

User authentication in eosxd: A tale of /proc/pid/envIRON and kernel deadlocks

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Supporting multiple parallel users in eosxd requires some mechanism of distinguishing their identities, and assigning a different set of credentials to each.

In this presentation, we detail our efforts in implementing the eosxd authentication subsystem based on process environment variables.

However, reading the environment variables of a process (/proc/pid/envIRON) from within a FUSE daemon comes with a major caveat: The possibility of triggering a deadlock in the Linux kernel. We will outline the root cause of this issue, and describe various mitigations and workarounds for preventing it, thus making environment-based authentication in a FUSE daemon feasible.

Primary authors: BITZES, Georgios (CERN); PETERS, Andreas Joachim (CERN)

Presenter: BITZES, Georgios (CERN)

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