欢迎第一次加入的伙伴

- 开放编辑，直接点击 request for edit 然后在东亚时区群里at吴伟
- 如果没有找到自己的内容分类，可以添加1-2页在最开始或中间
- 欢迎在开始的前5分钟进行自我介绍
- 日常八卦在东亚时区RISC-V双周同步微信群中，欢迎加入

东亚时区RISC-V双周会

2022年05月12日·第035次

https://github.com/cnrv/RISCV-East-Asia-Biweekly-Sync

Host: qiuji@iscas.ac.cn

Organizer: PLCT Lab wuwei2016@iscas.ac.cn

会议议程（15:00 - 16:00）

- 自我介绍、等待参会者接入、非技术话题八卦（5分钟）
- RVI 的更新和八卦（基本上跟东亚双周会群内消息同步）
- Unratified Specs 的参考实现进展
- 东亚地区小伙伴的项目更新
- 自由讨论

RISC-V International 同步

- 22Q1的满一年的chairs/co-chairs改选开始了
- RISC-V Profiles 的推动和可能的麻烦？
- DartVM 有了初步的 RISC-V 支持
- N家开源了Linux显卡驱动

AOSP for RISC-V - 汪辰、陆旭凡

* **RVI upstream:**
  - redo prebuilt ndk for 12: https://github.com/riscv-android-src/platform-prebuilts-ndk/pull/2
  - fixed some typo issues: https://github.com/riscv-android-src/platform-bionic/pull/20
  - fixed issue for setjmp: https://github.com/riscv-android-src/platform-bionic/pull/21
  - using 0x0001(c.addi) as padding bytes: https://github.com/riscv-android-src/platform-bionic/pull/23
* **aosp-riscv development**
  - PR for Disable dex2oat: https://gitee.com/aosp-riscv/platform_build/pulls/5 review 中
  - completed sync mem* from RVI upstream：https://gitee.com/aosp-riscv/platform_bionic/pulls/22
  - fix setjmp issue： https://gitee.com/aosp-riscv/platform_bionic/pulls/21
  - sync from rvi upstream：https://gitee.com/aosp-riscv/platform_bionic/pulls/19
  - added log after fixed setjmp issue：https://gitee.com/aosp-riscv/test-riscv/pulls/18
  - enable those disabled cases: https://gitee.com/aosp-riscv/test-riscv/pulls/19
* **Articles:**
  - PR for the analysis of RenderScript in Android 12 RISCV64 porting: https://gitee.com/aosp-riscv/working-group/pulls/34 review 中
  - add article about setjmp：https://gitee.com/aosp-riscv/working-group/pulls/35, https://zhuanlan.zhihu.com/p/512648599

RISC-V GCC进展

目前RVI正在讨论自定义扩展vendor extension实现规范，目前Sifive,Ventana,T-head三家公司已经参与其中

https://github.com/riscv-non-isa/riscv-toolchain-conventions/pull/17
https://sourceware.org/pipermail/binutils/2022-April/120454.html
https://sourceware.org/pipermail/binutils/2022-April/120446.html

Zicntr与Zihpm的兼容方案仍在讨论中

https://docs.google.com/presentation/d/1saweo3wMmbRCuxDBA657tCijD1n3H1Xy8J2PMRyFMKQ/edit#slide=id.g1228ebbb203_0_21

RISCV-GNU-Toolchain仓库新增了RVV分支，方便进行构建使用

https://github.com/riscv-collab/riscv-gnu-toolchain/tree/rvv-next

已经确认CMO的指令形式，和binutils upstream保持一致，重新发送了patch

https://gcc.gnu.org/pipermail/gcc-patches/2022-May/594372.html

和Palmer讨论修复了gcc上游的一些bug:

https://gcc.gnu.org/pipermail/gcc-patches/2022-May/594091.html

https://gcc.gnu.org/pipermail/gcc-patches/2022-May/593993.html https://gcc.gnu.org/pipermail/gcc-patches/2021-December/587468.html

RISC-V GNU Toolchain会议slides链接: https://docs.google.com/presentation/d/1cN8zHcPyQLod8ZYs7-S8Sf4vf0gakrqojUpZFBNrL9g/edit?usp=sharing

Clang/LLVM 进展 (PLCT)

