Blue Screen

Application Note ANBS1.00.06 [Issued date June 8, 2009]

Setting up with Eclipse and GNU

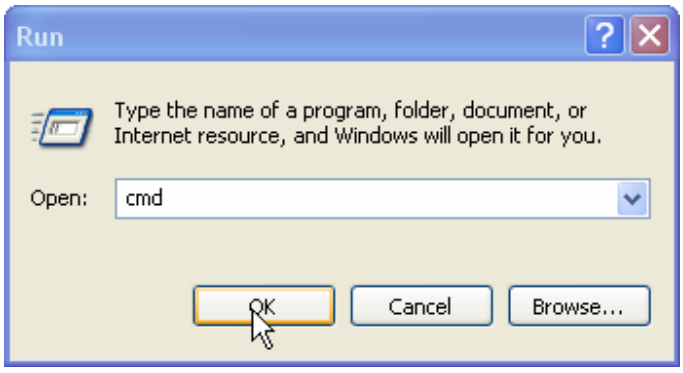
Now, it's time for Blue Screen platform to be used with free license IDE and compiler. This application note describes step by step on setting up the project with GNU compiler. The IDE selected is Eclipse running on Windows. Modifying the makefile is also described.

The example project is the Keypad project, but the same procedure can be applied with the others. All source code (also makefile) can be downloaded from www.thaieasyelec.com

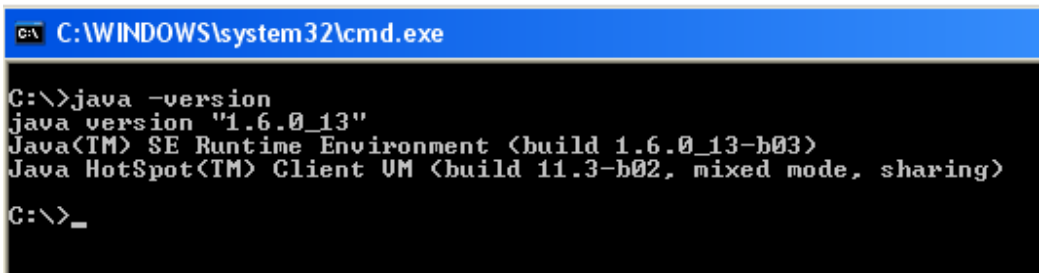
1. Installation of Eclipse and Yagarto

1.1Install **Java Runtime Environment (JRE)**

Select "Start Menu" from your Windows and then "Run", type "cmd" and hit enter.



Type "java –version" to see Java Runtime version on your machine.



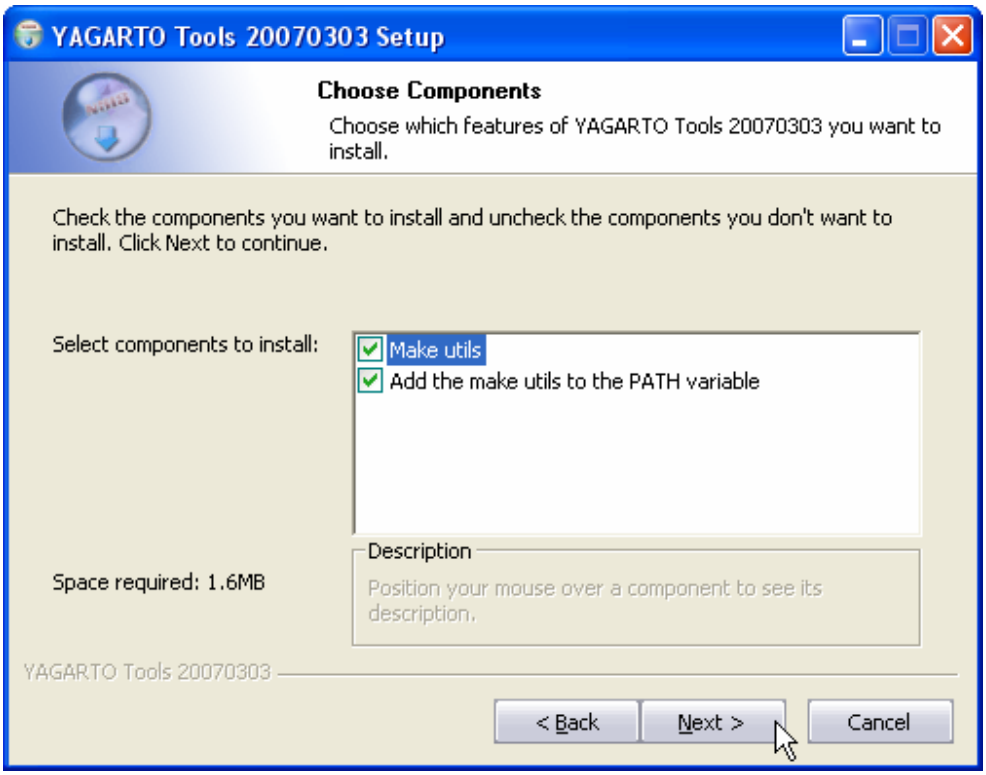
If this is not installed on your machine, download it from here: http://java.sun.com/javase/downloads/index.jsp . The version using in this application note is Java Runtime Environment (JRE) 6 Update 13

