

东亚时区RISC-V双周会

2023年03月16日·第053次

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

Host: 王俊强

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

RISC-V International 同步、全球开源社区八卦

- 多国部署RV计划，印度半导体路演活动，三星或将大力投入RISC-V
- 嘉楠科技发布了新一代的SoC产品K230，Vector 1.0架构首量产
- 中国联通今年3月正式加入CRVIC联盟
- 华硕发布旗下首款RISC-V架构开发板Tinker V
-

RISC-V 韩语社区的同步与八卦

- 韩国半导体 fabless 厂 帕度今年下半年上市，首尔科技大学的团队
- 世界移动通讯大会（MWC），SK Square副董事长朴正浩宣布出售SK Shields（约45亿人民币）
 - 同时表示预计进行RISC-V相关公司的并购和投资
 - 坊间传闻SK有计划并购SiFive（SK海力士20年投资了六千万美元）

RISC-V 日语社区的同步与八卦

- RSD: RISC-V Out-of-Order Superscalar Processor ([rsd-devel/rsd: RSD: RISC-V Out-of-Order Superscalar Processor \(github.com\)](https://github.com/rsd-devel/rsd))
 - 最近开发比较活跃, 支持 Vivado synthesis/simulation in Ubuntu 22.04
- Tenstrent在日本设立办公室, 做high-performance RISC-V processor for AI and Server
- 今天晚上六点riscv学习会, 有日本活跃 的开发者koba和大居さん

<https://us02web.zoom.us/j/83050061953?pwd=QVJxc1FJNGhzL25yR2hUN2VnZWx3UT09>

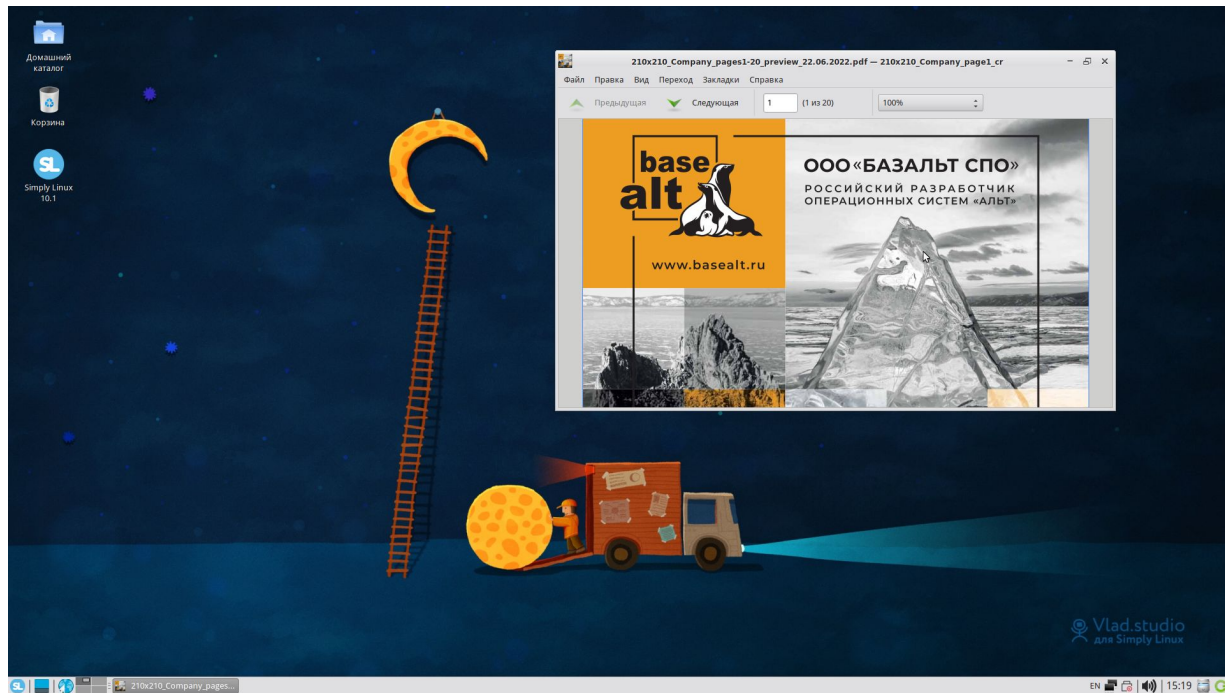
Meeting ID: 830 5006 1953

Passcode: 664740

RISC-V 俄语社区的同步与八卦

Basalt SPO发布了用于 64 位 RISC-V 架构 (riscv64) 的 Simply Linux 10.1 操作系统版本。

邮件列表



RISC-V 俄语社区的同步与八卦

电子技术科学研究所НИИЭТ正在寻找开发人员来开发四款基于RISC-V架构的民用微控制器。产品应在工业系统、汽车电子、驱动控制、便携系统、物联网和传感设备等领域替代国外元器件。第一批产品模型样品将于 2024 年出现。

