

IM 2007 Moving from Bits to Business Value

21-25 May 2007
Munich, Germany



10th IFIP/IEEE Symposium on Integrated Management

Conference Program

der Bundeswehr
Universität München

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About IM 2007

The Tenth IFIP/IEEE International Symposium on Integrated Network Management (IM 2007) is held 21–25 May 2007 in Munich, Germany.

IM 2007 presents the latest technical advances in the area of management, operations and control of networks, networking services, networked applications, and distributed systems. Held in odd-numbered years since 1989 and taking turns with its sibling conference NOMS, IM 2007 builds on the successes of its predecessors and serve as the primary forum for exchange among the research, standards, vendor and user communities in the field of integrated management. The symposium is sponsored by the International Federation for Information Processing (IFIP) Working Group 6.6 on Management of Networks and Distributed Systems, and by the IEEE Communications Society Technical Committee on Network Operations and Management.

IM 2007 is organized into technical and application sessions, panels, and tutorials. In addition, it features an industrial experience track to share practical lessons learned by user and vendor communities, birds-of-a-feather sessions, and vendor exhibits. In the tradition of previous events, we strive to make the IM 2007 Symposium the highest quality professional event of the year. Paper submissions underwent a stringent review process implemented by the Technical Program Committee, which includes many of the most respected experts in the field. We received papers that break new grounds or present insightful results based on experience with integrated management of networks, systems, applications and services.

Six workshops on specialized topics are held on the days before and after the IM technical program.

Addresses of Welcome

I cordially welcome all of you to this symposium!

I am happy to see experts from all over the world gathering in Munich to consult with each other on their research findings and developments. I regard this as a compliment to Munich as a location of scientific endeavor: The Free State of Bavaria takes pride in having two of Germany's most respected universities located in its state capital – Ludwig-Maximilians-Universität München and Technische Universität München.

About ninety thousand young women and men at these two institutions of higher education devote themselves to their specialized subjects across the entire spectrum of science: Students from Munich are at the top of their scientific disciplines with respect to both domestic and international ratings. This provides eloquent confirmation of our policy in the area of education, science and research.

In this matter we place emphasis on cooperation between science and business. For that section of the sciences which is directly relevant for business, it is important to establish contact between theory and practice; by the same token, commercial enterprises for very good reasons set value on employees with first-rate and practice-oriented education. This should not be taken to mean that "less-economic" sciences will be marginalized on Bavarian university campuses, since our strength lies in diversity also at the institutions of higher education.

In this spirit I wish the symposium lots of luck and success.

— Dr. Edmund Stoiber, Bavarian Minister-President



The Universität der Bundeswehr München welcomes our guests from all over the world who will take part in the 10th International IFIP/IEEE Symposium on Integrated Network Management.

Though our university has three big faculties in social and economic sciences, we see ourselves as a technical university. The main research effort at our university takes place in four faculties comprising computer science and engineering disciplines resulting in considerable third party funding.

Financed by the Ministry of Defense and academically supervised by the Bavarian Ministry of Science, this university educates German officers up to their diploma, master or doctorate degrees. After 12 years of service, these men and women are able to integrate themselves easily into the civil labor market. Their high success rate is due to the combination of leadership ability and their profound academic education.

In research and teaching, we therefore highly encourage any combination of engineering and computer science with methods of modern management. One result of our efforts is the university-wide research program in Security and Safety. That you have chosen the Universität der Bundeswehr München as a venue for this conference makes us proud. It is only the second time that this conference will take place outside the USA.

I wish all participants lively and successful discussions!

— Prof. Dr. Merith Niehuss, President of the
Universität der Bundeswehr München



Committees involved in the organization of IM 2007

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 - Gabi Dreo Rodosek, Universität der Bundeswehr München, Germany
 - Edgar Aschenbrenner, Hewlett-Packard, Germany
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 - Heinz-Gerd Hegering, Leibniz Supercomputing Center, Germany
 - Alexander Keller, IBM T.J. Watson Research Center, USA
- Tutorial Program Chair
 - Burkhard Stiller, University of Zürich, Switzerland
- Keynotes/DEP Co-Chairs
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 - Aiko Pras, University of Twente, Netherlands
- Panel Chair
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- Finance Co-Chairs
 - Joan Serrat, Technical University of Catalonia, Spain
 - Prosper Chemoul, France Telecom, France
- Application Session Co-Chairs
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 - Bernhard Neumair, GWDG, Germany
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 - Iris Hochstatter, Universität der Bundeswehr München, Germany
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Message from the General Co-Chairs

The 10th IFIP/IEEE International Symposium on Integrated Network Management (IM 2007) is being held in Munich, Germany. It is the second time that IM takes place outside the United States, following IM 2005 which took place in France. IM 2007 covers the latest technical advances in the area of management, operations and control of networks, networking services, networked applications, and distributed systems. Held in odd-numbered years since 1989 and taking turns with its sibling conference NOMS, IM 2007 builds on the successes of its predecessors and serves as the primary forum for exchange among the research, standards, vendor and user communities in the field of integrated management. The symposium is sponsored by the International Federation for Information Processing (IFIP) Working Group 6.6 on Management of Networks and Distributed Systems, and by the IEEE Communications Society Technical Committee on Network Operations and Management (CNOM).



