

Veronica Mikhaylova

Systems Programmer
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Education & Certificates

- High School Diploma Graduated

Projects

Systems Programmer, ouma 2023 to Current

- Built a hardened C standard library for Linux from scratch, supporting six processor architectures.
- Hardened libc implementation: written in Rust for Linux-based systems, explicit unsafe boundaries, and monadic error handling built into the type system for C interoperability. glibc and musl are slow to adopt hardening features (control-flow integrity, safe stack and more) and carry a large unaudited attack surface that lead to various forms of vulnerabilities; ouma implements following mitigations from the start with code being easy to audit to fight the issues as described above.
- Sanitizer-driven correctness: library builds and is tested under Address and Memory Sanitizer, catching memory-safety regressions before they reach a hardened deployment target.

Systems Programmer, wrappa 2026 to Current

- Built a broker that wraps setuid-based privilege escalation for Linux command-line tools (such as “su”, “sudo”) without a need of setting filesystem attributes coupled with extra isolation that implements capability-based security for such command-line tools.
- Linux privilege-separation design: Unix-socket IPC design for client and server. Server, that enforces user-defined policy and sets appropriate user and group IDs for the isolated container. Client, that crates an isolated container with all priviledges being dropped and required per binary call Linux capabilities being set process-wide, eliminating the need of specific filesystem-wide attributes.
- Security rationale: CVE-2021-4034 (PwnKit, CVSS 7.8, CISA Known Exploited Vulnerabilities Catalog) was exploitable because pkexec's argument-parsing bug ran with root privileges via its setuid bit; the identical bug in an unprivileged binary yields code execution as the calling user only. wrappa removes that privilege boundary from the binary itself making such bugs harder to exploit.

Contact

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