Gollvm 我们建立了PLCT仓库

- https://github.com/plctlab/gollvm
- https://github.com/plctlab/gofrontend
- https://github.com/plctlab/libffi

Upstream被合并的patch，没有新的patch

- 添加clt intrinsic: https://reviews.llvm.org/D124348
- 给shuffle broadcast 添加初始代价:https://reviews.llvm.org/D124101

Zce好几个大佬来到plct仓库参与讨论，可能是个不合理的需求？

- https://github.com/plctlab/llvm-project/issues/41

Clang / LLVM 社区的更新（廖春玉、陆旭凡）

1. D125408, D125232, D125392 关于 vsetvli指令的部分冗余消除
2. D124693 Fold addiw from (add X, (addiw (lui C1, C2))) into load/store address
3. D125108 Enable subregister liveness tracking for RVV.
4. D124639 Override TargetLowering::shouldProduceAndByConstByHoistingConstFromShiftsLHSOfAnd.

QEMU/Spike 中 K / Zce / Zfinx /全家桶 进展 (PLCT)

- QEMU K 扩展支持目前已合并至上游
- Zce支持暂无更新
  - https://github.com/plctlab/plct-qemu/tree/plct-zce-0.70.0
  - https://github.com/plctlab/plct-spike/tree/plct-zce-dev-0.70.0
- Spike Zfinx暂无更新
  - https://github.com/riscv-software-src/riscv-isa-sim/pull/831

V8 for RISC-V 更新（邱吉、陆亚涵）

Riscv64 upstream port and fix:

- 3629740: [riscv64] Enable some optional machine opcodes | https://chromium-review.googlesource.com/c/v8/v8/+/3629740
- 3631835: [riscv64] Delete kNoCondition | https://chromium-review.googlesource.com/c/v8/v8/+/3631835
- 3616169: [rab/gsab] Delete ”USE(array_buffer)“ | https://chromium-review.googlesource.com/c/v8/v8/+/3616169
- WIP: 3640195: [build] Add clang cross build config for riscv64 | https://chromium-review.googlesource.com/c/chromium/src/+/3640195

Clang support for Chromium project:

- https://chromium-review.googlesource.com/c/chromium/src/+/3500250
- https://chromium-review.googlesource.com/c/chromium/src/+/3607571
- WIP: [build] Add clang cross build config for riscv64 https://chromium-review.googlesource.com/c/chromium/src/+/3640195
- Clang status: (1)Lack of officially sysroot download support from Debian (2)Lack of full support of lld from LLVM

Riscv32:

- add.js pass(JIT demo works)
- PRs:
  - Implement RiscvAddPair (#581)
  - Port tarce into rv32 (#577)
  - Fix emit of divw/divuw/remw/remuw (#578)
  - Fix pass arg reg (#576)
  - Delete RV64I instr (#573)
  - Clean riscv64 code, port Ld to Lw, delete kRiscvLd, update test (#549)
  - changed lwu to lw (#561)
  - Partial fix of issue571. (#572)
  - Port the li/la related macro-assembler functions (#568)
  - Mark machine operator visitors to be implemented (#567)

OpenJDK for RISC-V 更新（RV64及upstream）

1.8285699:riscv: Provide information when hitting a HaltNode：https://github.com/openjdk/jdk/pull/8595

2.8286367:riscv: riscv port is broken after JDK-8284161 ：https://github.com/openjdk/jdk/pull/8595

3.Comment typo of imm index：https://mail.openjdk.java.net/pipermail/riscv-port-dev/2022-May/000553.html（张定立）

OpenJDK for RISC-V 更新（RV32/PLCT）

1.Rv32g dev c2 shining movptr:https://github.com/openjdk-riscv/jdk11u/pull/386 (史宁宁)

2.Fix check data dependency of movptr and li: https://github.com/openjdk-riscv/jdk11u/pull/384 (张定立)

3.Fix sign extension on loading immediates：https://github.com/openjdk-riscv/jdk11u/pull/383 (曹贵)

4.Fix addP_reg_reg instruct cannot match iRegI type under riscv 32-bit：https://github.com/openjdk-riscv/jdk11u/pull/389（曹贵）

