



## **SUPER-PIPELINED IMPLEMENTATION OF IP PACKET CLASSIFICATION**

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**ABSTRACT**—With developing all-optical communication networks, highly-functional and high-speed boundary routers and home gateways are becoming to be required. In this paper, high-speed pipelined algorithm for packet classification which is one of heavy load functions within boundary routers is proposed. Its software implementation scheme on a data-driven processor equipped with flexible capability of pipelined parallel processing is also discussed. Finally, it is shown at maximum performance exchanged for simulation and experimental hardware evaluation that the scheme achieves 12M IPv4 packets per second by only 6% additional hardware cost.

**Key Words:** packet classification, network processor, longest prefix matching, super-pipeline, self-timed, data-driven