

D41 - 2nd Inter-Domain Performance and Simulation Workshop (IPS 2004)

Abstract

This document is the report on the 2nd International Workshop on Inter-Domain Performance and Simulation (IPS 2004, MOME D41) held in Budapest, Hungary, on 22-23 March, 2004.

Keywords

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1 Overview

The 2nd International Workshop on Inter-Domain Performance and Simulation (IPS 2004) was held in Budapest, Hungary on 22-23 March, 2004.

The IPS 2004 was held together with the IST-INTERMON project to disseminate information about MOME and associated activities. The motivation for IPS 2004 was to serve as an integration forum for researchers, industrial partners, ISP operators and end-users from academia, standardisation, industry and research labs, working on inter-domain monitoring, modelling and simulation concepts and toolkits.

Detailed information on IPS 2004 is available at the workshop web-site:

<http://www.tmit.bme.hu/ips2004>

2 IPS 2004 Organisation

General Chair

Gyula Sallai, *BUTE, Hungary*

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Georg Carle, *University of Tübingen and Fraunhofer FOKUS, Germany*

klaffy, *CAIDA, Univ. of California, San Diego, USA*

Giorgio Corazza, *University of Bologna, Italy*

Willie Donnelly, *Waterford Institute of Technology, Ireland*

Bezalel Gavish, *Southern Methodist University, Dallas, USA*

Timothy G. Griffin, *Intel Research Cambridge, UK*

Pedro Andrés Aranda Gutiérrez, *Telefónica I+D, Spain*

Ulrich Hofmann, *Salzburg Research, Austria*

Geoff Huston, *Telstra, Australia*

Yevgeni Koucheryavy, *Tampere University of Technology, Finland*

György Lajtha, *MATÁV, Hungary*

Helmut Leopold, *Telekom Austria*

Sándor Molnár, *BUTE, Hungary*

Ali Nassri, *Siemens AG, Austria*

Jürgen Quittek, *NEC Europe, Germany*

Simon Pietro Romano, *University of Napoli Federico II, Italy*

Stefano Salsano, *University of Rome "Tor Vergata", Italy*

Giorgio Ventre, *University of Napoli Federico II, Italy*

Rolland Vida, *BUTE, Hungary*

Local Organising Committee

Györgyi Bock, *BUTE, Hungary*

Ivett Kulik, *BUTE, Hungary*

3 Workshop presentations

Monday, 22nd March

- 9:00 - 9:10 **Opening words:** *Gy. Sallai* (BUTE)
- 9:10 - 9:40 **Invited:** "EU R&D Programs and its impact on traffic issues", *Paulo De Sousa* (EU)
- 9:40 - 10:10 **Invited:** "Network composition and connectivity", *Cornel Pampu* (Siemens AG)
Session chair: Edit Halász (BUTE)
- 10:30 - 11:30 **Tutorial 1:** "A BGP-4 crash course", *Pedro A. Aranda Gutiérrez* (Telefónica I+D)
- 11:45 - 12:45 **Tutorial 2:** "An introduction to the theory and practice of inter-domain routing",
Timothy G. Griffin (Intel Research Cambridge)
Session chair: Cornel Pampu (Siemens AG)
- 14:00 - 14:20 **Invited:** "BGP-4 Protocol Patterns and Their Impact on QoS Behavior",
Pedro A. Aranda Gutiérrez (Telefónica I+D)
- 14:20 - 15:40 **Inter-domain routing and networking**
Session chair: Ali Nassri (Siemens AG, Austria)
"Acquisition, modeling and visualization of inter-domain routing data", *P. A. Aranda Gutiérrez, P. Malone, M. ÓFoghlú, S. Michaelis, J. Seger*
"Dynamic analysis of the autonomous system graph", *M. Gaertler, M. Patrignani*
"A topology discovery module based on a hybrid methodology", *S. Avallone, S. D'Antonio, M. Esposito, A. Pescape, S.P. Romano*
"Algorithms for the Inference of the commercial relationships between autonomous systems: Results analysis and model validation", *M. Rimondini, M. Pizzonia, G. Di Battista, M. Patrignani*
- 15:55 - 16:55 **Inter-domain QoS and traffic engineering (Part 1)**
Session chair: Timothy G. Griffin (Intel Research Cambridge)
"Optimized multi homing - an approach for inter-domain traffic engineering", *R. Szabó, A. Takács, A. Császár*
"On inter-domain admission control supported by measurements for multi-domain IP QoS network", *M. Dabrowski, A. Beben, W. Burakowski*
"Inter-domain communication and data exchange", *E. Boschi, S. D'Antonio, G. Ventre*
- 17:00 - 18:00 **Inter-domain QoS and traffic engineering (Part 2)**
Session chair: Vida Rolland (BUTE)
"Network monitoring as a key to the success of traffic engineering techniques", *S. D'Antonio, M. Esposito, S.P. Romano, G. Ventre*
"Implementation of a simple Bandwidth Broker for DiffServ networks", *C. P. W. Kulatunga, J. Kielthy, P. Malone, M. ÓFoghlú*
"A novel scheme for end-to-end protection in a multi-area network", *F. Ricciato, U. Monaco, A. D'Achille*

