

Minimal OpenRISC System on Chip

Installation Instructions

Install Icarus Verilog

1. You will need at least version 0.9.1 (<ftp://ftp.icarus.com/pub/eda/verilog/v0.9/>)

Download IP cores

1. download minsoc
2. download further necessary IP cores
 - a) `cd minsoc/rtl/verilog`
 - b) `svn co http://opencores.org/ocsvn/adv_debug_sys/adv_debug_sys/trunk adv_debug_sys`
 - c) `svn co http://opencores.org/ocsvn/ethmac/ethmac/trunk ethmac`
 - d) `svn co http://opencores.org/ocsvn/openrisc/openrisc/trunk/or1200 or1200`
 - e) `svn co http://opencores.org/ocsvn/uart16550/uart16550/trunk uart16550`

Install GNU toolchain and adv_jtag_bridge

1. Follow: http://www.opencores.org/openrisc.gnu_toolchain (to install binutils, gcc, gdb)
2. To debug and load the firmware you have to use the new advanced_debug_system. This project is included in the minsoc files inside of minsoc/rtl/verilog/adv_debug_sys. There you can find the software in Software and the documentation, which shall help you to go under Doc.
 - a) change the Makefile in minsoc/rtl/verilog/adv_debug_sys/Software/adv_jtag_bridge and compile the software using make.
 - change Makefile, “INCLUDE_JSP_SERVER=true” to “INCLUDE_JSP_SERVER=false”
 - make
 - sudo make install
 - b) If you have a Xilinx FPGA: copy the description file of **your** FPGA to your home directory (e.g. “`cp /opt/Xilinx/10.1/ISE/spartan3e/data/xc3s500e_fg320.bsd ~/`”)
3. With the adv_jtag_bridge you can also debug your simulation. To do so, the simulation has to include a vpi module. This has to be compiled by your system. The sources are found under “minsoc/rtl/verilog/adv_debug_sys/Software/adv_jtag_bridge/sim_lib/icarus”.
 - a) `cd minsoc/rtl/verilog/adv_debug_sys/Software/adv_jtag_bridge/sim_lib/icarus`
 - b) make
 - c) `cp jp-io-vpi.vpi minsoc/bench/verilog/vpi`
4. Check gdb version, patch it if version 6.8:

a) or32-elf-gdb -v

Building automata... done, num uncovered: 0/216.

Parsing operands data... done.

GNU gdb 6.8

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This GDB was configured as "--host=i686-pc-linux-gnu --target=or32-elf".

b) Proceed as in FAQ.pdf, "GDB reports "Value being assigned to is no longer active.", what happened?"