

How to create copy of KSDK example in KDS

by: Iva Dorazinova
script in Perl was written by Anthony Huereca

To do this procedure is needed the script, which creates Anthony Huereca and bat file created by me. Thanks to it is possible to create copy of any example which is based on KSDK. This script allows to work with real copy of KSDK example, which is choosen. It can be called like working copy. It is possible to edit any example and build on this demo user's own application.

It is also much easier than e.g. creating new MQX project, which is quite lengthy process – always must think of correct settings paths, including libraries etc. In this situation is everything copyied (compiler settings, linker, preprocessor...)

First of all is describe the utilization of the script. The script renames the original name of the demo to new one. So, user gets full-fledged copy.

The main essence of the matter is that the script must be in location with other examples.

E.g. *C:\Freescale\KSDK_1.1.0\demos* or
C:\Freescale\KSDK_1.1.0\rtos\mqx\mqx\examples

There is described whole procedure with MQX example under KSDK. Example is demonstrated on FRDM-K64F.

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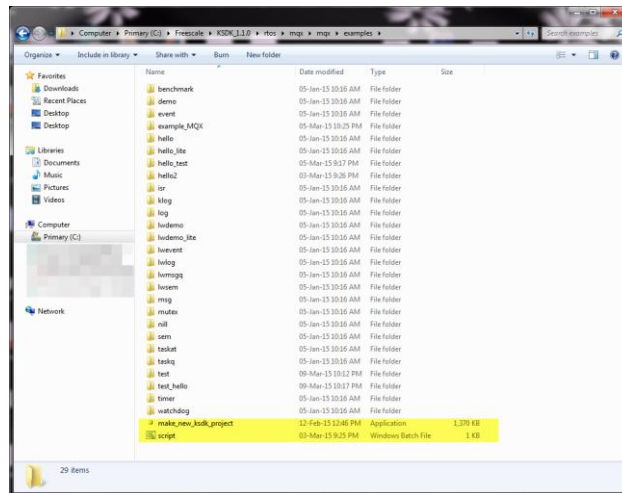
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Editing the script

Importing scripts

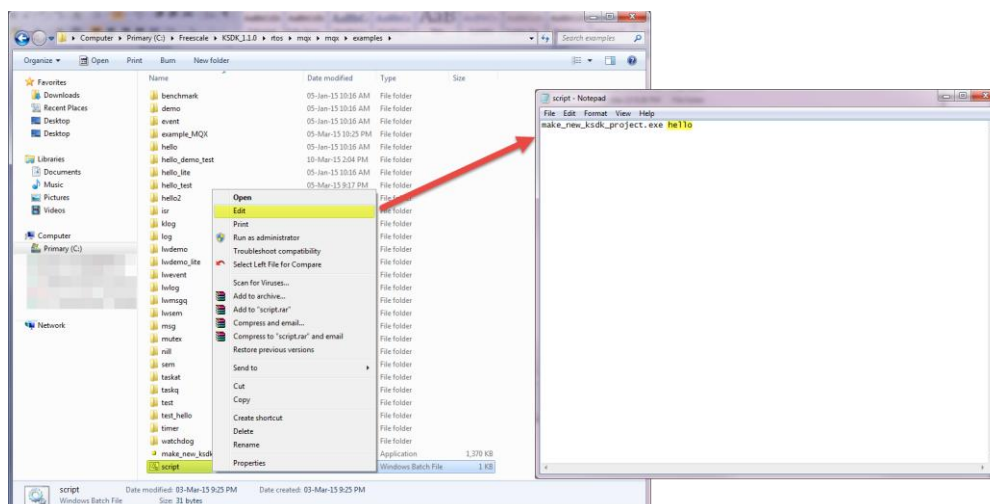
Copy the script `make_new_ksdk_project.exe` and `script.bat` to `C:\Freescale\KSDK_1.1.0\rtos\mqx\mqx\examples` in case MQX example.

For creating demo without MQX, only KSDK, go to `C:\Freescale\KSDK_1.1.0\demos`



Editing the script

The script is default set for copying hello project, so – in case other project, edit the parameter in bat file `script.bat`

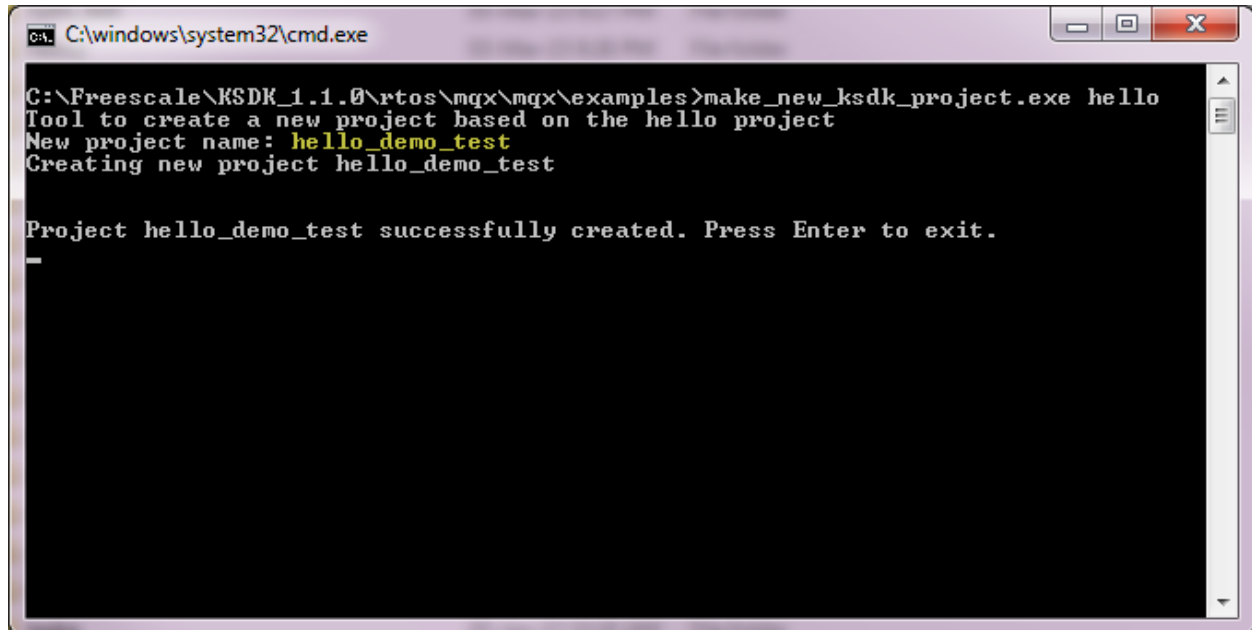


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Executing script

After that, execute the **script.bat** and type the name of new project.