1.2Install **Eclipse IDE for C/C++ Developers**

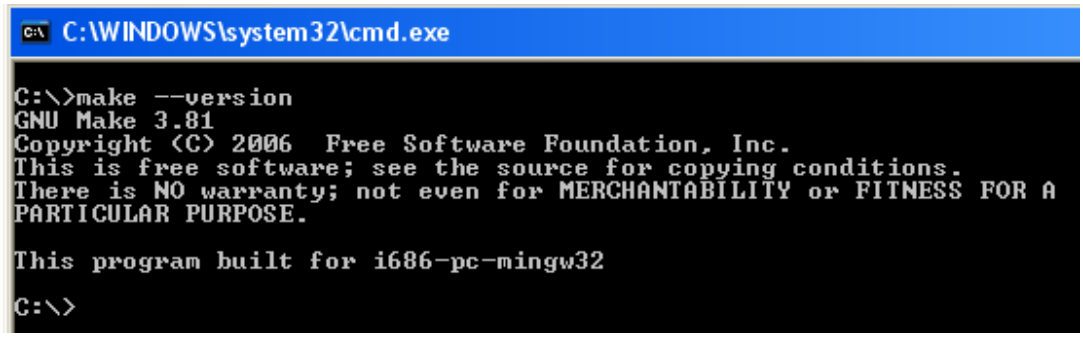
Eclipse IDE for C/C++ Developers can be downloaded from: http://www.eclipse.org/downloads/ . There you will get file eclipse-cpp-ganymede-SR2-win32.zip. Unzip it and install on your machine.

1.3Install **Yagarto Tools** and **Yagarto GNU ARM Toolchain**

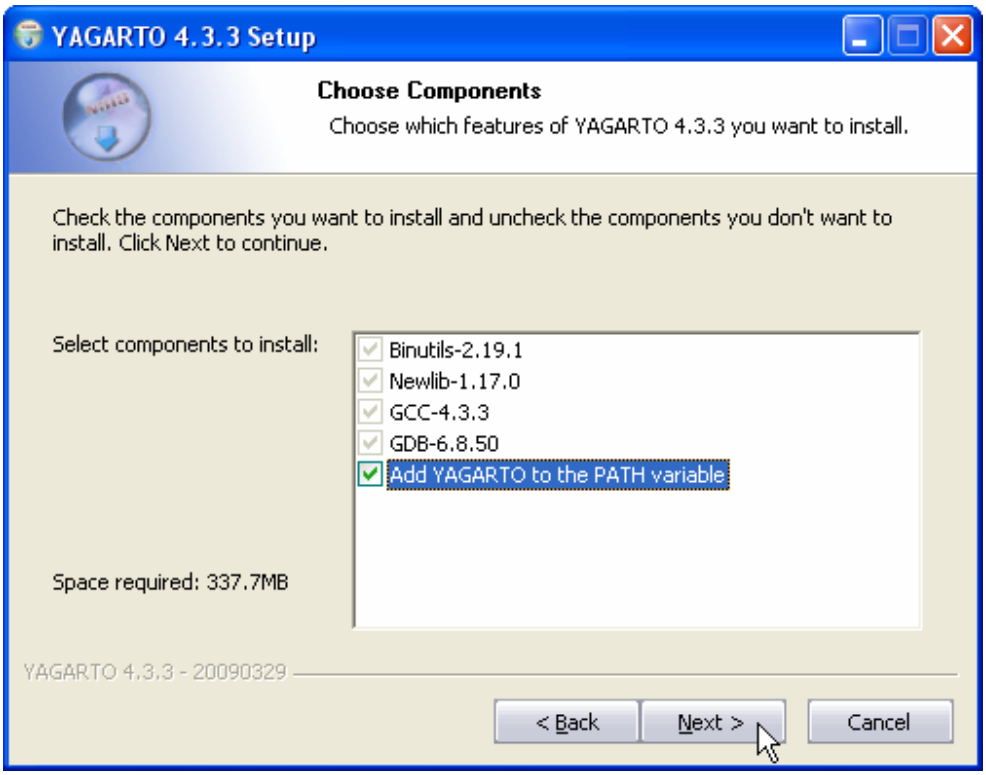
Download from http://www.yagarto.de/index.html . Follow the installation until “Choose Components” page, select as in the picture below.



