loader)

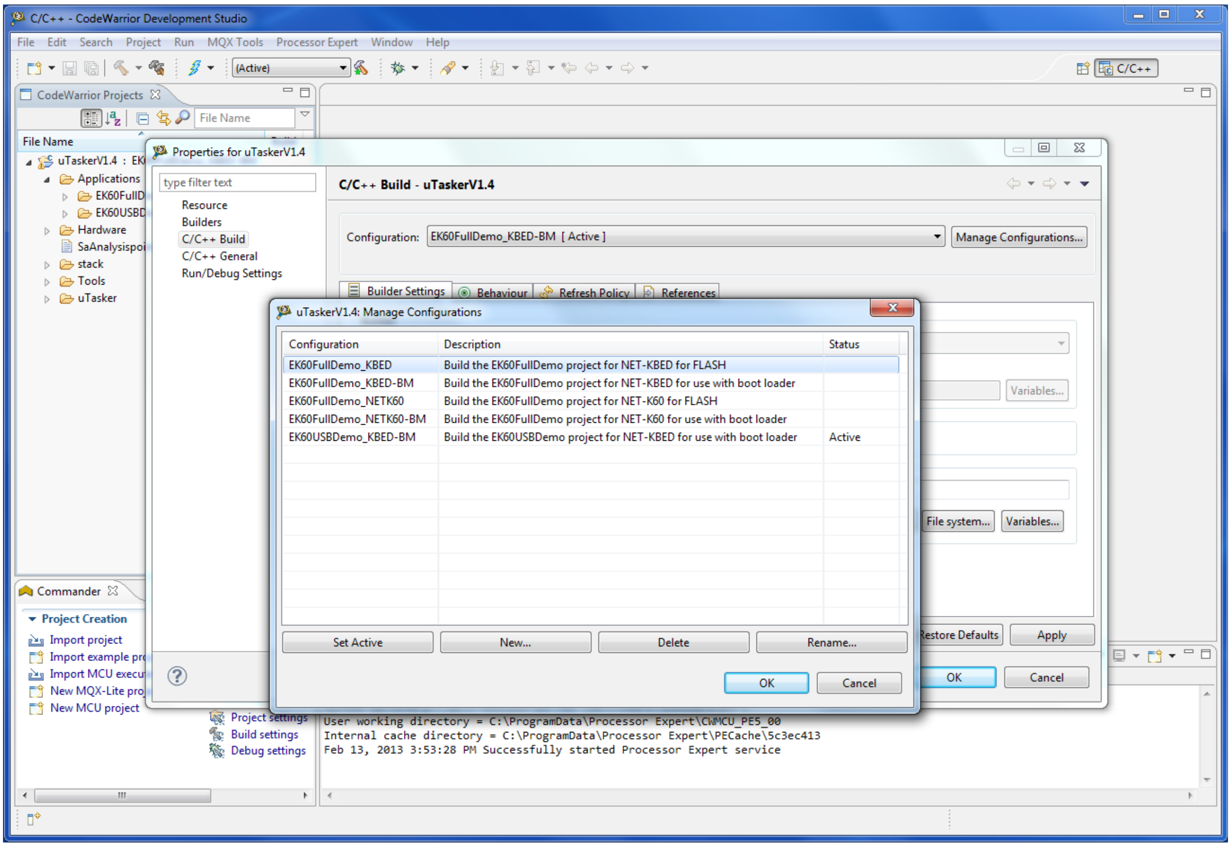
○ Default configuration: ARM Debug

○ Import from projects: -- not selected --

○ Import predefined: -- not selected --

/uTaskerV1.4/Applications/EK60USBDemo

Activate this new configuration



uTaskerV1.4: Manage Configurations

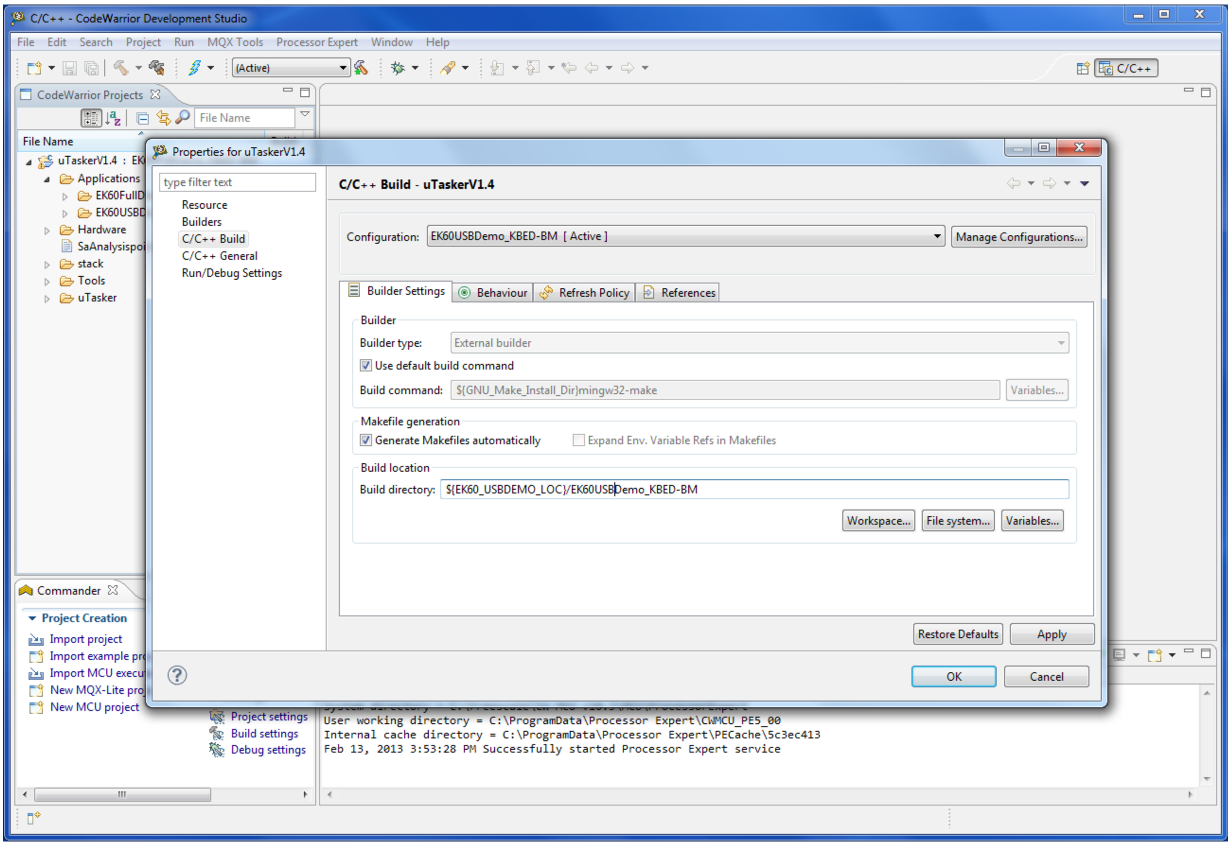
Configuration	Description	Status
EK60FullDemo_KBED	Build the EK60FullDemo project for NET-KBED for FLASH	
EK60FullDemo_KBED-BM	Build the EK60FullDemo project for NET-KBED for use with boot loader	
EK60FullDemo_NETK60	Build the EK60FullDemo project for NET-K60 for FLASH	
EK60FullDemo_NETK60-BM	Build the EK60FullDemo project for NET-K60 for use with boot loader	
EK60USBDemo_KBED-BM	Build the EK60USBDemo project for NET-KBED for use with boot loader	Active

C/C++ Build - uTaskerV1.4

Configuration: EK60FullDemo_KBED-BM [Active]

```
User working directory = C:\ProgramData\Processor Expert\CWMCU_PE5_00
Internal cache directory = C:\ProgramData\Processor Expert\PECache\5c3ec413
Feb 13, 2013 3:53:28 PM Successfully started Processor Expert service
```

Set the build location using the application location variable you created before in the Linked Resources and the Project configuration



C/C++ Build - uTaskerV1.4

Configuration: EK60USBDemo_KBED-BM [Active]

Builder

Builder type: External builder

☑ Use default build command

Build command: ${GNU_Make_Install_Dir}mingw32-make

Makefile generation

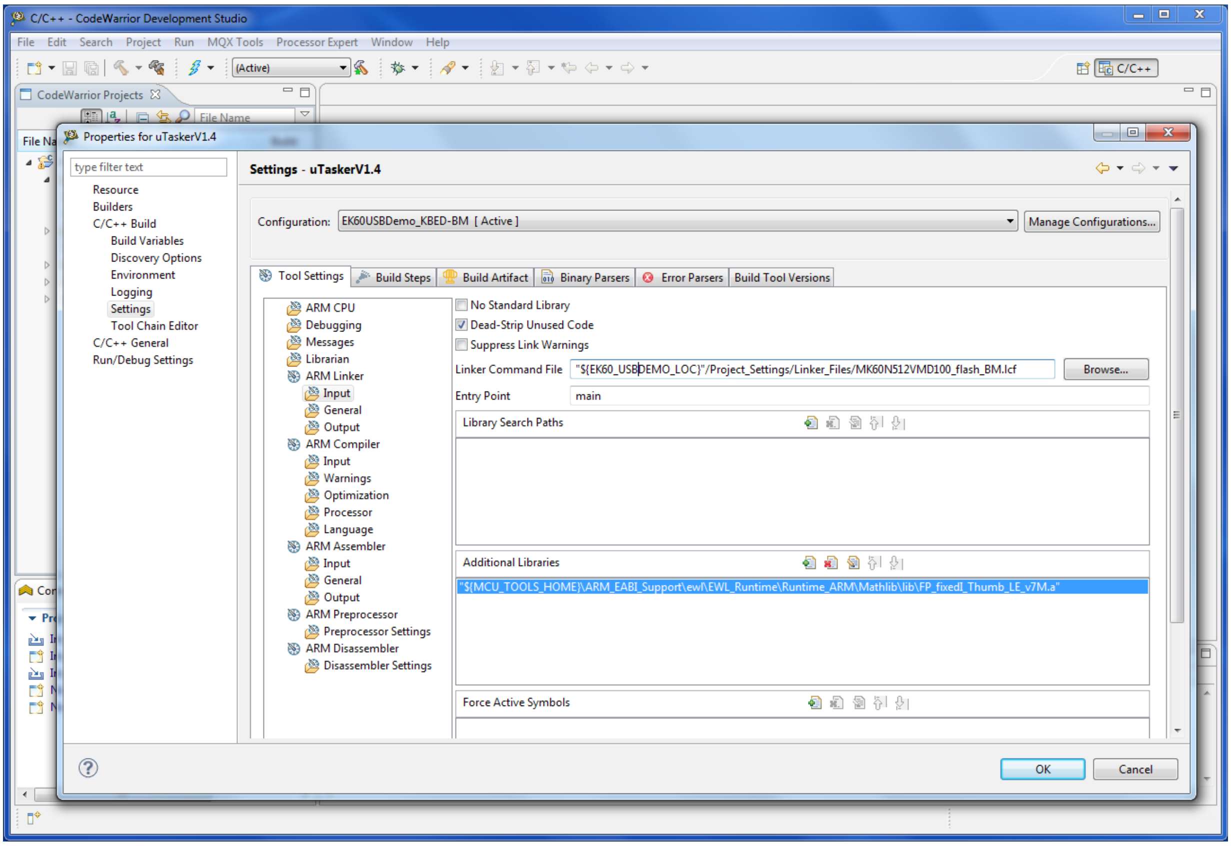
☑ Generate Makefiles automatically ☐ Expand Env. Variable Refs in Makefiles

Build location

Build directory: ${EK60_USBDEMO_LOC}/EK60USBDemo_KBED-BM

```
User working directory = C:\ProgramData\Processor Expert\CWMCU_PE5_00
Internal cache directory = C:\ProgramData\Processor Expert\PECache\5c3ec413
Feb 13, 2013 3:53:28 PM Successfully started Processor Expert service
```

In C/C++ Build - Settings – Tool Settings - ARM Linker – Input, set the path of the Linker Command File and correct the library path if necessary.