AOSP for RISC-V - 汪辰、陆旭凡

- Google AOSP upstream PR
 - Android (RISC-V) Review 双周报 第 12 期(in Chinese)
: <https://zhuanlan.zhihu.com/p/614404464>
 - ART 部分 Google 继续发力, 本周期提交的补丁数持续增多。
 - 非常高兴看到另一个来自中国的公司 ESWIN 也开始向 Google 上游提交贡献。
 - 从提交的补丁上看, 感觉 cuttlefish 现在可以工作了。来自 Google 的 enh 也在 RVI Android SIG 的 maillist 中 post 了一封如何使用 cuttlefish for riscv64 的说明:
<https://lists.riscv.org/g/sig-android/message/189>
 - 三月份 RVI Android SIG 会议记录(2023/3/11)
: <https://docs.qq.com/doc/DSU1VVnlBeldxeFZ2?&u=dafbeb5482cb47d59292ffa34b25af81>
 - Cuttlefish/ART Status
 - 今年 Android 14 是否会正式支持 RISC-V 以及NDK/VNDK 的支持计划
 - ABI 讨论
- RVI Android SIG upstream:
 - Chromium for Android apk 从 93/96 升级到 109.0.5414.87 Status update
 - <https://github.com/aosp-riscv/working-group/blob/master/docs/zh/howto-setup-env-chrome.md>

RISC-V GCC进展

钟居哲和Kito已完成了GCC upstream全部RVV intrinsic支持, 目前陈逸轩正在跟进测试工作

<https://gcc.gnu.org/git/?p=gcc.git;a=commit;h=7caa1ae5e451e780fbc4746a54e3f19d4f4304dc>

<https://github.com/XYenChi/intrinsic-testcase-generator>

廖仕华rebase了Scalar Crypto的gcc patch, 目前使用built-in函数生成指令, 已合入上游

<https://gcc.gnu.org/git/?p=gcc.git;a=commit;h=89456334473c6b1ea1713740fb5f5191cd0b2235>

ZC扩展正在rebase中, 目前正在review中:

<https://github.com/pz9115/riscv-gcc/tree/zc-rebase>

提交了Zbf扩展的RFC patch, 廖仕华正在跟进中, 由于Zvfh目前没有ratify,所以暂未完成vector部分

<https://gcc.gnu.org/pipermail/gcc-patches/2023-March/613499.html>

会议纪要: [RISC-V GNU Toolchain Biweekly sync-up call Agenda / Notes 2023](#)

Clang/LLVM 进展 (PLCT)

- 基于LNT搭建了测评平台, 欢迎适用, 提需求 <https://lnt.rvperf.org>
- 已经合并的patch
 - [RISCV]Optimize (riscvisd::select_cc x, 0, ne, x, 1) <https://reviews.llvm.org/D146117>
 - [RISCV] Return false from shouldFormOverflowOp when type is i8 and i16
<https://reviews.llvm.org/D143646>
 - [Flang] add space between number and character in print
<https://reviews.llvm.org/D145768>
 - [Flang] Allow compile *.f03, *.f08 file <https://reviews.llvm.org/D145845>
 - [flang][nfc] Avoid generating external-hello-world by default
<https://reviews.llvm.org/D145877>
 - Flang][RISCV] Emit target features for RISC-V <https://reviews.llvm.org/D145883>

Clang / LLVM 社区的更新（廖春玉、陆旭凡）

1. <https://reviews.llvm.org/D145223> [InstCombine] Combine binary operator of two phi node
2. <https://reviews.llvm.org/D145214> [TSAN] add support for riscv64
3. <https://reviews.llvm.org/D145584> [libc] Add support for setjmp and longjmp in riscv
4. <https://reviews.llvm.org/D146145> [libc] Enable spawn lib in riscv
5. <https://reviews.llvm.org/D141672> [RISCV] Support vector crypto extension ISA string and assembly

QEMU/Spike/Sail/ACT进展 (PLCT)

