Minimal Footprint Hypervisor

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Virtualization is a technology widely adopted across IT industry. It is being used by a growing number of companies to enhance server security and enable scalability. The vast majority of virtual machine monitors are feature-rich and each has an imposing code base. Such projects are hard to debug and analyze. Unlike them, Jinet hypervisor is a minimal footprint hypervisor that is supposed to be attuned to specific tasks, e.g. a VMM for IoT-related processing or a one that serves as a debugging facility. This project is a type-1 hypervisor: a computer boots directly into it, the virtual machine monitor initializes hardware, particularly Intel VMX, and enters a virtualized environment with paravirtualization interface based on VT-x vmcall instruction. Virtual machines run on application processors, while the bootstrap processor is dedicated to interface and terminal output. Several subsystems for handling hardware interactions were implemented (ACPI tables, APIC, x86-specific processor structures, etc.). This is an open source project distributed under MIT License.

Awards Won:
Fourth Award of $500