Configuration: EK60USBDemo_KBED-BM [Active]

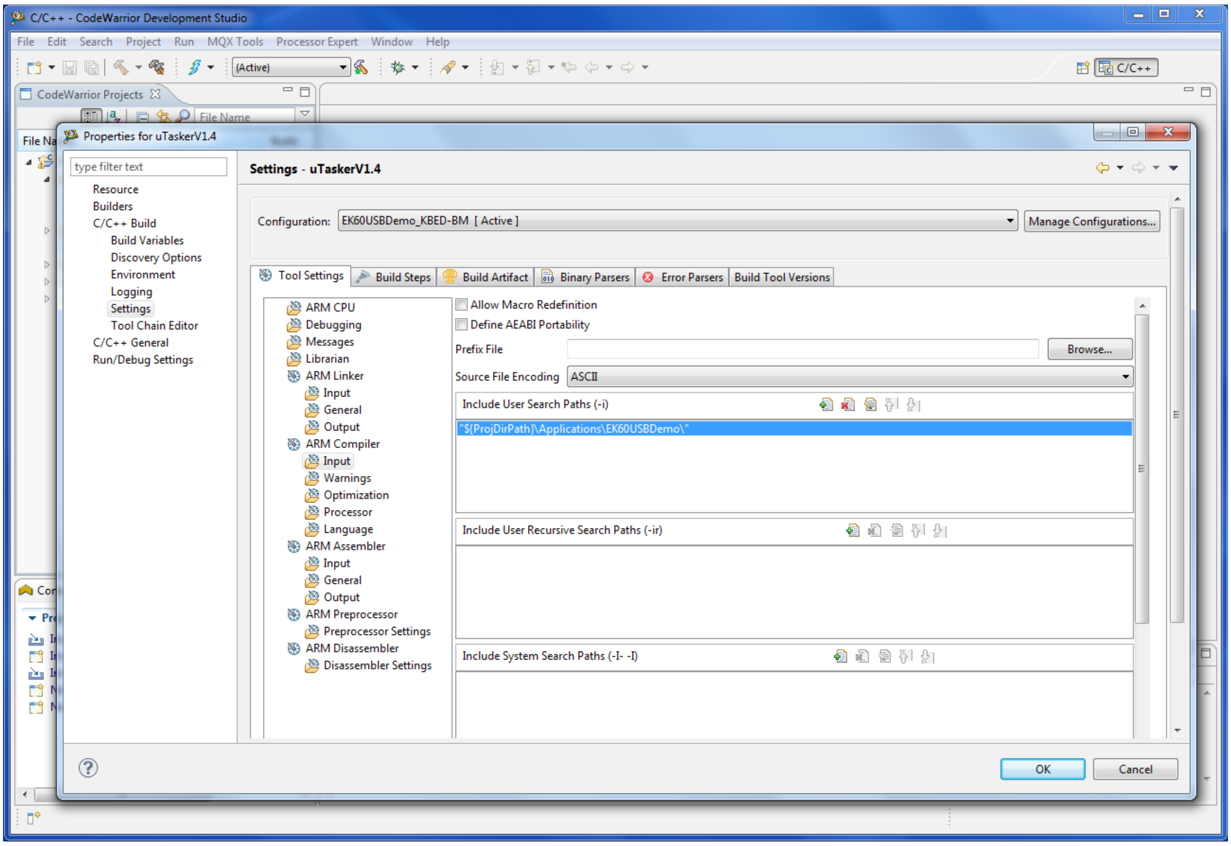
□ No Standard Library
☑ Dead-Strip Unused Code
□ Suppress Link Warnings

Linker Command File: "${EK60_USBDEMO_LOC}"/Project_Settings/Linker_Files/MK60N512VMD100_flash_BM.lcf

Entry Point: main

Additional Libraries: "${MCU_TOOLS_HOME}\ARM_EABI_Support\ewl\EWL_Runtime\Runtime_ARM\Mathlib\lib\FP_fixedI_Thumb_LE_v7M.a"

In C/C++ Build - Settings – Tool Settings - ARM Compiler – Input, set the Include Search Path.



Configuration: EK60USBDemo_KBED-BM [Active]

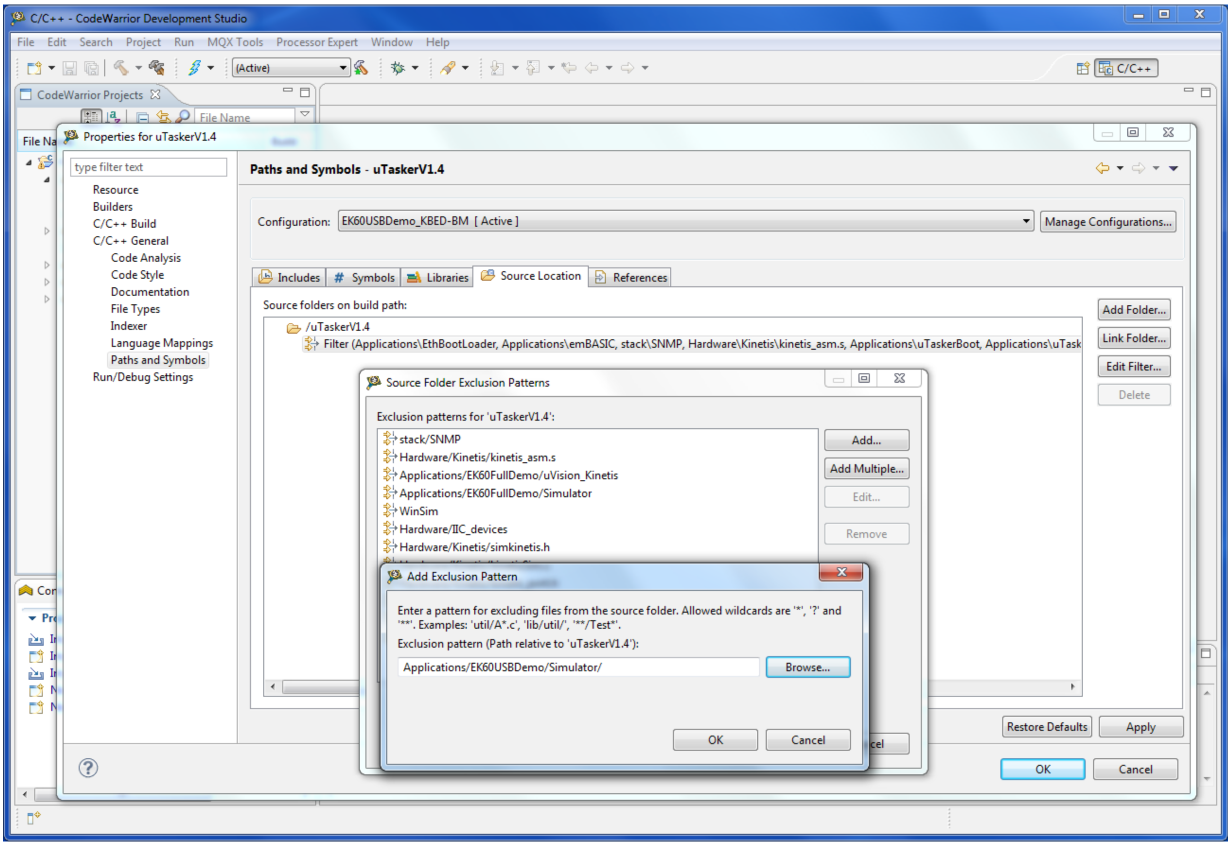
□ Allow Macro Redefinition
□ Define AEABI Portability

Prefix File:

Source File Encoding: ASCII

Include User Search Paths (-i): "${ProjDirPath}\Applications\EK60USBDemo\"

In C/C++ General – Paths and Symbols- Source Location, exclude the Simulator and the KinetisCodeWarrior directories from the build for this configuration.



Paths and Symbols - uTaskerV1.4

Configuration: EK60USBDemo_KBED-BM [Active]

Source folders on build path:

/uTaskerV1.4
Filter (Applications\EthBootLoader, Applications\emBASIC, stack\SNMP, Hardware\Kinetis\kinetis_asm.s, Applications\uTaskerBoot, Applications\uTask

Exclusion patterns for 'uTaskerV1.4':

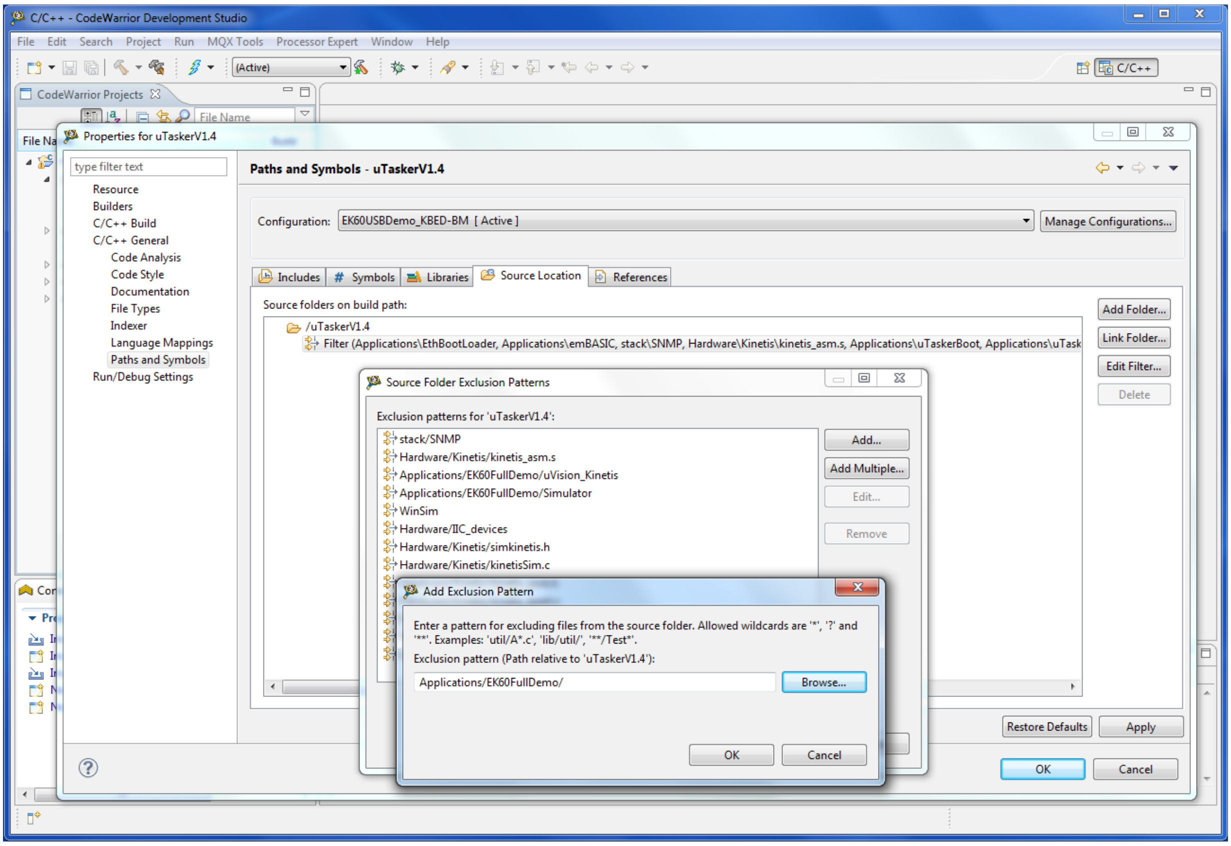
stack/SNMP
Hardware/Kinetis/kinetis_asm.s
Applications/EK60FullDemo/uVision_Kinetis
Applications/EK60FullDemo/Simulator
WinSim
Hardware/IIC_devices
Hardware/Kinetis/simkinetis.h

Enter a pattern for excluding files from the source folder. Allowed wildcards are '*', '?' and '**'. Examples: 'util/A*.c', 'lib/util/', '**/Test*'.