NOTE: the name cannot be the same as example name.



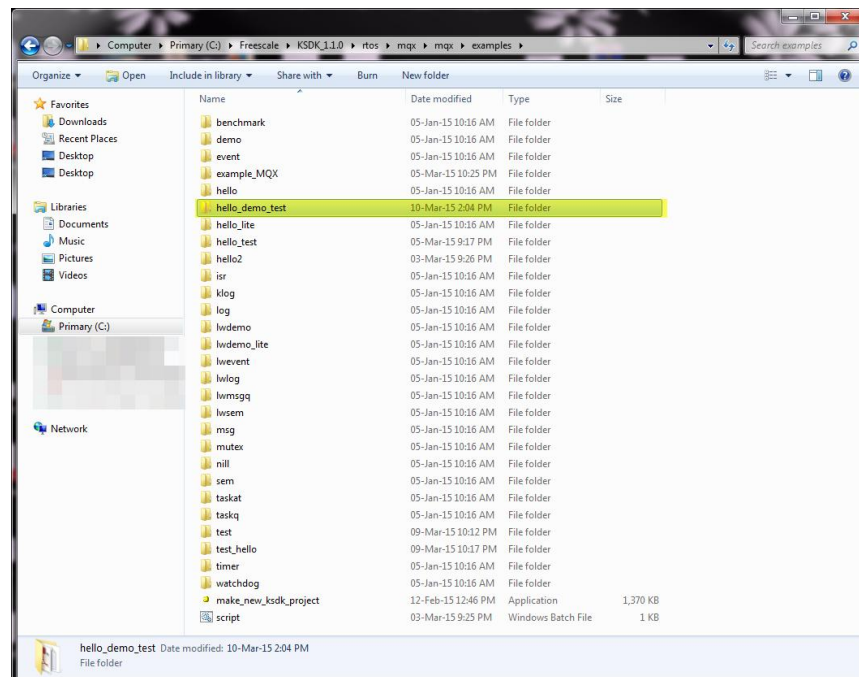
```

C:\windows\system32\cmd.exe

C:\Freescale\KSDK_1.1.0\rtos\mqx\mqx\examples>make_new_ksdk_project.exe hello
Tool to create a new project based on the hello project
New project name: hello_demo_test
Creating new project hello_demo_test

Project hello_demo_test successfully created. Press Enter to exit.
  
```

The demo hello_demo_test is successful created. It is immediately seen in destination folder.

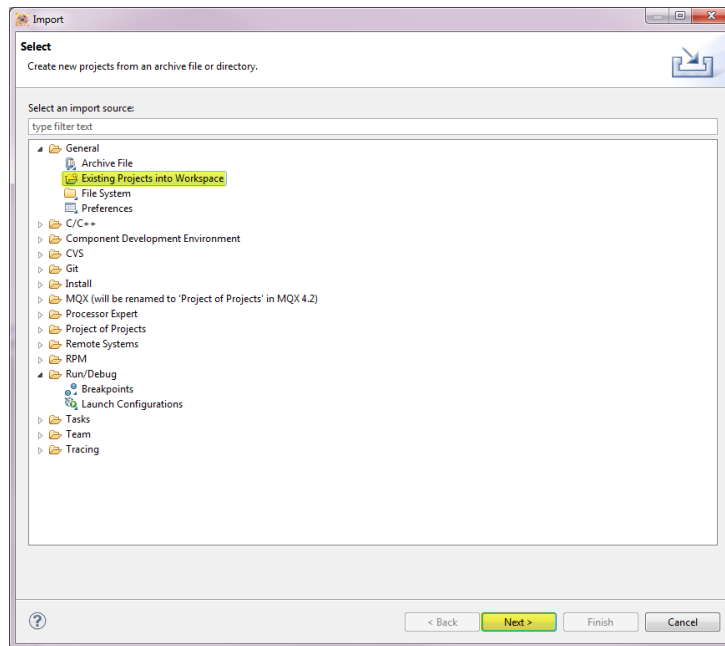
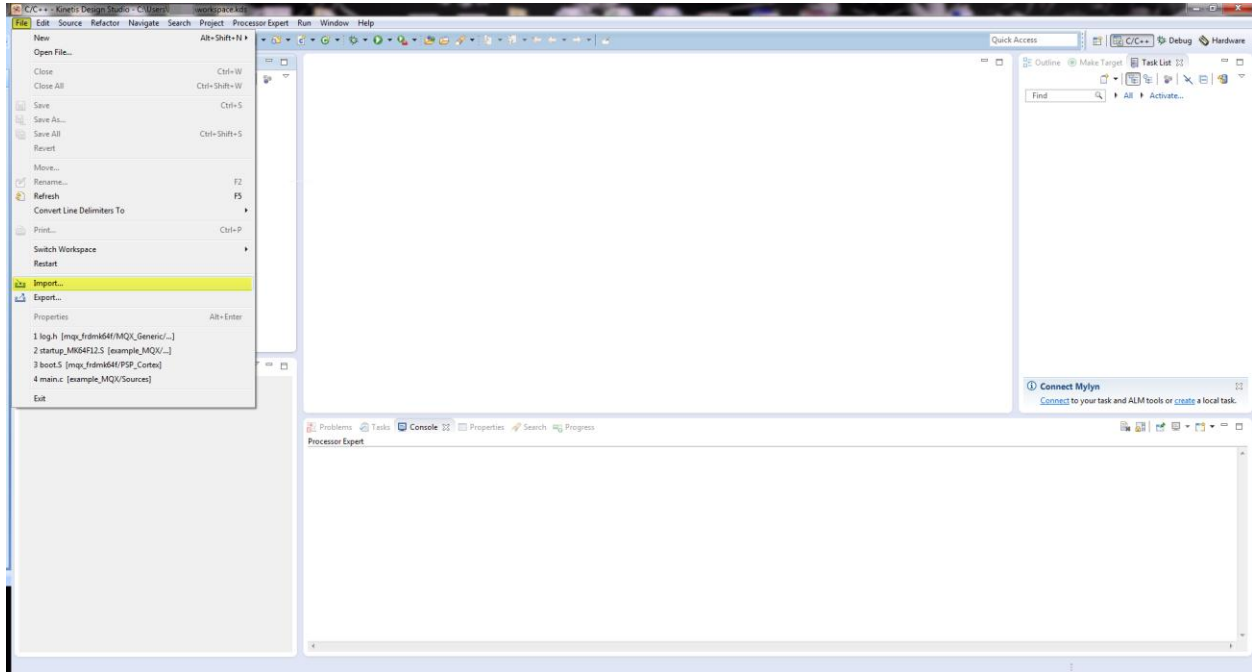


