

# See MIPS Run, Second Edition (The Morgan Kaufmann Series in Computer Architecture and Design)

By Dominic Sweetman





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See MIPS Run, Second Edition, is not only a thorough update of the first edition, it is also a marriage of the best-known RISC architecture--MIPS--with the best-known open-source OS--Linux. The first part of the book begins with MIPS design principles and then describes the MIPS instruction set and programmers' resources. It uses the MIPS32 standard as a baseline (the 1st edition used the R3000) from which to compare all other versions of the architecture and assumes that MIPS64 is the main option. The second part is a significant change from the first edition. It provides concrete examples of operating system low level code, by using Linux as the example operating system. It describes how Linux is built on the foundations the MIPS hardware provides and summarizes the Linux application environment, describing the libraries, kernel device-drivers and CPU-specific code. It then digs deep into application code and library support, protection and memory management, interrupts in the Linux kernel and multiprocessor Linux.

Sweetman has revised his best-selling MIPS bible for MIPS programmers, embedded systems designers, developers and programmers, who need an indepth understanding of the MIPS architecture and specific guidance for writing software for MIPS-based systems, which are increasingly Linux-based.

- Completely new material offers the best explanation available on how Linux runs on real hardware.
- Provides a complete, updated and easy-to-use guide to the MIPS instruction set using the MIPS32 standard as the baseline architecture with the MIPS64 as the main option.
- Retains the same engaging writing style that made the first edition so readable, reflecting the authors 20+ years experience in designing systems based on the MIPS architecture.

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#### **Editorial Review**

Review

"This book is a worthwhile read for anyone interested in Linux on MIPS processors or even MIPS and RISC architecture in general." -- James Mohr, *Linux Magazine*, April 2007

About the Author

**Dominic Sweetman** is a member of the last generation of programmers who could reasonably hope to understand computer systems from bottom to top. His rich career began with low-level coding, progressing from OS development to LANs to distributed systems. Dominic is an experienced designer and developer of hardware systems, CPUs, networks, and operating systems. He was a founder member of Whitechapel Workstations, and in 1988 founded Algorithmics, a MIPS consulting firm of which he is the director. Dominic lives with his partner, two grown-up children and three cats in north London.

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