

2012 European Workshop on Software Defined Networking

(EWSDN 2012)

Darmstadt, Germany
25 – 26 October 2012



IEEE Catalog Number: CFP1283T-PRT
ISBN: 978-1-4673-4554-5

2012 European Workshop on Software Defined Networking

EWSDN 2012

Table of Contents

Message from the Organizers.....	viii
Technical Program Committee.....	ix

Session 1: Wireless, Cellular, and Multilayer

Software Defined Wireless Networks: Unbridling SDNs	1
<i>Salvatore Costanzo, Laura Galluccio, Giacomo Morabito, and Sergio Palazzo</i>	
Toward Software-Defined Cellular Networks	7
<i>Li Erran Li, Z. Morley Mao, and Jennifer Rexford</i>	
OpenFlow and Multi-layer Extensions: Overview and Next Steps	13
<i>Meral Shirazipour, Ying Zhang, Neda Beheshti, Geoffrey Lefebvre, and Mallik Tatipamula</i>	

Session 2: Virtualization and Layer 2 Issues

OpenFlow Virtualization Framework with Advanced Capabilities	18
<i>Balázs Sonkoly, András Gulyás, Felicián Németh, János Czentye, Krisztián Kurucz, Barnabás Novák, and Gábor Vaszkun</i>	
VeRTIGO: Network Virtualization and Beyond	24
<i>Roberto Doriguzzi Corin, Matteo Gerola, Roberto Riggio, Francesco De Pellegrini, and Elio Salvadori</i>	
Implementing Layer 2 Network Virtualization Using OpenFlow: Challenges and Solutions	30
<i>Jon Matias, Borja Tornero, Alaitz Mendiola, Eduardo Jacob, and Nerea Toledo</i>	
Energy Efficient Minimum Spanning Tree in OpenFlow Networks	36
<i>Luca Prete, Fabio Farina, Mauro Campanella, and Andrea Biancini</i>	

Session 3: Peformance, Testing, and Development

Packet-In Message Control for Reducing CPU Load and Control Traffic in OpenFlow Switches	42
<i>Daisuke Kotani and Yasuo Okabe</i>	
A Flexible OpenFlow-Controller Benchmark	48
<i>Michael Jarschel, Frank Lehrieder, Zsolt Magyari, and Rastin Pries</i>	
OFTEN Testing OpenFlow Networks	54
<i>Maciej Kuźniar, Marco Canini, and Dejan Kostić</i>	
A Practical Experience in Designing an OpenFlow Controller	61
<i>Roberto Bifulco, Roberto Canonico, Marcus Brunner, Peer Hasselmeyer, and Faisal Mir</i>	

Session 4: Open

Techno-economic Analysis of Software Defined Networking as Architecture for the Virtualization of a Mobile Network	67
<i>Bram Naudts, Mario Kind, Fritz-Joachim Westphal, Sofie Verbrugge, Didier Colle, and Mario Pickavet</i>	
Enabling Future Internet Architecture Research and Experimentation by Using Software Defined Networking	73
<i>Flávio de Oliveira Silva, João Henrique de Souza Pereira, Pedro Frozi Rosa, and Sergio Takeo Kofuji</i>	
Macroflows and Microflows: Enabling Rapid Network Innovation through a Split SDN Data Plane	79
<i>Rajesh Narayanan, Saikrishna Kotha, Geng Lin, Aimal Khan, Sajjad Rizvi, Wajeeha Javed, Hassan Khan, and Syed Ali Khayam</i>	
A Use-Case Based Analysis of Network Management Functions in the ONF SDN Model	85
<i>Alisa Devlic, Wolfgang John, and Pontus Sköldström</i>	

Special Session from the Second OFELIA Open Call

Software-Defined Networking: Experimenting with the Control to Forwarding Plane Interface	91
<i>Evangelos Haleplidis, Spyros Denazis, Odysseas Koufopavlou, Jamal Hadi Salim, and Joel Halpern</i>	
PaFloMon—A Slice Aware Passive Flow Monitoring Framework for OpenFlow Enabled Experimental Facilities	97
<i>C. Argyropoulos, D. Kalogerias, G. Androulidakis, and V. Maglaris</i>	

Pursuing a Software Defined Information-centric Network	103
<i>Dimitris Syrivelis, George Parisis, Dirk Trossen, Paris Flegkas, Vasilis Sourlas, Thanasis Korakis, and Leandros Tassiulas</i>	
On QoS Support to Ofelia and OpenFlow	109
<i>Balázs Sonkoly, András Gulyás, Felicián Németh, János Czentye, Krisztián Kurucz, Barnabás Novák, and Gábor Vaszkun</i>	
Customizing Data-Plane Processing in Edge Routers	114
<i>Fulvio Risso and Ivano Cerrato</i>	
Author Index	121