Exclusion pattern (Path relative to 'uTaskerV1.4'):

Applications/EK60USBDemo/Simulator/

In C/C++ General – Paths and Symbols- Source Location, exclude the existing Applications from the build for this configuration.



Paths and Symbols - uTaskerV1.4

Configuration: EK60USBDemo_KBED-BM [Active]

Source folders on build path:

/uTaskerV1.4
Filter (Applications\EthBootLoader, Applications\emBASIC, stack\SNMP, Hardware\Kinetis\kinetis_asm.s, Applications\uTaskerBoot, Applications\uTask

Exclusion patterns for 'uTaskerV1.4':

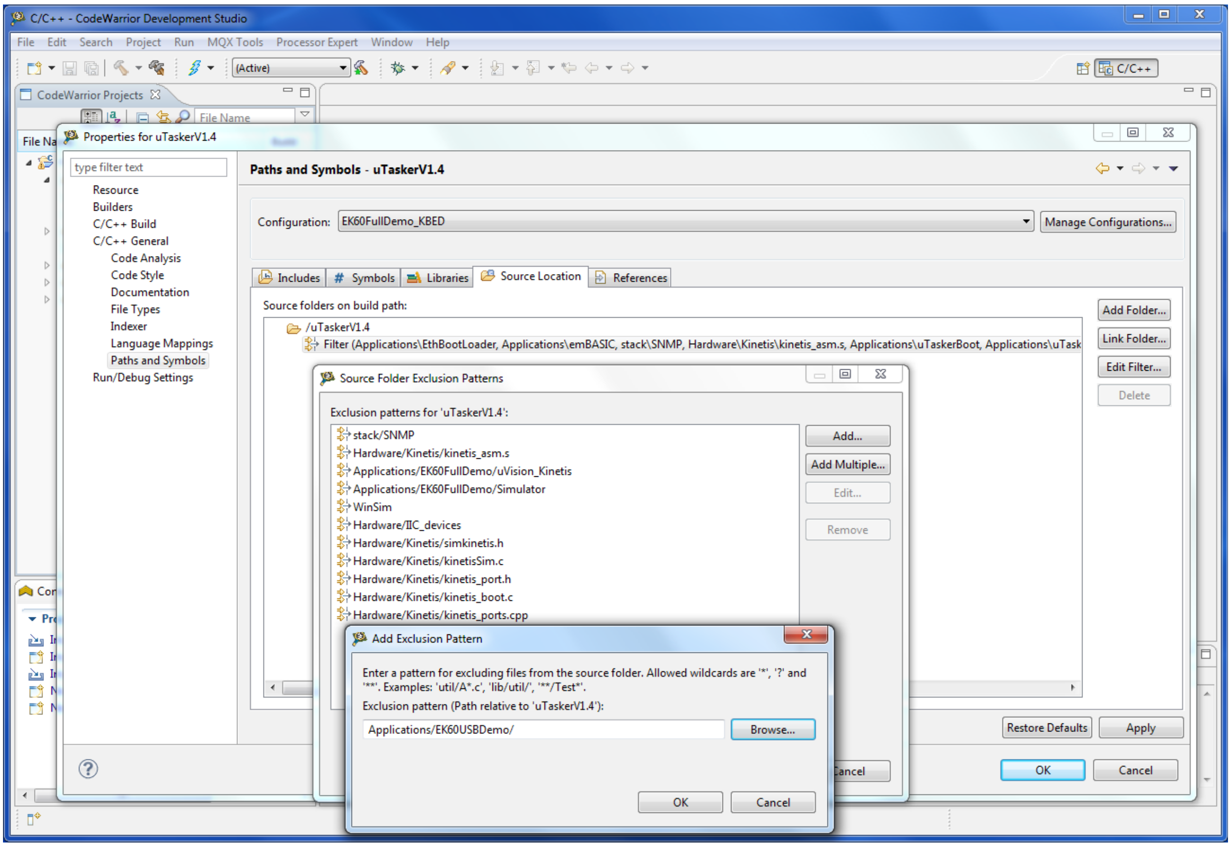
stack/SNMP
Hardware/Kinetis/kinetis_asm.s
Applications/EK60FullDemo/uVision_Kinetis
Applications/EK60FullDemo/Simulator
WinSim
Hardware/IIC_devices
Hardware/Kinetis/simkinetis.h
Hardware/Kinetis/kinetisSim.c

Enter a pattern for excluding files from the source folder. Allowed wildcards are '*', '?' and '**'. Examples: 'util/A*.c', 'lib/util/', '**/Test*'.

Exclusion pattern (Path relative to 'uTaskerV1.4'):

Applications/EK60FullDemo/

In C/C++ General – Paths and Symbols- Source Location, exclude the new Application from the build for all other configurations.



Paths and Symbols - uTaskerV1.4

Configuration: EK60FullDemo_KBED

Source Location

Source folders on build path:

/uTaskerV1.4

Filter (Applications\EthBootLoader, Applications\emBASIC, stack\SNMP, Hardware\Kinetis\kinetis_asm.s, Applications\uTaskerBoot, Applications\uTask

Source Folder Exclusion Patterns

Exclusion patterns for 'uTaskerV1.4':

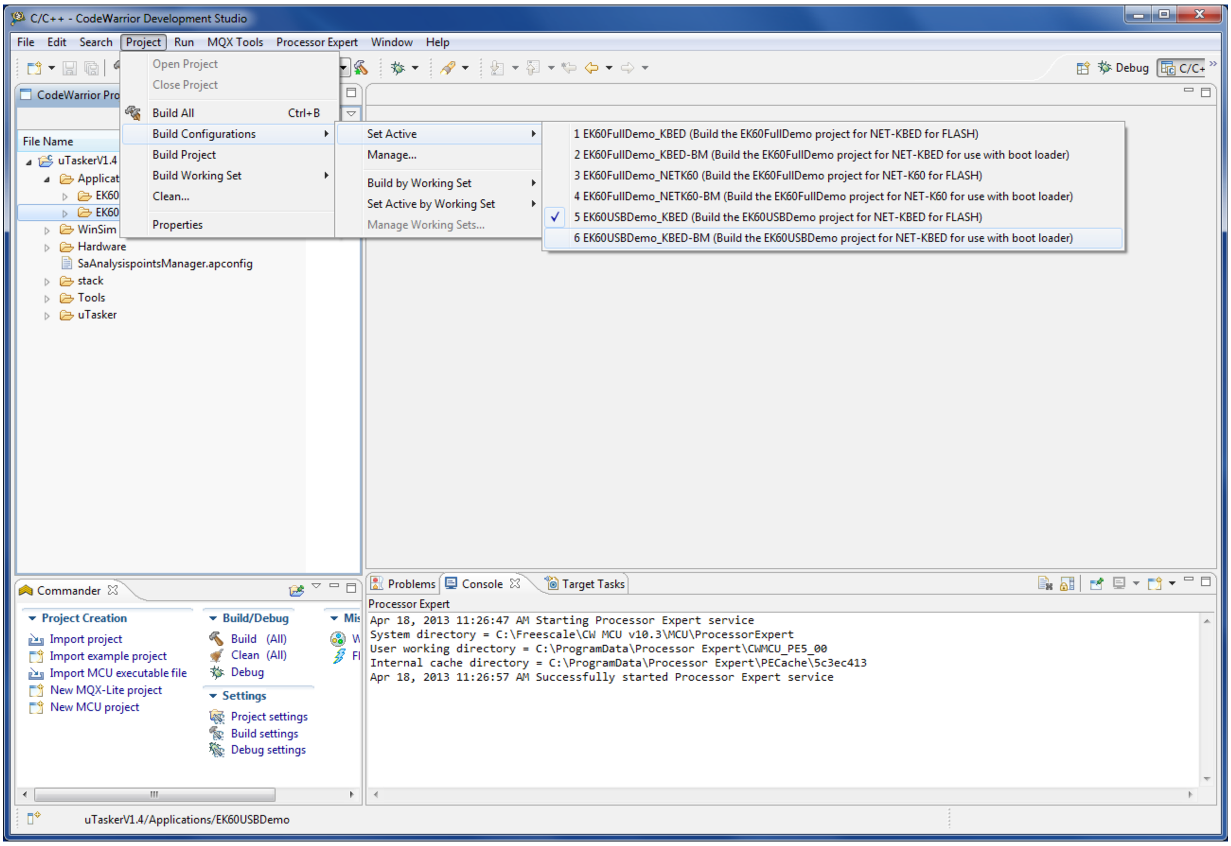
- stack/SNMP
- Hardware/Kinetis/kinetis_asm.s
- Applications/EK60FullDemo/uVision_Kinetis
- Applications/EK60FullDemo/Simulator
- WinSim
- Hardware/IIC_devices
- Hardware/Kinetis/simkinetis.h
- Hardware/Kinetis/kinetisSim.c
- Hardware/Kinetis/kinetis_port.h
- Hardware/Kinetis/kinetis_boot.c
- Hardware/Kinetis/kinetis_ports.cpp

Add Exclusion Pattern

Enter a pattern for excluding files from the source folder. Allowed wildcards are '*', '?' and '**'. Examples: 'util/A*.c', 'lib/util/', '**/Test*'.

Exclusion pattern (Path relative to 'uTaskerV1.4'): Applications/EK60USBDemo/

Make sure that the application you want to build is your active configuration.



