

# QEMU support for Xtensa

- Git tree (view): <http://jcmvbkbc.spb.ru/git/?p=dumb/qemu-xtensa.git;a=summary>
- Git tree (clone): <git:jcmvbkbc.spb.ru/dumb/qemu-xtensa.git> / <http://jcmvbkbc.spb.ru/dumb/qemu-xtensa.git> \* *Toolchain build scripts (view):* <http://jcmvbkbc.spb.ru/git/?p=dumb/xtensa-toolchain-build.git;a=summary> \* *Toolchain build scripts (clone):* <git:jcmvbkbc.spb.ru/dumb/xtensa-toolchain-build.git> / <http://jcmvbkbc.spb.ru/dumb/xtensa-toolchain-build.git>

## Things to do

- core/basic opcodes implementation;
  - [+] and/or/xor/neg/abs;
  - [+] shifts;
  - [+] add[x\*]/sub[x\*]/add.n/addi.n;
  - [+] call0, callx0, j, b\*;
  - [+] l32\*, s32\*;
  - [+] accurate SR write semantics;
  - [-] boolean registers/commands;
- windowed registers;
  - [+] call\*/callx\*, retw, rotw, rfwo, rfwu;
  - [+] simple overflow algorithm that's triggered from ENTER;
  - [+] accurate overflow triggering;
- [+] loop option;
- [+] extended L32R option;
- [-] floating point;
- MMU;
  - [+] no-MMU mode;
  - [+] proper mem\_idx usage;
  - [+] region protection (with/without translation);
  - [+] MMU mode;
- gdbserver;
  - [+] xml register map, read/write register;
  - [+] correct SR mapping;
  - [+] debug exception, single step mode;
  - [+] hw/sw breakpoints;
  - [-] gdbserver for different processor types;
- [-] debug option;
- exceptions;
  - [+] debug (only external);
  - [-] break;
  - [+] window overflow/underflow;
  - [+] user/kernel (invalid insn, privileged insn, alignment, division by 0,...);
  - [+] relocatable vectors;
  - [+] external interrupts;
  - [+] timer interrupts;
    - [-] correct opcode timings?;
    - [+] qemu timer to avoid busy looping in waiti;

- sample evaluation board;
  - [+] memory mapping, ELF loader;
  - [-] standard peripherals;
  - [+] dc232b;
- simulation quality;
  - [+] pass command line arguments to argc/argv SIMCALLs (DAN branch only);
  - [+] TB chaining;
- [+] external configuration (a-la xtensa overlay)?
- [-] automatic regression test suite;

## Events

- 2011.04.20: C++ 'hello world' is working in qemu (stdio, stdlib, simcalls, windowed registers, loops, ext l32r) (:
- 2011.04.26: multithreaded ThreadX application is working in qemu (timer interrupts)
- 2011.04.30: preparation for qemu mainline submission started
- 2011.05.04: first RFC patchset sent to qemu-devel  
<http://lists.nongnu.org/archive/html/qemu-devel/2011-05/msg00242.html>
- 2011.05.18: first PATCH patchset sent to qemu-devel  
<http://lists.nongnu.org/archive/html/qemu-devel/2011-05/msg01525.html>
- 2011.06.19: [linux boots](#), issues on userspace application startup
- 2011.06.22: successfull userspace app startup in linux
- 2011.06.29: xtensa linux session on qemu-xtensa is available at ssh -p 3022 xtensa@jcmvbkbc.spb.ru with the following private key:

```
-----BEGIN RSA PRIVATE KEY-----  
MIIEpQIBAACAQEA2ycE9iuEtWoN0myLsx5aiEAPDx//MJlMrx6o6qAUTj+wivk  
kaQE1yCZMUa/B40BMUST9KffHqIcV9jxDFjagM/dfbdbTxeeiNEKyjBsRidEoU  
ytM5fKpHFyg1DmCvkXdoUAAzeVCy5ILh6ZhqpQpe68Pb8vQLdj9QmwcV0pS7d97q  
0MbGadIRdg0dlVAYQ/Rju8D+k9yygFn/TwZlTiT/gLEpk/D4dq+8D1UlFNvohUH4  
3VY/gVJ0CuEQx10wS+NTJLSz25Z2eTaNTEE4sqQy2zLBe23Ef4vQo0mWvmBBIkA  
x6dPBqKsQZCW6gGcsHk7fMw0K4H1RSOLRiAuQwIDAQABAoIBAQDZQ1m743DxmW37  
2di1fwYpxbgo0oR33dxFuF0tJj+IRoTqYzF64DsNtszesjoKcLcJc4av9B0BCMLz  
/Cmg04Zfd1DW1iK3RP5E3KmcUA+X49xQhZEPc1CwT1sjLg1Lb7ce885KYaimQMbZ  
nJfzSd0QzPPcKEBv8gNNr/msby0ySFZ06sQNPszaboD0u7TdsYz22BDaZ0E+4C  
Vg0LgFHo9qEM05PlTELrVrd0JjVRF5Mn9SEsXqWKFzLFMNRkk63Fd3j34St+Z6U  
VFc50AMEoJt8pPEFNwpbzK0CZyYhWi02US2A8d5aPgodb1WQ0H1Jdg03u9b5YsJN  
hcGjtdWhAoGBA05/ySbW59vfUkmwI/s5WL3KgfdkzIUGKdG3yPL3MpUgnr0PPcnT  
xZi67BWCPS0ac4A1KjMJ0Px85XZQChjEh43CH3cglf9bzneTTC+LiHq7GfvoQITd  
TOZTHFu1z6SCgUtTnUwQFdXZHJDs0C21VENcS/N0XudXLY0nIBwWKwzHAoGBA0s7  
zfBA2IOFim30HNaMjMUYvtpo+QQNGSwQJrw91rEbyrCd/09rUD5YLddPRhwq1jYJ  
qRDGN6gqANRiTkJsZyvQz81aEqLp3WmG4hPwitymhlpgQ4mFmZU88IMYaQ9Dh8Vp  
Dv6kT6zraAzBKc5nezjKisDIvZieDbly4TWMX6lAoGAJsh0zGsL3vwsPgdPKPQF  
Uy93/00+Qi9jY3/wRFogNpHMXMSBNq2iJxjWRRUdn5T6jS798ri47CXfJmMTkT18  
EXgsp7F70r96DoW8UM8pJ1P/gLAetbxKwfVn2h3xev3hyn75SCIhetnIRGTN4XDo  
F+ANVbRprLLGECCznxeXvocCgYEAhLnfvvm3sK3+p2ou1lgCbYtC1JV607DwTQ5n  
7Lqvkort2K2tSrBwPF0gsGXIV0hMSX016YM0EFJy2WMGaTAlHnHZbjKua0yUw2AZ  
27un6kwDbqb2NHgvaidsRYXWcYhW6SoYDdHEKvtAYEH1RsLYofiWRaR5wIj/72nF  
ZZQ9pQkCgYEA7I004D9SvsVytaeN4RdmbpXYhontoYTorL343B/hAXYgGENKEfTK
```

```
VfbweLGQ6Ga8K99YARbx2/3F0YqbGKUtUpqxVwhquyBtcUxq6+vr4riUP6M2Zw55  
y3Cqme66+P08Ka0NjjWxb+ksg00hgcmEhlnz+3MWN0DiacxHffH0ChM=  
-----END RSA PRIVATE KEY-----
```

qemu

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Permanent link:

<http://wiki.osll.ru/doku.php/etc:users:jcmvbkbc:qemu-target-xtensa?rev=1310122416>

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