- Qemu
 - Svadu支持upstream
 - <https://github.com/plctlab/plct-qemu/tree/plct-svadu-upstream>
 - Zicond扩展支持
 - <https://github.com/plctlab/plct-qemu/tree/plct-zicond-upstream>
 - ACT测试相关支持
 - <https://github.com/plctlab/plct-qemu/tree/plct-act-upstream-v3>
 - Zc扩展更新至v12
 - <https://github.com/plctlab/plct-qemu/tree/plct-zce-upstream-v12>
 - env/cfg相关优化
 - <https://github.com/plctlab/plct-qemu/tree/plct-cleanup-upstream>
 - Spmp and Zjpm扩展支持
 - <https://github.com/plctlab/plct-qemu/tree/plct-profile-dev>
 - Bf16相关扩展支持
 - <https://github.com/plctlab/plct-qemu/tree/plct-bf16-dev>

V8 for RISC-V 更新(邱吉、陆亚涵)

常规上游更新Port

1. 4321798: [riscv][cleanup] Remove unused code for relocation | <https://chromium-review.googlesource.com/c/v8/v8/+4321798>
2. 4312602: [riscv][wasm-gc] Inlining of very small wasm functions into JS | <https://chromium-review.googlesource.com/c/v8/v8/+4312602>
3. 4311821: [riscv][liftoff] Emit less code for write barriers | <https://chromium-review.googlesource.com/c/v8/v8/+4311821>
4. 4307619: [riscv]Optimizations for jitless builds | <https://chromium-review.googlesource.com/c/v8/v8/+4307619>
5. 4296981: [riscv][wasm] Load isolate root from root register | <https://chromium-review.googlesource.com/c/v8/v8/+4296981>

Spidermonkey for RISC-V更新（邱吉、陆亚涵）

无

OpenJDK for RISC-V 更新(RV64及upstream) 杨飞

1. Authored jdk-mainline PRs:

- <https://github.com/openjdk/zgc/pull/16> (RISC-V: Only use conditional far branch in copy_memory for ZGC)
- <https://github.com/openjdk/jdk/pull/12849> (8303562: Remove obsolete comments in os::pd_attempt_reserve_memory_at)
- Added more RISC-V changes for JDK-8291555:
<https://github.com/openjdk/jdk/pull/10907/commits/0ad01c1d794bbbfbfef911c1ef4d8601f2e48302>

2. Reviewed jdk-mainline PRs:

- <https://github.com/openjdk/jdk/pull/12547> (8302368: [ZGC] Client build fails after JDK-8300255)
- <https://github.com/openjdk/jdk/pull/12553> (8302453: RISC-V: Add support for small width vector operations)
- <https://github.com/openjdk/jdk/pull/12616> (8302776: RISC-V: Fix typo CSR_INSTERT to CSR_INSTRET)
- <https://github.com/openjdk/jdk/pull/12670> (8302780: Add support for vectorized arraycopy GC barriers)
- <https://github.com/openjdk/jdk/pull/12753> (8303210: [linux, Windows] Enable UseSystemMemoryBarrier by default if possible)
- <https://github.com/openjdk/jdk/pull/12869> (8302976: C2 intrinsification of Float.floatToFloat16 and Float.float16ToFloat yields different result than the interpreter)
- <https://github.com/openjdk/jdk/pull/12950> (8303863: RISC-V: TestArrayStructs.java fails after JDK-8303604)
- <https://github.com/openjdk/jdk/pull/12969> (8303955: RISC-V: Factor out the tmp parameter from copy_memory and copy_memory_v)

3. jdk17u for RISC-V builds are available here: <https://builds.shipilev.net/openjdk-jdk17-riscv>

OpenJDK for RISC-V 更新(RV64及upstream)张定立

Merged & New JDK-mainline PRs:

- <https://github.com/openjdk/jdk/pull/12682> | (8302908: RISC-V: Support masked vector arithmetic instructions for Vector API) (as co-author)
- <https://github.com/openjdk/jdk/pull/12778> | (8301995: Move invokedynamic resolution information out of ConstantPoolCacheEntry) (as co-author)

Backport jdk17u:

- <https://github.com/openjdk/riscv-port-jdk17u/pull/2> | (8290496: riscv: Fix build warnings-as-errors with GCC 11)
- <https://github.com/openjdk/riscv-port-jdk17u/pull/3> | (8290164: compiler/runtime/TestConstantsInError.java fails on riscv)
- <https://github.com/openjdk/riscv-port-jdk17u/pull/5> | (8285437: riscv: Fix MachNode size mismatch for MacroAssembler::verify_oops*)
- <https://github.com/openjdk/riscv-port-jdk17u/pull/10> | (8295926: RISC-V: C1: Fix LIRGenerator::do_LibmIntrinsic)
- <https://github.com/openjdk/riscv-port-jdk17u/pull/12> | (8296448: RISC-V: Fix temp usages of heapbase register killed by MacroAssembler::en/decode_klass_not_null)

