

High Configurability for Operating Systems

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The capacity of software to adapt its functionalities based on user preferences or hardware requirements is of utmost importance. Improved user satisfaction and overall system performance are just two of the advantages. Kernel configuration serves as a practical example. Situated at the core of an operating system, the kernel is responsible for critical tasks such as process management and memory allocation. Its configuration process has naturally evolved to address the needs of users and systems, as well as specific hardware requirements. However, given the complexity of such projects, the entire configuration process can quickly become overwhelming, especially for users unfamiliar with kernel internals. This paper introduces a 32-bit kernel with a more user-friendly configuration process, facilitated by a step-by-step configuration menu and default configuration profiles. The kernel implements essential features such as file system support, a syscall interface, process control, and physical and virtual memory management.

Author: Mr DEAK, Tiberiu (POLITEHNICA Bucharest)

Co-authors: DEACONESCU, Răzvan (University Politehnica of Bucharest); KROENING, Martin (RWTH Aachen University); MONTI, Antonello (RWTH Aachen)

Presenters: Mr DEAK, Tiberiu (POLITEHNICA Bucharest); DEACONESCU, Răzvan (University Politehnica of Bucharest)

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