#### 1 Eclipse projects for KNJN boards

#### By Victor Suarez.

#### Last modified February 2, 2008

This documentation describes how to use Eclipse with KNJN boards. We use code from one of the KNJN board startup-kit example. We don't use makefiles (as KNJN examples do) because they are automatically generated by CDT, including new files you add to the project. Other features are the automatic generation of listings of generated assembly code intermixed with C/C++ code for the ease of debugging, compiler switches like in your project, automatic compilation of startup or other assembly files, use of linker script, etc.

#### 2 Installation

If you don't have gnu make or msys, download and install them. Make sure they are in your path. Download make from http://ufpr.dl.sourceforge.net/sourceforge/mingw/mingw32-make-3.80.0-3.exe Download Msys from http://ufpr.dl.sourceforge.net/sourceforge/mingw/MSYS-1.0.10.exe

Test mingw32-make and msys tools are working well, opening a console and running some commands, like cp and mingw32-make.



Download Yagarto IDE and toolchain. Install them, default options works ok.

Run eclipse

### 3 Disable automatic build

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# 7 Build done (elf generated)

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#### 8 Setup selected debugger if not set

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# 10 Open debug dialog

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# 11 Make sure openocd and jtag server are running

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	The JTAG server is running.

Close JTAG server

# 12 Open debug dialog

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# 13 Select Zylin embedded CDT

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Filter matched 6 of 12 items	
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#### 14 Set initalize commands

Set initialize commands to:

target remote localhost:3333
monitor soft\_reset\_halt
monitor arm7\_9 sw\_bkpts enable
monitor arm7\_9 force\_hw\_bkpts disable
monitor mww 0xE01FC040 0x0002

#### Also set run commands to:

load tbreak main continue

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Create, manage, and run configur	ations
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# 15 Press 'Debug'

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		unsigned int $k = 0;$					
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there is a temporary breakpoint at main, then program stops there.

#### 16 Debug program

For example, Dissasembling shows assembly code intermixed wit C code



### 17 Press F6, F5

Press F6, F5 and other eclipse debugger keys in assembly or source code, set breakpoints, show variable values, etc.

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#### **19 Modify your project to suit your needs**

For example if you add a C file to the project's src folder, it will be included in the compilation automatically (thanks CDT managed build project, that generates makefiles).

Compiler options are set in the example project to generate detailed assembly listings, debug information, etc. change to suit your needs: right click in your project and set properties:

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		Paste		im Debug [Zylin Embedded d	lebug (Native)] arm-elf-g	db (01/02/08	8 15:14)	
		Move		<pre>9 force_hw_bkpts d</pre>	isable			
		Rename		e breakpoints disa	bled			
				KEUIFCU4U UXUUUZ				
		Import		on .text, size 0x1	d4 lma 0x400000	00		
		Z Export		0x40000040, load	size 468			
		🖑 Refresh		: 30 KB/sec, 468 b	ytes/write.			
		Close Project			, , .			
		Run As	•	at UX40000134: 111	e/src/main.c	, line 6	υ.	
		Debug As	•	/src/main.c:60				
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#### For example, set optimization level 2



# 20 Press OK and then CTRL-B (or project/build project) to rebuild the project.

Debug it. Assembly listing changed.



#### 21 CDT Hardware debugging

New CDT comes with support for hardware debugging, it could be used instead of Zylin's.

Create a new debuug configuration, set debugger to arm-elf-gdb and Port number to 3333

🚔 Debug		×
Create, manage, and run configurations		Ť
Image: Second system       Image: Second system         Image: Second	Name: fpga4fun_LEDglow_ram Debug   Main Debugger   GDB Setup   GDB Command:   arm-elf-gdb   GDB Init File:   .gdbinit   Command Set:   Standard (Windows)   Protocol Version:   mi   Verbose console mode   Remote Target   Vise remote target   Host name or IP address:   localhost   Port number:   3333	mmon Browse Variables Browse Variables
Filter matched 8 of 14 items		Apply Re <u>v</u> ert
0		Debug Close

### 22 Startup code

Startup code is basically the same as with Zylin, but you haven't to specify port number again

🖨 Debug	
Create, manage, and run configur	ations
Image: Second constraints         Image: Second constraints	Name: fpga4fun_LEDglow_ram Debug     Main Pebugger   Startup Source   Initialization Commands   monitor soft_reset_halt monitor arm 7_9 sw_bkpts enable monitor arm 7_9 force_nw_bkpts disable monitor mww 0xE01FC040 0x0002 Variables Variables Load Image Automatically load image Image file name: Browse Variables Variables Kun Commands Ioad thread th
Filter matched 8 of 14 items	Apply
0	Debug Close