



Contribution ID: 174

Type: **not specified**

Run ILP32 on RV64 ISA (RV64ILP32)

Monday, November 13, 2023 9:55 AM (20 minutes)

The 64ilp32 ABI is not a fresh topic; x86-x32, mips-n32, and arm64-ilp32 have all appeared for many years but have yet to succeed in wide usage. But running ILP32 on 64-bit ISA still has a magic power to abstract people for continuous trying; now, this is our turn. The rv64ilp32 patch series has iterated to the second version, combining u64ilp32 (User) & s64ilp32 (kernel), supporting the 64ilp32 kernel for the first time. In the presentation, we will show the advantages of 64ILP32 from different views:

- ILP32 v.s. LP64 (SPECint 2006 & 2017 scores)
- RV64 v.s. RV32 ISA (memcpy, ebpf, atomic64, DCAS ...)
- Run 64ilp32 Fedora on all popular platforms.

The conclusion is that 64ilp32 would help the existing RISC-V hardware platforms by increasing performance and decreasing cost.

Primary author: Mr GUO, Ren

Presenter: Mr GUO, Ren

Session Classification: RISC-V MC

Track Classification: LPC Microconference: RISC-V MC