东亚时区RISC-V双周会

2022年07月07日·第039次

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

Host: 王俊强

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、全球开源社区八卦

- RISC-V 中国峰会征稿结束，预期7月25日公布结果
- 第一台 RISC-V 笔记本 ROMA！开始接受预定了
- 泰晓社区的 RISC-V Linux 学习社区正在如火如荼的进行
  - 已经公开了十几篇RISC-V相关的技术文章
- RISC-V Profiles，请大家一定要去了解和参与讨论
  - https://github.com/riscv/riscv-profiles/blob/main/profiles.adoc
  - 提出来很久了，但是关注的人很少。RVI 在考虑继续推进标准化。
  - 实际上会对编译器、基础库、操作系统、Linux发行版产生很大影响
-

AOSP for RISC-V - 汪辰、陆旭凡 (continued)

RVI upstream 仓库 (https://github.com/riscv-android-src/) 持续更新:

- 2022/7/5: cts build env setup issue bugfix; clang update to fix ifunc issue

bionic unit test (on emulator) status update (https://gitee.com/aosp-riscv/working-group/issues/I57TBH):

- 剩余失败 cases：dynamic(16/3128); static(17/2953), 其中 fread_unbuffered_pathological_performance 这个 case 是因为 emulator 上运行速度太慢导致的，其实不是问题，所以修正后是：dynamic(15/3128); static(15/2953)

已解决	• ifunc 函数 crash 异常：https://gitee.com/aosp-riscv/working-group/issues/I5DNIJ • dl.exec_linker_load_self：https://gitee.com/aosp-riscv/working-group/issues/I5EV12 • exec_argv0_null：https://gitee.com/aosp-riscv/working-group/issues/I5EGDI
已定位，正在解决：	• 数学库 round 问题研究：https://gitee.com/aosp-riscv/working-group/issues/I5BV63，修改 PR: https://reviews.llvm.org/D128240: 为 compiler-rt 中添加获取浮点round mode 的功能，目前正在根据reviewer 的反馈改进。
已定位，但还未找到解决方案：	• "-nan" 打印处理异常：https://gitee.com/aosp-riscv/working-group/issues/I5CKA4，相关 GNU toolchain issue：https://github.com/riscv-collab/riscv-gnu-toolchain/issues/1092
未完全定位，继续研究中：	• Signal Stack unwinding 异常：https://gitee.com/aosp-riscv/working-group/issues/I5D6NY • sys_ptrace：未开始分析

AOSP for RISC-V - 汪辰、陆旭凡

PRs list:

- Fix unistd.exec_argv0_null for new kernels: https://github.com/riscv-android-src/platform-bionic/pull/32
- updated qemu for riscv: https://github.com/riscv-android-src/platform-prebuilts-android-emulator/pull/2
- updated android 12 guide: https://github.com/riscv-android-src/riscv-android/pull/5
- Updated the android12.md for cts: https://github.com/riscv-android-src/riscv-android/pull/6

Articles:

- AOSP 12 移植 RISCV64 过程中针对 RenderScript 的适配方案分析: https://gitee.com/aosp-riscv/working-group/blob/master/articles/20220509-renderscipt-adaptation-analysis-in-android12-riscv64-porting.md
- BIONIC 中对 IFUNC 的支持: https://zhuanlan.zhihu.com/p/532885045
- 搭建 CTS 环境: https://gitee.com/aosp-riscv/working-group/blob/master/articles/20220705-build-the-cts.md

RISC-V GCC进展

Zawrs扩展已被支持，patch正在review中，草案总共包含两条Loop相关指令：

https://gcc.gnu.org/pipermail/gcc-patches/2022-June/596031.html

Hypervisor扩展的binutils支持正式合并 进入上游：

https://sourceware.org/git/?p=binutils-gdb.git;a=commit;h=39590abd658b9d7322ed8c54b784f00aca749e03

