

“CloudNet: Virtual Networking Wide-Area Cloud Resources”

INVITED TALK FEATURING



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Brickyard BYENG 210

Abstract:

Network virtualization allows to overcome the ossification of today’s Internet architecture, and enables new services. In this talk, I will present the CloudNet architecture developed at Telekom Innovation Laboratories, which allows to connect distributed cloud resources with virtual networking (e.g., based on Software-Defined Networks). This architecture supports multiple economical roles, from service and content providers via resource brokers down to the physical infrastructure providers, and respects these roles’ autonomy. It also comprises an optimized pipeline which includes service specification, automatic translation into formal algorithms and solutions, down to signaling and allocating the corresponding resource in the network.

After giving a brief overview of these new networking trends and the prototype architecture, I will focus on two new research questions arising in this context:

- How to efficiently (and online!) decide which requests to accept and embed (access control), and how to migrate CloudNets? I will describe online algorithms for this problem and sketch an analysis.
- Is this technology a security threat for ISPs? I will introduce a new formal model to study this question, and provide analytical results.

Bio:

Stefan Schmid is a Senior Research Scientist at TU Berlin and Telekom Innovation Laboratories. He received his PhD from ETH Zurich. He is interested in distributed systems, algorithms, network economics, and virtualization. More info at: <http://www.net.t-labs.tu-berlin.de/~stefan/>