Project > Build Configurations > Set Active

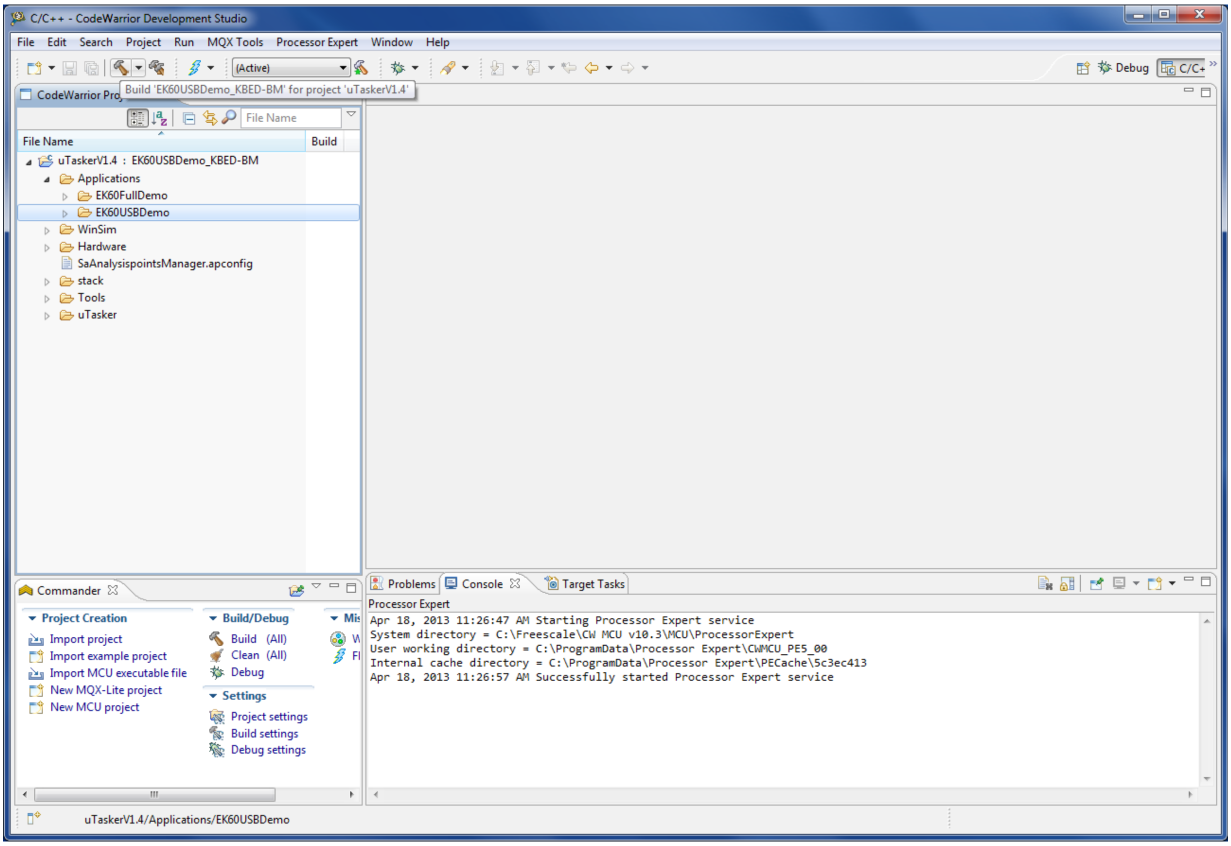
1 EK60FullDemo_KBED (Build the EK60FullDemo project for NET-KBED for FLASH)
2 EK60FullDemo_KBED-BM (Build the EK60FullDemo project for NET-KBED for use with boot loader)
3 EK60FullDemo_NETK60 (Build the EK60FullDemo project for NET-K60 for FLASH)
4 EK60FullDemo_NETK60-BM (Build the EK60FullDemo project for NET-K60 for use with boot loader)
✓ 5 EK60USBDemo_KBED (Build the EK60USBDemo project for NET-KBED for FLASH)
6 EK60USBDemo_KBED-BM (Build the EK60USBDemo project for NET-KBED for use with boot loader)

```
Processor Expert
Apr 18, 2013 11:26:47 AM Starting Processor Expert service
System directory = C:\Freescale\CW MCU v10.3\MCU\ProcessorExpert
User working directory = C:\ProgramData\Processor Expert\CWMCU_PE5_00
Internal cache directory = C:\ProgramData\Processor Expert\PECache\5c3ec413
Apr 18, 2013 11:26:57 AM Successfully started Processor Expert service
```

uTaskerV1.4/Applications/EK60USBDemo

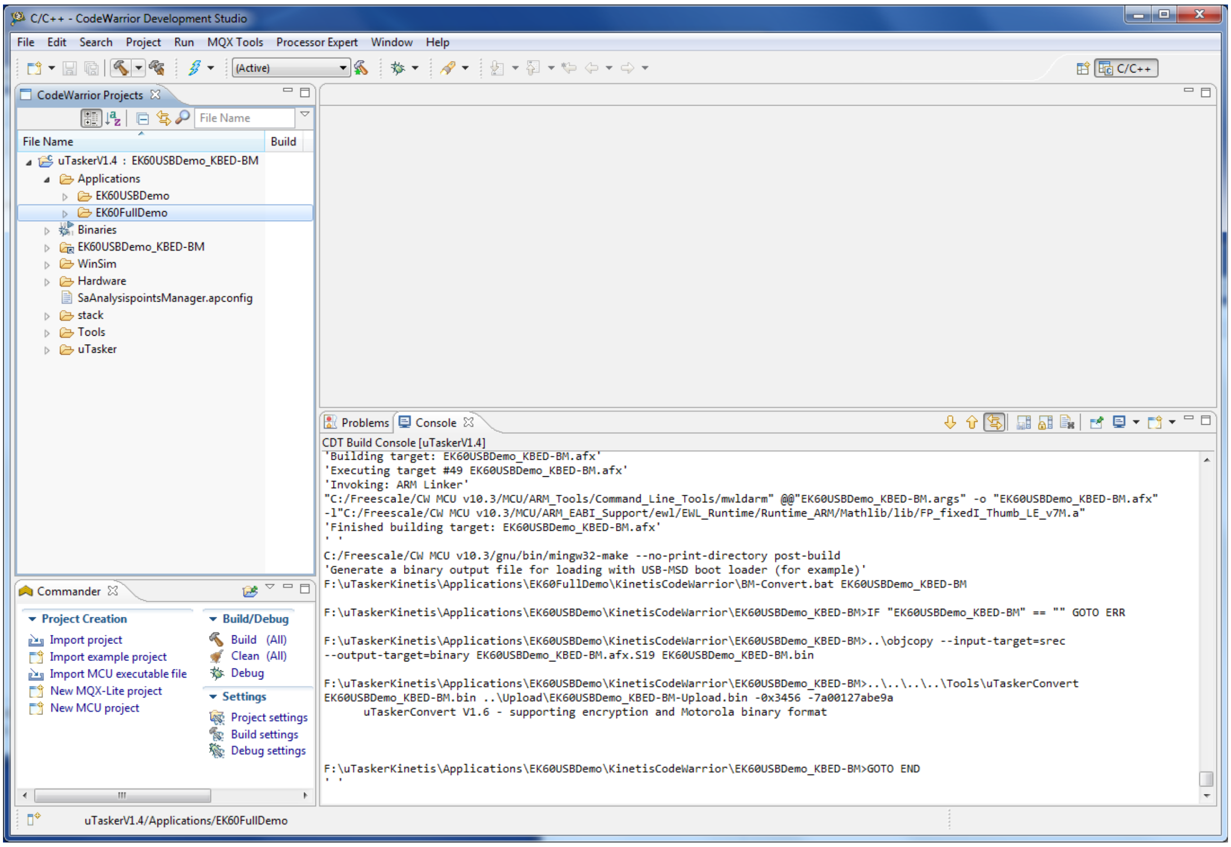
Now you can start coding and modify the new application to your needs.

To build your application click on the Build symbol in the toolbar, you can verify if the correct configuration is active, or select the configuration to be build here, too.



```
Apr 18, 2013 11:26:47 AM Starting Processor Expert service
System directory = C:\Freescale\CW MCU v10.3\MCU\ProcessorExpert
User working directory = C:\ProgramData\Processor Expert\CWMCU_PE5_00
Internal cache directory = C:\ProgramData\Processor Expert\PECache\5c3ec413
Apr 18, 2013 11:26:57 AM Successfully started Processor Expert service
```

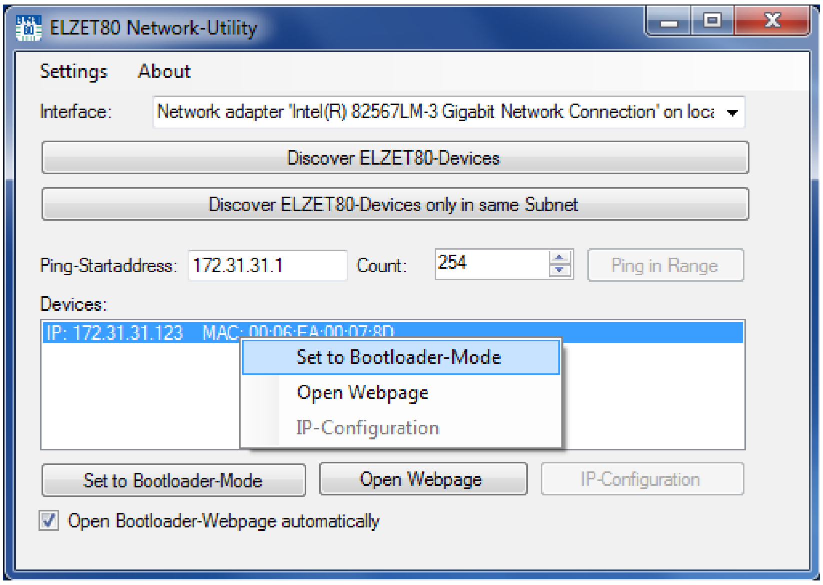
After the application has been build it can be uploaded to your NET-KBED or NET-K60 device using the Web-Interface of the Bootloader, or you may debug your new application with the CodeWarrior IDE and the USBDM debug adapter.



```
'Building target: EK60USBDemo_KBED-BM.afx'
'Executing target #49 EK60USBDemo_KBED-BM.afx'
'Invoking: ARM Linker'
"C:/Freescale/CW MCU v10.3/MCU/ARM_Tools/Command_Line_Tools/mwldarm" @@"EK60USBDemo_KBED-BM.args" -o "EK60USBDemo_KBED-BM.afx"
-l"C:/Freescale/CW MCU v10.3/MCU/ARM_EABI_Support/ewl/EWL_Runtime/Runtime_ARM/Mathlib/lib/FP_fixedI_Thumb_LE_v7M.a"
'Finished building target: EK60USBDemo_KBED-BM.afx'
' '
C:/Freescale/CW MCU v10.3/gnu/bin/mingw32-make --no-print-directory post-build
'Generate a binary output file for loading with USB-MSD boot loader (for example)'
F:\uTaskerKinetis\Applications\EK60FullDemo\KinetisCodeWarrior\BM-Convert.bat EK60USBDemo_KBED-BM

F:\uTaskerKinetis\Applications\EK60USBDemo\KinetisCodeWarrior\EK60USBDemo_KBED-BM>IF "EK60USBDemo_KBED-BM" == "" GOTO ERR

F:\uTaskerKinetis\Applications\EK60USBDemo\KinetisCodeWarrior\EK60USBDemo_KBED-BM>..\objcopy --input-target=srec
--output-target=binary EK60USBDemo_KBED-BM.afx.S19 EK60USBDemo_KBED-BM.bin

F:\uTaskerKinetis\Applications\EK60USBDemo\KinetisCodeWarrior\EK60USBDemo_KBED-BM>..\..\..\..\Tools\uTaskerConvert
EK60USBDemo_KBED-BM.bin ..\Upload\EK60USBDemo_KBED-BM-Upload.bin -0x3456 -7a00127abe9a
      uTaskerConvert V1.6 - supporting encryption and Motorola binary format



F:\uTaskerKinetis\Applications\EK60USBDemo\KinetisCodeWarrior\EK60USBDemo_KBED-BM>GOTO END
' '
```

Uploading an application using the Bootloader-Webpage

If your hardware contains the ELZET 80 Bootloader, you can simply upload your application using the Bootloader-Webpage. This screenshot show how to set your device to Bootloader-Mode using the ELZET 80 Network utility:



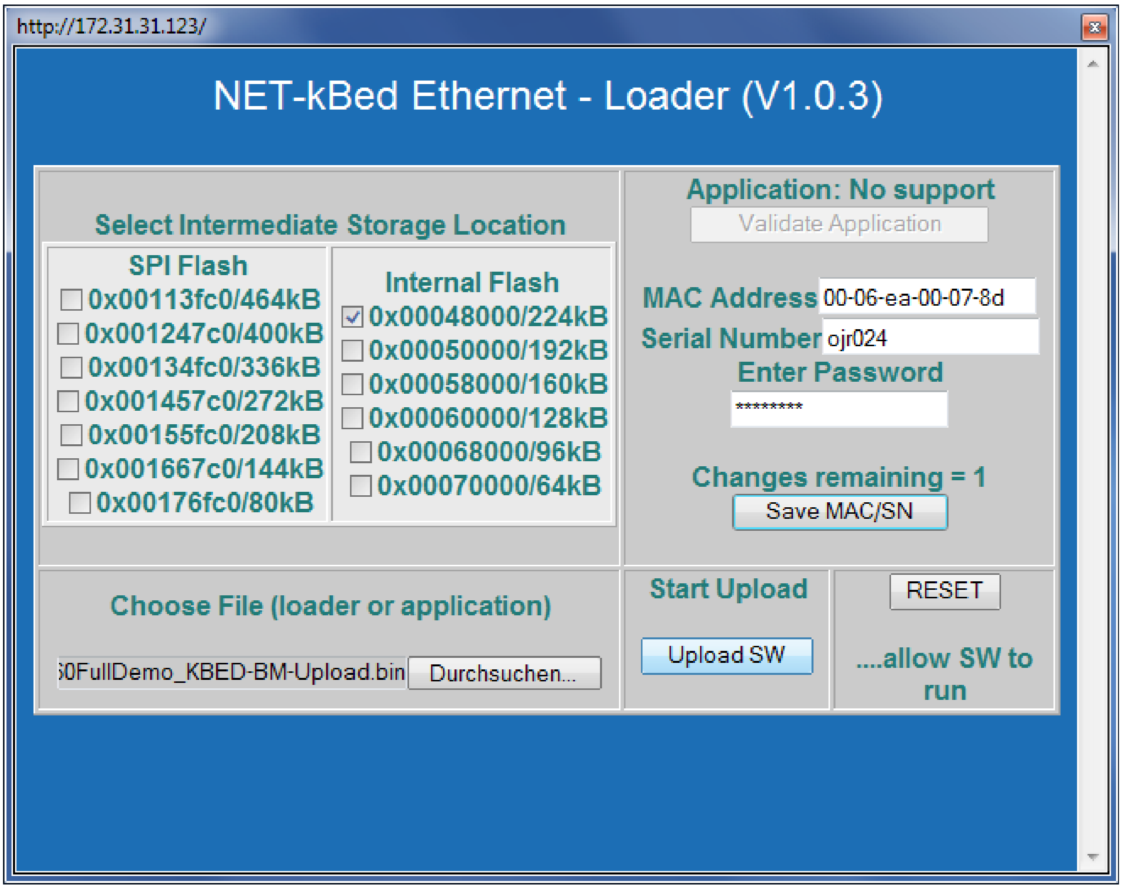
Interface: Network adapter 'Intel(R) 82567LM-3 Gigabit Network Connection' on loca

Ping-Startaddress: 172.31.31.1 Count: 254

Devices:
IP: 172.31.31.123 MAC: 00:06:EA:00:07:8D

☑ Open Bootloader-Webpage automatically

The Bootloader Webpage is opened and you can select the file you want to upload. Files which are suitable for upload with the Bootloader can be found in the Upload directory (the file names usually ends with the *-BM-Upload.bin) of the example projects (projects for use with Bootloader contain the *-BM* in their name) . Click the "Upload SW" button. Reset the device to let the Bootloader check the uploaded application, install and run it.



Select Intermediate Storage Location

SPI Flash	Internal Flash
□ 0x00113fc0/464kB	☑ 0x00048000/224kB
□ 0x001247c0/400kB	□ 0x00050000/192kB
□ 0x00134fc0/336kB	□ 0x00058000/160kB
□ 0x001457c0/272kB	□ 0x00060000/128kB
□ 0x00155fc0/208kB	□ 0x00068000/96kB
□ 0x001667c0/144kB	□ 0x00070000/64kB
□ 0x00176fc0/80kB	

Application: No support

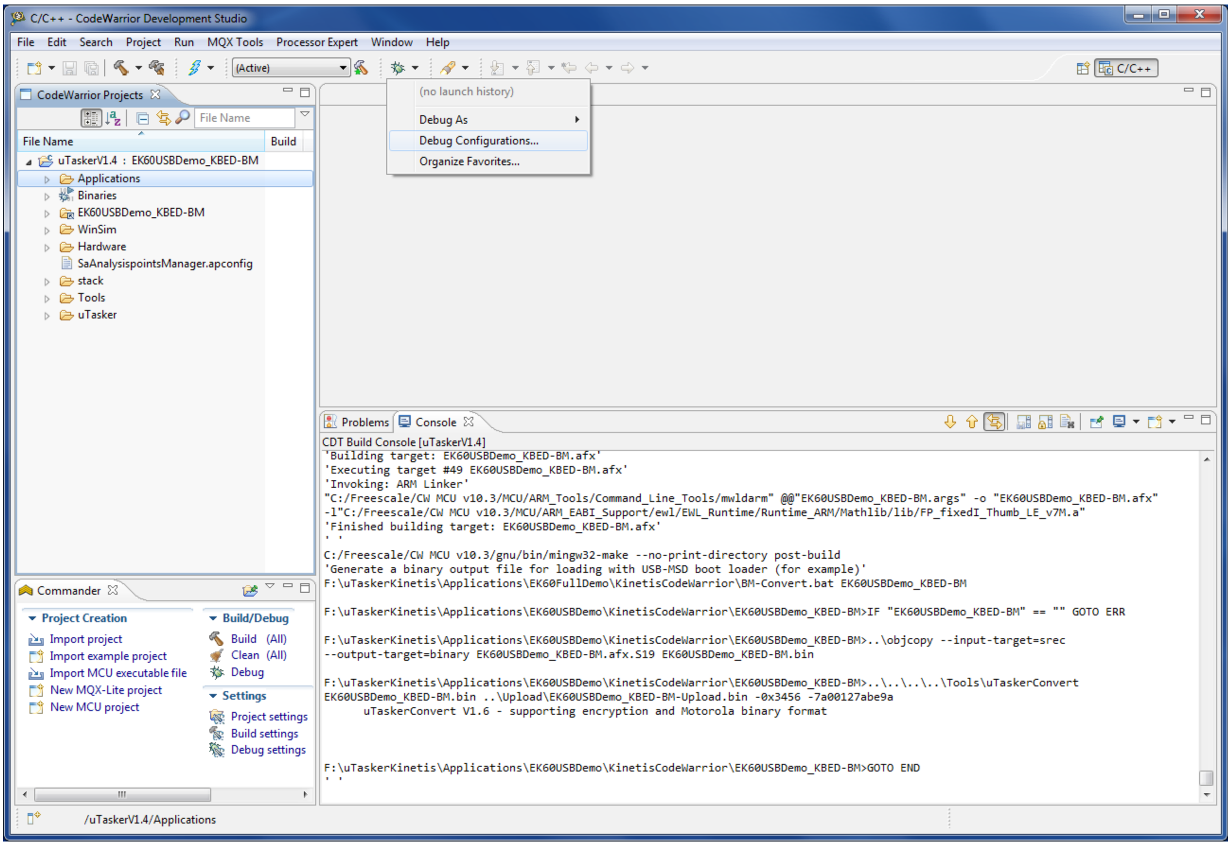
MAC Address 00-06-ea-00-07-8d
Serial Number ojr024
Enter Password ********

