Zylin CPU

**Soft CPU Demo**

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Demo

- Xilinx XC3S400

- Runs TCP/IP stack & web server under eCos

- Wishbone interfaces

- 16 bit DDR SDRAM

Zylin eCosBoard

eCosBoard 1.1 w/ZPU

www.zylin.com
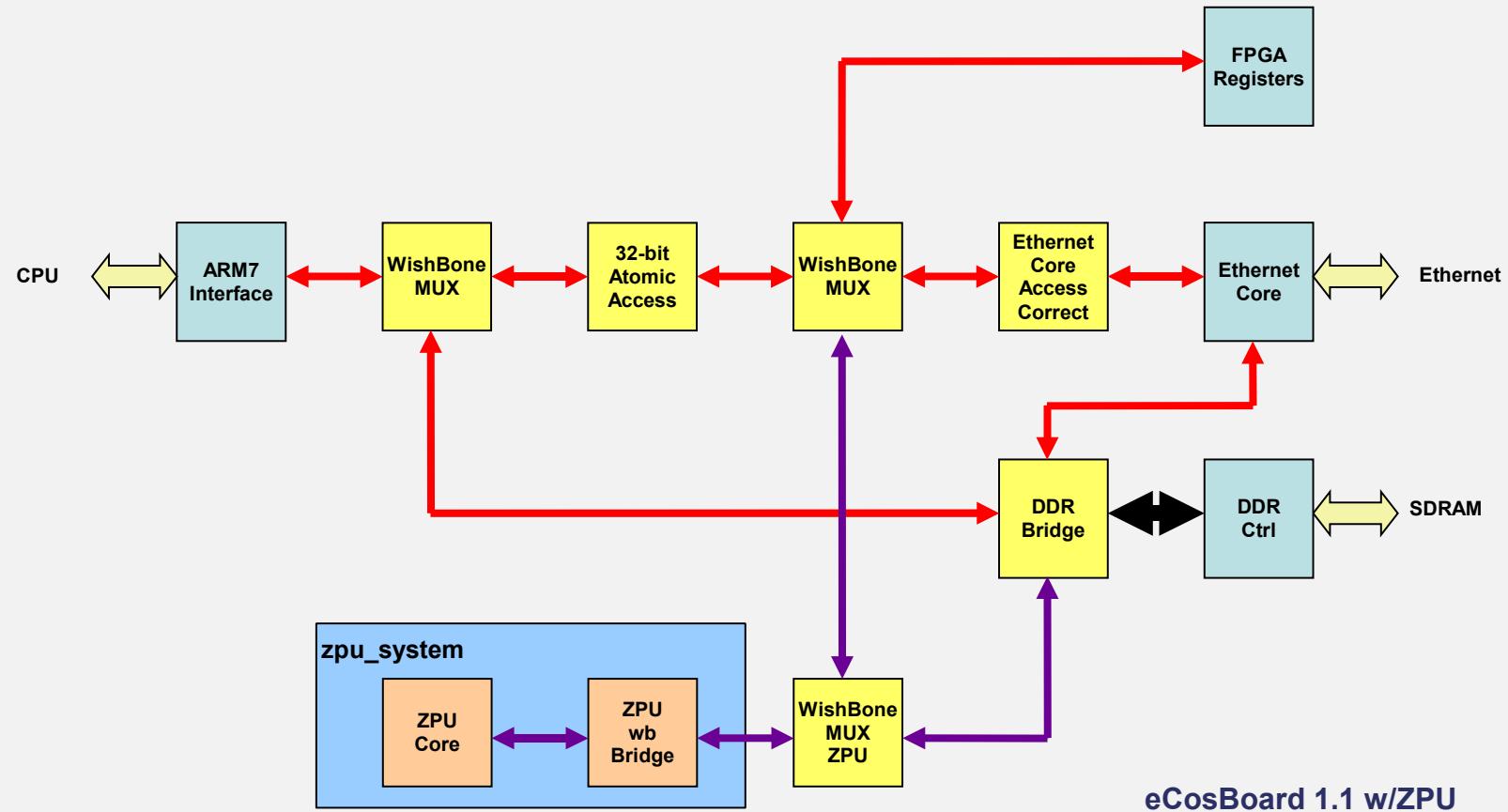
Dhrystone 2.1

- Feeble 16 bit DRAM memory subsystem

- ZPU   1.8 DMIPS using 16 bit DRAM only

- AT91FR40162R ARM7 - 3 DMIPS using SRAM + DRAM

Games

- No operating system. libgloss + newlib.

