

Safety in processes CPU execution state

Tuesday, August 25, 2020 8:00 AM (20 minutes)

A process running a safety critical function needs to be free from any interference. One source of this interference comes from are interruptions to the program flow from either synchronous events like system calls, or asynchronous events such as interrupts.

This talk details the sources of such events; the hazards that are associated with them, and some of the ways in which these may be mitigated. It will also go into some of the complexities of a modern processor such as an x86, showing what is considered to be the execution state and the issues surrounding monitoring the program flow.

We will show a mitigation developed to detect any changes in the execution state of a given process and discuss the limitations, performance and the issues raised during the development of the feature.

I agree to abide by the anti-harassment policy

I agree

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