Runtime CPU scheduler customization framework for a flexible mobile operating system

ABSTRACT

Mobile operating systems should adapt to different applications requirement such as multimedia, games, video and audio applications, and mobile calls, etc. Process scheduling is considered as the most important part of the mobile operating system, which has the responsibility for adapting the operating systems to these applications requirements. In this work, the architecture for a runtime CPU scheduler customization framework for the Linux kernel that take into account different applications requirements is presented. The Runtime CPU Scheduler Customization (RCSC) framework permits the mobile devices users as well as the developers of Linux-based mobile operating systems to customize CPU scheduler to run with a specific scheduling policy as well as evaluate newly developed scheduling policies from user space at runtime. As a consequence, mobile operating system can be tuned manually or automatically in order to adapt with the requirements of a particular application.