协助Tsukasa OI review了zfinx更新的有关patch，预计在binutils2.39中合入支持：

https://sourceware.org/pipermail/binutils/2022-June/121441.html

修复了zcmpe pop时返回栈帧大小不正确的问题：

https://github.com/riscv/riscv-code-size-reduction/issues/164

Rebase 了RVP的工具链实现：
https://github.com/plctlab/riscv-gcc/pull/2 https://github.com/plctlab/riscv-binutils-gdb/pull/1

RVV 的调用约定正在讨论中：
https://github.com/riscv-non-isa/riscv-elf-psabi-doc/pull/296（lazy binding）
https://github.com/riscv-non-isa/riscv-elf-psabi-doc/pull/294 (vxrm/vxsat)

profile,Zihpm与zicntr的支持方案仍在讨论中

Clang/LLVM 进展 (PLCT)

Gollvm，可以成功跑通helloworld，但是，llvm的修改如果是动态链接的话会有问题，具体如何修改成一个可以 llvm接收的方式还在寻找：

1. 为RISC-V添加与GCC相同的静态链参数支持， https://reviews.llvm.org/D129106
2. gollvm跨平台编译支持的pr https://go-review.googlesource.com/c/gollvm/+/415818
3. 成功运行helloworld的issue：https://github.com/plctlab/gollvm/issues?q=is%3Aissue+is%3Aclosed

LLVM

1. 新的，在lldb-server中初步添加riscv的支持，逐渐完善测试环境：https://reviews.llvm.org/D128250
2. 已经合并，两个select指令的优化: https://reviews.llvm.org/D127871
3. 新的，已经废弃，大佬重新实现了：https://reviews.llvm.org/D128613

开始本地测试p扩展。

Clang / LLVM 社区的更新（廖春玉、陆旭凡）

1. https://reviews.llvm.org/D129178 [RISCV] Enable the GlobalMerge pass for RISC-V
2. https://reviews.llvm.org/D129179 [RISCV] Extend use of SHXADD instructions in RVV spill/reload code.
3. https://reviews.llvm.org/D128965 [RISCV] Restore "Enable shrink wrap by default"
4. https://reviews.llvm.org/D128876 [RISCV] Fix wrong register rename for store value during make-compressible optimization

QEMU/Spike/Sail/ACT进展 (PLCT)

- Qemu:
  - Zce扩展支持进行了整理和修复: https://github.com/plctlab/plct-qemu/tree/plct-zce-upstream
  - Corev mcu支持添加了i2cs设备支持: https://github.com/plctlab/plct-qemu/tree/plct-corev-dev
  - 尝试修复了counteren相关检查的问题:
    - https://lists.nongnu.org/archive/html/qemu-riscv/2022-07/msg00005.html
- Spike:
  - Zce扩展支持进行了整理和修复: https://github.com/plctlab/plct-spike/tree/plct-zce-upstream
  - 添加了对Smstateen, Sscofpmf扩展的支持
    - https://github.com/riscv-software-src/riscv-isa-sim/pull/1035
    - https://github.com/riscv-software-src/riscv-isa-sim/pull/1036
    - 在riscv-opcodes中添加了对相关csr的定义: https://github.com/riscv/riscv-opcodes/pull/134
  - 在pk中添加了对rve的支持: https://github.com/riscv-software-src/riscv-pk/pull/280
- Sail/ACT 对CMO的支持暂无更新

gem5 相关进展 (PLCT)

- RVV 扩展的 Draft PR 已提交上游，我们也一直在保持更新：https://gem5-review.googlesource.com/c/public/gem5/+/59789
- 上游 Maintainer 近期就会参与到 RVV 的开发推进，后面应该会和社区其他人一起推进开发和完善。
- 开发进展：
  - 新增浮点数 Widening 指令、浮点数乘加指令和浮点数比较指令
  - 新增定点乘加指令
  - 修复 fmerge.vfm 指令的 bug
  - 修复 vse<EEW>.v 小粒度写回内存的 bug
- 其他相关工作：
  - RVK 扩展（*部分）支持已提交上游，即将合并：https://gem5-review.googlesource.com/c/public/gem5/+/60949
  - 通过魔改 Spike 来生成 RVV 指令测试，已支持大部分指令：https://github.com/ksco/riscv-tests-upstream/tree/spike