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Importing new project to KDS

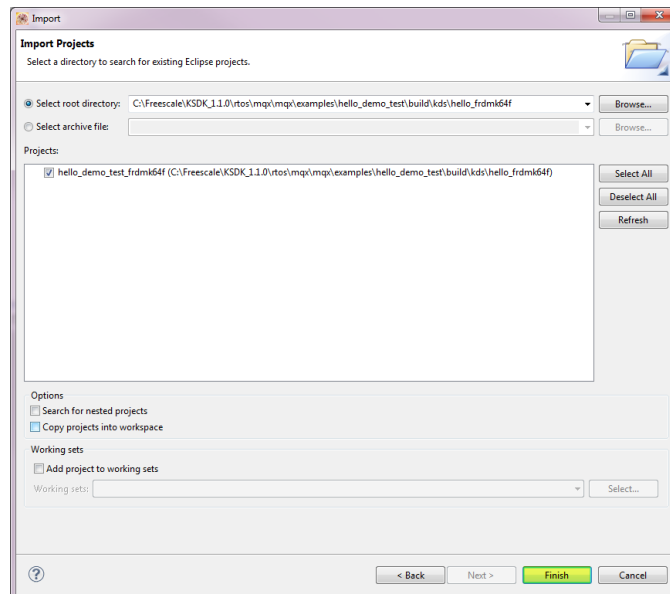
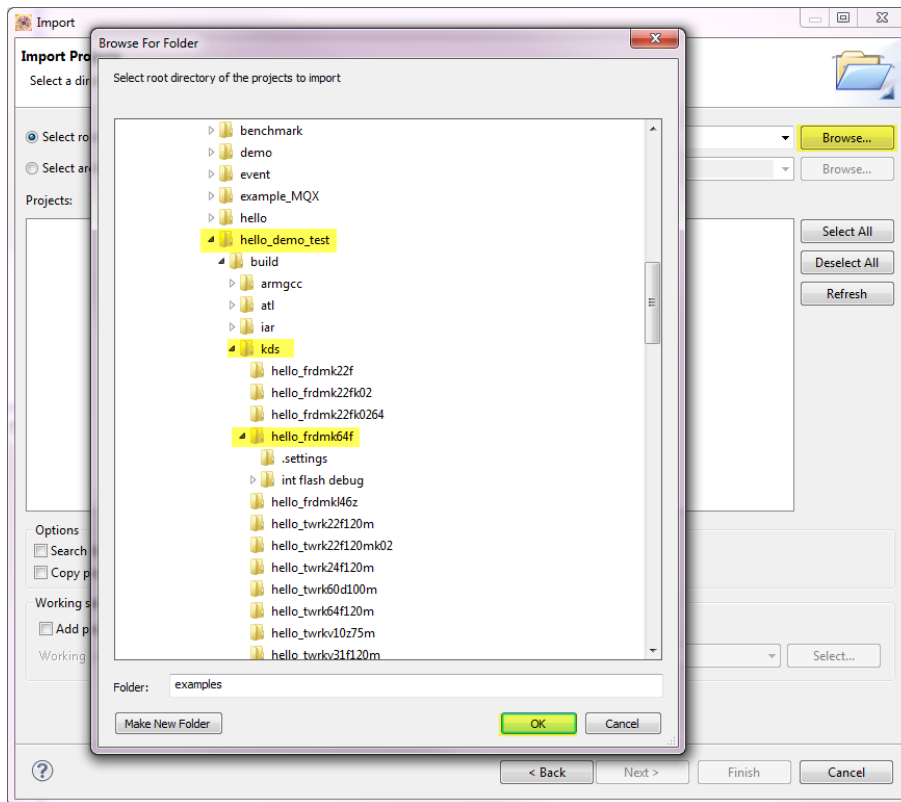
Importing new project to KDS

Now, import the created demo to KDS.



Find the demo, which is newly created.

Go to *C:\Freescale\KSDK_1.1.0\rtos\mqx\mqx\examples* or *C:\Freescale\KSDK_1.1.0\demos*



Building the libraries

After these steps is important to think of libraries, which the MQX project needs.