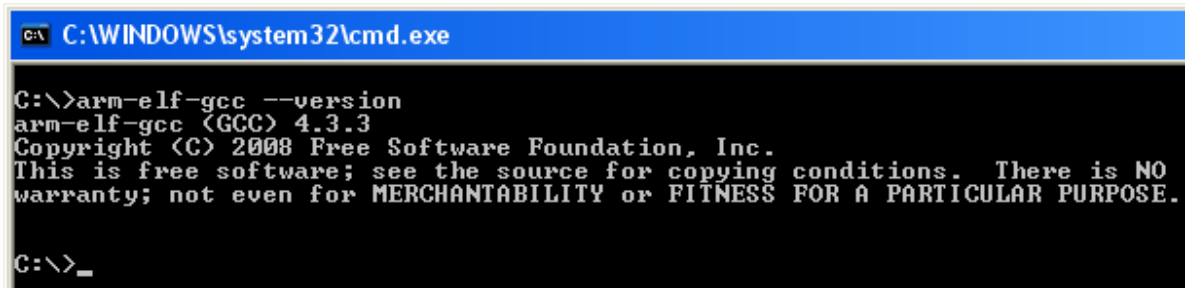
Press “Next” until you finish the installation. Now try on Windows’s command “make --version”, the result should be the same here (unless, the Yagarto Tool may not be installed completely).



And then install YAGARTO GNU ARM Toolchain until you’ve got to “Choose Components” page, select as in the picture below.

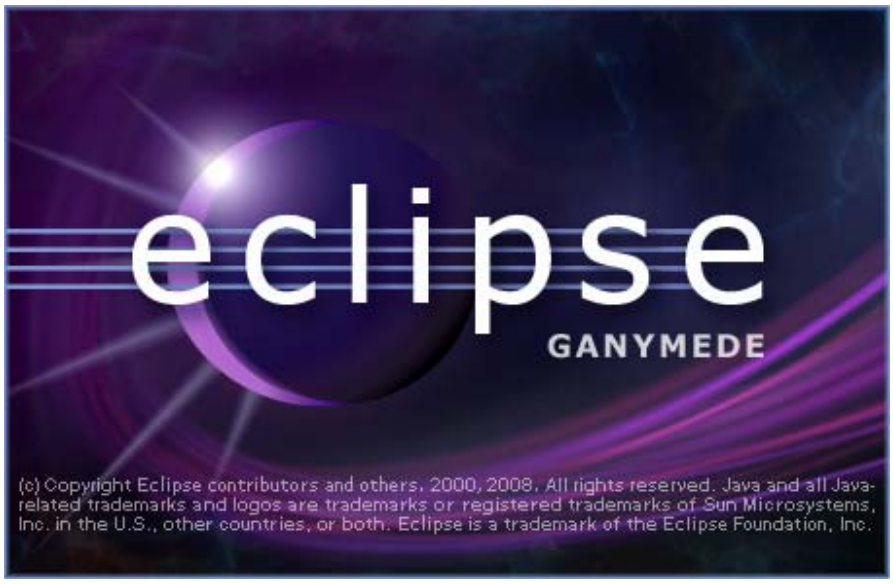


Press “Next” until the installation is finished. Now test it with command: “**arm-elf-gcc --version**”.