- Standard C applications

- Eliza   simple text based

- Sumeria - uses -lm math library

eCos TCP/IP

- TCP/IP stack

- eCos web server, e.g. configuration pages, status, logs

ISS   GDB & CDT
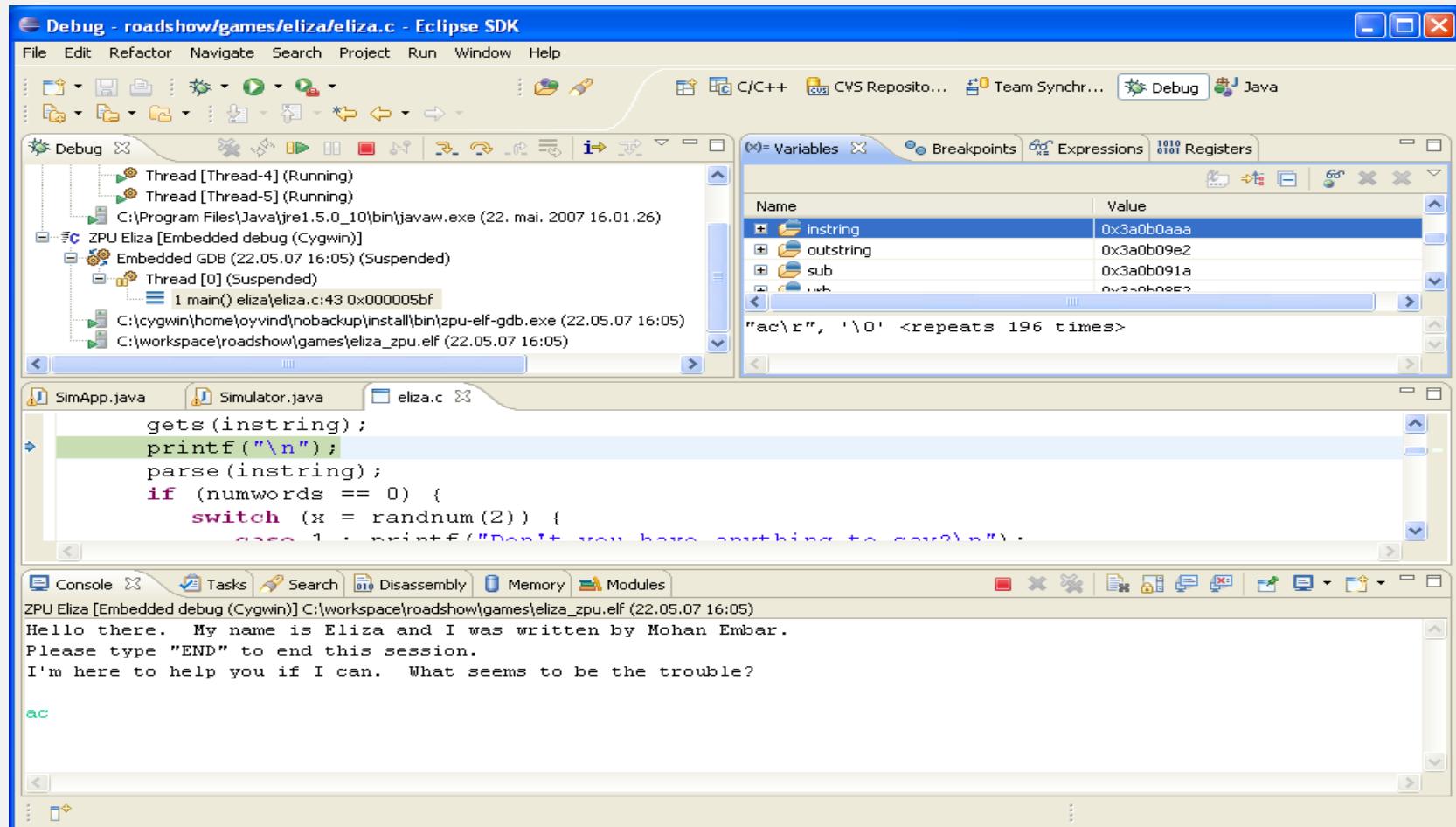
ISS GDB & CDT

Toolchain codesize

Toolchain codesize   custom startup