* 目前还缺少 Zbkb、Zkr 和 Zkt 的支持

V8 for RISC-V 更新（邱吉、陆亚涵）

1. 3736732: [riscv32] Add RISCV32 backend | https://chromium-review.googlesource.com/c/v8/v8/+/3736732

2. 3740486: [riscv64] Fix wasm-spec-tests/tests/func | https://chromium-review.googlesource.com/c/v8/v8/+/3740486
3. 3736554: [riscv64][wasm] Fix and harden all conditional tier-up checks | https://chromium-review.googlesource.com/c/v8/v8/+/3736554
4. 3723540: [riscv64] [wasm][stack-switching] Support rejected promises | https://chromium-review.googlesource.com/c/v8/v8/+/3723540

OpenJDK for RISC-V 更新（RV64及upstream）

- 社区个人账号更新
  - https://openjdk.org/census#fyang
  - https://db.openjdk.org/people
  - https://bugs.openjdk.org
  - https://wiki.openjdk.org/pages/viewpage.action?spaceKey=HotSpot&title=Ports
- OpenJDK主线每日测试
  - RISCV release/fastdebug build，测试负载：Dacapo, SPECJVM, SPECJBB2005/2015
- LOOM协程代码梳理
  - RISCV Port相关代码约2000行需要实现和调试
- LOOM协程机制理解
  - 关注Park/UnPark过程与CPU Port的调用关系（stub、frame等）
- 其它事项
  - 和华为、阿里小伙伴沟通对齐相关工作（17u backport、分代ZGC、RVC特性支持等）

```
8284161: Implementation of Virtual Threads (Preview)
8286376: Wrong condition for using non-immediate oops on AArch64
8286897: Loom: Cleanup x86_64 StubGenerator
8287205: generate_cont_thaw generates dead code after jump to exception handler
8287496: Alternative virtual thread implementation that maps to OS thread
8287512: continuationEntry.hpp has incomplete definitions
8287567: AArch64: Implement post-call NOPs
8286301: Port JEP 425 to RISC-V
8283626: AArch64: Set relocInfo::offset_unit to 4
8286056: AArch64: clarify uses of MacroAssembler::far_call/MacroAssembler::far_jump
8286058: AArch64: clarify types of calls
8288181: AArch64: clean up out-of-date comments
8288971: AArch64: Clean up stack and register handling in interpreter
8289698: AArch64: Need to relativize extended_sp in frame
```

OpenJDK for RISC-V 更新（RV32/PLCT）

1. https://github.com/openjdk-riscv/jdk11u/pull/412 Update the bishengjdk to improve string compare funcs
2. https://github.com/openjdk-riscv/jdk11u/pull/413 Change lw/inflate_lo32/flate_hi32 to lhu/inflate_lo16/flate_hi16 in macroAssembler and StubCodeGenerator
3. https://github.com/openjdk-riscv/jdk11u/pull/414 Add needle fix of string_index_of
4. https://github.com/openjdk-riscv/jdk11u/pull/415 Modify the string_indexof()
5. https://github.com/openjdk-riscv/jdk11u/pull/416 Modify the counts in string_compare()
6. https://github.com/openjdk-riscv/jdk11u/pull/419 Fix using wrong offset when reclaiming self-frame space
7. https://github.com/openjdk-riscv/jdk11u/pull/420 Remove useless clear_upper_bits
8. https://github.com/openjdk-riscv/jdk11u/pull/421 Fix slots number in register/vmreg and processing of long in sharedRuntime
9. https://github.com/openjdk-riscv/jdk11u/pull/422 Fix T_LONG on SharedRuntime::gen_i2c_adapter
10. https://github.com/openjdk-riscv/jdk11u/pull/423 Fix generate_compare_long_string_different_encoding
11. https://github.com/openjdk-riscv/jdk11u/pull/424 Fix the return value on ic_stub_code_size()