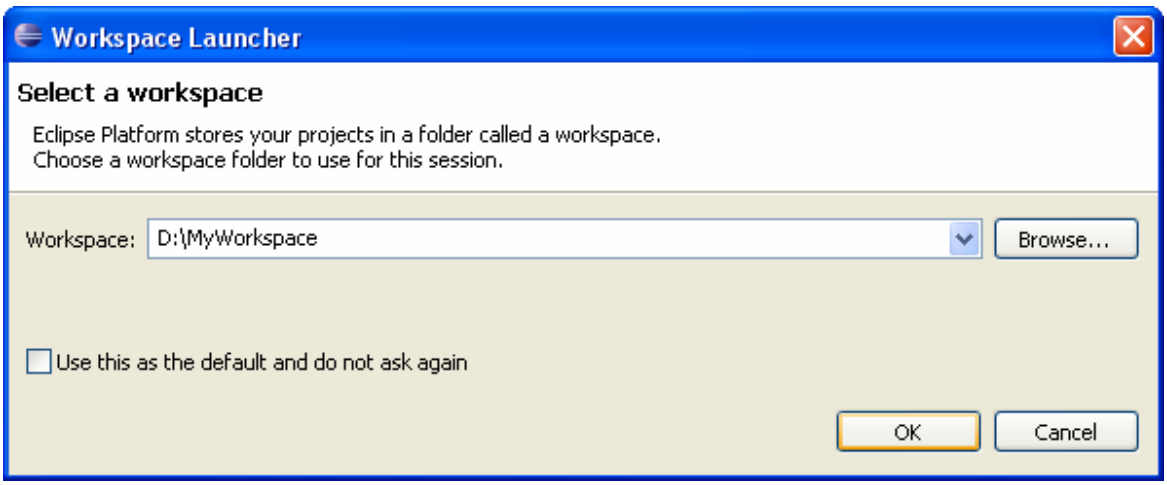


2. Setting Eclipse for Yagarto GNU ARM Toolchain

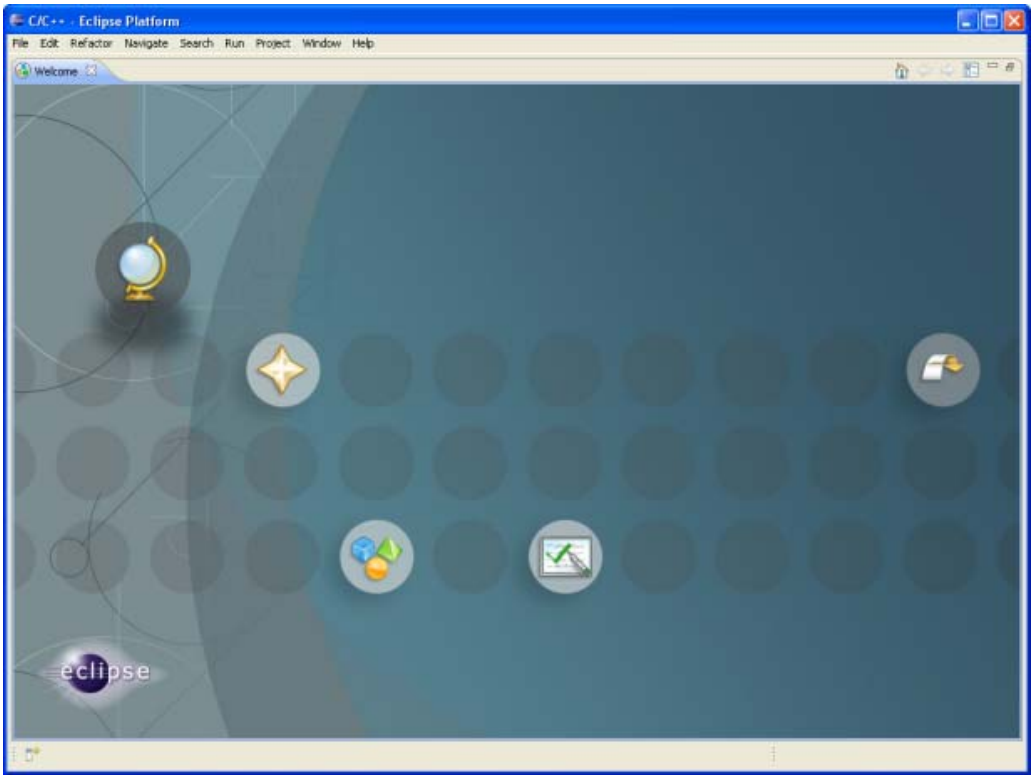
Run Eclipse from the folder where it's unzipped to (for example C:\Eclipse)

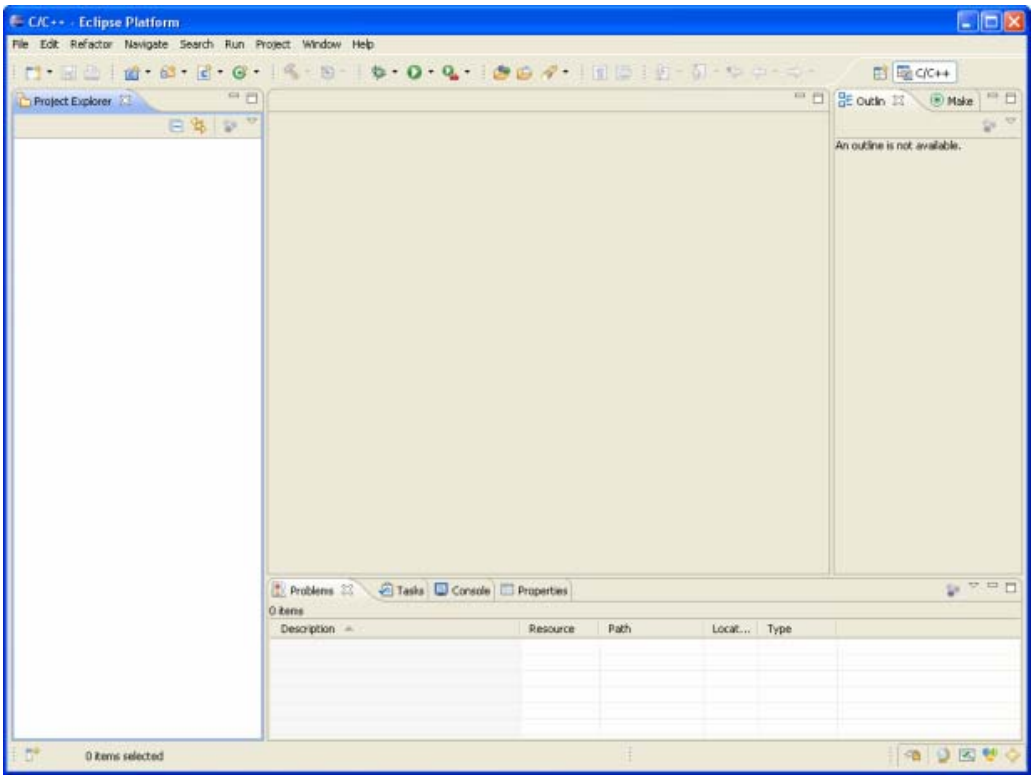


Select your workspace.

