



An Introduction to the Arch Linux RISC-V Port

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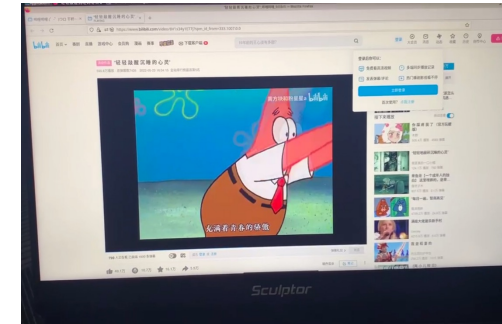
Motivations

- RISC-V is becoming more and more popular
- Many chips and boards are manufactured and released to the market
- In order to attract more personal end-users, we should build a **feature-rich distribution** to meet their daily needs.
 - Necessary software: LibreOffice, Chromium, Python/Node.js/Rust, GCC...
 - Cross-architecture compatibility: wine-ce, QEMU...
 - Graphics and Games! Box64, llvmpipe, mesa...
- ALL available in the Arch Linux RISC-V port

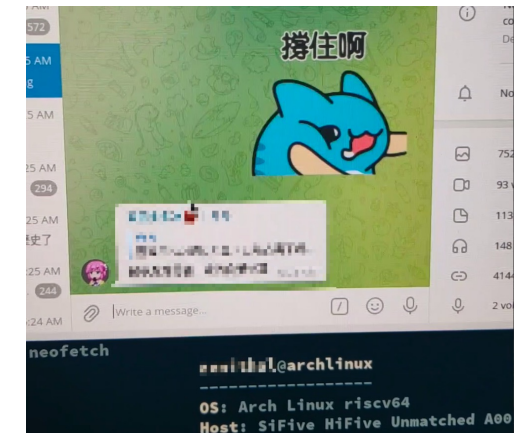
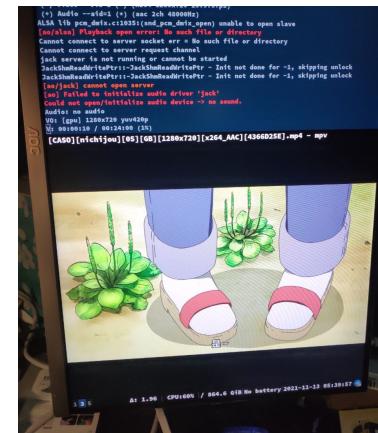


Showcases

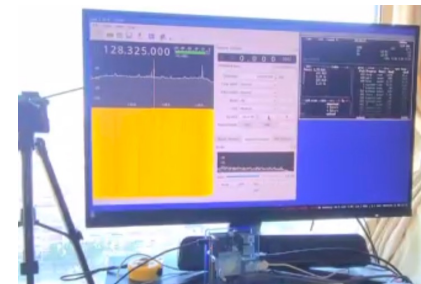
Watching videos on Bilibili with Firefox using VisionFive:
(Firefox now has JIT enabled on RISC-V)



Watching videos and using Telegram on Unmatched:
(Unmatched now has JIT enabled on RISC-V)



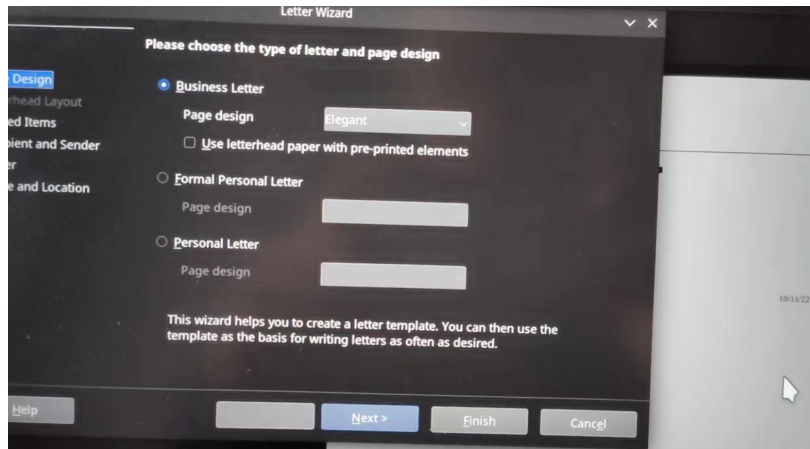
Monitoring the ATC with gnuradio on VisionFive 2:
(gnuradio now has JIT enabled on RISC-V)



Showcases (cont.d)



