Special Issue on
"Cloud Networking"

IEEE Transactions on Cloud Computing

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Cloud computing is entering our lives and changing the way people consume information dramatically. Clouds transform IT infrastructures with an emphasis on making them flexible, affordable, and capable of serving millions of users, satisfying their computing or storage demands. The design of early cloud computing systems has evolved from, and was dominated by, the concepts of cluster and grid computing. Currently, as the concepts of the cloud become advanced and mature, cloud networking and communication processes begin playing a central role. Cloud Networking has emerged as a promising direction for cost-efficient and reliable service delivery across data communication networks. The dynamic location of service facilities and the virtualization of hardware and software elements are stressing the communication network and protocols, especially when datacenters are interconnected through the Internet.

The optimization of cloud networking can significantly increase system performance, reducing energy consumption and save costs not only inside individual data centers, but also globally, on the Internet scale. Developing novel network architectures would facilitate adoption of modular container-based data centers. Advancements in internetworking become key enabler for building hybrid clouds and federations of clouds. Service provisioning over heterogeneous connections and wireless links can enhance computational capacity and enrich application experience of mobile users. Efficient resource management and scheduling in data centers and cloud infrastructures is open research challenge that has to be addressed and novel architectures, telecommunication technologies, and protocols must be developed to ensure efficiency of future cloud computing systems.

Scope of Special Issue
• Data Center Network Management, Reliability, Optimization
• Distributed Data Center Architectures and Services, IaaS, PaaS, SaaS
• Energy-Efficient Data Centers and Networks
• Big Data Management
• Internet Routing of Cloud Data
• Virtual Ethernet Switching, Data Center Bridging
• Cloud Traffic Characterization and Measurements
• Intra-Cloud vs. Inter-Cloud Management
• Cloud Traffic Engineering and Control-Plane Architectures

- Green Data Centers and Cloud Networking
- Security, Privacy, and Confidentiality in Cloud Networking
- Virtualization of Network Equipment
- Unified User and Machine Mobility Management
- Data Flow Management and Load Balancing
- Mobile Cloud Networking
- Network Programmability, Software-Defined Networks
- Cloud Federation and Hybrid Cloud Infrastructure
- Storage Area Networks, Optical Interconnect, Fiber Channels
- Content and Service Distribution

Important Dates

Full Paper Regular Submission Due:	November 15, 2014 (extended)
Extended versions of CLOUDNET Best Papers due:	December 15, 2014
Notification of Results:	March 15, 2015
Revisions Due:	April 15, 2015
Notifications of Final Acceptance:	May 15, 2015
Submissions of Final Revised Papers:	June 15, 2015

Submission

This special issue invites original research papers that present novel ideas and encourages submission of "extended versions" of 2-3 Best Papers from the IEEE CLOUDNET 2014 conference. Every submitted paper will receive at least three reviews and will be selected based on the originality, technical contribution, and scope.

Submitted articles must not have been previously published or currently submitted for publication elsewhere. Papers should be submitted directly to the IEEE TCC at https://mc.manuscriptcentral.com/tcc-cs, and must follow TCC formatting guidelines.

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