

欢迎第一次加入的伙伴(开会时请从下一页开始展示)

- 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

2024年1月18日·第073次

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

Host: 程龙灿

Organizer: PLCT Lab plct-oss@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(没有的话就直接跳过)
- 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



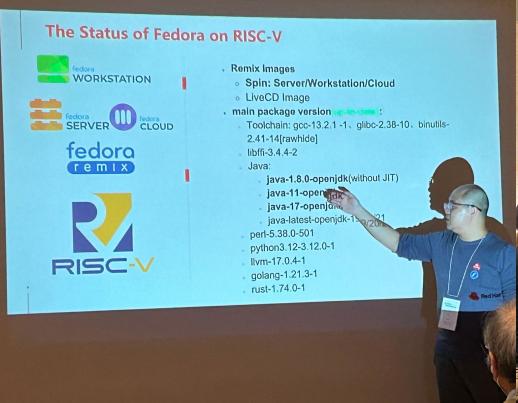
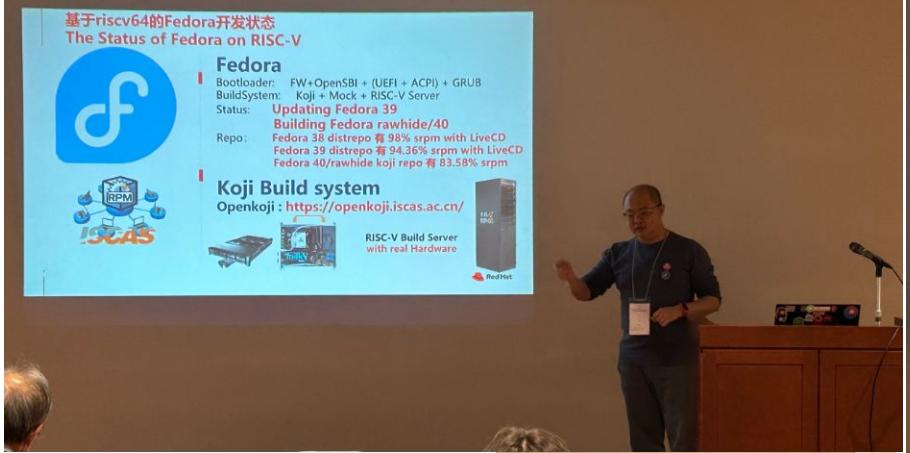
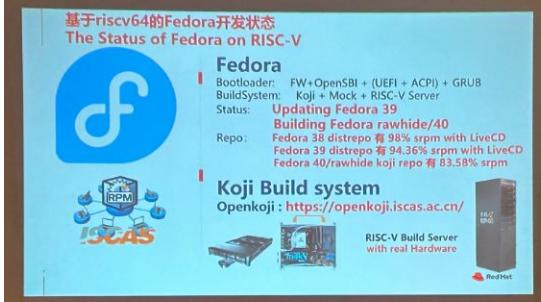
于 1 月 16 日成功举办



RuyiSDK: Preparing for 1 million RISC-V software developers — Wei Wu
Linux on RISC-V status update from firmware to distros — Wei Fu
rv64ilp32: The future of 32-bit Linux — Ren Guo

RISC-V Day Tokyo 2024 Winter

于1月16日成功举办





于 1 月 16 日成功举办



RISC-V International 同步、全球开源社区八卦

- Andes Technology 和 Spacetouch Technology 合作推出了一款采用 RISC-V AndesCore™ D25F 的边缘 AI 音频处理器
- RISC-V Summit North America 2023 演讲影像已上传到
youtube : <https://youtu.be/yB4rEYKhHrs?si=CRnqoqzyiD0HTzvW>
-

RISC-V 韩语社区的同步与八卦

- LG
 - 新设WebOS开发部门，扩大WebOS在显示器、汽车的搭载
 - 修建昌原智能工厂，实现混流生产（同一条生产线生产多个型号）

RISC-V 日语社区的同步与八卦

- 日本DENSO 加入 RISC-V International
 - 做车用SoC的
- 日本Rapidus 与 Tenstorrent 合作共同开发 2nm AI Edge RISC-V
 - IC设计及代工

RISC-V Tokyo 参会八卦: RobinLu(offline)

DENSO, former NSITEXE, known for NX27V (OoO, v1p0 vector unit),
FPGA bringup

复数日本本土 Debugger 厂商: Kyoto Micro Computer 和 DTS Insight
GigaDevice 和 Verisilicon 出展, Verisilicon 展示 Andes 核心 *4 + Vivante
IP 全家桶的 PoC silicon (IP vendor to chip vendor?)