OpenJDK for RISC-V 更新(RV64及upstream) 曹贵

Merged & New JDK-mainline PRs:

- <https://github.com/openjdk/jdk/pull/12682> | (8302908: RISC-V: Support masked vector arithmetic instructions for Vector API)(as co-author)
- <https://github.com/openjdk/jdk/pull/12778> | (8301995: Move invokedynamic resolution information out of ConstantPoolCacheEntry)(as co-author)

Backport jdk17u:

- <https://github.com/openjdk/riscv-port-jdk17u/pull/4> | (8293100: RISC-V: Need to save and restore callee-saved FloatRegisters in StubGenerator::generate_call_stub)
- <https://github.com/openjdk/riscv-port-jdk17u/pull/6> | (8294083: RISC-V: Minimal build failed with --disable-precompiled-headers)
- <https://github.com/openjdk/riscv-port-jdk17u/pull/8> | (8296771: RISC-V: C2: assert(false) failed: bad AD file)
- <https://github.com/openjdk/riscv-port-jdk17u/pull/11> | (8287970: riscv: jdk/incubator/vector/*VectorTests failing)

OpenJDK8 backporting (章翔)

解释器调试

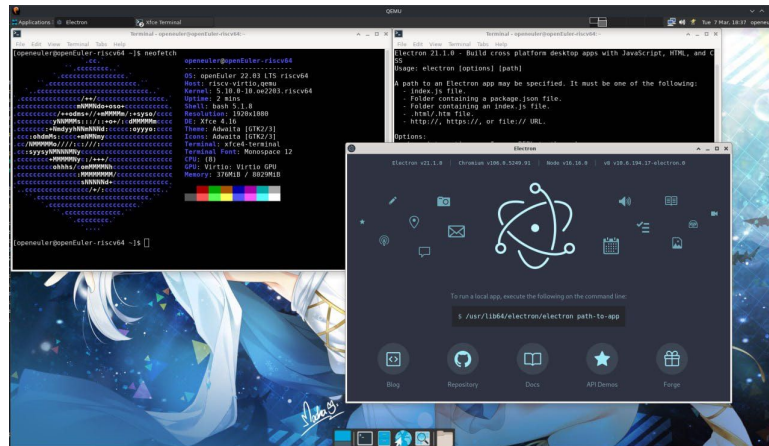
- Rebuild directory structure
- Delete safepointMechanism_riscv64.hpp
- Delete gcld.hpp
- Delete CodeCacheSegmentSize/StackReservedPages
- Delete CompactStrings/InitArrayShortSize/ThreadLocalHandshakes
- Fix interp_masm_riscv64.cpp
- Fix interpreterRT_riscv64.hpp/interpreterRT_riscv64.cpp
- Fix LinuxDebuggerLocal.c for riscv64
- Fix copy in javaFrameAnchor_riscv64.hpp
- Delete USE_LIBRARY_BASED_TLS_ONLY
- Add support for riscv64 in LinuxCDebugger.java
- Delete support for riscv64 in jfrTime.cpp
- Add support for riscv64 in libproc.h
- Fix methodHandles_riscv64.cpp & gen_write_ref_array_post_barrier
- Fix is_imm_in_range about #pr191

C2调试

- Fix AbstractInterpreter::can_be_compiled
- Fix __branch in LIRGenerator::do_StoreIndexed
- Add poll_for_safepoint and fix safepoint_poll/return_op
- Fix LIRGenerator::emit_array_address
- Add g1_post_barrier_slow_id/g1_pre_barrier_slow_id
- Add EnableInvokeDynamic
- Fix Runtime1::generate_unwind_exception
- Fix lbu in g1_post_barrier_slow_id by adding tempregister
- Fix include by replacing intrinsicnode.hpp with memnode.hpp
- Fix LIR_Op4::print_instr in c1_IIR.cpp for release
- Add riscv64 for InterpreterRuntime::popframe_move_outgoing_args
- Add riscv64 for GraphKit::write_barrier_post
- Fix Runtime1::patch_code for rv64

