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## Active networking on a programmable networking platform

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### Abstract

Current active networks research projects are mainly realized in software-based host systems since commercial network devices lack required networking programmability. This paper studies the active networking approach using the Openet programmable networking platform. Openet comprises ORE (Oplet Runtime Environment) and hierarchical services from low-level systems to high-level applications, and provides a neutral service-based programmability to network devices. Moreover, Openet can have customer network services including active networks based services deployed on current commercial network platforms. We demonstrate the active networking with commercial network devices by deploying the active network service ANTS onto the Accelar routing switches. The performance of active network communication is examined by the experiment in an Accelar-routed active net and compared with regular non-active network communication. The experimental result reveals that Java network I/O is a bottleneck of enhancing capsule processing capability and ends up a look at what active network services are applicable to current commercial network platforms. Finally we present observations and future works about active networking through the Openet platform

### Index Terms

#### Inspec

#### Controlled Indexing

[computer network management](#) | [computer networks](#) | [network operating systems](#) | [performance evaluation](#)

#### Non-controlled Indexing

[ANTS](#) | [Accelar routing switches](#) | [Java network I/O](#) | [ORE](#) | [Openet programmable networking platform](#) | [Oplet Runtime Environment](#) | [active networking](#) | [capsule processing](#) | [ctive network communication](#) | [customer network services](#) | [hierarchical services](#) | [networking programmability](#) | [performance](#) | [programmable networking platform](#)

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### References

No references available on IEEE Xplore.

### Citing Documents

- 1 An extensible, programmable, commercial-grade platform for internet service architecture, T. Lavian; D.B. Hoang; F. Travostino; P.Y. Wang; S. Subramanian; I. Monga *Systems, Man, and Cybernetics, Part C: Applications and Reviews, IEEE Transactions on* On page(s): 58-68, Volume: 34, Issue: 1, Feb. 2004 [Abstract](#) | Full Text: [PDF](#) (1298)