
BareMetal

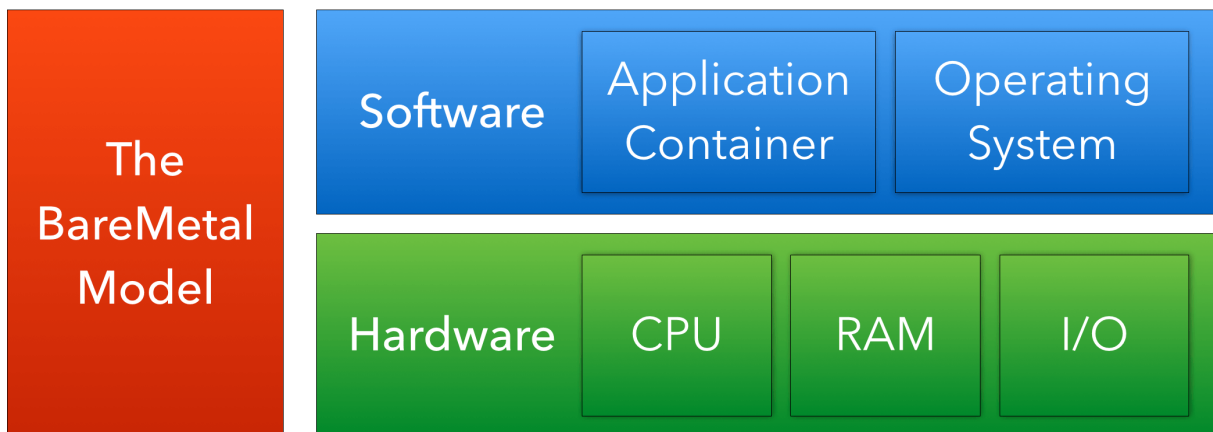
Just enough kernel

Official repo of the BareMetal exokernel. It's written from scratch in Assembly, designed for x86-64 hardware, with no dependencies except for the virtual/physical hardware. A 64-bit ARMv8 version is also planned.

What is this?

BareMetal is a very lean kernel. The name is a play on the phrase “bare metal” which means to run directly on physical or virtualized hardware. BareMetal also only offers the “bare essentials” required for a working operating system.

BareMetal provides basic support for symmetric multiprocessing, network, and drive access via a low-level abstraction layer.



Key features

- **64-bit:** Make use of the extra-wide and additional registers available in 64-bit mode.
- **Mono-processing, multi-core:** The system is able to execute a single “program” but can spread the work load amongst available CPU cores.
- **Extremely tiny memory footprint:** A minimal bootable image, including boot-loader and operating system components, is currently 16K.
- **Physical and virtual hardware support** with full virtualization, using x86 hardware virtualization whenever available (it is on most modern x86-64 CPU's). In principle BareMetal should run on any x86-64 hardware platform, even on a physical x86-64 computer, given appropri-

ate drivers. Officially, we develop on QEMU and VirtualBox, which means that you can run BareMetal on both Linux, Microsoft Windows, and Apple macOS.

Try it out!

See the BareMetal-OS repo for a full build environment.

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