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Speaker：Ralph Duncan -Principal Engineer

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Title: ：Using Packet Processing Object Modules Interchangeably as Stand-Alone Programs or “Multi-App” Components

Abstract:

The basic model for processing packets and routing them from one hardware system to another can be extended to describe virtual packet transmission from one module to another within a single program image.Representing virtual and physical ports interchangeably and embodying their routing relations in runtime data structures makes it possible to produce object modules that can be deployed in a variety of roles without recompilation. We describe a fielded system that combines (a) application virtual ports, (b) a software tool for specifying packet routing to virtual and physical ports, (c) an advanced linker that encapsulates routing actions in runtime tables within a single multi-application image, and (d) a table-driven dispatcher that effects control flow and packet routing. We present results that show performance advantages and demonstrate the usability and security benefits of reconfiguring and redeploying programs in object module form.

Speaker:

Ralph Duncan is a Principal Engineer for CloudShield Technologies, a Leidos company in Sunnyvale, California. He holds B.A. and M.A. degrees from the University of Michigan and University of California, Berkeley and has an M.S. in Information and Computer Science from the Georgia Institute of Technology. He worked for the Georgia Tech Research Institute, Control Data, Mentor Graphics and CloudShield Technologies. His publications have included papers and chapters on parallel architectures, fault tolerance, programming language design and network processing.