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Dynamic classification in silicon-based forwarding engine environments

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This paper appears in: [Local and Metropolitan Area Networks, 1999. Selected Papers. 10th IEEE Workshop on](#)

Publication Date: 1999
On page(s): 103-109
Meeting Date: 11/21/1999 - 11/24/1999
Location: Sydney, NSW, Australia
ISBN: 0-7803-7172-0
References Cited: 17
INSPEC Accession Number: 7037036
Digital Object Identifier: 10.1109/LANMAN.1999.939963
Current Version Published: 2002-08-06

Abstract

Current network devices enable connectivity between end systems with support for routing with a defined set of protocol software bundled with the hardware. These devices do not support user customization or the introduction of new software applications. Programmable network devices allow for the dynamic downloading of customized programs into network devices allowing for the introduction of new protocols and network services. The Oplet Runtime Environment (ORE) is a programmable network architecture built on a Gigabit Ethernet L3 Routing Switch to support downloadable services. Complementing the ORE, we introduce the JFWD API, a uniform, platform-independent portal through which application programmers control the forwarding engines of heterogeneous network nodes (e.g., switches and routers). Using the JFWD API, an ORE service has been implemented to classify and dynamically adjust packet handling on silicon-based network devices

Index Terms

Inspec

Controlled Indexing

[application program interfaces](#) [computer networks](#) [network servers](#) [protocols](#)

Non-controlled Indexing

[JFWD API](#) [ORE service](#) [Oplet Runtime Environment](#) [packet handling](#) [portal](#) [programmable network architecture](#) [protocols](#)

Author Keywords

Not Available

Medical Subject Heading (MeSH Terms)

Not Available

PACS Codes

Not Available

DOE Thesaurus Terms

Not Available

References

No references available on IEEE Xplore.

Citing Documents

No citing documents available on IEEEExplore.

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