5.Fix slli shamt: https://github.com/openjdk-riscv/jdk11u/pull/390 (史宁宁)

openEuler RISC-V

oerv OBS 构建

- openEuler:22.03工程的构建与包修复 110+：https://build.tarsier-infra.com/project/show/openEuler:22.03

PR 新增 68个

- https://gitee.com/openeuler/RISC-V/blob/master/archive/weeklyreports/2022-05-05.md

RISC-V 软件源&每日镜像计划

- 镜像构建CI的搭建与部署

测试

- ORSP004 openEuler RISC-V 开发版本暂定发版测试流程
- 调研主流桌面发行版操作系统众测方法和流程，为编写openEuler测试proposal做准备
- 验证Xfce和Firefox在基于RISC-V openEuler源的安装和运行，内测反馈需要添加和修复的包
- 测试编译支持Xfce4的RISC-V openEuler内核，编写步骤文档

社区宣传

- 欧拉开源操作系统成功适配赛昉 VisionFive RISC-V 单板计算机

Gentoo for RISC-V 的情况更新

- A total of 64 keywording commits: https://whale.plctlab.org/riscv/RISC-V-双周会/20220502/commits.txt
  - app-misc/reptyr: keyword 0.8.0 for ~riscv, and add riscv64 support
    - Keywording: 6024b640019ca55d6977e3836fb678d107e07e5e
    - Patch: 72ac7a65fce9351185111a2b42573aa4636efe8c
- dev-libs/ffcall-2.4: add vacall PIC support for Linux/riscv, https://gitweb.gentoo.org/repo/gentoo.git/commit/?id=27474f966c5c419ea4fd3a7cb050071d0f9d84c6
  Upstream bug track: https://savannah.gnu.org/bugs/?62422
- Launched two major projects
  - Binhost (glep-0078 and, exploit calculate-linux's facilities): basic functionality, only available in intranet for now
  - Automatic testing system (based on tinderbox): beginning

Arch Linux RISC-V（东东）

1. 移植进度

   [extra] 2582 / 3030 (85.21%)

   [community] 7129 / 9158 (77.84%)
2. Archriscv-packages merged 36 PR. highlights

   Updpkg: firefox to 100

   Updpkg: chromium to 101.0.4951

Fedora for RISC-V

SRPM打包编译进度
[fc36] **13101 / 22832 (57.3%)**
[rawhide]【**TODO**】

- 现在主要以主要模块化软件刷包为主，图形化桌面环境目标为辅。
- firefox/chromium【**TODO**】

F36 highlights:

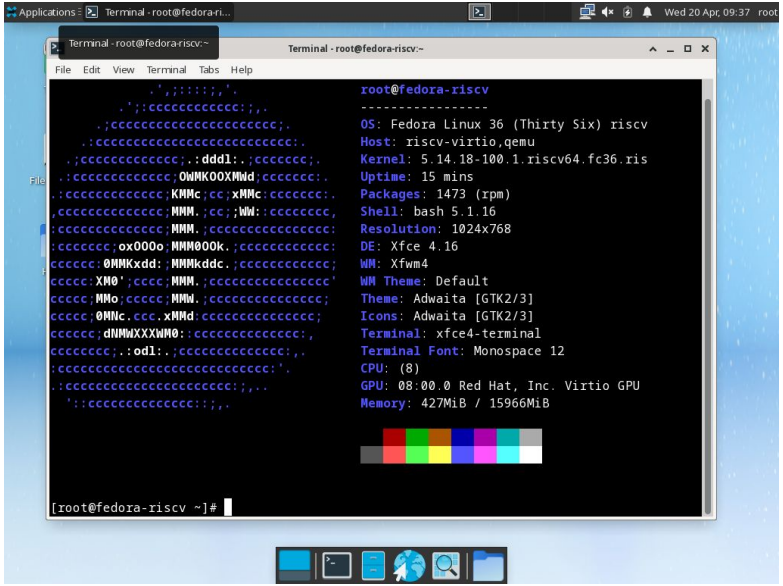
- koji build supported
- QEMU XFCE graphic desktop supported

软件版本:

- GCC 12.0.1 / Glibc 2.35
- Binutils 2.37-27 → 2.37-28[need new kernel rpm]
- Python 3.10.4 → 3.11[rawhide]
- Perl 5.34.1
- LLVM/Clang 13.1 → 14.0
- Rust 1.58.1→ 1.59.0
- QT-5.15.3 → QT-6【TODO】