- Use more FPGA resources, reduce fixed overhead
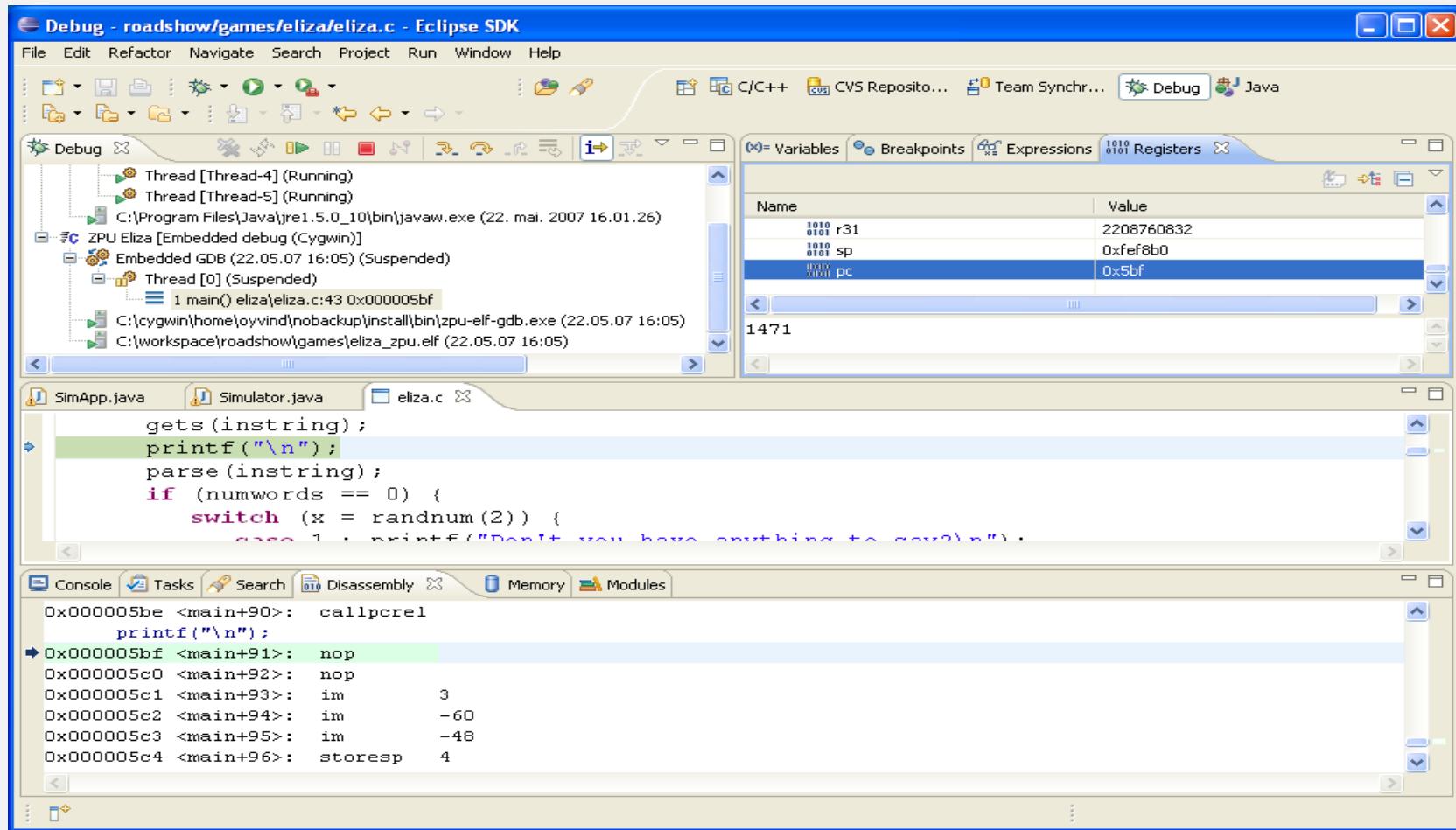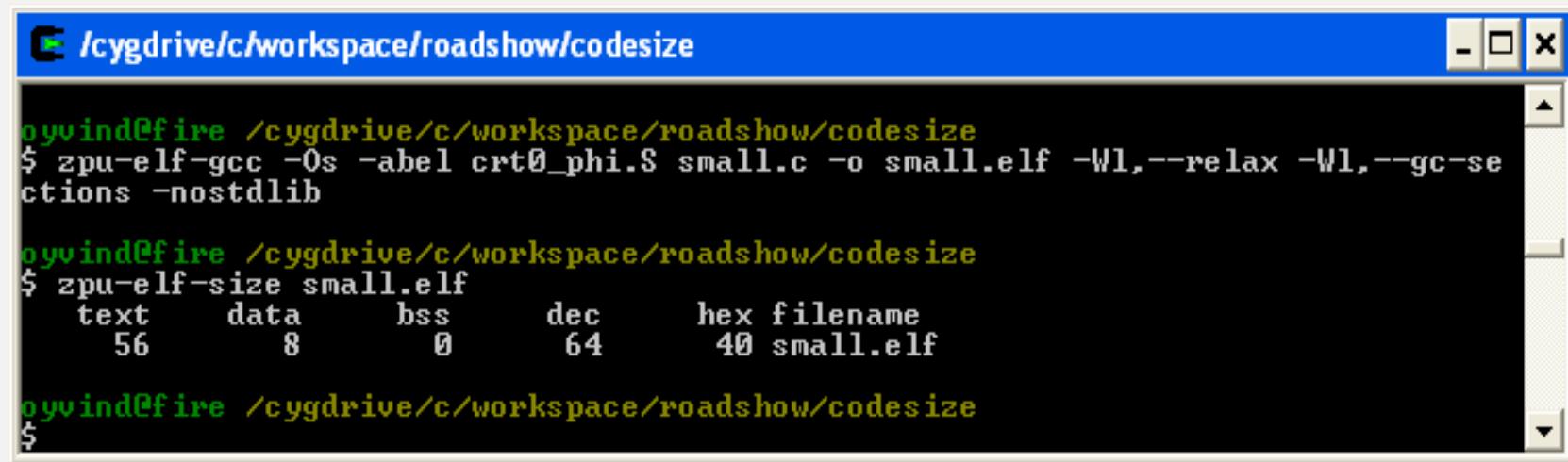

```
oyvind@fire /cygdrive/c/workspace/roadshow/codesize
$ zpu-elf-gcc -Os -abel crt0_phi.S small.c -o small.elf -Wl,--relax -Wl,--gc-se
ctions -nostdlib

oyvind@fire /cygdrive/c/workspace/roadshow/codesize
$ zpu-elf-size small.elf
   text    data     bss     dec     hex filename
     56       8       0      64      40 small.elf

oyvind@fire /cygdrive/c/workspace/roadshow/codesize
$
```

Demo summary

- DMIPS

- Games   standard C with math library, etc.

- eCos - TCP/IP stack and drivers

- ISS   Instruction set simulator and debugger

Questions?