The Design of the Tarkix Kernel

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1) Introduction

This document shows the design of the Tarkix kernel.

2) Kernel Architecture

The Tarkix kernel will be a 64-bit (x86_64) UNIX-like micro-kernel designed to be POSIX compliant, and makes everything literally a file. The kernel will be written in the C++ programming language and x86_64 Assembly.

3) System Call Interface

The kernel will use the x86_64 `SYSCALL` instruction, with arguments in: System call number: `RAX`

1. `RDI`
2. `RSI`
3. `RDX`
4. `R10`
5. `R8`
6. `R9`

and the return value of the call in `RAX`.

3.a) System Calls

The kernel will have standard UNIX system calls, example: `ssize_t write(int fd, void* buf, size_t count);`