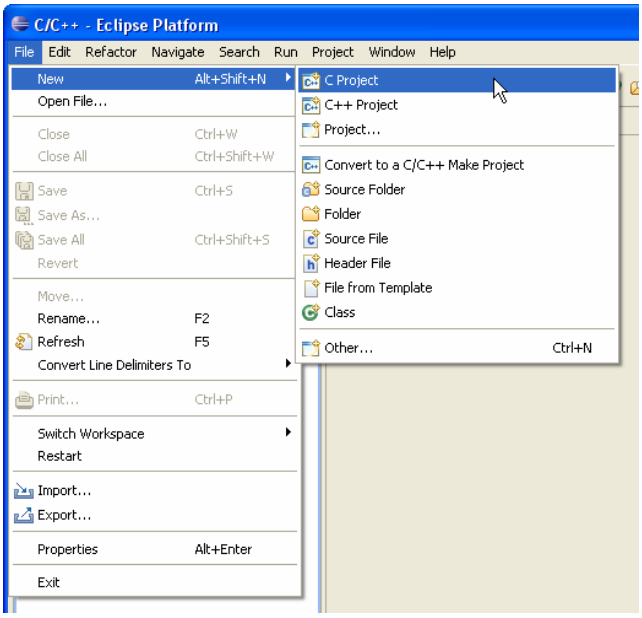


Now you can see the window, select “Workbench” icon.

