Back to the Future: Hardware-specialized Cloud Networking
Professor Giuseppe Bianchi

Abstract

Since its inception, Cloud Networking (and the relevant Network Function Virtualization trend) has been based on the assumption that network processing tasks originally performed by dedicated hardware appliances should be converted into software running on commodity hardware. However, emerging media-rich and network-intensive applications come along with, at the same time, throughput requirements which are challenging for software functions, as well as latency requirements which mandate for decentralization towards the edge. In this talk we posit that recent trends in fully programmable hardware platforms specialized for high-speed packet processing, and their relevant leap of orders of magnitude with respect to the same processing on commodity CPUs, appears not only a way to address the emerging applications' requirements, but also appear to be a compelling way to address horizontal caling limitations deemed to affect edge cloud deployments.

Short bio

Giuseppe Bianchi is Full Professor of Networking at the University of Roma Tor Vergata since 2007. His research activity includes wireless networks (his pioneering research work on WLAN modeling and assessment has received the ACM SigMobile 2017 Test-Of-Time award), programmable network systems, privacy and security, traffic modeling and control, and is documented in about 230 peer-reviewed international journal and conference papers, accounting for more than 16.000 citations (source: Google Scholar). He has coordinated six large scale EU projects, and has been (or still is) editor for several journals in his field, including IEEE/ACM Trans. on Networking, IEEE Trans. on Wireless Communications, IEEE Trans. on Network and Service Management, and Elsevier Computer Communications.