Definitely, there are **ksdk_mqx_lib_K64F12**

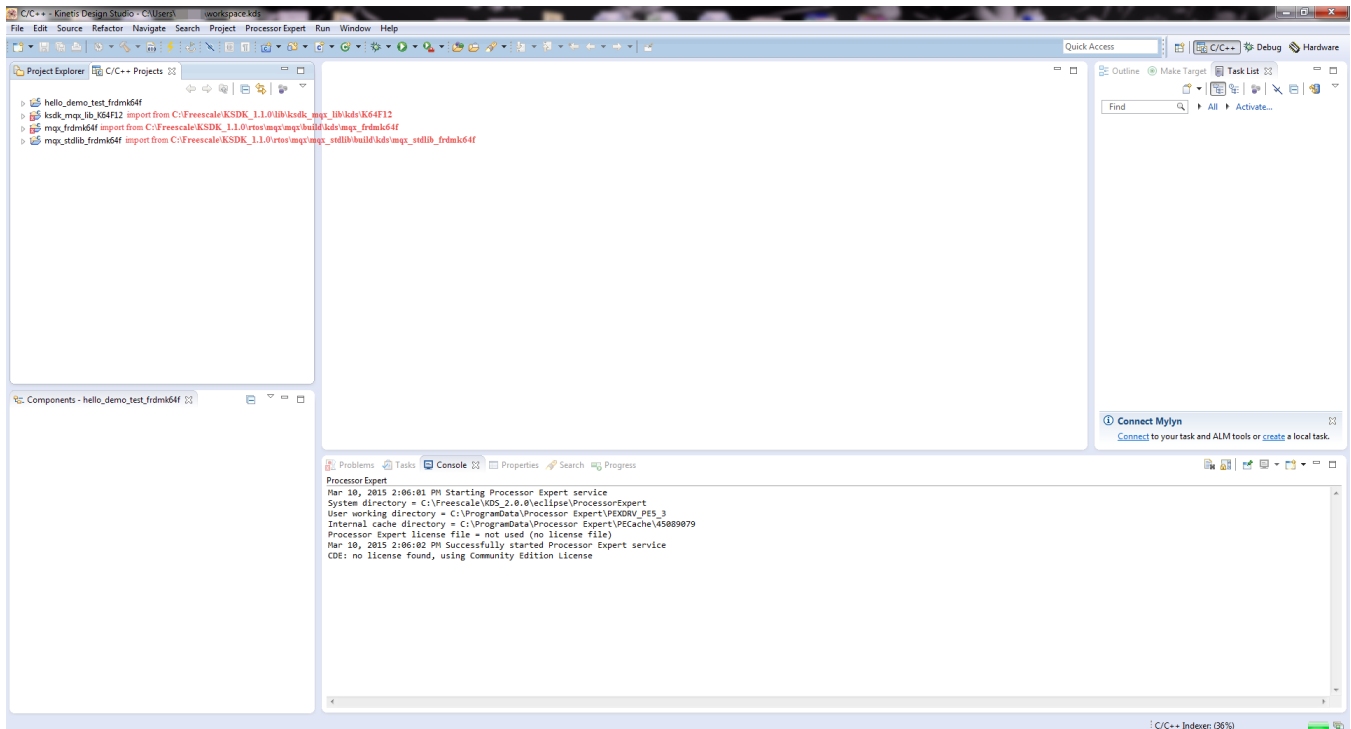
C:\Freescale\KSDK_1.1.0\lib\ksdk_mqx_lib\kds\K64F12

mqx_frdmk64f

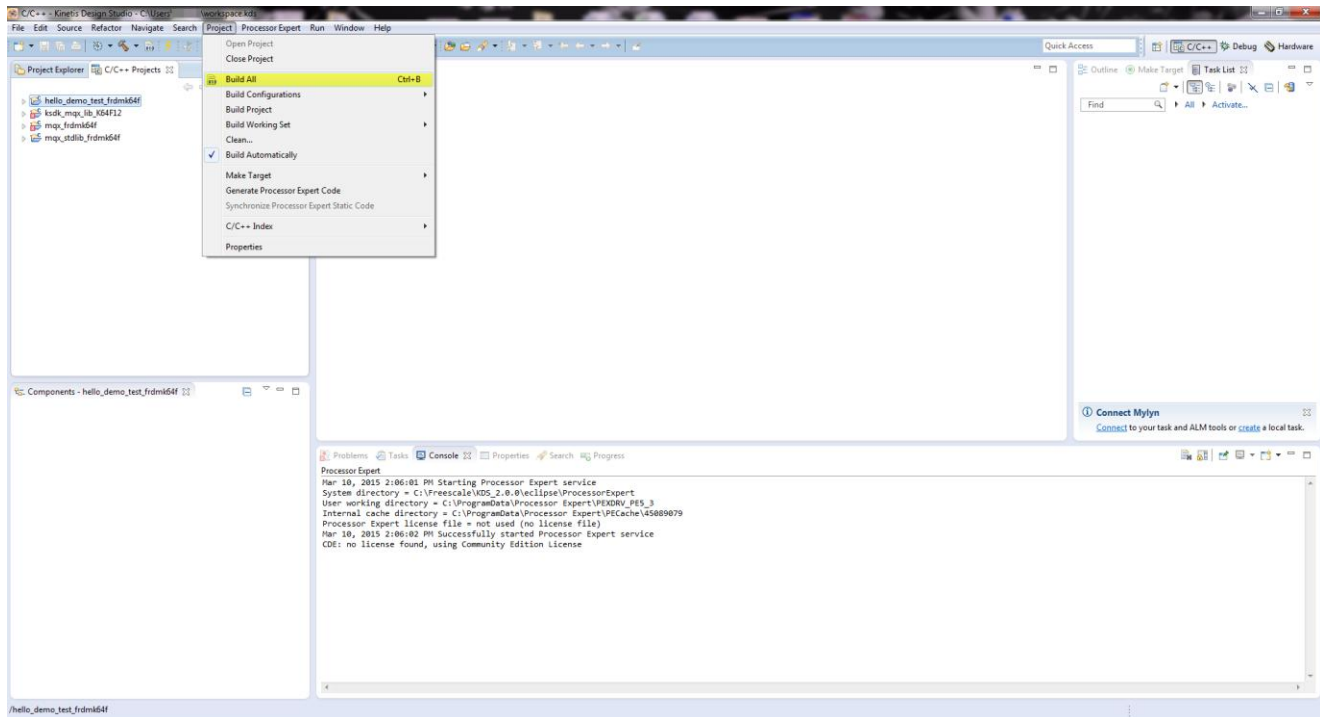
C:\Freescale\KSDK_1.1.0\rtos\mqx\mqx\build\kds\mqx_frdmk64f