Changes remaining = 1

Choose File (loader or application)
:0FullDemo_KBED-BM-Upload.bin

Debugging an application in CodeWarrior with USBDM 4.10.4

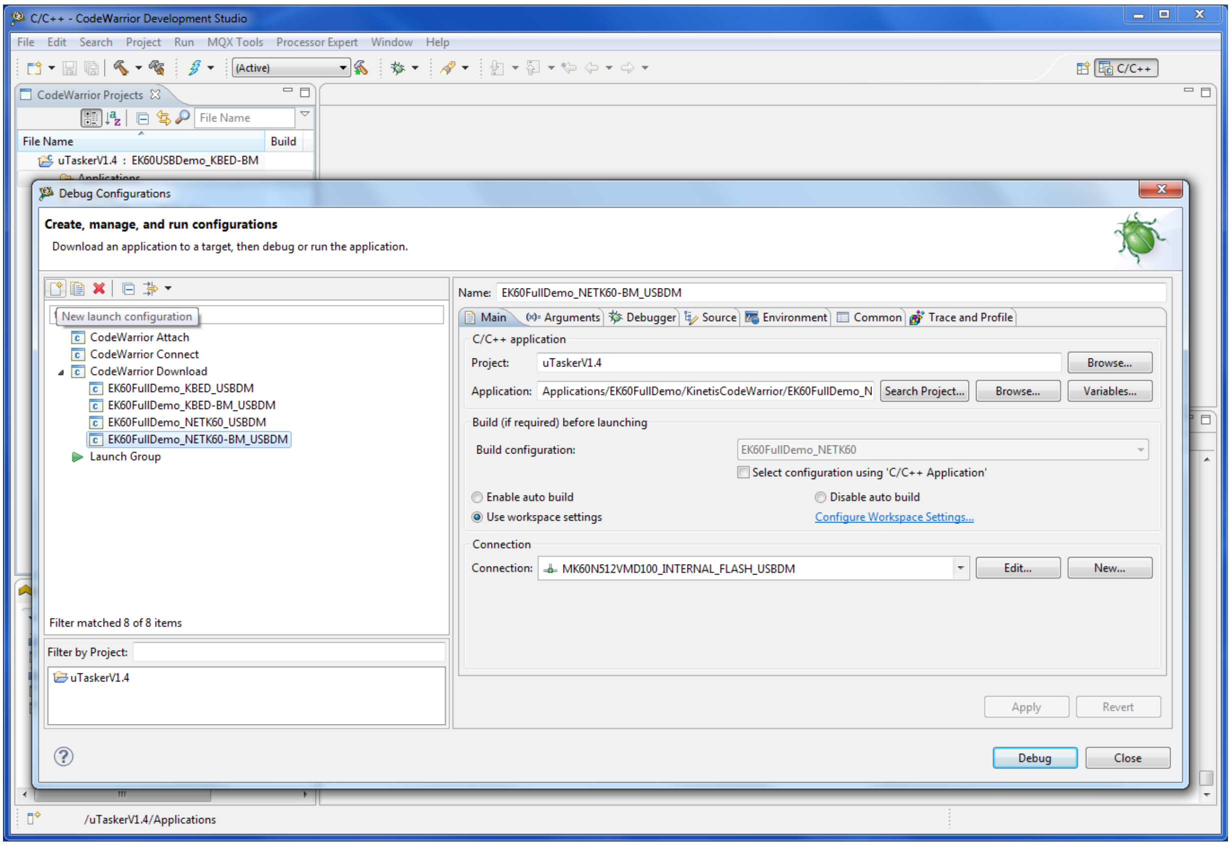
Open Debug configurations



CDT Build Console [uTaskerV1.4]

```
'Building target: EK60USBDemo_KBED-BM.afx'
'Executing target #49 EK60USBDemo_KBED-BM.afx'
'Invoking: ARM Linker'
"C:/Freescale/CW MCU v10.3/MCU/ARM_Tools/Command_Line_Tools/mwldarm" @@"EK60USBDemo_KBED-BM.args" -o "EK60USBDemo_KBED-BM.afx"
-l"C:/Freescale/CW MCU v10.3/MCU/ARM_EABI_Support/ewl/EWL_Runtime/Runtime_ARM/Mathlib/lib/FP_fixedI_Thumb_LE_v7M.a"
'Finished building target: EK60USBDemo_KBED-BM.afx'
' '
C:/Freescale/CW MCU v10.3/gnu/bin/mingw32-make --no-print-directory post-build
'Generate a binary output file for loading with USB-MSD boot loader (for example)'
F:\uTaskerKinetis\Applications\EK60FullDemo\KinetisCodeWarrior\BM-Convert.bat EK60USBDemo_KBED-BM

F:\uTaskerKinetis\Applications\EK60USBDemo\KinetisCodeWarrior\EK60USBDemo_KBED-BM>IF "EK60USBDemo_KBED-BM" == "" GOTO ERR

F:\uTaskerKinetis\Applications\EK60USBDemo\KinetisCodeWarrior\EK60USBDemo_KBED-BM>..\objcopy --input-target=srec
--output-target=binary EK60USBDemo_KBED-BM.afx.S19 EK60USBDemo_KBED-BM.bin

F:\uTaskerKinetis\Applications\EK60USBDemo\KinetisCodeWarrior\EK60USBDemo_KBED-BM>..\..\..\..\Tools\uTaskerConvert
EK60USBDemo_KBED-BM.bin ..\Upload\EK60USBDemo_KBED-BM-Upload.bin -0x3456 -7a00127abe9a
      uTaskerConvert V1.6 - supporting encryption and Motorola binary format



F:\uTaskerKinetis\Applications\EK60USBDemo\KinetisCodeWarrior\EK60USBDemo_KBED-BM>GOTO END
' '
```

Create a new configuration



Create, manage, and run configurations

Download an application to a target, then debug or run the application.

Filter matched 8 of 8 items

Filter by Project:

uTaskerV1.4

Name: EK60FullDemo_NETK60-BM_USBDM

C/C++ application

Project: uTaskerV1.4

Application: Applications/EK60FullDemo/KinetisCodeWarrior/EK60FullDemo_N

Build (if required) before launching

Build configuration: EK60FullDemo_NETK60

□ Select configuration using 'C/C++ Application'

○ Enable auto build

○ Disable auto build

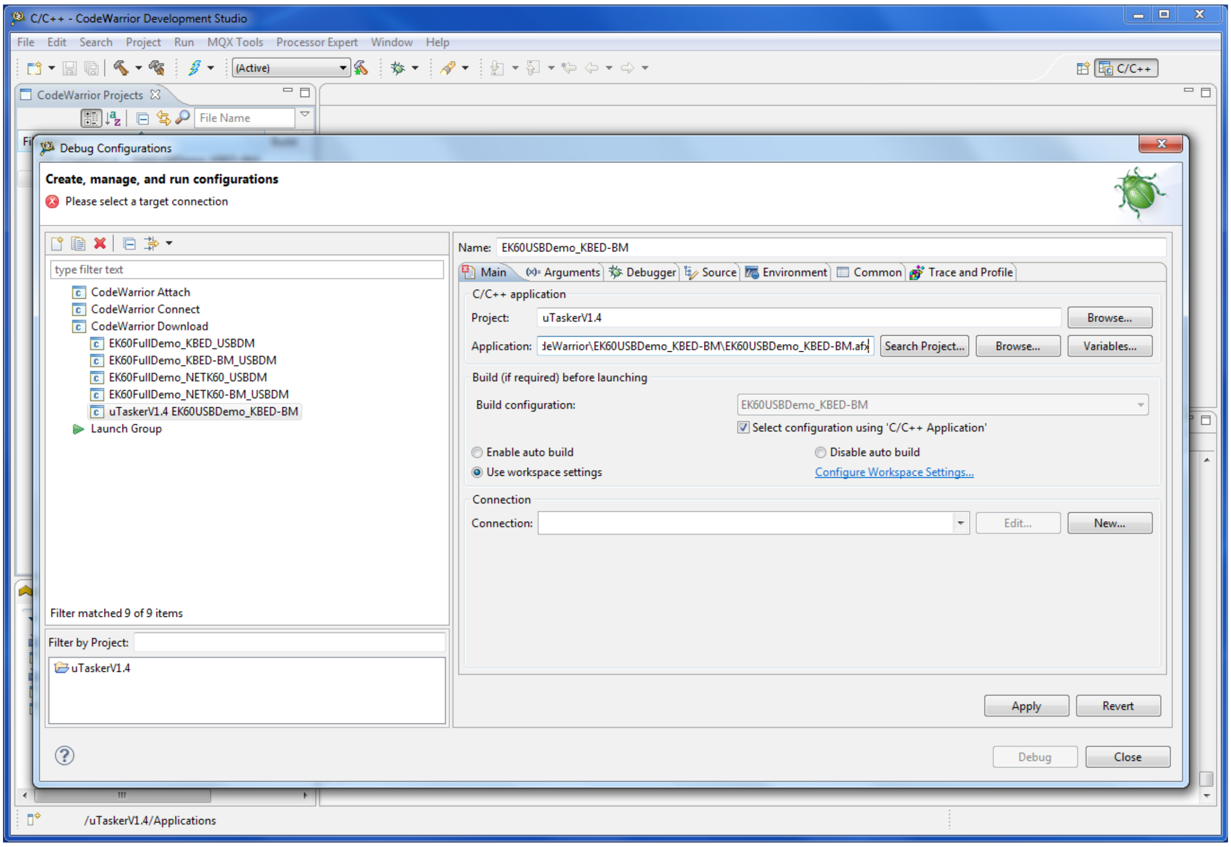
● Use workspace settings

Configure Workspace Settings...

Connection

Connection: MK60N512VMD100_INTERNAL_FLASH_USBDM

Set the name and the path to the application file you want to debug.


C/C++ - CodeWarrior Development Studio
File Edit Search Project Run MQX Tools Processor Expert Window Help
(Active)
C/C++
CodeWarrior Projects
File Name
Debug Configurations

Create, manage, and run configurations

Please select a target connection

type filter text

- CodeWarrior Attach
- CodeWarrior Connect
- CodeWarrior Download
  - EK60FullDemo_KBED_USBDM
  - EK60FullDemo_KBED-BM_USBDM
  - EK60FullDemo_NETK60_USBDM
  - EK60FullDemo_NETK60-BM_USBDM
  - uTaskerV1.4 EK60USBDemo_KBED-BM
- Launch Group

Filter matched 9 of 9 items

Filter by Project:

uTaskerV1.4

Name: EK60USBDemo_KBED-BM

Main | Arguments | Debugger | Source | Environment | Common | Trace and Profile

C/C++ application

Project: uTaskerV1.4

Application: deWarrior\EK60USBDemo_KBED-BM\EK60USBDemo_KBED-BM.afx

Build (if required) before launching

Build configuration: EK60USBDemo_KBED-BM

☑ Select configuration using 'C/C++ Application'

○ Enable auto build

○ Disable auto build

● Use workspace settings

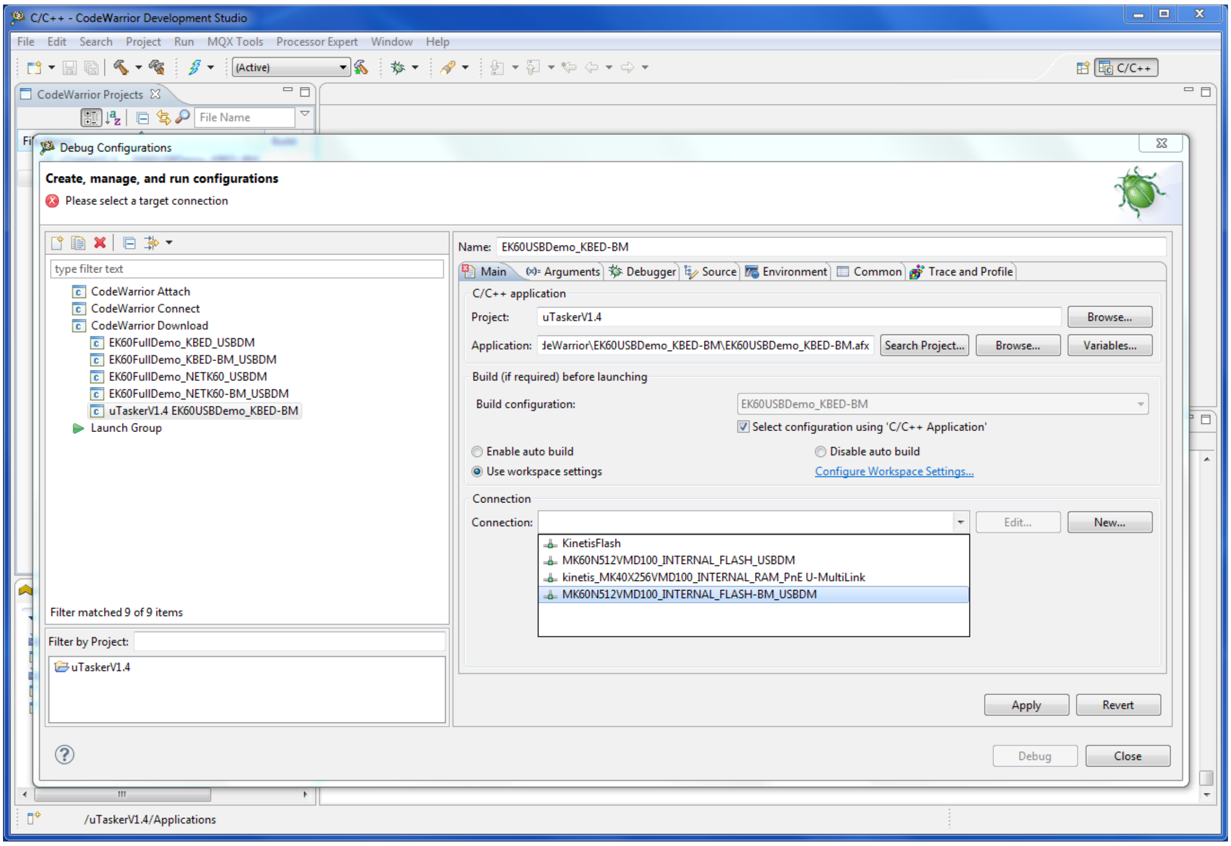
Configure Workspace Settings...

Connection

Connection:

/uTaskerV1.4/Applications

Select a *_USBDM debug connection, choose the *-BM_USBDM connection for a project that is build for use with the Bootloader.


