Network Processor: Design Issues and Challenges

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Abstract

Networking technology has been advancing faster than CPU technology in many ways, and this has created a need for new design approaches for chips used in networking settings. A new semiconductor device called a Network Processor (NP) has been introduced to meet the demands of rapidly advancing physical link speeds and feature-rich applications. This imposes great challenges on NP design. This presentation examines these challenges in details. Several possible solutions are also presented, including parallel processing, memory hierarchy and hardware accelerators.