mqx_stdlib_frdmk64f

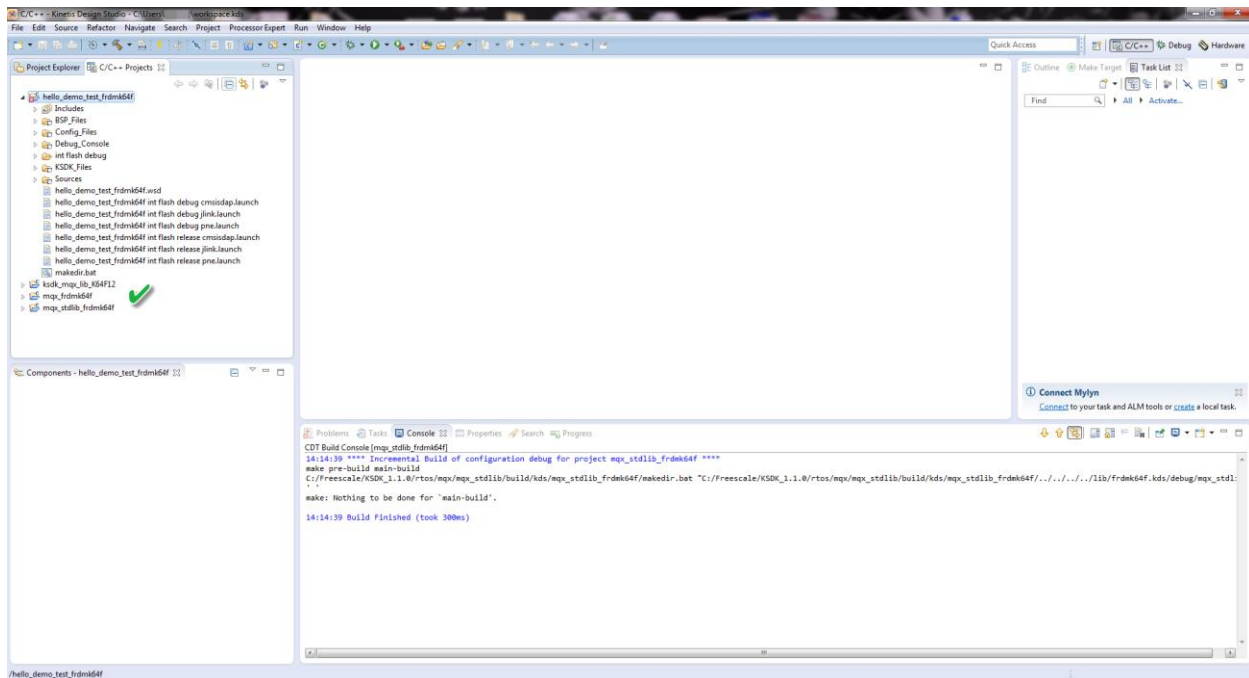
C:\Freescale\KSDK_1.1.0\rtos\mqx\mqx_stdlib\build\kds\mqx_stdlib_frdmk64f



Go to Project, Build All.



Libraries are successfully built.