C/C++ - CodeWarrior Development Studio
File Edit Search Project Run MQX Tools Processor Expert Window Help
(Active)
C/C++
CodeWarrior Projects
File Name
Debug Configurations

Create, manage, and run configurations

Please select a target connection

type filter text

- CodeWarrior Attach
- CodeWarrior Connect
- CodeWarrior Download
  - EK60FullDemo_KBED_USBDM
  - EK60FullDemo_KBED-BM_USBDM
  - EK60FullDemo_NETK60_USBDM
  - EK60FullDemo_NETK60-BM_USBDM
  - uTaskerV1.4 EK60USBDemo_KBED-BM
- Launch Group

Filter matched 9 of 9 items

Filter by Project:

uTaskerV1.4

Name: EK60USBDemo_KBED-BM

Main | Arguments | Debugger | Source | Environment | Common | Trace and Profile

C/C++ application

Project: uTaskerV1.4

Application: deWarrior\EK60USBDemo_KBED-BM\EK60USBDemo_KBED-BM.afx

Build (if required) before launching

Build configuration: EK60USBDemo_KBED-BM

☑ Select configuration using 'C/C++ Application'

○ Enable auto build

○ Disable auto build

● Use workspace settings

Configure Workspace Settings...

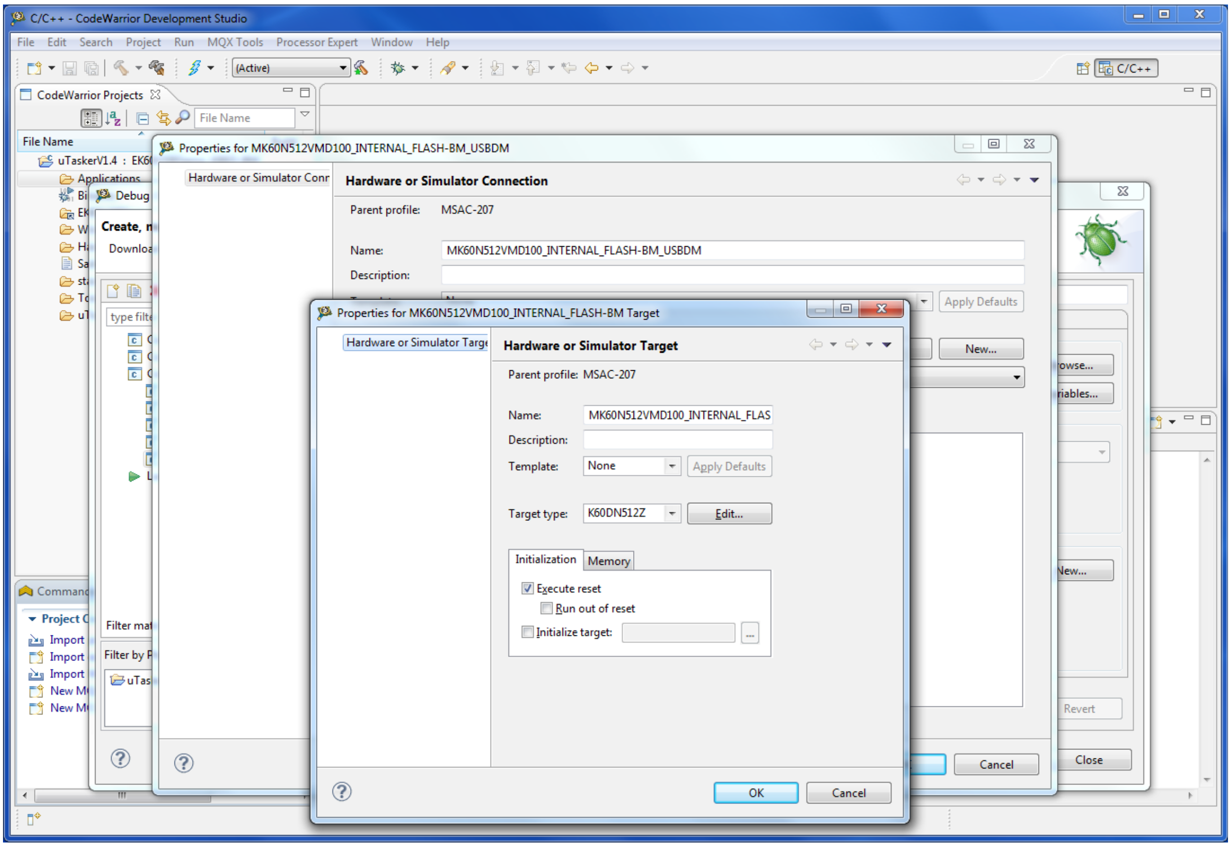
Connection

Connection:

- KinetisFlash
- MK60N512VMD100_INTERNAL_FLASH_USBDM
- kinetis_MK40X256VMD100_INTERNAL_RAM_PnE U-MultiLink
- MK60N512VMD100_INTERNAL_FLASH-BM_USBDM

/uTaskerV1.4/Applications

Check and apply the settings and close the Connection wizard.


C/C++ - CodeWarrior Development Studio
File Edit Search Project Run MQX Tools Processor Expert Window Help
(Active)
C/C++
CodeWarrior Projects
File Name
Properties for MK60N512VMD100_INTERNAL_FLASH-BM_USBDM
Hardware or Simulator Conr
Apply Defaults
New...
Revert
Close
Cancel

Hardware or Simulator Connection

Parent profile: MSAC-207

Name: MK60N512VMD100_INTERNAL_FLASH-BM_USBDM

Description:

Properties for MK60N512VMD100_INTERNAL_FLASH-BM Target

Hardware or Simulator Target

Parent profile: MSAC-207

Name: MK60N512VMD100_INTERNAL_FLAS

Description:

Template: None

Target type: K60DN512Z

Initialization | Memory

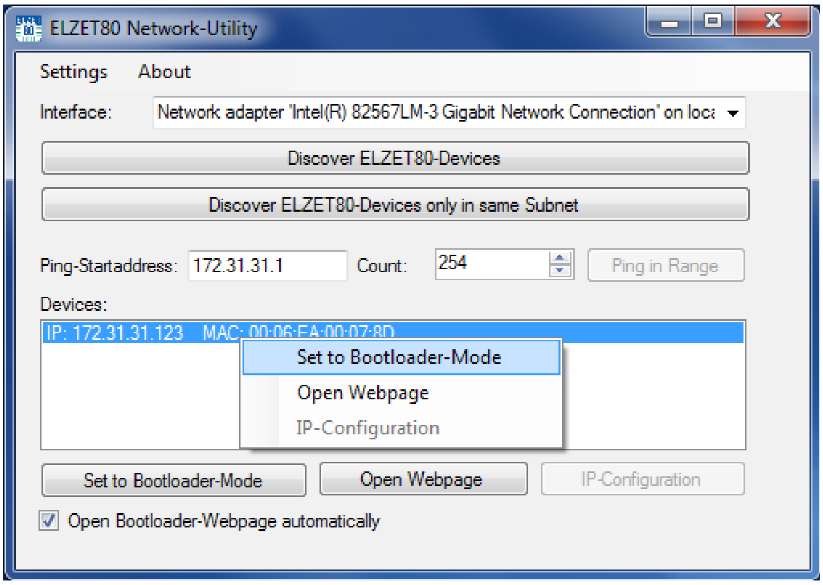
☑ Execute reset

☐ Run out of reset

☐ Initialize target:

Additional steps when debugging applications for use with Bootloader

If your configuration is to be used with the ELZET 80 Bootloader, the Flash Erase settings in CodeWarrior are set to EraseNone, to avoid that the Bootloader is erased. In this case the application needs to be erased manually before you can upload your application and start debugging. You can use the ELZET 80 network utility to start the device in Bootloader mode:



Interface: Network adapter 'Intel(R) 82567LM-3 Gigabit Network Connection' on loca

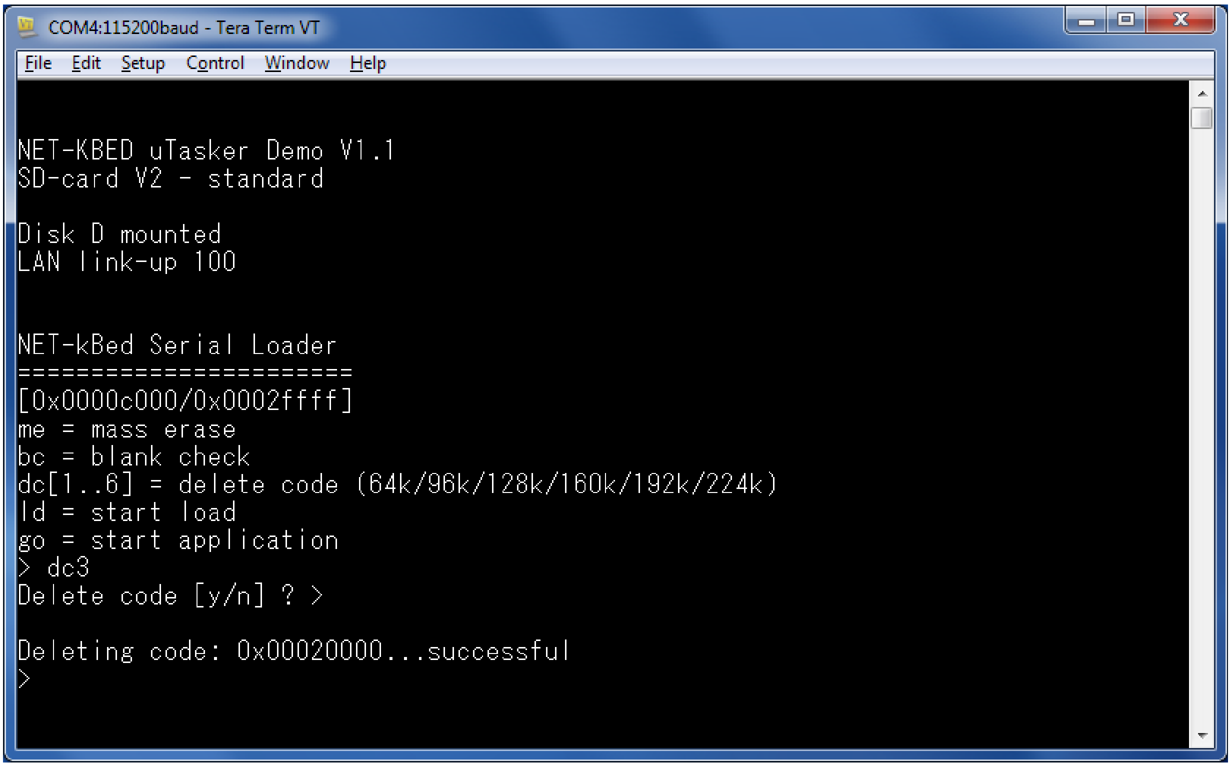
Ping-Startaddress: 172.31.31.1 Count: 254

Devices:

IP: 172.31.31.123 MAC: 00:06:FA:00:07:8D

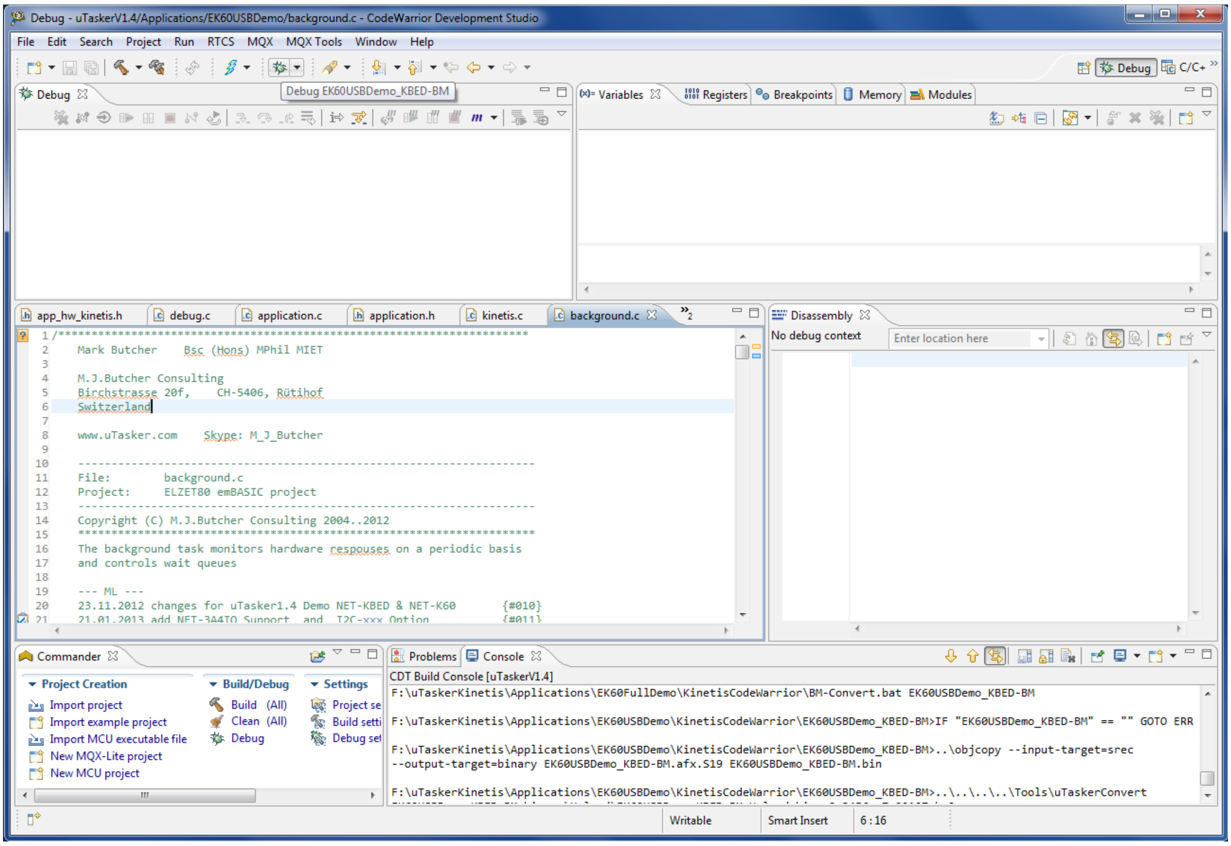
☑ Open Bootloader-Webpage automatically

Erase the application using a terminal program like TeraTerm:


COM4:115200baud - Tera Term VT
File Edit Setup Control Window Help

```
NET-KBED uTasker Demo V1.1
SD-card V2 - standard

Disk D mounted
LAN link-up 100


NET-kBed Serial Loader
======================
[0x0000c000/0x0002ffff]
me = mass erase
bc = blank check
dc[1..6] = delete code (64k/96k/128k/160k/192k/224k)
ld = start load
go = start application
> dc3
Delete code [y/n] ? >

Deleting code: 0x00020000...successful
>
```

Now you can start debugging in the CodeWarrior IDE:

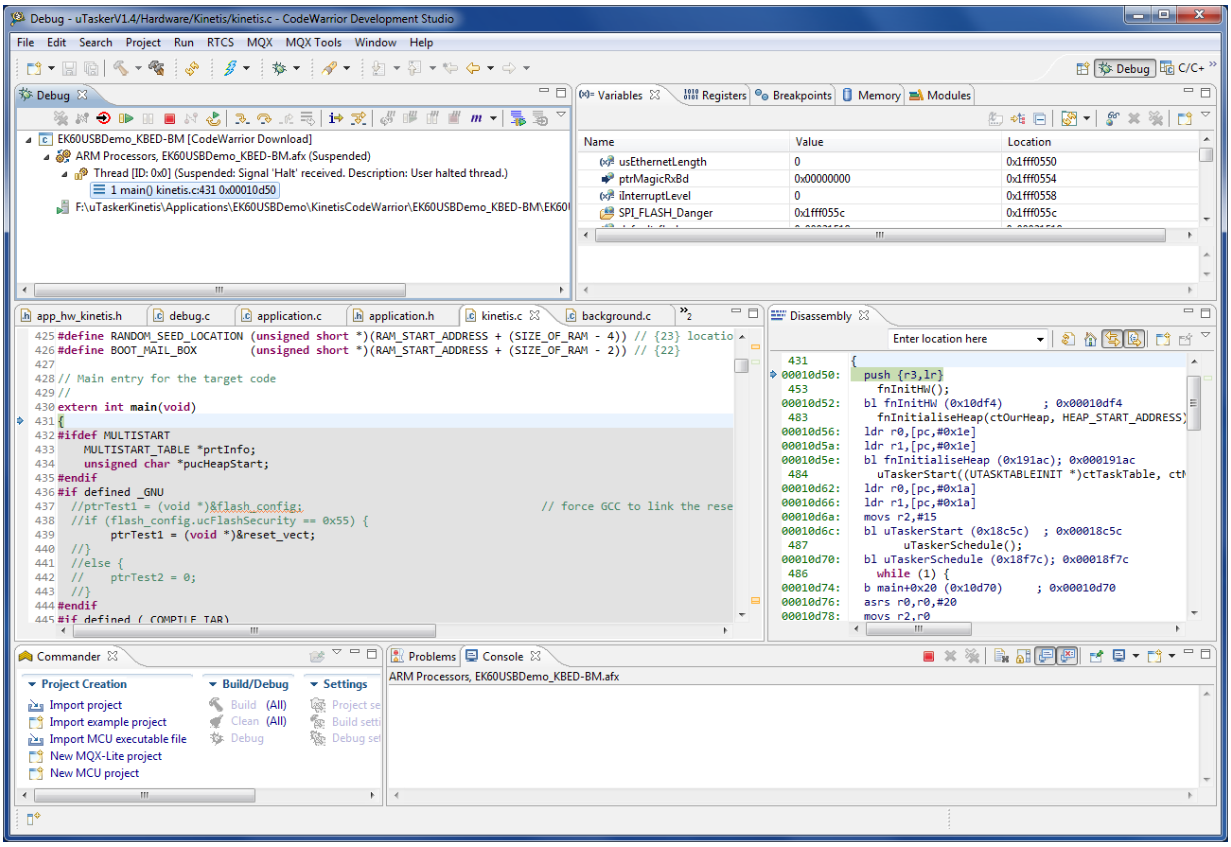

Debug - uTaskerV1.4/Applications/EK60USBDemo/background.c - CodeWarrior Development Studio
File Edit Search Project Run RTCS MQX MQX Tools Window Help
Debug C/C++
Debug
Debug EK60USBDemo_KBED-BM
Variables Registers Breakpoints Memory Modules
app_hw_kinetis.h debug.c application.c application.h kinetis.c background.c
Disassembly
No debug context
Enter location here
Commander
Project Creation
Import project
Import example project
Import MCU executable file
New MQX-Lite project
New MCU project
Build/Debug
Build (All)
Clean (All)
Debug
Settings
Project se
Build setti
Debug set
Problems Console
Writable
Smart Insert
6 : 16

```
/***********************************************************************
    Mark Butcher    Bsc (Hons) MPhil MIET

    M.J.Butcher Consulting
    Birchstrasse 20f,    CH-5406, Rütihof
    Switzerland

    www.uTasker.com    Skype: M_J_Butcher

    ---------------------------------------------------------------------
    File:        background.c
    Project:     ELZET80 emBASIC project
    ---------------------------------------------------------------------
    Copyright (C) M.J.Butcher Consulting 2004..2012
    *********************************************************************
    The background task monitors hardware respouses on a periodic basis
    and controls wait queues

    --- ML ---
    23.11.2012 changes for uTasker1.4 Demo NET-KBED & NET-K60       {#010}
    21.01.2013 add NET-3A4IO Support  and  I2C-xxx Option           {#011}
```

CDT Build Console [uTaskerV1.4]

```
F:\uTaskerKinetis\Applications\EK60FullDemo\KinetisCodeWarrior\BM-Convert.bat EK60USBDemo_KBED-BM

F:\uTaskerKinetis\Applications\EK60USBDemo\KinetisCodeWarrior\EK60USBDemo_KBED-BM>IF "EK60USBDemo_KBED-BM" == "" GOTO ERR

F:\uTaskerKinetis\Applications\EK60USBDemo\KinetisCodeWarrior\EK60USBDemo_KBED-BM>..\objcopy --input-target=srec
--output-target=binary EK60USBDemo_KBED-BM.afx.S19 EK60USBDemo_KBED-BM.bin

F:\uTaskerKinetis\Applications\EK60USBDemo\KinetisCodeWarrior\EK60USBDemo_KBED-BM>..\..\..\..\Tools\uTaskerConvert
```

Debugger is halted at main() and ready to debug.



```
EK60USBDemo_KBED-BM [CodeWarrior Download]
  ARM Processors, EK60USBDemo_KBED-BM.afx (Suspended)
    Thread [ID: 0x0] (Suspended: Signal 'Halt' received. Description: User halted thread.)
      1 main() kinetis.c:431 0x00010d50
  F:\uTaskerKinetis\Applications\EK60USBDemo\KinetisCodeWarrior\EK60USBDemo_KBED-BM\EK60
```

Name	Value	Location
usEthernetLength	0	0x1fff0550
ptrMagicRxBd	0x00000000	0x1fff0554
iInterruptLevel	0	0x1fff0558
SPI_FLASH_Danger	0x1fff055c	0x1fff055c

```
425 #define RANDOM_SEED_LOCATION (unsigned short *)(RAM_START_ADDRESS + (SIZE_OF_RAM - 4)) // {23} locatio
426 #define BOOT_MAIL_BOX        (unsigned short *)(RAM_START_ADDRESS + (SIZE_OF_RAM - 2)) // {22}
427
428 // Main entry for the target code
429 //
430 extern int main(void)
431 {
432 #ifdef MULTISTART
433     MULTISTART_TABLE *prtInfo;
434     unsigned char *pucHeapStart;
435 #endif
436 #if defined _GNU
437   //ptrTest1 = (void *)&flash_config;                              // force GCC to link the rese
438   //if (flash_config.ucFlashSecurity == 0x55) {
439         ptrTest1 = (void *)&reset_vect;
440   //}
441   //else {
442   //    ptrTest2 = 0;
443   //}
444 #endif
445 #if defined ( COMPILE_TAR)
```

```
 431        {
00010d50:     push {r3,lr}
 453            fnInitHW();
00010d52:     bl fnInitHW (0x10df4)       ; 0x00010df4
 483            fnInitialiseHeap(ctOurHeap, HEAP_START_ADDRESS)
00010d56:     ldr r0,[pc,#0x1e]
00010d5a:     ldr r1,[pc,#0x1e]
00010d5e:     bl fnInitialiseHeap (0x191ac); 0x000191ac
 484            uTaskerStart((UTASKTABLEINIT *)ctTaskTable, ct
00010d62:     ldr r0,[pc,#0x1a]
00010d66:     ldr r1,[pc,#0x1a]
00010d6a:     movs r2,#15
00010d6c:     bl uTaskerStart (0x18c5c)  ; 0x00018c5c
 487                uTaskerSchedule();
00010d70:     bl uTaskerSchedule (0x18f7c); 0x00018f7c
 486            while (1) {
00010d74:     b main+0x20 (0x10d70)      ; 0x00010d70
00010d76:     asrs r0,r0,#20
00010d78:     movs r2,r0
```

ARM Processors, EK60USBDemo_KBED-BM.afx