Call for Papers for
Symposium on Selected Areas in Communications
(Network Functions Virtualization & Software Defined Networking Track)
IEEE Globecom 2015

Scope and Motivation:

The Network Functions Virtualization (NFV) and Software Defined Networking (SDN) areas promise to reshape today's network infrastructure into a globally-distributed, heterogeneous computing platform. NFV and SDN propose a variety of software components that are aware, at some level of abstraction, of the network's capabilities. A key goal is to analyze and drive integration around major IT inflexion points such as next generation IP, compute and storage virtualization, cloud, mobility and the next generation applications. NFV, in particular, is a key emerging area for network operators, hardware and software vendors, cloud service providers, and in general network practitioners and researchers. This area requires exploring new directions and working collaboratively on how to create network services that utilize a virtualized infrastructure. Network functions that are traditionally implemented in dedicated hardware appliances will need to be decomposed and executed as software appliances in virtual machines running in data centers. This is expected to reduce capital and operating expenditures for future deployments for networks and associated services.

NFV and SDN technologies effectively re-envision the network infrastructure with a layered software perspective in contrast to the traditional siloed view of independent infrastructures organized by proprietary physical elements dedicated to a specific type of service. Operating multiple services on a common infrastructure through virtualization promises savings in capital costs, but implies potential operational changes. Another important goal is for the network operators to be able to offer value added cloud services to their customers. Finally, new business models will open for the provisioning of network services. The technologies enabling the virtualization of network functions are currently in an early stage and they need researchers to develop new architectures, systems, and software, and to explore tradeoffs and possibilities for leveraging virtualized infrastructure to provide support for network functions.

NFV and SDN are increasingly based on open source components in addition to proprietary developments. These approaches envisage a change in the lifecycles of network elements into independent lifecycles for hardware and software components. The key challenge to be addressed is to support multivendor networks with open interfaces to enable interaction between components from different vendors, operating in a virtualized and/or software-defined infrastructure.

Main Topics of Interest:

Topics of interest will include but are not limited to

• Novel network architecture to support SDN/NFV
• Network and service function chaining: architecture and implementation
• Autonomous service orchestration and optimization
• New operational aspects of network and service virtualization
• Infrastructure and service function description and programming
• Virtualized network economics and business modeling
• Security, trust and service verification
• Real-time big data analytics and data-centric management of virtualized infrastructure
• New application domains enabled by virtualized infrastructure and services
• Explore infrastructure and service abstractions enabled by virtualization
• Protocols and implementations that fully leverage the SDN/NFV concepts,
• New emerging open platforms such as OPNFV,
• Ongoing research in the OpenFlow, OpenDaylight and OpenStack communities
• Energy-efficient utilization of network resources
• Analysis of NFV use-cases such Virtual CDNs, Infrastructure-as-a-Service, and Disaster Mgmt
• Operations and service assurance in SDN/NFV-enabled environments
• Autonomic and real-time orchestration enabled by network function virtualization
• Analytics for learning and prediction of network resources
• Static/dynamic/policy-based resource mgmt. of NFV PoP and Cloud data centers
• System wide optimization of compute, storage, network and energy efficiency
• Security considerations for SDN/NFV
• Common Network Abstraction Models for SDN and NFV
• Dynamic Adaptation of VNF Forwarding Graphs
• Service Verification
• Virtual Network Function Performance Modeling
• Analytics for Visibility and Orchestration
• Virtual Network Function (VNF) Performance Modelling
• Distributed Network Optimization

How to Submit a Paper:

The IEEE Globecom 2015 conference website provides full instructions on how to submit papers. You will select the desired symposium when submitting. Please follow submission deadlines as specified at the conference website.

Symposium Co-Chairs:

Dilip Krishnaswamy, IBM Research, India

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Biography: Dr. Dilip Krishnaswamy is a Sr. Research Scientist at IBM Research. He received the PhD degree in Electrical Engineering in 1997 from the University of Illinois at Urbana-Champaign. From 1997 to 2006 he was at Intel Corporation in California where he was a Platform Architect. From 2006 to 2013, he was a Sr. Staff Researcher at the Office of the Chief Scientist at the Qualcomm Research Center in San Diego. Since then he has been working at IBM in Bangalore, India. He served as the Associate Editor-in-Chief of IEEE Wireless Communications from 2009-2014. His research interests include distributed data centers, network functions virtualization, edge services, wireless distributed computing, distributed analytics, distributed optimization, and nano-scale networks and systems. He currently chairs the Network Functions Virtualization Research Group in the Internet Research Task Force, and leads a project on distributed function virtualization at IBM Research.

TPC Members (Tentative)

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Raouf Boutaba (U Waterloo)
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