

Program for the 3rd CleanSky ITN Conference

March 13th & 17th, Göttingen, Germany



March 13, 2017 (Bunsenstrasse 3-5, 37083 Göttingen)

Time	Session
09:00	<p>Session: Fellow Presentations #1</p> <p>Yordanos Tibebu Woldeyohannes (NTNU, ESR3): "ClusPR: A scalable delay sensitive NFV resource allocator"</p> <p>Abhinandan S Prasad (UGOE, ESR7): "Optimal Resource Configuration of Complex Services in the Cloud"</p> <p>Sachin Sharma (NEC Europe, ER3): "Microservice approach: challenges and opportunities for network function virtualization"</p>
10:30	Coffee Break
11:00	<p>Session: Keynote #1: Prof. Dr. David Hausheer (TU Darmstadt, Germany) <i>Efficient and Seamless NFV State Migration</i></p> <p><i>Abstract:</i> Instance migration and scale-in/out operations in network functions virtualization (NFV) require state transfer mechanisms, which are known to cause service degradation through increased jitter and packet loss. Techniques such as packet duplication for state synchronization mitigate this problem, however, they incur significant additional costs. In this talk, we present a novel approach providing an interface to the VNF to announce "statelets" for incoming packets, which comprise only the information in the packet which is required for a VNF's internal state change. Based on this interface, we designed and implemented SLiM, a statelet-based framework for seamless VNF migration. Evaluation results show that SLiM operates seamlessly at very high dataplane utilization of physical links, up to 3 times the utilization level at which existing approaches are failing due to insufficient bandwidth for state synchronization.</p>
12:30	Lunch Break
13:30	<p>Session: Keynote #2 13:30 - 14:30 Peter Schneider (Nokia Bell Labs): <i>Building Secure 5G Networks on Distributed Telco Clouds</i></p> <p>Session: GuestTalks #1 14:30 - 15:00 Leveraging SDN for Collaborative DDoS Mitigation <i>Sufian Hameed (NUCES), Hassan Ahmed Khan (NUCES)</i></p>
15:00	Coffee Break

15:30	<p>Session: Guest Talks #2</p> <p>Towards Resource-aware Flow Delegation for Software-defined Networks <i>Robert Bauer (Karlsruhe Institute of Technology), Addis Dittebrandt (Karlsruhe Institute of Technology)</i></p> <p>Benefits of Conditional FPGA Provisioning for Virtualized Network Functions <i>Leonhard Nobach (Technische Universität Darmstadt), Benedikt Rudolph (Technische Universität Darmstadt), David Hausheer (Technische Universität Darmstadt)</i></p> <p>Towards an SDN-based Bandwidth on Demand service for the European research community <i>Alaitz Mendiola (University of the Basque Country), Jasone Astorga (University of the Basque Country), Jordi Ortiz (University of Murcia), Jovana Vuleta-Radoičić (University of Belgrade – Computer Centre / AMRES), Artur Juszczak (Poznan Supercomputing and Networking Center), Kostas Stamos (Technological Educational Institute of Western Greece), Eduardo Jacob (University of the Basque Country), Marivi Higuero (University of the Basque Country)</i></p> <p>Beyond the Core: Enabling Software-defined Control at the Network Edge <i>Jens Heuschkel (TK / TU-Darmstadt), Michael Stein (TK / TU-Darmstadt), Lin Wang (TK / TU-Darmstadt), Max Mühlhäuser (TK / TU-Darmstadt)</i></p> <p>A Priori State Synchronization for Fast Failover of Stateful Firewall VNFs <i>Nicholas Gray (University of Würzburg), Alexander Müssig (University of Würzburg), Claas Lorenz (genua GmbH, Kirchheim), Steffen Gebert (University of Würzburg), Thomas Zinner (University of Würzburg), Phuoc Tran-Gia (University of Würzburg)</i></p>
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March 17, 2017 (Goldschmidtstraße 7, 37077 Göttingen)

Time	Session
09:00	<p>Session: Fellow Presentations #2</p> <p>Pengyuan Zhou (UH, ESR1): “Profiling edge network”</p> <p>Nitinder Mohan (UH, ESR8): “Filling Edge-Fog cloud cover: All power to robots!”</p> <p>Alessio Silvestro (NEC Europe, ESR2): “DNS extensions enhancing middlebox selection”</p>
10:30	Coffee Break

11:00	<p>Session: Keynote #3</p> <p>Prof. Dr. Holger Karl (University of Paderborn, Germany) <i>Distributed applications: A challenge for systems, networks, and application development</i></p> <p><i>Abstract:</i> Applications have developed from simple, monolithic pieces of code running on a single machine to a complex web of individual services, loosely coupled and interacting ("microservices"), running on a complex infrastructure interconnecting them. Such microservices comprise, conventionally, application-oriented services (like web servers, data bases, etc.); they are typically considered for running on a single data centre. This talk will look at the distributed execution of such application structures (distributed cloud computing) and the needs and benefits of incorporating network-level services (e.g., firewalls) as well. The hypothesis is that a union of distributed cloud computing, network function virtualization, and software defined networking is beneficial but results in new challenges for application development and deployment. The talk will look at some results from the EU projects SONATA and NetIDE and the German collaborative research center On-the-fly computing (SFB 901).</p>
12:30	Lunch Break
13:30	<p>Session: Fellow Presentations #3</p> <p>Besmir Tola (NTNU Trondheim, ESR9): "Failure Process Characteristics for cloud-enabled services"</p> <p>Sameer Kulkarni (UGOE, ESR5): "REARM: Towards Renewable Energy based Resilient Deployment of Virtual Network Functions"</p> <p>Konglin Zhu (THU, ER1): "Towards Virtual Private Cloud Embedding Through SDN in Multi-Tenants Cloud"</p>
15:00	Coffee Break
15:30	<p>Session: Fellow Presentations #4</p> <p>Syed Shah-e- Mardan Ali Rizvi (THU, ESR6): "DVMP: Incremental Traffic-aware VM Placement on Heterogeneous Servers in Data Centers"</p> <p>Faraz Fatemi Moghaddam (GWDG, ESR4): "A Structural Policy Management Engine based on Policy Mapping and Ring Analysis for Clouds"</p> <p>Song Yang (GWDG, ER2): "Latency-Sensitive Data Allocation for Cloud Storage"</p>

Venue Information

Note that the conference will be held in two different locations: On March 13, all presentations will be held in the Institute of Mathematics, Bunsenstr  e 3-5, 37083 G  ttingen. The event will be co-located with NetSys 2017 (<http://netsys17.uni-goettingen.de>). On March 17, the event will be held in the Institute of Computer Science, Goldschmidtstra  e 7, 37077 G  ttingen.