openEuler RISC-V

- oerv OBS 构建:修包&升级
  - Factory:RISC-V
    - 22.09：1916/4222 building
  - openEuler:22.03 :4137+/4236 +9/+3
    - openEuler 2203 是第一次滚动 产生尽可能多的包做seed **4137**
    - openEuler 2203 self 是第二次滚动 进行纯净的编译，并且构建包依赖升到当前版本 **4074**
    - openEuler_2203_rel 是第三次滚动 自身编译自身（todo，等待openEuler 2203failed包解决）
  - Factory:RISC-V:Mozilla : 3/4 0/+1 firefox合入公共工程
  - Factory:RISC-V:Java：+12 eclipse bootstrap模式构建成功
  - Factory:RISC-V:Erlang：新增Erlang包进行维护 2/17
  - Factory:RISC-V:Perl：perl升级到5.34并构建成功
- PR 新增 23个
  - https://github.com/isrc-cas/tarsier-oerv/blob/main/biweekly/2022-06-30.md
- RISC-V 软件源&每日镜像计划:维护优化
- 测试/验证
  - Verify firefox for openeuler on visionfive @samuel_yuan
  - Verify sdlquake for openeuler on visionfive @samuel_yuan
  - Verify dosbox for openeuler on visionfive @samuel_yuan
  - D1镜像测试报告
  - Unmatched镜像测试报告
  - Visionfive镜像测试报告

Gentoo for RISC-V 的情况更新（Gentoo小队）

- A total of 18 keywording commits: https://whale.plctlab.org/riscv/RISC-V-双周会/20220707/commits.txt
- riscv overlay
  - sys-apps/kexec-tools, new support for riscv
    - Patch commit: gentoo/riscv@31108ac2c9aa23918f46ff3f56e3084d0bb725f2
    - Keywording: gentoo/riscv@f3278d7aa754f3e32444e815e62db6b047ab3af8
- BCC
  - A new PR for initial ebpf support of riscv, https://github.com/iovisor/bcc/pull/4085

Arch Linux RISC-V（东东）

1. 移植进度

   [extra] 2607 / 3039 (85.78%)

   [community] 7236 / 9234 (78.36%)
2. Archriscv-packages merged 36 PR.
3. Updpkg: llvm to 14.0.5
4. Porting firefox 102　(stuck

Fedora for RISC-V（傅炜）

- **SRPM打包编译进度**
  - **[fc36] 144000 / 22832 (65%) [pause]**
  - **[rawhide]【On Going】重点工作**
- **以 server 和 desktop 的功能包为目标:**
  - **firefox【waiting for the latest gcc update】**
  - **Podman and bodhi【On Going】**

- **highlights:**
  - **koji + mock build supported (standardize build flow, improve auto-deployment script)**
  - **multi graphic desktop supported**
- **软件版本:**
  - **GCC 12.0-1** -> gcc-12.0-16 **/ Glibc 2.35**
  - **Binutils 2.38.14**→ **2.39 [need to update for opensbi/uboot/kernel]**
  - **Python 3.10.4** → **3.11[rawhide]**
  - **Perl 5.34.2**
  - **LLVM/Clang 14.0.0-1**→ **14.0.5-1[rawhide]**
  - **Rust 1.61-2 [need qemu fix from Felix]**
  - **QT-5.15.3 and QT-6**
- **Images:**
  - **QEMU/D1/Icicle/Unmatched Images**
  - **New koji builder Image (F36) 3GB**
  - **Workstation (GNOME&KDE/Deepin) Image: 预计7月底前**

Debian for RISC-V（于波）

[libemf patch done]https://bugs.debian.org/cgi-bin/bugreport.cgi?bug=1013922

[libpg-query patch done]https://bugs.debian.org/cgi-bin/bugreport.cgi?bug=1014082

[content-hub patch done]https://bugs.debian.org/cgi-bin/bugreport.cgi?bug=1014126