openEuler RISC-V

- [WIP] openEuler 23.03创新版:集中构建完成准 备制作镜像
 - <https://build.tarsier-infra.com/project/show/openEuler:23.03> 4300 (3000+)
 - <https://build.tarsier-infra.com/project/show/openEuler:23.03:Epel> 1234 (1156)
- Electron 运行成功。 <https://build.tarsier-infra.com/project/show/home:misaka00251:electron>
- PR(35个)
 - [gn : Add risc-v and loongarch support @misaka00251](#)
 - [python-oslo.vmware : Fix test failed @misaka00251](#)
 - [python-os-vif : Fix test failed @misaka00251](#)
 - [python-os-win : Fix test failed @misaka00251](#)
 - [eggo : Fix riscv64 support @misaka00251](#)
 - [mysql : Import patch from Ubuntu to fix build on riscv64 @misaka00251](#)
 - [fwupd : Fix build on riscv64 @misaka00251](#)
 - [gnu-efi : Upgrade to 3.0.15 & Enable build on riscv64 @misaka00251](#)
 - [opencv : Fix tests failed on riscv64 & Add option to build DNN @misaka00251](#)
 - [libvirt : 增加riscv构建支持 @laokz](#)
 - [libgovirt : 调整-Wcast-align指针强制转换参数 @laokz](#)
 - [qemu : 增加riscv64宿主机构建支持 @laokz](#)
 - [leveldb : 修改-mtune参数 @laokz](#)
 - [openmpi : Upgrade OpenMPI to 4.1.5 @arielheleneto](#)
 - [systemd : Exclude riscv64 unsupported files @misaka00251](#)
 - [biometric-authentication : Fix riscv64 build error @misaka00251](#)
 - [qt : Add riscv64 support @misaka00251](#)
 - [java-service-wrapper : Fix riscv64 support @misaka00251](#)
 - [lxc : fix RISC-V build errors @misaka00251](#)
 - [mpich : Fix build on riscv64 @misaka00251](#)
 - [x265 : x265 添加 RISC-V 架构支持 @Jingwiw](#)
 - [meson : update to 1.0.1 @Jingwiw](#)
 - [isula-build : riscv64去除-static-pie @laokz](#)
 - [jnr-fri : 修复riscv64上的有关构建测试错误 @laokz](#)
 - [jffi : 应用上游补丁修复riscv64上的有关构建测试错误 @laokz](#)
 - [isomd5sum : \[sync\]手工同步PR#10 @laokz](#)
 - [ppp : \[sync\]手工同步:修正017补丁代码 @laokz](#)
 - [cadvisor : Fix build on riscv64 @misaka00251](#)
 - [dde-daemon : Merge upstream & Update vendor.tar.gz to build on RISC-V @misaka00251](#)
 - [KubeOS : Merge upstream & Fix riscv64 support @misaka00251](#)
 - [dde-api : Rebase upstream & Update vendor.tar.gz to build on RISC-V @misaka00251](#)
 - [openresty : 升级到最新release 并初步支持riscv64 @Jingwiw](#)
 - [livm-mlir : Upgrade to 15.0.7 @jchzhou](#)
 - [lldb : Upgrade to 15.0.7 @jchzhou](#)
 - [qemu : 升级到7.2.0 @laokz](#)



Gentoo for RISC-V 的情况更新 (Gentoo 小队)

- Support statistics (7757/18734, 41.41%) : <https://whale.plctlab.org/riscv/support-statistics/>
- A total of 63 keywording commits: <https://whale.plctlab.org/riscv/RISC-V-双周会/20230316/commits.txt>
 - app-office/libreoffice: Keyword 7.5.1.2 riscv
 - app-office/libreoffice: forward ~riscv keyword to live ebuild
 - dev-util/kdbg: keyword 3.0.1-r1 riscv
 - kde-apps/yakuake: keyword 22.12.2 riscv
 - kde-misc/plasma-pass: keyword 1.2.1 riscv
 - mail-mta/postfix: keyword 3.8_pre20230219 for ~riscv
 - www-apps/hugo: Keyword 0.110.0 riscv
- Update riscv patch for openjdk 11.0.18_p10
 - <https://github.com/gentoo/gentoo/pull/29922>
- app-office/libreoffice has finally got the riscv keyword in the official repo
 - <https://github.com/gentoo/gentoo/commit/cbabbe89c1440c08655bc23b8b1fba98051e97b0>
 - <https://github.com/gentoo/gentoo/commit/28d5a993618ee5f34dce7b3ef8a4dccddab4f742>

Arch Linux RISC-V (东东、潘瑞哲)

Report generated on: 20230316

Package update count: 1982

Distinct package update count: 1675

[core] 256 / 263 (97.33%)

[extra] 2870 / 3092 (92.82%)

[community] 9043 / 10076 (89.74%)

