

Improving system performance through operating system optimization on embedded devices platform

Implemented with a low speed CPU, small memory footprint, low static memory storage and developed specifically for low power requirement, small embedded devices are significantly affected by processing time. By cutting down processing time needed to complete a certain task, not only power consumption could be reduced, but it could also lead to greater system performance without the need to redevelop the current system. In this paper, we propose a system optimization technique through operating system optimization implemented during the OS compilation stages. Results obtained shows that a proper compiler optimization during the OS development stages could lead to a more than 100% speed increase on code execution performance, code loading sequences and library linking procedures. This greatly improves total system performance and reduces the time for a particular system to complete its' tasks and effectively reduces system turnover time without requiring a major overhaul on the software and hardware side.