[psocksxx patch]https://bugs.debian.org/cgi-bin/bugreport.cgi?bug=1014158

[sscg confirmed]https://bugs.debian.org/cgi-bin/bugreport.cgi?bug=1014259

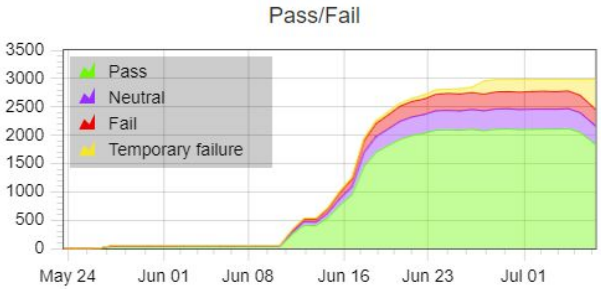
[rocm-smi-lib patch done]https://bugs.debian.org/cgi-bin/bugreport.cgi?bug=1014318

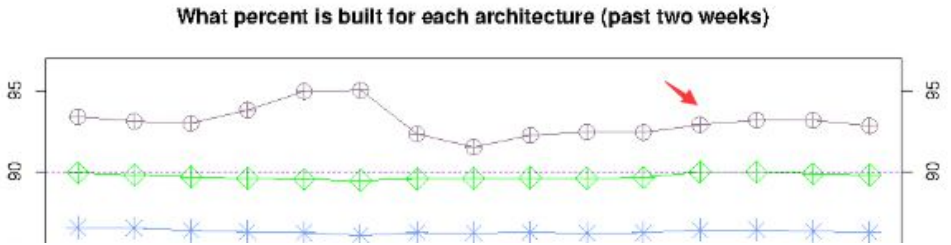
[openlibm patch]https://bugs.debian.org/cgi-bin/bugreport.cgi?bug=1014338

[mingw-w64 patch]https://bugs.debian.org/cgi-bin/bugreport.cgi?bug=1014392

[Openni patch]https://bugs.debian.org/cgi-bin/bugreport.cgi?bug=1014442

[openni upstream issue]https://github.com/OpenNI/OpenNI/issues/137





FW相关更新（王翔）

- opensbi
  - 添加超时等待接口
  - Shakti uart更新，寄存器操作从16位修正为8位

RISCV性能跟踪小队 - 陈小欧、陈逸轩

1. Update SPECjbb2015 on Unmatched

Composite：max-jOPS=484, critical-jOPS=63
MultiJVM：max-jOPS = 437, critical-jOPS = 0
Distributed：max-jOPS = 388, critical-jOPS = 29
（Ubuntu21.04, openjdk version "19-internal", 16G memory）

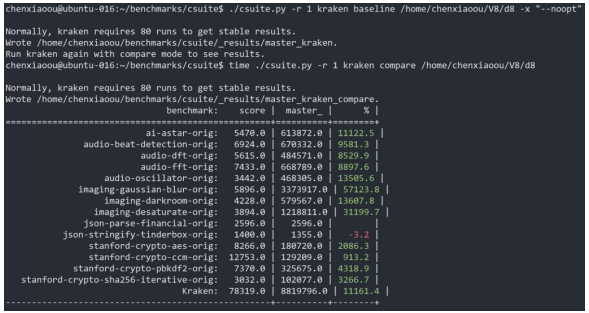
文档记录
：https://github.com/mollybuild/RISCV-Measurement/blob/master/Run-SPECjbb-on-unmatched.md

2. Run Benchmarks for V8 on Unmatched

Kraken: 8819796
SunSpider: 123483（3d-cube.js, 3d-raytrace.js, math-spectral-norm.js failed）
Octane: Failed

文档记录
：https://github.com/mollybuild/RISCV-Measurement/blob/master/Cross-Compile-V8-and-run-Benchmark.md

