

Overview of the HelenOS operating system. General overview of the 64-bit SPARC processors (registers, traps, memory management unit, OpenBoot PROM). Overview of the specific features of the processors compliant with JPS (Joint Programming Specification). Overview of the specific features of the Niagara-based processors (virtualization, hypervisor, memory management). Overview of the original SPARC port of HelenOS (boot phase, preemptible trap handler, memory management). Description of the port of HelenOS onto the JPS-compliant processors (booting, OBP anomalies, modification of the memory management, detecting particular processor model, adding support for dual-core processors, driver of the Serengeti machine console). Description of the port of HelenOS onto the Niagara-based processors (integration with other SPARC HelenOS ports, bootloader modifications, taking over the TLB, hypercalls, parsing the machine description, memory management, preemptible trap handler modifications, input and output driver, multiprocessing, scheduler optimization). Overview of the existing HelenOS ports. Comparison with the original SPARC HelenOS port, comparison with Linux and Solaris.