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Mind the gap - between real-time Linux and real-time theory

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It is common to see Linux being used on real-time research projects. However, the assumptions made in papers are very often unrealistic. In contrast, researchers argue that the main metric used on PREEMPT RT, although useful, is an oversimplification of the problem.

It is a consensus that the academic research helps to improve Linux's state-of-art, and vice-versa. So how can we reduce the gap between these task forces? The real-time researchers start papers with a clear definition of the task model. But we do not have a task model for Linux: this is where the gap is.

This talk presents effort on establishing the task model for the PREEMPT RT Linux. Starting with the description of the operations that influence the timing behavior of tasks, passing by the definition of the relationships of the operations. Finally, the outcomes for Linux, like new metrics for the PREEMPT RT and a model validator (a lockdep like verificator, but for preemption) for the kernel, are discussed.

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Yes

Primary author: BRISTOT DE OLIVEIRA, Daniel (Red Hat, Inc.)

Presenter: BRISTOT DE OLIVEIRA, Daniel (Red Hat, Inc.)

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