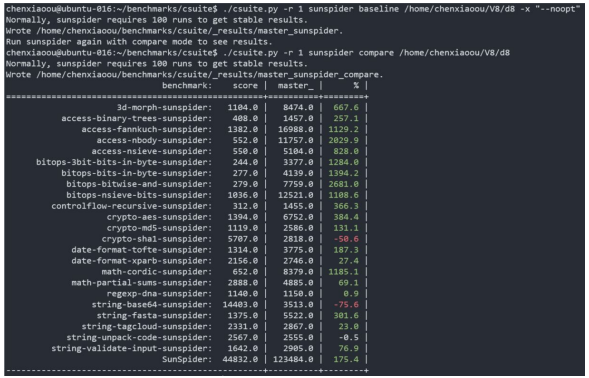
Issue：https://github.com/riscv-collab/v8/issues/701



```
chenxiaoou@ubuntu-016:~/benchmarks/csuite$ ./csuite.py -r 1 kraken baseline /home/chenxiaoou/V8/d8 -x "--noopt"

Normally, kraken requires 80 runs to get stable results.
Wrote /home/chenxiaoou/benchmarks/csuite/_results/master_kraken.
Run kraken again with compare mode to see results.
chenxiaoou@ubuntu-016:~/benchmarks/csuite$ time ./csuite.py -r 1 kraken compare /home/chenxiaoou/V8/d8

Normally, kraken requires 80 runs to get stable results.
Wrote /home/chenxiaoou/benchmarks/csuite/_results/master_kraken_compare.
                                benchmark:    score |  master_ |      % |
==========================================================+==========+========+
                          ai-astar-orig:   5470.0 | 613872.0 | 11122.5 |
                audio-beat-detection-orig:   6924.0 | 670332.0 |  9581.3 |
                          audio-dft-orig:   5615.0 | 484571.0 |  8529.9 |
                          audio-fft-orig:   7433.0 | 668789.0 |  8897.6 |
                    audio-oscillator-orig:   3442.0 | 468305.0 | 13505.6 |
                imaging-gaussian-blur-orig:   5896.0 | 3373917.0 | 57123.8 |
                      imaging-darkroom-orig:   4228.0 | 579567.0 | 13607.8 |
                    imaging-desaturate-orig:   3894.0 | 1218811.0 | 31199.7 |
                  json-parse-financial-orig:   2596.0 |   2596.0 |      |
              json-stringify-tinderbox-orig:   1400.0 |   1355.0 |   -3.2 |
                  stanford-crypto-aes-orig:   8266.0 | 180720.0 |  2086.3 |
                  stanford-crypto-ccm-orig:  12753.0 | 129209.0 |   913.2 |
                stanford-crypto-pbkdf2-orig:   7370.0 | 325675.0 |  4318.9 |
    stanford-crypto-sha256-iterative-orig:   3032.0 | 102077.0 |  3266.7 |
                                   Kraken:  78319.0 | 8819796.0 | 11161.4 |
-------------------------------------------------------------+----------+--------+
```



```
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Normally, sunspider requires 100 runs to get stable results.
Wrote /home/chenxiaoou/benchmarks/csuite/_results/master_sunspider.
Run sunspider again with compare mode to see results.
chenxiaoou@ubuntu-016:~/benchmarks/csuite$ ./csuite.py -r 1 sunspider compare /home/chenxiaoou/V8/d8
Normally, sunspider requires 100 runs to get stable results.
Wrote /home/chenxiaoou/benchmarks/csuite/_results/master_sunspider_compare.
                                benchmark:    score |  master_ |      % |
==========================================================+==========+========+
                      3d-morph-sunspider:   1104.0 |   8474.0 |  667.6 |
                access-binary-trees-sunspider:    408.0 |   1457.0 |  257.1 |
                  access-fannkuch-sunspider:   1382.0 |  16988.0 | 1129.2 |
                     access-nbody-sunspider:    552.0 |  11757.0 | 2029.9 |
                   access-nsieve-sunspider:    550.0 |   5104.0 |  828.0 |
          bitops-3bit-bits-in-byte-sunspider:    244.0 |   3377.0 | 1284.0 |
             bitops-bits-in-byte-sunspider:    277.0 |   4139.0 | 1394.2 |
              bitops-bitwise-and-sunspider:    279.0 |   7759.0 | 2681.0 |
             bitops-nsieve-bits-sunspider:   1036.0 |  12521.0 | 1108.6 |
          controlflow-recursive-sunspider:    312.0 |   1455.0 |  366.3 |
                    crypto-aes-sunspider:   1394.0 |   6752.0 |  384.4 |
                    crypto-md5-sunspider:   1119.0 |   2586.0 |  131.1 |
                   crypto-sha1-sunspider:   5707.0 |   2818.0 |  -50.6 |
              date-format-tofte-sunspider:   1314.0 |   3775.0 |  187.3 |
              date-format-xparb-sunspider:   2156.0 |   2746.0 |   27.4 |
                  math-cordic-sunspider:    652.0 |   8379.0 | 1185.1 |
               math-partial-sums-sunspider:   2888.0 |   4885.0 |   69.1 |
                    regexp-dna-sunspider:   1140.0 |   1150.0 |    0.9 |
                 string-base64-sunspider:  14403.0 |   3513.0 |  -75.6 |
                  string-fasta-sunspider:   1375.0 |   5522.0 |  301.6 |
               string-tagcloud-sunspider:   2331.0 |   2867.0 |   23.0 |
             string-unpack-code-sunspider:   2567.0 |   2555.0 |   -0.5 |
          string-validate-input-sunspider:   1642.0 |   2905.0 |   76.9 |
                                SunSpider:  44832.0 | 123484.0 |  175.4 |
-------------------------------------------------------------+----------+--------+
```