Highlight packages:

linux - 6.0.9.arch1-1 --> 6.2.1.arch1-1

firefox - 110.0-1 --> 110.0.1-1

nodejs - 19.5.0-1 --> 19.7.0-1

postgresql - 15.1-1 --> 15.2-1

python - 3.10.9-1 --> 3.10.10-1

glib2 - 2.74.6-1 --> 2.76.0-1

libreoffice-fresh - 7.4.5-1 --> 7.5.1-1

libreoffice-still - never been built --> 7.4.6-1

openmpi - 4.1.4-4 --> 4.1.5-1

ffmpeg - 2:5.1.2-2 --> 2:6.0-3

chromium - 110.0.5481.177-1 --> 111.0.5563.64-2

Arch Linux RISC-V (东东、潘瑞哲)

- firefox: felixonmars/archriscv-packages PR #2324
 - lld and jit are already supported, so we enabled them
 - Also wasi is ready and we can enable wasi support
- libreoffice-still: felixonmars/archriscv-packages PR #2317
 - backport upstream RISC-V support
 - Modified libraries:
 - solenv: add riscv64 build config
 - bridges: backport riscv64 cpp_uno implementation
 - jvmfwk: add riscv64 build target
 - firebird: add riscv64 implementation
- nodejs: felixonmars/archriscv-packages PR #2308 - fix rotten patch.
 - No further modification is needed
- chromium: felixonmars/archriscv-packages PR #2294
 - backported from openSUSE (credit to Eric Long)

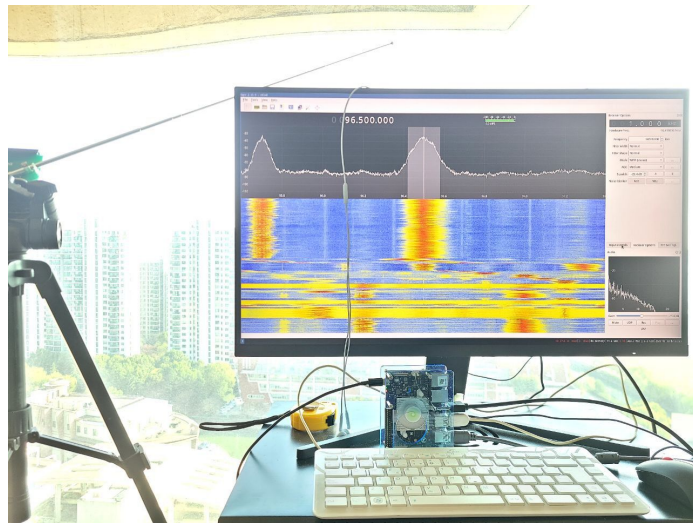
Arch Linux RISC-V (东东、潘瑞哲)

- gnuradio: no PR available yet
 - credit to Estela ad Astra
 - change `cmake --build build --verbose` to `cd build` and `make` (strange but it works)

```
[estela@huawei trunk]$ git diff
diff --git a/trunk/PKGBUILD b/trunk/PKGBUILD
index fdc5e0f..8be838f 100644
--- a/trunk/PKGBUILD
+++ b/trunk/PKGBUILD
@@ -119,7 +119,8 @@ build() {
     )

     cmake "${cmake_options[@]}"
-    cmake --build build --verbose
+    cd build
+    make
   }

   check() {
[estela@huawei trunk]$
```



Fedora for RISC-V (傅炜)

- **RPM packaging**

- Status: Fedora 37, upgrading to Fedora 38
- REPO: 18000+ srpm have been built.

- **main package version:**

- **Toolchain(up-to-date for F38)**
 - **gcc-12.2.1-4** → 13.0.1-0.7[**DONE**]
 - **glibc-2.36-9** → 2.37.1[**DONE**]
 - **Binutils 2.38-25** → 2.40-2[**DONE**]
- libffi-3.4.3-1.1(up-to-date)
- java-latest-openjdk-19.0.1.0.10-3(up-to-date)
- perl-5.36.0-492(up-to-date)
- Python 3.11.1(up-to-date)
- LLVM/Clang 15.0.7-1(up-to-date)
- Go 1.19.4-1(up-to-date)
- Rust 1.66.0-1(up-to-date)

- **App packaging**

- firefox-110.0-3[**DONE**]
- Libreoffice 7.4.5.1-1[**DONE**]
- Chromium-110.0.5481.177 [**ONGOING**]

- **Image** : Sophgo SG2042 EVB / TH1520 Light
- **ROS/ROS2 porting**



Debian for RISC-V(I) (干波)

- [Official porting update](#)

