

Access this document Full Text: [PDF](#) (1298 KB)**Download this citation**Choose Download » [Learn More](#)**[Rights and Permissions](#)**» [Learn More](#)**An extensible, programmable, commercial-grade platform for internet service architecture**T. [Lavian](#) D.B. [Hoang](#) F. [Travostino](#) P.Y. [Wang](#) S. [Subramanian](#) I. [Monga](#)

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Abstract

With their increasingly sophisticated applications, users promote the notion that there is more to a network (be it an intranet, or the Internet) than mere L1-3 connectivity. In what shapes a next generation service contract between users and the network, users want the network to offer services that are as ubiquitous and dependable as dial tones. Typical services include application-aware firewalls, directories, nomadic support, virtualization, load balancing, alternate site failover, etc. To fulfill this vision, a service architecture is needed. That is, an architecture wherein end-to-end services compose, on-demand, across network domains, technologies, and administration boundaries. Such an architecture requires programmable mechanisms and programmable network devices for service enabling, service negotiation, and service management. The bedrock foundation of the architecture, and also the key focus of the paper, is an open-source programmable service platform that is explicitly designed to best exploit commercial-grade network devices. The platform predicates a full separation of concerns, in that control-intensive operations are executed in software, whereas, data-intensive operations are delegated to hardware. This way, the platform is capable of performing wire-speed content filtering, and activating network services according to the state of data and control flows. The paper describes the platform and some distinguishing services realized on the platform.

Index Terms**Inspec****Controlled Indexing**[Internet](#) [distributed programming](#) [public domain software](#)**Non-controlled Indexing**

[Internet service architecture](#) [alternate site failover](#) [application-aware firewalls](#) [control-intensive operations](#) [data-intensive operations](#) [directories](#) [end-to-end services](#) [extensible programmable commercial-grade platform](#) [hardware](#) [load balancing](#) [network devices](#) [nomadic support](#) [open-source programmable service platform](#) [programmable network devices](#) [service enabling](#) [service management](#) [service negotiation](#) [software](#) [virtualization](#) [wire-speed content filtering](#)

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Medical Subject Heading (MeSH Terms)

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PACS Codes

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DOE Thesaurus Terms

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