

This bachelor's thesis focuses on tracing in the Linux operating system with an emphasis on the KernelShark application. The theoretical part describes tracing principles and available visualization tools, while the practical part presents the design and implementation of several KernelShark enhancements. Key improvements include a GUI modification for more efficient work with Trace-cmd, splitting of selected event types, visualization of the system's NUMA topology (mainly NUMA nodes, cores, and processors within cores), a plugin for monitoring process idleness, and a plugin for more user-friendly analysis of kernel stack trace records. Additionally, minor technical improvements were made. Each enhancement is accompanied by a technical description, development and user documentation, and an evaluation of how well the defined expectations were met.