Meetings Disclaimers Video

Link:

https://drive.google.com/file/d/1y_XWJus8M5ZwSQ2cvEOzCjlOmsmXOnN4/view

RISC-V®

Agenda

1. Submission status update (llvm, binutils)
2. Reopened conversation: "do we need ABI for overlay"?
3. Round table - q&a

Submission status update

- LLVM/Clang
  - Overlay patches match latest changes to the HLD
    - https://reviews.llvm.org/D109371
    - https://reviews.llvm.org/D109372
  - Patch submitted to add new reserved register ELF attribute
    - https://reviews.llvm.org/D113890
- GNU Binutils - work in progress
  - Extends BFD to build overlay tables during link and resolve overlay relocations
  - Currently refactoring changes to be separate from main RISC-V BFD
  - Needs handling of reserved register attribute
- GNU GDB - work in progress
  - Adding overlay manager class to allow different overlay systems to be
  - supported

RISC-V®

Reopened conversation

- Q:Do we need ABI for overlay"?
- A: From the email thread (psabi):

The Overlay TG was created to specify the requirements for software Overlay and come with a generic standard for it.
RISCV was generous to host us (therefore, the first open-source implementation for SW Overlay will be RISCV).
Since SW Overlay is not target-specific, we follow the generic implementation concepts of the standard.

Key points:
- The choice of reserved registers is flexible for different users/applications/overlay engines.
- We can already reserve registers with -ffixed-reg, but we don't get link-time checks.
- The reserved register attribute allows an existing ABI to be mutated to reserve a set of registers and allows link-time checks to be done. It avoids the need to approve and implement a new ABI each time a different set of registers needs to be reserved. The attribute may also be useful in contexts other than overlay.
- If someone wants to write their own engine and allocate different registers, they can. They will just need to follow the Overlay standard document

RISC-V®

Round table – Q&A

- Open issues

Thank You

RISC-V®