Tenstorrent 产品发售, 内核和用户态驱动全开源

<https://www.lila.cs.tsukuba.ac.jp/> RISC-V FPGA Many-Core Framework

RISC-V 俄语社区的同步与八卦

俄罗斯高等经济大学成为俄罗斯RISC-V 联盟的成员

RISC-V GCC进展

psABI开始新一轮的议题讨论,:

[Add program property for CFI extension](#)

[Standard Fixed-length Vector Calling Convention Variant](#)

[ABI for _BitInt](#)

Vector ABI已被合入:

[Type size and alignment for vector](#)

[Specify the Calling Convention for Fixed-Length Vectors](#)

更新了RVV的cost model:

[Switch RVV cost model.](#)

Scalar crypto与Bitmanip扩展的intrinsic支持已被上游接受

[RISC-V: Add C intrinsic for Scalar Crypto Extension](#)

[Add C intrinsic for Scalar Bitmanip Extension](#)

Clang/LLVM 进展 (PLCT)

upstream被合并的代码，重点是rvv和中端的修复

- [RISCV][ISel] Use vaaddu with rounding mode rnu for ISD::AVGCEILU.
<https://github.com/llvm/llvm-project/pull/77473>
- [SimplifyCFG] Emit rotl directly in ReduceSwitchRange
<https://github.com/llvm/llvm-project/pull/77603>

XtheadVector 支持了更多intrinsic, vsll/vsrl/vsra/vwadd/vbsub/vand/vor/vxor....

<https://github.com/ruyisdk/llvm-project/pulls?q=is%3Apr+is%3Aclosed>

V8 for RISC-V 更新(邱吉、陆亚涵)

Port 上游

1.5201079: [riscv] Use enum for Conditions in base-constants-riscv.h |

<https://chromium-review.googlesource.com/c/v8/v8/+/5201079>

2. 5197210: [riscv][wasm][liftoff] Optimize in-bounds atomic operations |

<https://chromium-review.googlesource.com/c/v8/v8/+/5197210>

3. 5190789: [riscv] Implement InstructionAt |

<https://chromium-review.googlesource.com/c/v8/v8/+/5190789>

4. NodeJs用clang编译和gcc编译会导致不同的行为, gcc下

DCHECK(__isolate__->has_pending_exception());会失败, 但clang不会, 原因未知

5. V8目前已经可以在Android 上成功运行并执行回归测试

OpenJDK Upstream for RISC-V (RV64GC / PLCT) 杨飞

- 1. Two new LTS update versions released: OpenJDK 17.0.10 / OpenJDK 21.0.2
 - <https://mail.openjdk.org/pipermail/jdk-updates-dev/2024-January/029089.html>
 - <https://mail.openjdk.org/pipermail/jdk-updates-dev/2024-January/029090.html>
- 2. Support for SHA-256 & SHA-256 intrinsics is reviewed and upstreamed
 - <https://github.com/openjdk/jdk/pull/16562> (8319716: RISC-V: Add SHA-2)
 - Pending perf tuning issue: <https://bugs.openjdk.org/browse/JDK-8322177> (RISC_V: SHA2, investigate preloading of constants in vector registers for SHA256/SHA512)
- 3. Co-authored JDK-mainline PRs:
 - <https://github.com/openjdk/jdk/pull/17103> (8321972: test runtime/Unsafe/InternalErrorTest.java timeout on linux-riscv64 platform)
- 4. Reviewed JDK-mainline PRs:
 - <https://github.com/openjdk/jdk/pull/16743> (JDK-8320368: Per-CPU optimization of Klass range reservation)
 - <https://github.com/openjdk/jdk/pull/16608> (8319801: Recursive lightweight locking: aarch64 implementation)
 - <https://github.com/openjdk/jdk/pull/17122> (8320069: RISC-V: Add Zcb instructions)
 - <https://github.com/openjdk/jdk/pull/16816> (8320697: RISC-V: Small refactoring for runtime calls)
 - <https://github.com/openjdk/jdk/pull/16802> (8318227: RISC-V: C2 ConvHF2F)
 - <https://github.com/openjdk/jdk/pull/16808> (8318157: RISC-V: implement ensureMaterializedForStackWalk intrinsic)
 - <https://github.com/openjdk/jdk/pull/16857> (8320911: RISC-V: Enable hotspot/jtreg/compiler/intrinsics/chacha/TestChaCha20.java)
 - <https://github.com/openjdk/jdk/pull/16910> (8315856: RISC-V: Use Zacas extension for cmpxchg)
 - <https://github.com/openjdk/jdk/pull/16925> (8321001: RISC-V: C2 SignumVF)
 - <https://github.com/openjdk/jdk/pull/16880> (8320397: RISC-V: Avoid passing t0 as temp register to MacroAssembler::cmpxchg_obj_header/cmpxchgptr)
 - <https://github.com/openjdk/jdk/pull/17117> (8322154: RISC-V: JDK-8315743 missed change in MacroAssembler::load_reserved)
 - <https://github.com/openjdk/jdk/pull/17123> (8322195: RISC-V: Minor improvement of MD5 intrinsic)
 - <https://github.com/openjdk/jdk/pull/17126> (8322209: RISC-V: Enable some tests related to MD5 intrinsic)
 - <https://github.com/openjdk/jdk/pull/17192> (8322583: RISC-V: Enable fast class initialization checks)
 - <https://github.com/openjdk/jdk/pull/17215> (8322816: RISC-V: Incorrect guarantee in patch_vtype)
 - <https://github.com/openjdk/jdk/pull/17216> (8322817: RISC-V: Eliminate -Wparentheses warnings in riscv code)
- 5. Reviewed JDK22 upstream PRs:
 - <https://github.com/openjdk/jdk22/pull/19> (8322154: RISC-V: JDK-8315743 missed change in MacroAssembler::load_reserved)
- 6. Reviewed JDK17u upstream PRs:
 - <https://github.com/openjdk/jdk17u-dev/pull/2095> (8322968: [17u] Amend Atomics gtest with 1-byte tests)