Images:

- minimal Image : 314 rpm packages
- developer Image : 1231 rpm packages
- XFCE Image : 1506 rpm packages
- **Workstation (GNOME&LXQT) Image: 预计6月初**

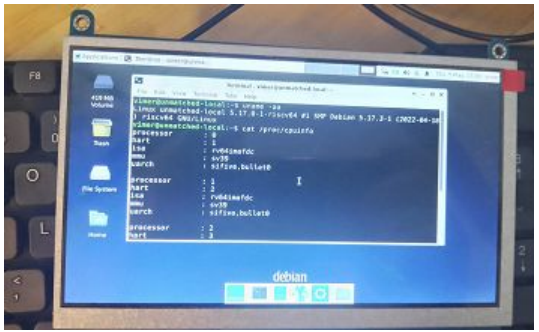


Debian for RISC-V

Summary: fix 5 ftbfs; open 8 upstream issues hope to support riscv64

[netw-ib-ox-ag]https://bugs.debian.org/cgi-bin/bugreport.cgi?bug=1010361.
[commons-daemon done]https://bugs.debian.org/cgi-bin/bugreport.cgi?bug=1010381
[openmsx-debugger]https://bugs.debian.org/cgi-bin/bugreport.cgi?bug=1010507.
[onv done]https://bugs.debian.org/cgi-bin/bugreport.cgi?bug=1010442
[isc-dhcp]https://bugs.debian.org/cgi-bin/bugreport.cgi?bug=1010807

[upstream quickfix]https://github.com/quickfix/quickfix/issues/393
[upstream commons-daemon done]https://www.mail-archive.com/dev@commons.apache.org/msg72369.html
[upstream openmsx-debugger]https://github.com/openMSX/debugger/issues/119
[upstream cpp-httplib]https://github.com/yhirose/cpp-httplib/issues/1266
[upstream purelibc] https://github.com/virtualsquare/purelibc/issues/5
[golang packages switch to bblot]
[Upstream nomad-driver-lxc]https://github.com/hashicorp/nomad-driver-lxc/issues/33
[Upstream vuls]https://github.com/future-architect/vuls/issues/1457
[upstream golang-github-micromdm-scep]https://github.com/micromdm/scep/issues/195



FW相关更新（王翔）

- opensbi
  - 关于hart功能的更新
    - 通过几个特定的csr确定特权指令集的版本
    - 跟新基础指令集的字符串移除u/s
    - 移除一些功能检查通过特权指令集版本来替代
    - 芯片功能检查只执行一次，重启后不检测
  - 当前opensbi的库硬编码了一些驱动和模块的数组，不利于二次开发。anup修改了Makefile，通过一个脚本生成这些数组的源文件。anup的修改方案在生成的库中没有数组，用户拿到库想要自己找到原始的数组信息，然后把自己的对象加到数组中。Jessica建议通过生产特定的段的对象，然后构成数组，这样用户二次开发就不需要找到原始数组了。anup不接受Jessica的建议，他认为需要添加特定的段，会影响用户的链接脚本。我建议把这些数组放到一个源文件中和库一起发布，也没有被接受。
  - D1添加HSM支持，D1可以使CPU断电，所以休眠前后需要保存恢复一些状态
  - FDT cpu节点的status可以禁用cpu，添加对应的支持代码
  - 修正rv32下访问mhpmeventh的代码，自由存在sscofpmf功能时才能访问mhpmeventh

RISCV性能跟踪小队 - 陈小欧

1. 读Brendan Gregg的博客：https://zhuanlan.zhihu.com/p/513186797
2. 验证https://reviews.llvm.org/D122650 对issue#54163 #54161的影响

   https://github.com/llvm/llvm-project/issues/54163
   https://github.com/llvm/llvm-project/issues/54161
   （导致SPEC CPU2017 Fortran程序编译失败，属于Flang Openmp的bug）