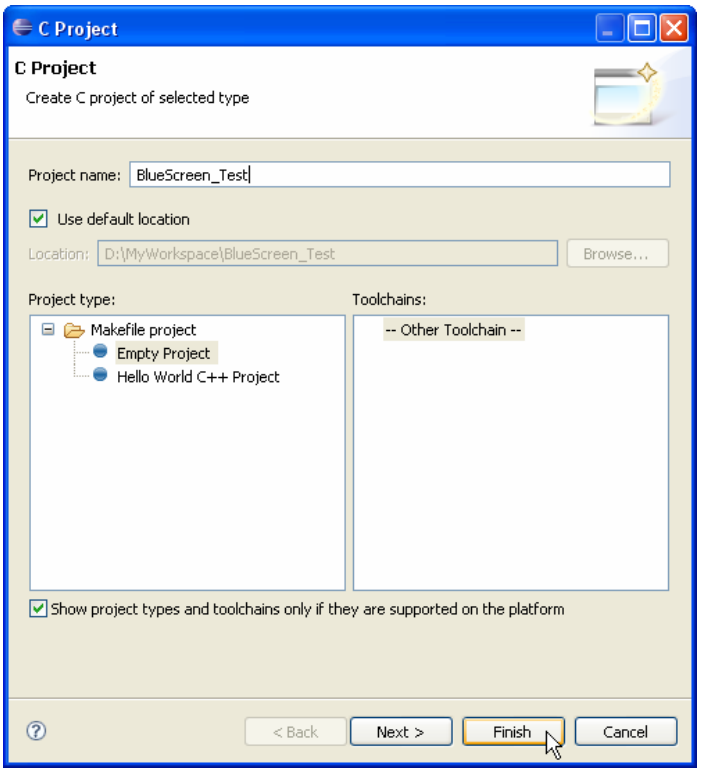




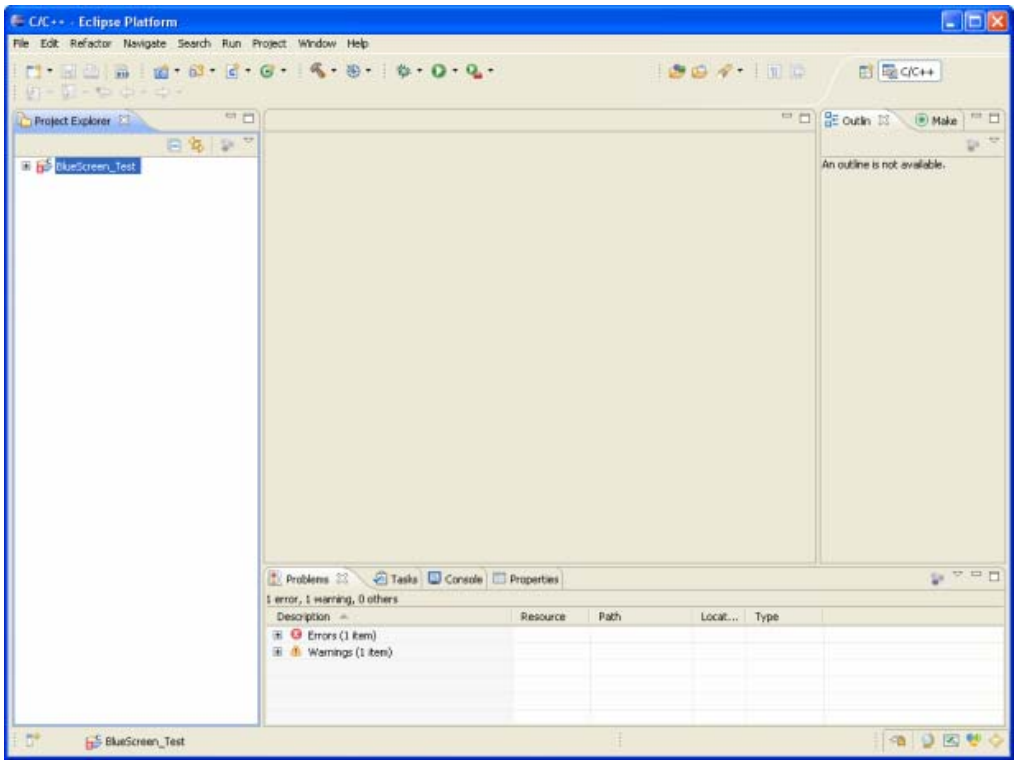
Create new project at File→New→C Project



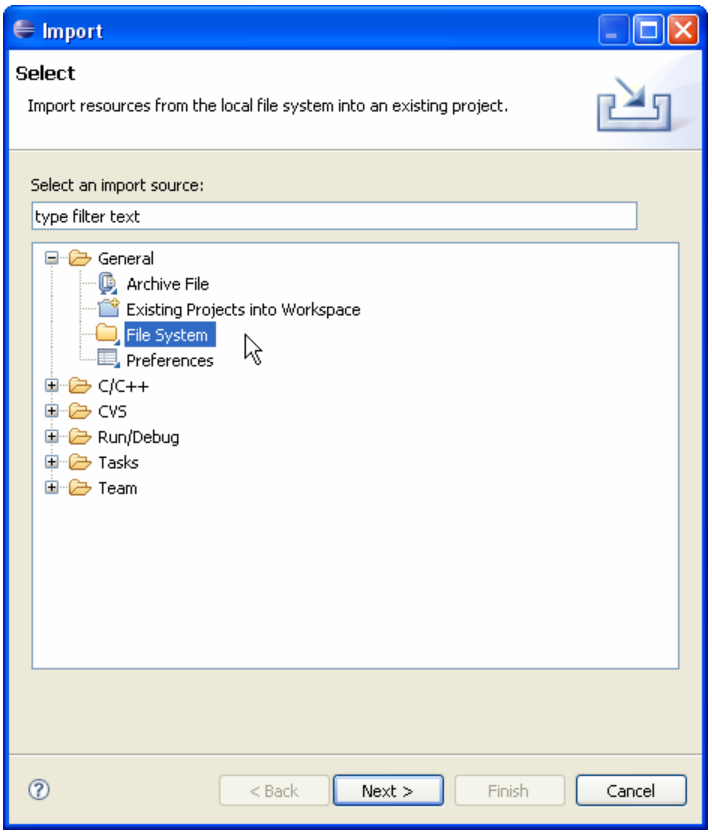
Create project name (it is BlueScreen_Test here), select Project type as “Empty project” and select Toolchains as “Other Toolchain”. Then select “Finish”.



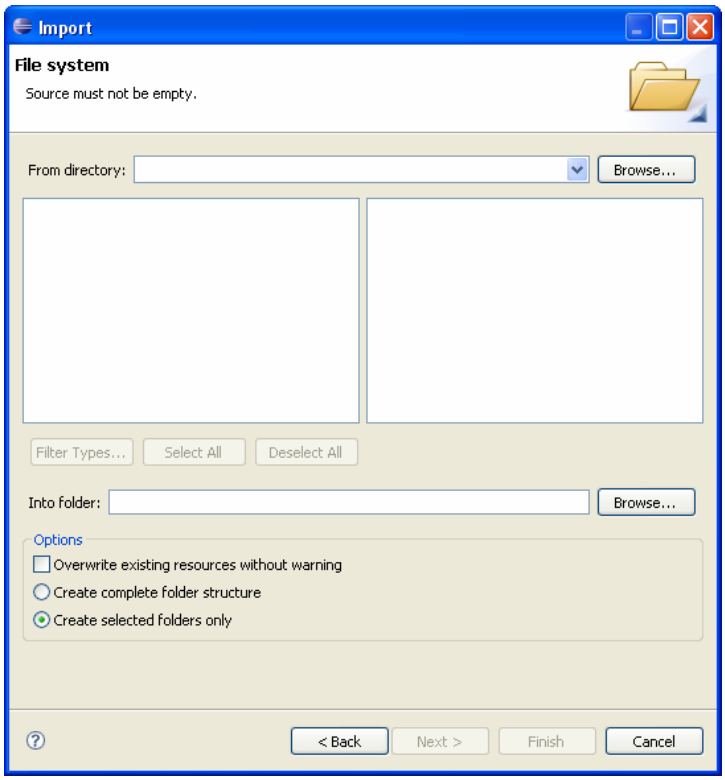
Now we have an empty project.