香山开源RISC-V处理器 - ICT / PCL

- 前端设计
  - 探索 Stream Predictor 的设计方案
- 后端流水线
  - 优化译码、定浮点跨域操作、freelist 等部分的时序
  - 针对重命名优化、指令融合和 V 扩展中的 mask 处理进行讨论与调研
- 访存单元
  - MMU 和 DCache 进行时序优化
- 缓存
  - Inclusive 版本增加 anti-alias 功能
  - 限制 L3 MSHR 阻塞粒度以规避潜在的功能问题

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

相关链接

- 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
- MLIR + RVV 环境搭建 - https://github.com/buddy-compiler/buddy-mlir/blob/main/thirdparty/build-rvv-env.sh
- MLIR + RVV 相关实验 - https://github.com/buddy-compiler/buddy-mlir/tree/main/examples/RVVExperiment

WIP

- 尝试添加高层 Config Operation，重用 Vector Operation
- 将高层 Operation 下降到 RVV-specific Operation
- 尝试使用 vector prediction intrinsic 增加可重用性

面向 RISC-V 的 OpenCV 情况更新 - 韩柳彤

- **为 Universal Intrinsic 增加可变长向量指令的支持**

  Google Summer of Code 2022: Optimizing OpenCV Universal Intrinsic for RISC-V Vector

  新的PR：https://github.com/opencv/opencv/pull/22179

  - 修改了测试用例，使其适应于可变长架构
  - 增加了必要的 Universal Intrinsic 函数
  - 增加了兼容层
  - 修改了图像处理模块中的向量化循环，启用新的RVV后端

Chisel and Additional Technology / Sequencer

- RISC-V Vector Start RTL Designing by Qinjun, reviewed by Yunqian!
  - https://github.com/qinjun-li/v
- I$ Documentation by Yanqi
  - https://github.com/chipsalliance/rocket-chip/pull/3001
- Test framework by Lucheng
  - https://github.com/chipsalliance/rocket-chip/pull/2991
- SCIRT supports hierarchy(GCD works now) by Ruikang
  - https://github.com/dramforever/scirt
- Post-synthesis flow ongoing by Chunyun

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~~
  - 但是有了新的传言～ ROMA，Pine64
- 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 陈璇** 同学 all in！
  - LuaJIT：呼唤勇士，**吴伟** 自己上了（然后已经咕了一周）。
  - DynamoRIO：呼唤勇士，**钱耀津** 同学 all in！
  - Valgrind：呼唤勇士，一位**不愿意透露姓名的实习生**提交了patch
  - DartVM：官方说基础rv64支持有了，召唤实习生验证和扩充
  - Mono：开始招募实习生
  - Spidermonkey/IonMonkey：招募实习生
  - 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？