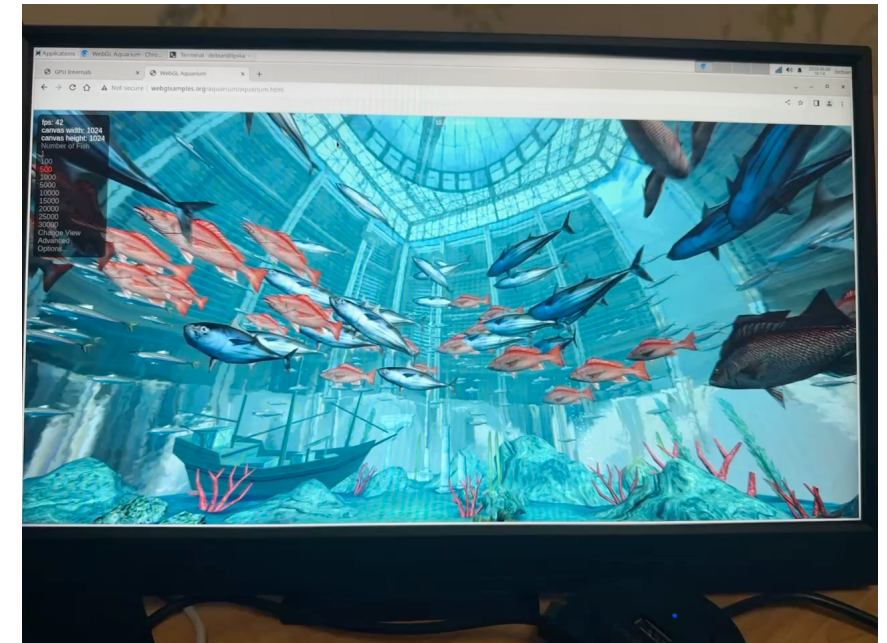
LibreOffice



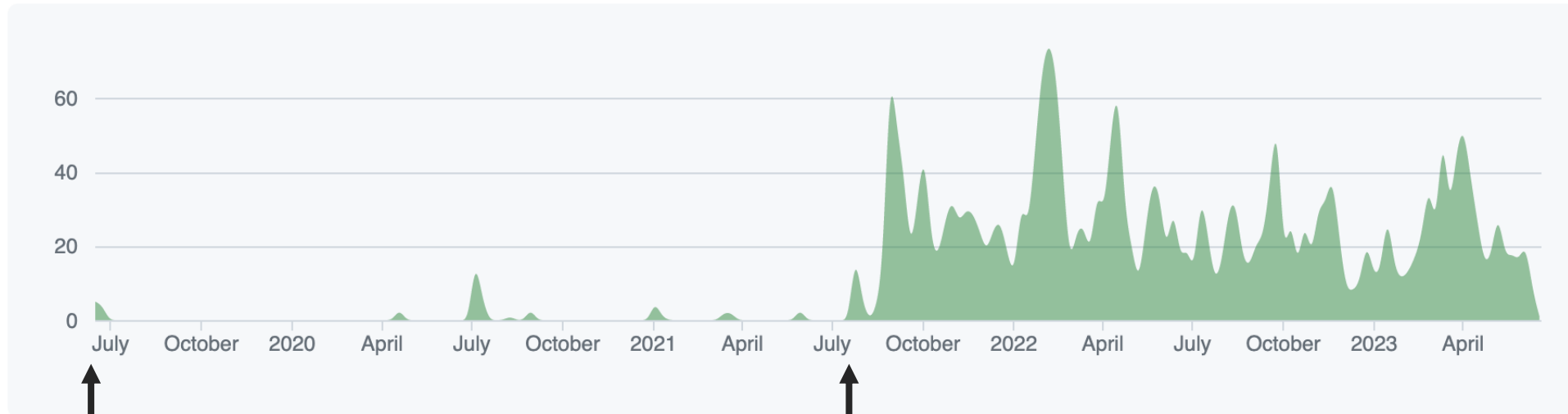
Box64
VisionFive 2



WebGL in Chromium
VisionFive 2



Timeline



July 2019: Port started

@felixonmars, one of the Arch Linux Packagers, started to maintain the RISC-V port as his personal project

September 2021: Actively maintained

Thanks to the aid of PLCT, we gathered many people to work on this port. About 40 people has actively contributed to the port since then, and most of them are undergraduate students from China.



Arch	[core]			[extra]		
	Up-to-date (Ratio%)	Outdated	Missing	Up-to-date (Ratio%)	Outdated	Missing
x86_64	264	0	0	13222	0	0
i486	163 (61.74%)	93	8	4813 (36.4%)	4688	3721
i686	162 (61.36%)	97	5	5805 (43.9%)	6067	1350
pentium4	166 (62.88%)	93	5	5857 (44.3%)	5958	1407
aarch64	241 (91.29%)	10	13	10927 (82.64%)	161	2134
armv7h	240 (90.91%)	10	14	10650 (80.55%)	275	2297
riscv64	243 (92.05%)	13	8	10072 (76.18%)	2092	1058
loong64	165 (62.5%)	91	8	5051 (38.2%)	4529	3642

- Many contributions are made at upstream, so that other distros can avoid repeated works.
- e.g. 2 PR @ QEMU, 1 @ systemd, 1 @ gcc, 3 @ glibc, 1 @ Linux, 1 @ CMake...
About a total of 500 PRs submitted to upstream software developers/maintainers



Get Started

- archriscv.felixc.at
- github.com/felixonmars/archriscv-packages
- Tutorials for using QEMU (user mode and system mode):
 - <https://github.com/felixonmars/archriscv-packages/wiki>



- Thank you!