OpenJDK for RISC-V 更新(RV32G移植相关工作)曹贵

JDK RV64:

1. - <https://github.com/openjdk/jdk/pull/17436> (8323694: RISC-V: Unnecessary ResourceMark in NativeCall::set_destination_mt_safe)
2. - <https://github.com/openjdk/jdk21u-dev/pull/132> (8322583: RISC-V: Enable fast class initialization checks)
3. - <https://github.com/openjdk/jdk17u-dev/pull/2110> (8322583: RISC-V: Enable fast class initialization checks)

openEuler RISC-V(周嘉诚)

- 23.09 follow-up: Add support for Milk-V Pioneer v1.3 revision
- Early Preparing for next major release, 24.03 LTS and a LLVM-built sibling preview release for LLVM Parallel Universe Project
- Brief work recap
 - [iperf3: upgrade to 3.16 \[distro\] \[merged\]](#)
 - [prometheus: upgrade to 2.48.1 \[distro\] \[merged\]](#)
 - [iozone: add riscv64 support to spec \[distro\] \[merged\]](#)
 - [qtkeychain-qt5: upgrade to 0.14.2 \[distro\] \[merged\]](#)
 - [apache-mime4j: upgrade to 0.8.9 \[distro\] \[open\]](#)
 - KDE: upgrade multiple (17) packages to 23.08.4, init 5 new packages
 - Many other packaging changes, and more fixes for the “LLVM Parallel Universe Project”

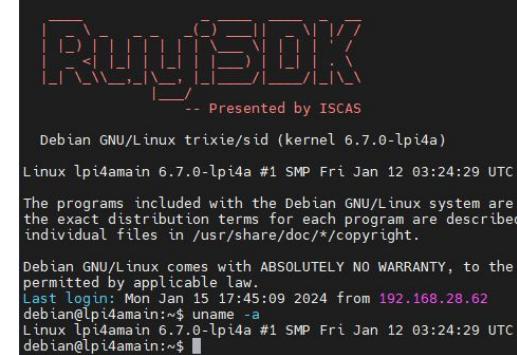
Arch Linux for RISC-V(潘瑞哲、Felix)(Offline)

- 在高铁上不方便开麦大家简单阅读一下
- 正在推进 Arch Linux RISC-V 进入官方 ports, 现在 Arch Linux 上游已经启用了 arch-ports mailing list
- [core] 258 / 265 (97.36%)
- [extra] 13043 / 13558 (96.2%)
- firefox - 121.0-1 --> 121.0.1-1
- rust - 1:1.74.1-1 --> 1:1.75.0-1
- docker-compose - 2.23.3-1 --> 2.24.0-1
- electron25 - 25.9.6-1 --> 25.9.8-1.1
- electron27 - never been built --> 27.2.2-1
- electron26 - never been built --> 26.6.5-1
- openmpi - 4.1.5-5 --> 4.1.6-1
- ffmpeg - 2:6.1-3 --> 2:6.1.1-1
- imagemagick - 7.1.1.24-1 --> 7.1.1.26-1
- redis - 7.2.3-1 --> 7.2.4-1
- chromium - 120.0.6099.129-1 --> 120.0.6099.216-1
- 另: 正在尝试 bootstrap .NET, 目前来看 cross compile 难度尚可, native build 麻烦(要 hack 工具链)
- 另: Andreas 在 openSUSE 提交了 ghc 在 riscv64 的 ncg 实现 patch