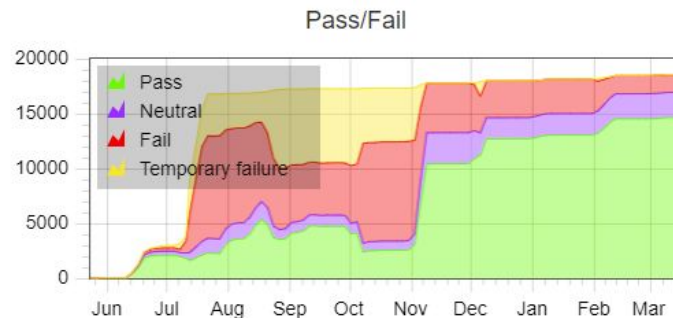
1. Waiting FTP team to add riscv64 on unstable(many pings but no replies: **WIP**)
2. Unstable -> testing migration for riscv64(fix issues: **Todo**)
3. Become stable(**Todo**)

- [Debci update](#)

[Riscv64_packages_list](#)

- Some works

1. Rebasing patch for firefox 110.0.1 (nix ->0.25)
2. Ready for porting riscv32.
3. Fix/debug some issues from upstream



Debian for RISC-V(II)

- <https://github.com/strace/strace/issues/242> [strace found riscv kernel issue]
- [Fix #1032957](#) [fix micro ftbfs on riscv64]
- [Fix #1032265](#) [upstream support riscv64]
- <https://bugs.debian.org/cgi-bin/bugreport.cgi?bug=1027802> [pyro5 upload done]
- <https://github.com/yuzibo/Unmatched-Debian-image> [dockerfile for Unmatched image] *
- <https://github.com/yuzibo/diff-debian-build> [diff build status] *
- <https://bugs.debian.org/cgi-bin/bugreport.cgi?bug=1024047> [python-line-profiler done]

Deepin for RISCV

- Deepin-stage1 相关

增加游戏补充仓库 <https://mirror.iscas.ac.cn/deepin-riscv/deepin-addon-games-stage1/>

增加sg2042适配 <https://mirror.iscas.ac.cn/deepin-riscv/deepin-addons/soghpo/>

推进alpha2桌面进度同步 <https://build.tarsier-infra.com/project/show/home:revy:deepin-riscv-stage1-alpha2>

- Deepin-stage2 相关

Stage2构建继续推进&桌面进度同步 <https://build.tarsier-infra.com/project/show/home:revy:deepin-riscv-stage2>

- Deepin-port-stage1 相关

多架构同步构建测试repo 已经完成基本构建base rootfs要求 完成1783源码包构建

<https://mirror.iscas.ac.cn/deepin-riscv/deepin-port-stage1/>

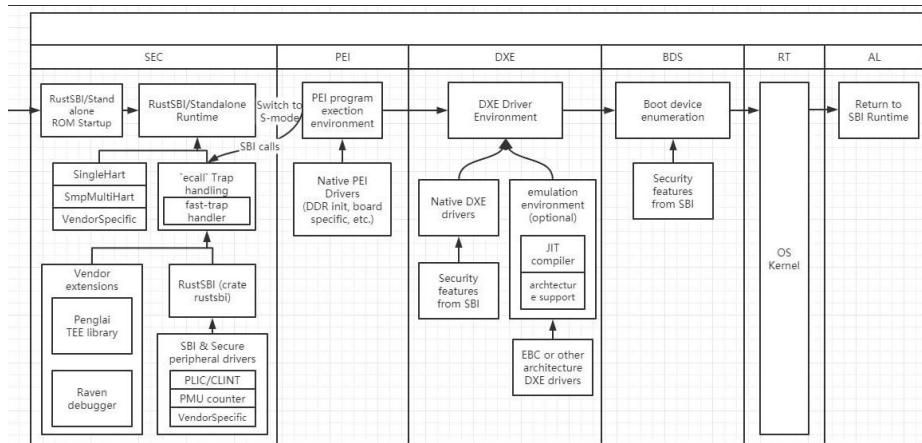
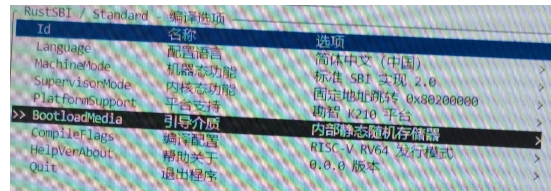
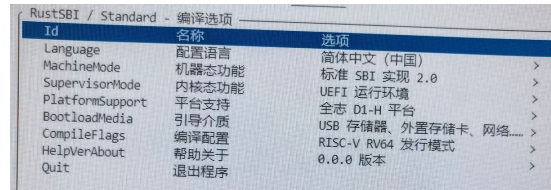
FW相关更新（王翔）

❖ opensbi

- 为desginware添加GPIO支持
- cadence串口增加兼容cdns,uart-r1p8
- 优化sbi_scratch内存申请的内存对齐代码

固件相关更新(洛佳)