Tuesday, 23rd March

- 9:00 - 9:45 **Keynote:** "Top problems of the Internet and what sysadmins and researchers can do to help", *k claffy* (CAIDA)
- 9:45 - 10:05 **Invited:** "Towards advanced technologies for Measurement based Resource and QoS Planning in Large Scale Internet", *Dirk Hetzer* (T-Systems)
Session chair: Pedro A. Aranda Gutiérrez (Telefónica I+D, Spain)
- 10:20 - 11:40 **Inter-domain measurement and monitoring**
Session chair: k claffy (CAIDA, USA)
"Intermon architecture for complex QoS analysis in inter-domain environment based on discovery of topology and traffic impact", *I. Miloucheva, P.A. Aranda Gutiérrez, D. Hetzer, A. Nassri, M. Beoni*
"Path-coupled configuration of passive measurements", *F. Raspall, J. Quittek, M. Brunner, M. Martin*
"Implementation of general-purpose network measurement system", *F. Raspall, A. Kock*
"SCAMPI - A scalable monitoring platform for the Internet", *J. Coppens, E. Markatos, J. Novotny, M. Polychronakis, V. Smotlacha, S. Ubik*
- 11:50 - 12:50 **Inter-domain simulation** *Session chair: Dirk Hetzer (T-Systems, Germany)*
"The INTERMON simulation framework", *M. Bartoli, F. Baumgartner, C. Brandauer, T. Braun, S. Kardos, F. Orlandi, M. Scheidegger, J. Seger*
"Simulating router- and domain characteristics", *F. Baumgartner, T. Braun, M. Scheidegger*
"Efficient inter-domain quality of service simulation based on time series information", *S. Kardos, I. Ráncsik, A. Vidács*
- 14:00 - 14:30 **Invited:** "Active monitoring toolkit for long-term QoS analysis in large scale Internet", *Ulrich Hofmann* (Salzburg Research)
- 14:30 - 15:50 **Performance measurement and monitoring**
Session chair: Ilka Miloucheva (Salzburg Research, Austria)
"Performance measurement of routers using conformance testing methods", *M. J. Csorba, S. Palugyai, J. Miskolczi, S. Dibuz*
"Automated negotiation for on-demand inter-domain performance monitoring", *L. Yamamoto*
"Performance implications of IPSec deployment", *J. Ronan, S. Davy, P. Malone, M. ÓFoghlú*
"Dynamic monitoring architecture for spatio temporal QoS and traffic mapping in inter-domain environment", *M. Beoni, R. Antonini, P. A. Aranda Gutiérrez, I. Miloucheva*
- 16:10 - 17:30 **QoS pattern analysis and modeling**
Session chair: Ulrich Hofmann (Salzburg Research, Austria)
"Automated analysis of network QoS parameters for Voice over IP applications", *I. Miloucheva, A. Nassri, A. Anzaloni*
"Improving quality of service parameter prediction with preliminary outlier detection and elimination", *L. Kovács, D. Vass, A. Vidács*
"Cause and effect of anomalous events on QoS parameters", *M. de Freitas Minicz, A. Anzaloni*
"Mobility pattern detection for Quality of Service enhancements", *S. Michaelis*