Debian for RISC-V(于波)

- Official port update
 1. [~9k](#) rebuild for testing
 2. A few ftbfs during rebuild
 - 3*. perl-[5.38](#) [100%], python[3.12](#) [98%]
- Debsci
 1. Extra job for [riscv64](#) only to test debci upgrade
 2. Adding licheepi4A for debci
- Some works
 1. chromium [120.0.6099.216-1](#) [refase patch]
 2. [wordcloud](#), [dde-store](#), [python-acora](#), [zfec](#) [ftbfs done]
 3. [sdaps](#) [nmu], [shed](#), [endless-sky](#)[MR], [mes](#) [issue]



FW相关更新（王翔）

- ❖ opensbi
 - Makefile为clang 移除编译选项-mstrict-align, 否则clang 17.06 会编译报错
 - 把部分汇编实现移动到C代码中, 减少汇编代码大小
 - 修正startfive jh7110的系统时钟的dt兼容字符串
 - 修正jh7110 i2c的时钟使能代码

固件相关更新(洛佳)

- 目前正在做算能芯片支持包sophgo-hal(rust支持包, 不只是rustsbi项目), 框架正在搭建
- 更新了社区hypervisors到rustsbi 0.4.0
- 社区embedded-hal 1.0.0已经正式发布(rustsbi社区维护的k210等生态包已经更新到embedded-hal 1.0.0)
- display-interface发布0.5.0, 支持embedded-hal 1.0.0, 便于厂商做屏幕驱动支持

Chisel and Additional Technology / Sequencer

- T1
 - Setup new CI infra
 - 24 pieces of 7840HS/7940HS high frequency machines.
 - floorplaner for lanes
 - NPC algorithm
 - Commercial toolchain w/ CIRCT Property support.
 - VCS for simulation flow
 - VCF/JasperGold for UNR flow
 - Fusion for PnR flow
- Analog
 - PLL FDR

香山开源RISC-V处理器 - ICT / PCL

- 前端
 - ICache SRAM 划分方式优化并修复遗留性能 bug (#2604, #2605)
 - 实现 ICache cacheline 划分、miss 减拍等功能 (#2609)
- 后端流水线
 - 完成整数指令派遣时序性能优化，减少派遣冲突 (#2614)
 - 去除 load 指令写回唤醒，所有指令唤醒采取快速推测唤醒 (#2615)
- 访存单元
 - 修复关键字优先引入的 FMA bug，并合入 master (#2562)
 - 在 L2-L1 D 通道的 Bank 选择优先级上引入请求 Stall 的因素，milc 性能提升
- 缓存系统
 - 发现 LLC 性能计数器统计存在问题，修复后继续分析 LLC 替换算法在 mcf 上性能下降的原因
 - skewed 缓存压缩算法完成实现，测试性能符合预期，在 milc 上有较大提升，在 mcf 等程序上有一定程度下降

OpenHW & OpenHW Aisa Working Group

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GPGPU for RISC-V (陆言, PLCT)

- <https://rvspoc.org/p2303/>
- RISC-V 软件移植及优化锦标赛 P2303
 - ROCm 平台移植并兼容 AMD GPU
 - 中心从 HiFive Unmatched 转移到了 SG2042 上
- Intel oneAPI + Xe:
 - <https://gitlab.freedesktop.org/drm/xe/kernel/-/tree/drm-xe-next>
 - 树外内核可以通过编译
 - oneAPI 的各种 runtime 有一些需要和 x86 解耦合的部分(例如用 sse/avx to rvv)

Gentoo for RISC-V 的情况更新 (Gentoo 小队)

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RISCV性能跟踪小队 - 陈小欧

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Fedora for RISC-V status update (20231221)

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Fedora 39 on T-Head TH1520 with latest kernel

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Fedora 38 with ROS2

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QEMU/Spike/Sail/ACT进展 (PLCT)

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SiFive Open Source Software (Hong-Rong Hsu 許宏榮)

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Spidermonkey for RISC-V更新（邱吉、陆亚涵）

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自由讨论 / AOB

BACKUP

DynamoRIO for RISC-V (PLCT)

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Box64 for RISC-V (PLCT)

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准备加入更多的国际开源组织进行同步观测

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