- RustSBI 0.3.2版本已发布(<https://github.com/rustsbi/rustsbi>)
 - 0.4.0版本将移除对legacy extensions的支持, 请开发者做好准备
- 全家桶计划: RustSBI原型设计系统
 - 快速选型: UEFI 还是 LinuxBoot? 都试试看!
 - 提供从RustSBI到引导程序的完整纯Rust解决方案(高内聚, 低耦合)
 - 扫描引导媒体, 实现内核的运行环境
 - 为异构芯片支持RISC-V和其它架构
- 组件化外设驱动
 - 静态地址、动态地址兼顾
 - 内核、固件和嵌入式生态, 驱动只写一次
 - 设计早期可从原型设计系统孵化
- 为每个芯片产品线提供ROM运行环境
 - 解决裸机开发最难调试的问题



RISCV性能跟踪小队 - 陈小欧

1. RISC-V C扩展和Zce扩展Code Size实测

Benchmark: Csibe 测试编译器生成二进制代码体积

<https://zhuanlan.zhihu.com/p/613627968>

LLVM				GCC	
g	gc	gcZce	gZce	g	gc
1	0.83	0.83	0.83	0.98	0.81

Note:

Arch: rv64

LLVM version 17.0.0

GCC version 12.2.0

Compiler options: -Os

Here Clang Zce not include Zcmp and Zcmt.

LLVM				GCC	
g	gc	gcZce	gZce	g	gc
1	0.84	0.83	0.83	0.94	0.78

Note:

Arch: rv32

LLVM version 17.0.0

GCC version 12.2.0

Compiler options: -Os

Here Clang Zce not include Zcmp and Zcmt.

在不升压缩指令的情况下，RV64 GCC的代码体积就比LLVM要小2%，RV32要小6%；无论是GCC还是LLVM，C扩展大概可以减少17%的代码体积。gcZce相比于gc优化不大（不到1%），打开Zce之后，开不开c的效果是一样的。RVC指令理想情况是带来20-30%的代码压缩，这里的测试是接近20%。

香山开源RISC-V处理器 - ICT / PCL

- 南湖进展
 - 完成 GPU 适配工作, 可以启动 xfce
- 昆明湖进展
 - 前端: 联合 Loop Predictor 和 Loop Buffer、优化 TAGE 预测器哈希算法
 - 后端: 在模拟器上实现完成 V 扩展运算指令; 构建单元级验证框架
 - 访存: 完成 Load Queue 的拆分; 优化 L1 L2 之间的 refill 流程
 - 缓存: 开始实现一些规划中的优化点 (early release, remove set conflict, ...)

MLIR 结合 RISC-V 相关工作 - 张洪滨

注: 提交人不在线 hongbin2019@iscas.ac.cn

完成 MLIR Vector Dialect Dynamic Vector Length Support Proposal (提供三种方案, 已提交给 Google 团队内部讨论)

- Integrate vector length configuration with the current mask operation.
- Create a standalone vector length operation
- Insert an optional argument in the existing operations.

添加了一系列面向 RVV 的 Vector Predication 的抽象和例子

(多维 Memref 支持, MatMul 实现, Mask and Strip-mining 对比, RV32 支持, etc.)

- <https://github.com/buddy-compiler/buddy-mlir/commit/454b4738eff554a325e92cc4a5679bf357f2840d>
- <https://github.com/buddy-compiler/buddy-mlir/commit/c5c0075f0cad34efe66c64011626277c5fcab4d8>
- <https://github.com/buddy-compiler/buddy-mlir/commit/6cf898e4b26bfa48c44f5689baaa22828b49de3b>
- <https://github.com/buddy-compiler/buddy-mlir/commit/4e762bf14029140ceb6e1f5133bd95cb6dd575a0>
- <https://github.com/buddy-compiler/buddy-mlir/commit/cc57e60f073d769224a334b4df10c16b43eb2711>

添加 Gemmini dialect

- <https://github.com/buddy-compiler/buddy-mlir/pull/123>

Chisel and Additional Technology / Sequencer

- RVV Long Vector
 - Vector RTL pre-release:
 - Benchmark test with buddy-compiler
 - Welcome contributor to PR case for benchmark the first long-vector RVV in the world ;p
 - Rocket RoCC is undergoing!
 - TODO:
 - Architecture level documentations
 - Code review
 - PnR guideline
- CIRCT:
 - Benchmark on elaborator performance and JNI/Panama of Chisel-CIRCT
 - SiFive released Arc, and OM dialect, looking for new interns for review and collaborating.

Jiuyang AFK

OpenHW & OpenHW Aisa Working Group

自由讨论 / AOB

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