香山开源RISC-V处理器 - ICT / PCL

- 昆明湖项目正式启动：Target Spec06 15分/GHz @ ~3GHz
  - 主线任务：V 扩展、H 扩展、代码可配置化重构等
  - 性能优化：分前端、后端、访存、缓存等部分实现性能优化点
    - 目前内部已讨论出一份优化点列表
    - 后续将与企业 & 专家进一步沟通交流
    - 任务列表整理后将开放，欢迎小伙伴们选取其中感兴趣的点参与开发

MLIR RISC-V Vector (RVV) Dialect Proposal - 张洪滨

日常维护

- 同步 func dialect 的修改

等待 Review

- RFC Patch - https://reviews.llvm.org/D108536
- RFC Post - https://discourse.llvm.org/t/rfc-add-risc-v-vector-extension-rvv-dialect/4146/32
- MLIR + RVV 集成测试环境搭建文档 - https://gist.github.com/zhanghb97/ad44407e169de298911b8a4235e68497
- 关于统一集成测试配置的讨论 - https://discourse.llvm.org/t/rfc-add-risc-v-vector-extension-rvv-dialect/4146/32

在真正的 RVV 硬件上进行测试还需要等待...

- @Powderluv 伸出了援手 - https://discourse.llvm.org/t/rfc-add-risc-v-vector-extension-rvv-dialect/4146/33

(收到私信回复，对方能提供的硬件是 RVV 0.8 版本的，RVV 1.0 版本还需要等一段时间，关于对方是什么机构，后续是否可以购买产品还在等待回复)

面向 RISC-V 的 OpenCV 情况更新 - 韩柳彤

- **OpenCV 演进提案**(OpenCV Evolution) Issue#21829：可变长向量指令的支持

  在OE-27 - Wide Universal Intrinsics的基础上，进一步扩展Universal Intrinsics的能力，从而更好的支持可变长向量体系结构。

  示例项目：https://github.com/hanliutong/rvv-ui

  - 新的RVV后端实现: intrin_rvv.hpp
  - 与现有Universal Intrinsic用户代码的兼容性: PR#2
  - 在汇编层面验证性能的提升

  实现了部分新的UI接口（目前90%以上的接口及实现已经更新）

  提供了复用当前 Universal Intrinsic 用户代码的方法，正在与上游社区讨论

Chisel and Additional Technology / Sequencer

- 提交人在另一个会
- 欢迎 Phantom1003 入职
  - 验证专家，未来会对Rocket进行Fuzzing测试
- RocketChip
  - Legacy fix https://github.com/chipsalliance/rocket-chip/issues/2980
  - Remove object module https://github.com/chipsalliance/rocket-chip/pull/2967
  - Build fix https://github.com/chipsalliance/rocket-chip/pull/2969
  - Update opcodes https://github.com/chipsalliance/rocket-chip/pull/2972
- Chisel
  - Build System fix https://github.com/chipsalliance/chisel3/pull/2519
  - Build System fix https://github.com/chipsalliance/chisel3/pull/2501
  - BarrelShift https://github.com/chipsalliance/chisel3/pull/2518
- Arithmetic
  - SRT https://github.com/sequencer/arithmetic/pull/27
  - Chacha https://github.com/sequencer/arithmetic/pull/26

VM：为Linux添加虚存拓展支持-潘庆霖

-

Spidermonkey for RISC-V - 吴伟

- 过去两周没有新的进展
  - 重新加入了 PLCT Roadmap 2022 计划
  - 但是这次并没有重新放入到 LFX Mentorship（专业对口的太少了）
  - https://github.com/plctlab/gecko-dev-riscv/pull/3
- 欢迎感兴趣移植的小伙伴通过实习、兼职或全职形式加入
  - https://github.com/lazyparser/weloveinterns/blob/master/open-internships.md
  -

RISC-V 笔记本计划的进展 / 吴伟

- 过去2周硬件部分没有观察到有新的动作
  -
- 软件部分，目光开始看向
  - LibreOffice：我们很高兴有一位全职员工 **钱耀津** 同学 all in！
  - LuaJIT：呼唤勇士
  - DynamoRIO：呼唤勇士
  - Valgrind：呼唤勇士
  - DartVM：呼唤（还没搞清楚要呼唤啥）
  - Mono：需要么？
  - Chromium：SUSE上ok但是其它发行版还不行，呼唤勇士

自由讨论 / AOB

- 各位工作生活都还顺利？