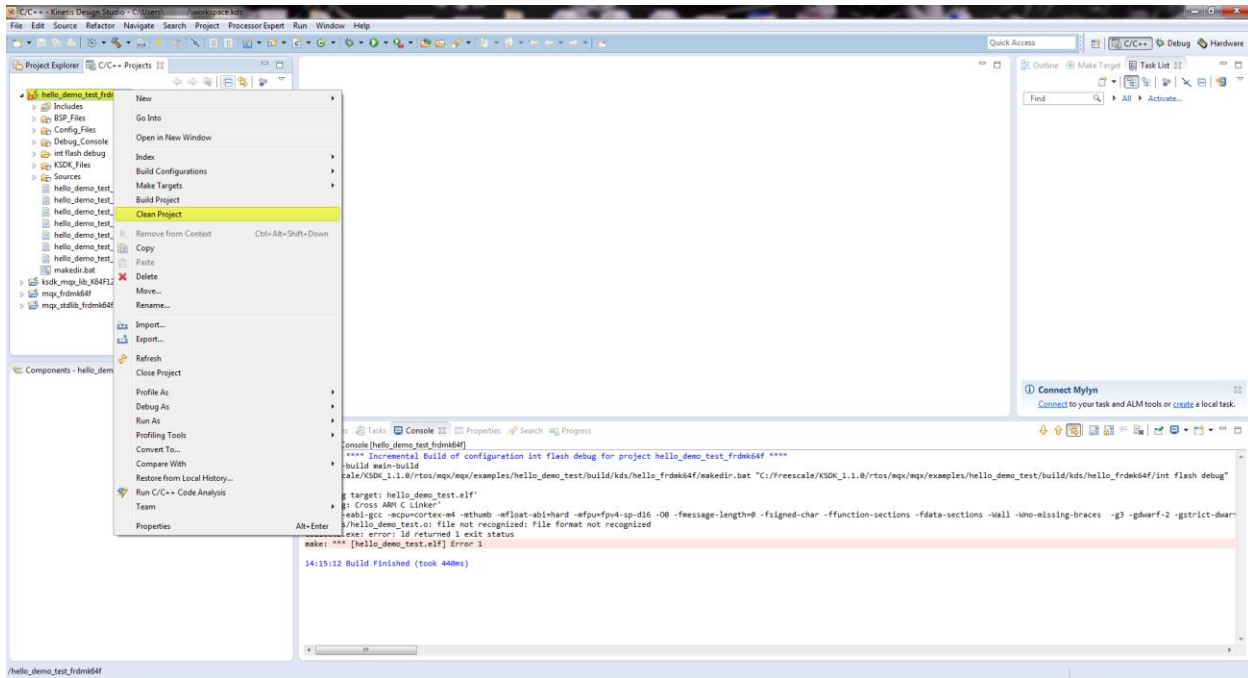


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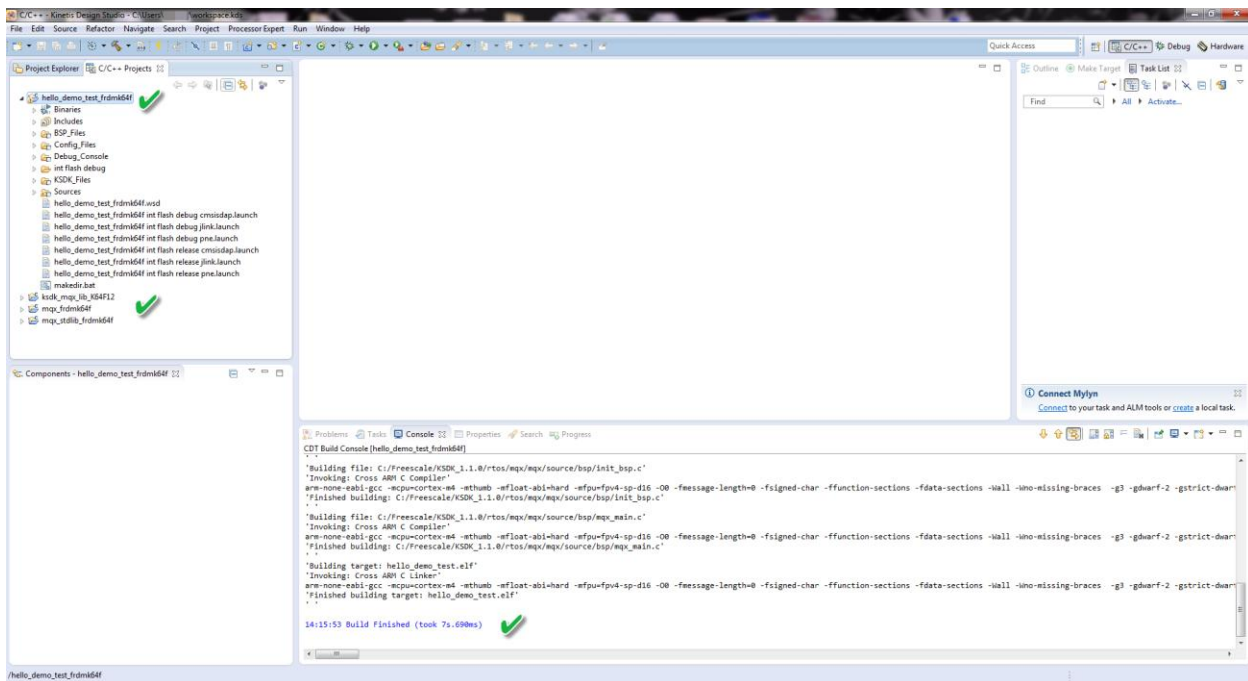
Building project

Building project

If some problems appear, right click on project and clean project.



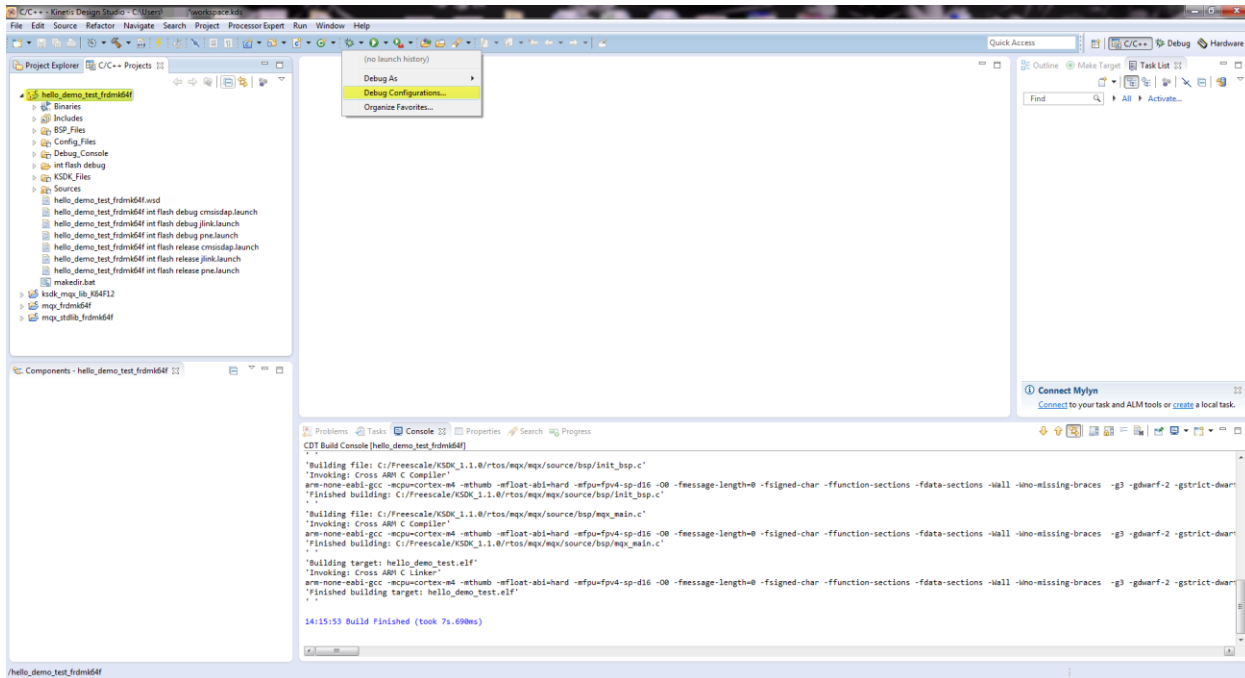
Project is successfully built.



