

Recently Ratified Extensions

If you are looking for documentation on a recently ratified extension that has not yet been merged into the published specifications listed on the [RISC-V Specifications page](#), check the table below. These extensions are completely ratified by RISC-V and will be merged into the final specifications in the coming months.

| Specification name | Ratification date | New extension(s) |
|--|-------------------|---|
| Zmmul Extension | June 2022 | Zmmul |
| PMP Enhancements for memory access and execution prevention on Machine mode (Smepmp) | November 2021 | Smepmp |
| RISC-V Base Cache Management Operation ISA Extensions | November 2021 | Zicbom, Zicbop, Zicboz |
| RISC-V Bit-Manipulation ISA-extensions | November 2021 | Zba, Zbb, Zbc, Zbs |
| RISC-V Count Overflow and Mode-Based Filtering Extension | November 2021 | Sscopmf |
| RISC-V Cryptography Extensions Volume I: Scalar & Entropy Source Instructions | November 2021 | Zbkb, Zbkc, Zbkx, Zknd, Zkne, Zknh, Zksed, Zksh, Zkn, Zks, Zkt, Zk, Zkr |
| RISC-V State Enable Extension | November 2021 | Smstateen |
| RISC-V "stimecmp / vstimecmp" Extension | November 2021 | Sstc |
| RISC-V Vector Extension | November 2021 | Zve32x, Zve32f, Zve64x, Zve64f, Zve64d, Zve, Zvl32b, Zvl64b, Zvl128b, Zvl256b, Zvl512b, Zvl1024b, Zvl, Zv |
| The RISC-V Instruction Set Manual Volume II: Privileged Architecture | November 2021 | Sm1p12, Ss1p12, Sv57, Hypervisor, Svinval, Svnapot, Svpbmt |
| "Zfh" and "Zfhmin" Standard Extensions for Half-Precision Floating-Point | November 2021 | Zfh, Zfhmin |
| "Zfinx", "Zdinx", "Zhinx", "Zhinxmin": Standard Extensions for Floating-Point in Integer Registers | November 2021 | Zfinx, Zdinx, Zhinx, Zhinxmin |