4 List of participants

There were a total of 50 registered attendees representing 15 countries at the workshop.

ANTONINI Roberto	Telecom Italia S.p.A.	Italy
ARANDA GUTIÉRREZ Pedro A.	Telefónica, Spain	Spain
BAUMGARTNER Florian	IAM University of Bern	Switzerland
BÍRÓ József	BUTE	Hungary
BOSCHI Elisa	Fraunhofer Institute FOKUS	Germany
BULANZA Antal	University of Brussels	Belgium
CHANG SUK KIM	Southern Connecticut State University	USA
CLAFFY Kimberley	CAIDA, University of California	USA
DABROWSKY Marek	Warsaw University of Technology	Poland
D'ANTONIO Salvatore	CINI	Italy
DAVY Steven	Waterford Institute of Technology (WIT)	Ireland
De SOUSA Paulo	European Commission	Belgium
GAERTLER V. Marco	University Karlsruhe	Germany
GRIFFIN Timothy G.	Intel Research Cambridge	UK
HALÁSZ Edit	BUTE	Hungary
HENK Tamás	BUTE	Hungary
HERFURT Martin	Salzburg Research	Austria
HETZER Dirk	T-Systems	Germany
HOFMANN Ulrich	Salzburg Research	Austria
KARDOS Sándor	BUTE	Hungary
KASKINA Baiba	TERENA	The Netherlands
KIELTHY Jesse	Waterford Institute of Technology (WIT)	Ireland
KULATUNGA Chamil	Waterford Institute of Technology (WIT)	Ireland
LAJTHA György	HTE/MATAV	Hungary
LICHTWALD Götz	University of Karlsruhe	Germany
MALONE Paul	Waterford Institute of Technology (WIT)	Ireland
MICHAELIS Stefan	University of Dortmund	Germany
MILOUCHEVA Ilka	Salzburg Research	Austria
MOLNÁR Sándor	BUTE	Hungary
MONACO Ugo	University of Rome "La Sapienza"	Italy
NASSRI Ali	Siemens Austria, PSE	Austria
PAMPU Cornel	Siemens AG	Germany
PATRIGNANI Maurizio	Università Degli Studi Roma Tre	Italy
RÁNCSIK István	BUTE	Hungary
RASPALL Frederic	NEC Europe Ltd.	Germany
RIMONDINI Massimo	Università Degli Studi Roma Tre	Italy
ROMANO Simon Pietro	CINI	Italy
SALLAI Gyula	BUTE	Hungary
SCHMOLL Carsten	Fraunhofer Institute FOKUS	Germany
SEGER Jörn	University of Dortmund	Germany
SLIWINSKY Jaroslaw	Warsaw University of Technology	Poland
STROHMEIER Felix	Salzburg Research	Austria
SZABÓ Róbert	BUTE	Hungary
TAKÁCS Attila	Ericsson Research	Hungary
TAKADA Hellinton	ITA - Brasil	Brazil
UBIK Sven	CESNET	Czech Republic
VIDA Rolland	BUTE	Hungary
VIDÁCS Attila	BUTE	Hungary
YAMAMOTO A.R. Lidia	Hitachi Europe	France
ZANDER Sebastian	Fraunhofer Institute FOKUS	Germany