At this version of Eclipse, there are no compiler to be set, what to do next is to import the source code to our project. Select File→Import, at General select File System, and then press “Next”.

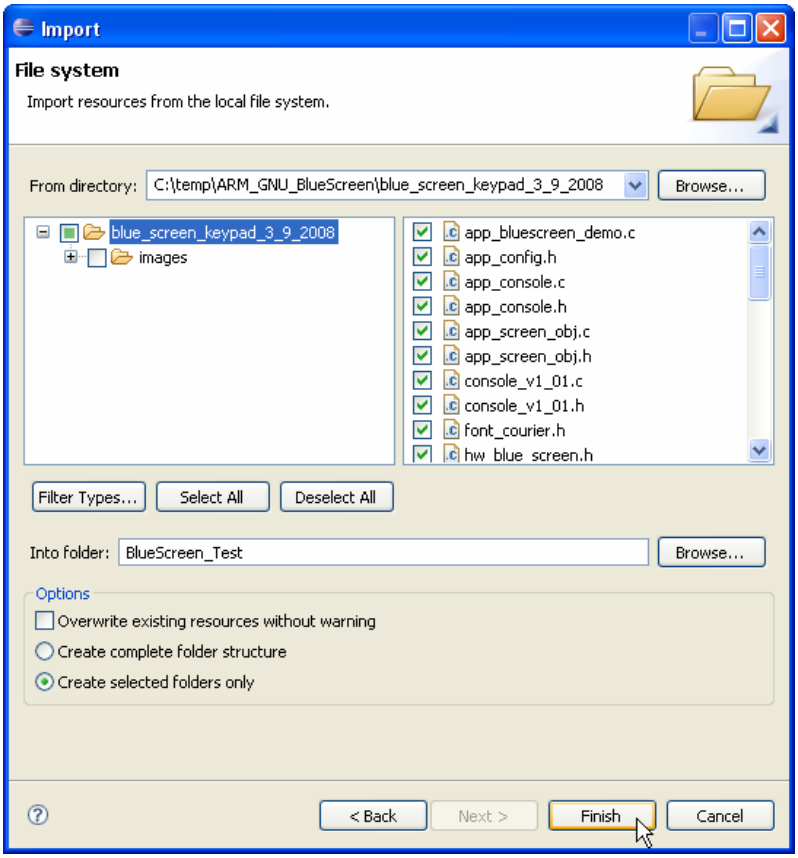


At the “From directory” select “Browse” and choose keypad example folder on your machine (this is the example project “Keypad Example Code (C Code LPC2378)” from our website, the link is here: http://www.mcudevzone.com/archives/Manual/blue_screen_keypad_3_9_2008.rar).

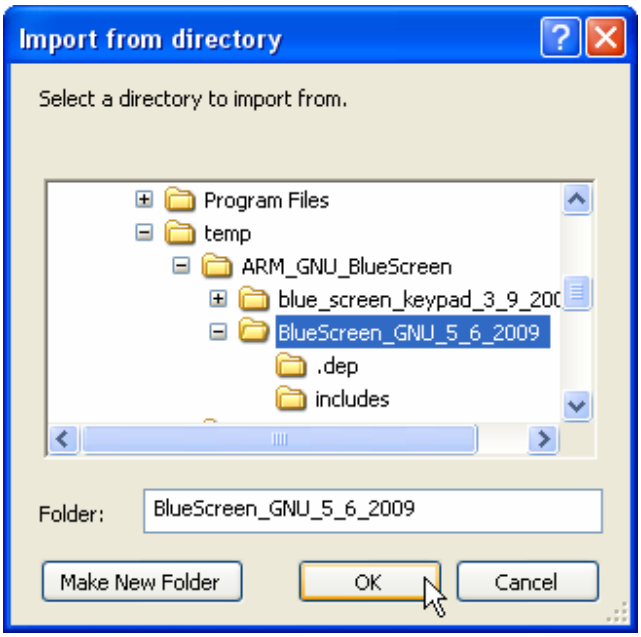

Import
File system
Source must not be empty.
From directory:
Browse...
Filter Types...
Select All
Deselect All
Into folder:
Browse...
Options
Overwrite existing resources without warning
Create complete folder structure
Create selected folders only
< Back
Next >
Finish
Cancel


Import from directory
Select a directory to import from.
MSOCache
Program Files
temp
ARM_GNU_BlueScreen
blue_screen_keypad_3_9_200
BlueScreen_GNU_5_6_2009
.dep
Folder:
blue_screen_keypad_3_9_2008
Make New Folder
OK
Cancel

Select all header and source files (all .h and .c files), then press “Finish”.