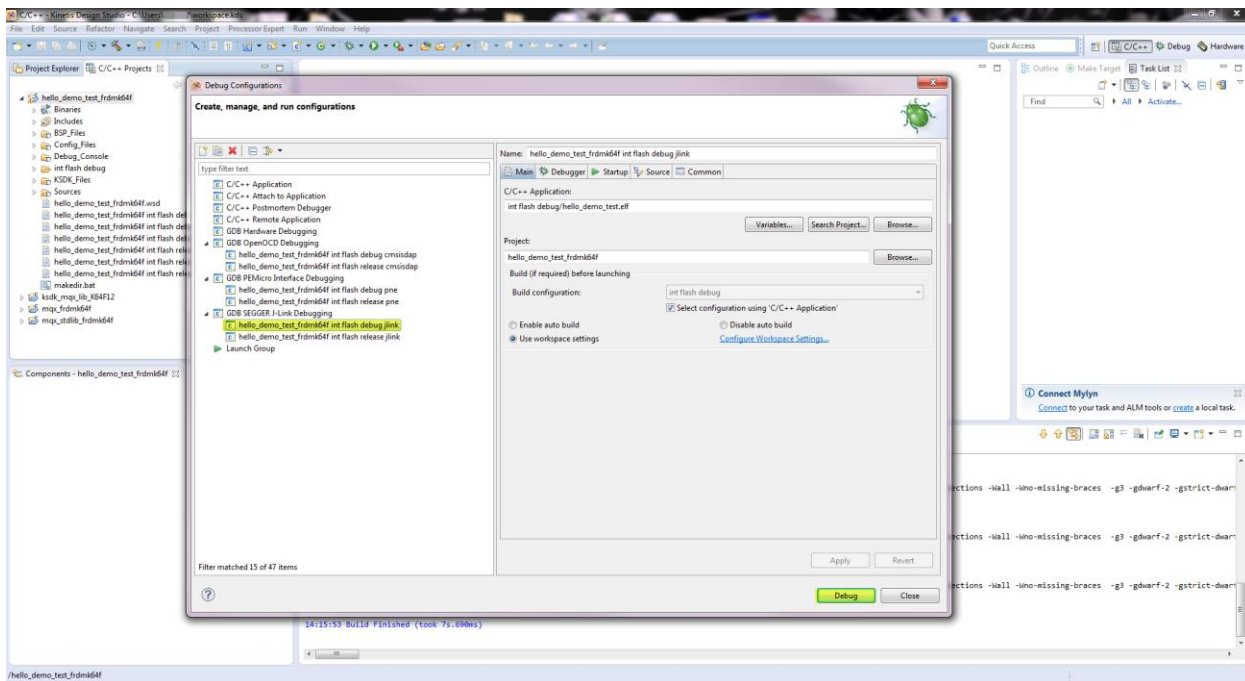
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Debug configuration

Go to Debug Configurations.



Choose Interface Debugging.



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Debug configuration

The screenshot illustrates the debug configuration process in Kinetis Design Studio (KDS). The top window shows the 'J-Link V4.92 - Terms of use' dialog box, which is a standard license agreement for SEGGER's J-Link hardware. Below the dialog, the console window displays the output of the 'Generate log file' command, showing various J-Link settings such as target device (MK6471H0xxx12), target interface (SWD), and target speed (30kHz). The bottom window shows the IDE in debug mode, with the 'Debug Console' displaying the execution of the 'mqx_main.c' file. The console output shows the start of the program, the initialization of the MQX structure, and the start of the target CPU.

```
hello_demo_test_frm64f int flash debug  
Accept remote connection:  
Generate log file:  
Verify download:  
Init regs on start:  
Silent mode: off  
Single run mode: on  
Target connection timeout: 5 sec.  
-----J-Link related settings-----  
J-Link host interface: USB  
J-Link script: none  
J-Link settings file: none  
-----Target related settings-----  
Target device: MK6471H0xxx12  
Target interface: SWD  
Target interface speed: 30kHz  
Target endian: little  
Connecting to J-Link...
```

