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Abstract
There are benefits and commonly used to partition modules in kernel design. However, they are bound altogether to form a single executable eventually, which brings disadvantages and inconvenient in on-line system software replacing and reconfiguring. In this thesis, we propose a new hot swap kernel design approach which we call it HS2 (Hot Swap System). Using the architecture, embedded systems shall exploit more functions and adaptabilities. The HS2 keeps all modules in a system as independent as possible, including kernel modules and applications. Users can upload, download or hot-swap any module from the remote Hot-Swap Console, and let the embedded system owns advantages such as optimal efficiency, dynamic maintenance and software reuse. Furthermore, when applying in the environment of multiple embedded systems, the Hot-Swap Console can dynamically redistribute tasks among systems to arrange load balance, and maximize the usage of processors and memories. We also implement an application of Mobile Task in the prototype. It is used to travel among different embedded systems connected with internet, gathering and analyzing information to find out potential problems.
Keyword： Hot-Swap，Mobile Task.
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