And then import another bundle of files from BlueScreen_GNU_5_6_2009 (available now at our website). Now use “Select All” and then “Finish”. This second bundle will replace “main.c” file originally made for Keil’s IDE. It also contains “makefile” and other source and header files necessary for GNU compiler.

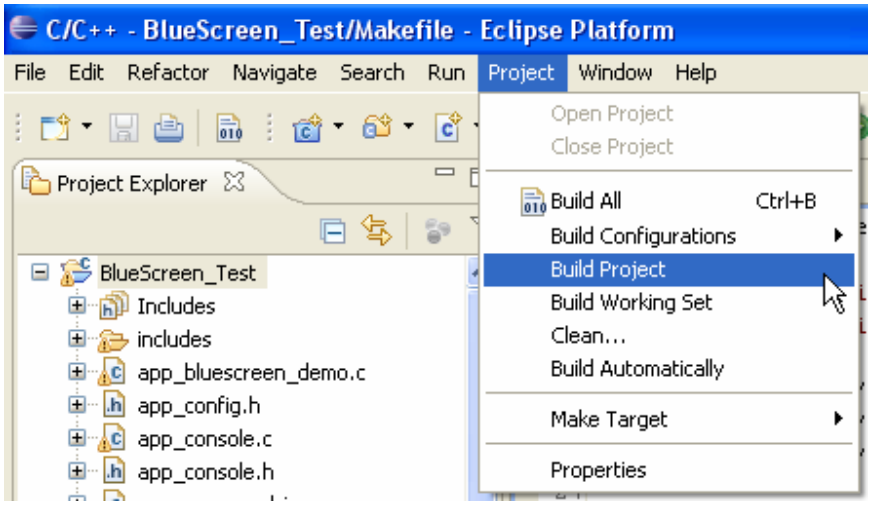


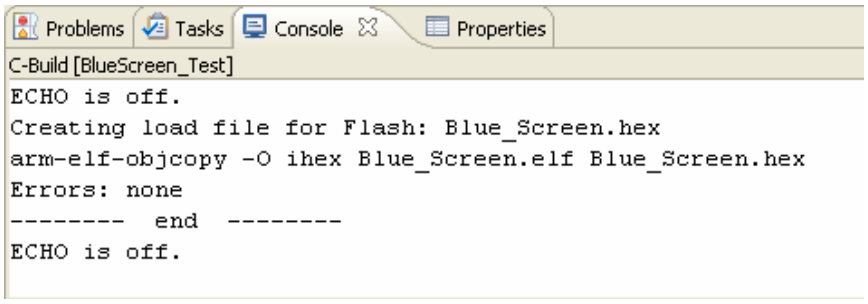
Open “makefile”, you will see those source files added up one by one. Depending on the project, add more source files here.

Makefile

```
19 TARGET = Blue_Screen
20
21 # List C source files here. (C dependencies are automatically generated.)
22 # use file-extension c for "c-only"-files
23 SRC = main.c
24 SRC += ./includes/syscalls.c
25 SRC += ./includes/lpc_lib.c
26 SRC += ./includes/isr.c
27
28 # List C source files here which must be compiled in ARM-Mode.
29 # use file-extension c for "c-only"-files
30 SRCARM = app_bluescreen_demo.c
31 SRCARM += app_console.c
32 SRCARM += app_screen_obj.c
33 SRCARM += console_v1_01.c
34 SRCARM += i2c_eeprom.c
35 SRCARM += i2c_lpc23xx_v1_00.c
36 SRCARM += screen_obj_v1_00.c
37 SRCARM += serial_lpc23xx_v1_00.c
38 SRCARM += spi_lpc23xx_v1_01.c
39 SRCARM += tc_ad7843_v1_00.c
40 SRCARM += tslcd_elt240320tp_v1_10.c
41 SRCARM += utils_custom_v1_00.c
42
43 # List C++ source files here.
44 # use file-extension cpp for C++-files
```

Now, everything is ready for the project to be built. Do it at “Project→Build Project”. If you do things right, no error should be found.





Here you have Blue_Screen.hex, program it to the board using Flash Magic or some kind of tools and then enjoy it!

References:

YAGARTO ARM GNU Toolchain: http://www.yagarto.de/
ARM Project: http://www.siwawi.arubi.uni-kl.de/avr_projects/arm_projects/

BLUESCREEN (ETEE009)
ARM7 LPC2378 with 2.8 inch QVGA TFT LCD Touch Screen
http://www.ThaiEasyElec.com
http://www.ThaiEasyElec.net

BLOG SUPPORT

http://bluescreen-etee009.blogspot.com/

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