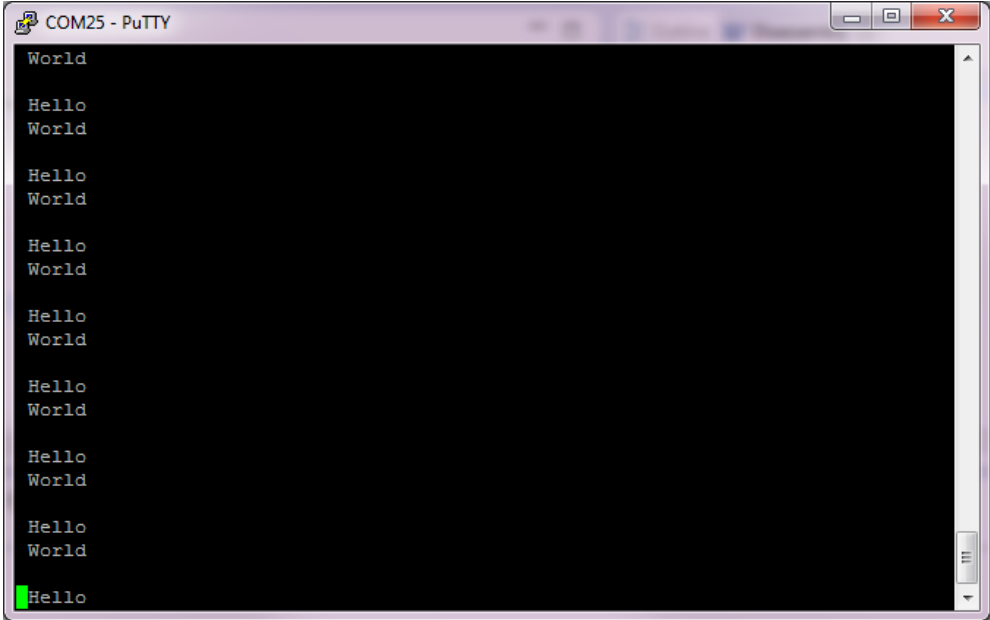
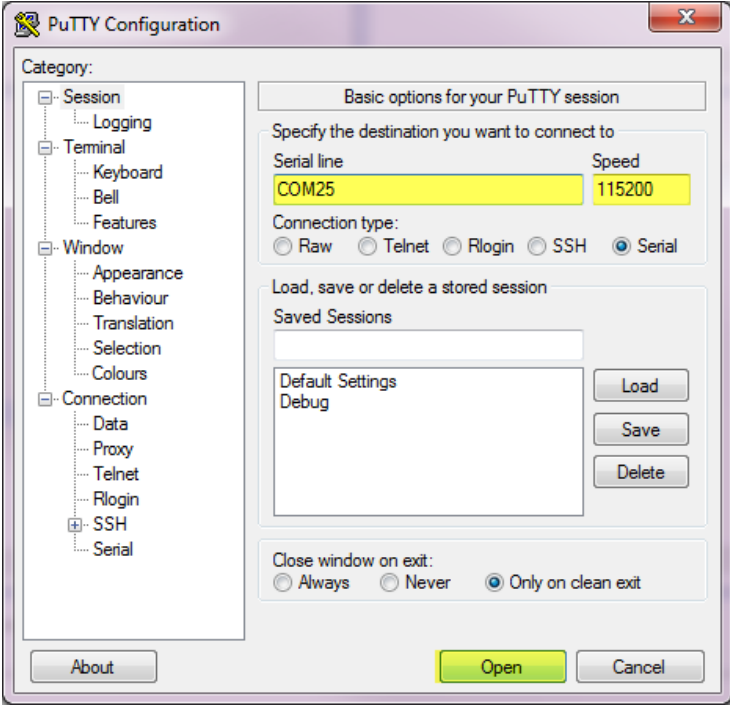
```
mqx_main.c : Starts MQX  
70 *  
71 *  
72 *  
73 *  
74 #if MQX_CUSTOM_MAIN  
75 {  
76 void  
77 }  
78 }  
79 /* Start MQX */  
80 _mqx( (MQX_INIT_TAL12AT120M_STRUCT_PTR) &MQX_Init_struct );  
81  
82 return 0;  
83  
84 }  
85 #endif /* MQX_CUSTOM_MAIN */  
86
```

```
Read 2 bytes @ address 0x00001604 (Data = 0x701A)  
Read 2 bytes @ address 0x00001606 (Data = 0x8578)  
Read 2 bytes @ address 0x00001608 (Data = 0x3390)  
Read 2 bytes @ address 0x0000160A (Data = 0x2208)  
Read 2 bytes @ address 0x0000160C (Data = 0x701A)  
Read 2 bytes @ address 0x0000160E (Data = 0x6678)  
Read 2 bytes @ address 0x00001610 (Data = 0x330A)  
Read 2 bytes @ address 0x00001612 (Data = 0x2208)  
Read 2 bytes @ address 0x00001614 (Data = 0x701A)  
Read 2 bytes @ address 0x00001616 (Data = 0x8578)  
Read 2 bytes @ address 0x00001618 (Data = 0x3390)  
Read 2 bytes @ address 0x0000161A (Data = 0x2208)  
Setting breakpoint @ address 0x00000A0C, Size = 2, BPHandle = 0x0003  
Starting target CPU...
```

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Output in PuTTY

Set session in terminal emulator. Especially serial line with correct port number and speed.



Useful links

Create new KSDK Projects

<https://community.freescale.com/docs/DOC-102547>

How To: Create a New MQX RTOS for KSDK Project in KDS

<https://community.freescale.com/docs/DOC-103405>

Writing my first KSDK Application in KDS - Hello World and Toggle LED with GPIO Interrupt

<https://community.freescale.com/docs/DOC-103288>

Segger J-Link Firmware for OpenSDAv2

<http://mcuoneclipse.com/2014/04/27/segger-j-link-firmware-for-opensdav2/>

KDS User Guide

http://www.freescale.com/files/microcontrollers/doc/user_guide/KDS200UG.pdf?fpsp=1&WT_TYPE=Users%20Guides&WT_VENDOR=FREESCALE&WT_FILE_FORMAT=pdf&WT_ASSET=Documentation&fileExt=.pdf

Documentation to KDS

http://www.freescale.com/webapp/sps/site/prod_summary.jsp?code=KDS_IDE&nodeId=0152101E8C1EB4&fpsp=1&tab=Documentation_Tab#nogo

Documentation to KSDK

http://www.freescale.com/webapp/sps/site/prod_summary.jsp?code=KINETIS_SDK&nodeId=0152101E8C1EF7&fpsp=1&tab=Documentation_Tab#nogo

Documentation to MQX™ RTOS for Kinetis SDK

http://www.freescale.com/webapp/sps/site/prod_summary.jsp?code=MQX-RTOS-FOR-KINETIS-SDK&nodeId=01521060795BB6&fpsp=1&tab=Documentation_Tab#nogo

Binary (and S19) Files for the mbed Bootloader with Eclipse and GNU ARM Eclipse Plugins

<http://mcuoneclipse.com/2014/04/20/binary-files-for-the-mbed-bootloader-with-eclipse-and-gnu-arm-eclipse-plugins/>

OpenSDA Update Instructions for Freescale Freedom Development Boards for Windows 8.1 and Linux

<http://www.element14.com/community/docs/DOC-65460/1/opensda-update-instructions-for-freescale-freedom-development-boards-for-windows-81-and-linux>

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Rev.
03/20