Integrated management of networked systems is facing new challenges, stemming from a combination of rapidly evolving technologies and an increased scrutiny from corporate customers. At the same time, as IT and network services become more and more ubiquitous, their reliability and performance become more critical for all kinds of enterprises. The resulting demands for improving and verifying service quality must be met in an environment of increasingly distributed and decentralized service provisioning, accelerated service lifecycles, and unprecedented security challenges. Today's IT management issues involve many diverse problems in controlling heterogeneous IT infrastructures, often across organizational boundaries. However, new and difficult challenges are emerging while aligning technical and organizational IT management to business requirements, thus calling for integrating management tools and measures *"from bits to business value"*.

IM 2007 offers a world class program including 51 technical papers that are distributed over 14 technical sessions, 15 application session papers in 5 application sessions as well as two poster sessions in which 43 posters are presented. The tracks are complemented with 5 panels, addressing challenging open questions and visions of integrated management and 8 tutorials presenting the latest advances. Keynotes from the Bavarian state minister Erwin Huber, René Wies (BMW Group), Wolfgang Gentzsch (D-Grid), Vasilis Maglaris (GÉANT2), Ulrich Pfeiffer (HP) and Keith Goodman (IBM) complement the exciting program. Furthermore, IM 2007 features a distinguished experts panel on *"Grid Computing: Moving from Bits to Business Value"*, bringing together leading scientists to discuss the challenges of Grid Computing. Besides, IM 2007 is accompanied by a record number of six topically related workshops – ACNM 2007, BcN 2007, BDIM 2007, E2EMON 2007, FeBID 2007, and MUCS 2007.

IM 2007 is the result of the enthusiastic work of a number of volunteers who did spend a lot of their time and effort to make this symposium happen. We would like to express our deepest gratitude to the whole Organizing Committee of IM 2007 who was the driving force behind IM 2007 and who did such a remarkable job. The Technical Program Committee under the adept leadership of Ehab Al-Shaer, Heinz-Gerd Hegering and Alexander Keller has once more underlined the quality and high prestige of the symposium by selecting the highest quality papers that are addressing the hottest topics of integrated management. Special thanks go to the Munich Network Management Team for its tireless support of the local organization and the Universität der Bundeswehr München for providing the infrastructure and the local arrangements. Last, but far from least, we would like to express our gratitude to the patrons who generously contributed to the symposium: HP, Compaq, IBM, Fujitsu-Siemens, T-Systems, bitempo, BMC, COMCO, EMANICS and Materna.

Munich, February 2007

Gabi Dreö Rodosek, Edgar Aschenbrenner

Message from the Technical Co-Chairs

Welcome to IM 2007! The 10th Symposium on Integrated Network Management (IM 2007) will provide participants with the opportunity to hear about the latest technological advances and serve as the catalyst for fruitful exchanges of ideas. We hope IM 2007 will help spark new thoughts and ideas among participants which they will be able to apply to their own projects back home, providing value long after the symposium has ended. The Technical Program Committee has put together a strong technical program that is presented in two technical tracks. It consists of 51 papers that are distributed over 14 technical sessions.



We received a total of 187 submissions from 37 countries. As a result, IM 2007 has remained selective in terms of acceptance rate. To arrive at the technical program, each submission was reviewed by 3 to 4 international experts, for a total of 536 reviews. Each paper and its reviews were discussed at last October's Technical Program Committee meeting in Dublin, Ireland, where the final paper selection took place. During this meeting, the TPC had to make many difficult decisions to keep this process rigorous and impartial at the same time. The authors of accepted papers were then mentored by TPC co-chairs and session chairs to address the comments raised by the reviewers and during the TPC meeting in order to produce high quality camera-ready copies.

The technical program is rounded up by two poster sessions in which 47 posters are presented, whose selection was finalized by the Poster Chairs. In addition to the two technical tracks, IM offers a third track that includes five panel discussions as well as five application sessions that include 17 presentations on experiences and practical lessons learned that were selected by the Application Session Committee. As usual, the tracks are complemented with various keynotes by distinguished speakers and a rich set of eight tutorials. In addition, IM 2007 is accompanied by a record number of six topically related workshops ACNM 2007, BcN 2007, BDIM 2007, E2EMON 2007, FeBID 2007, and MUCS 2007. With all these exciting activities, we hope that you will find IM 2007 an enriching and rewarding experience!

Ehab Al-Shaer, Heinz-Gerd Hegering, Alexander Keller

Keynote Speakers

We proudly announce six keynote speeches at IM 2007. The keynotes will be performed Tuesday at 9:00h and Wednesday and Thursday at 8:45h.

- Tuesday, 22 May 2007
 - Keynote 1: Erwin Huber (Bavarian State Minister)
 - Keynote 2: Ulrich Pfeiffer (HP)
- Wednesday, 23 May 2007
 - Keynote 3: Prof. Dr. Wolfgang Gentzsch (D-Grid)
 - Keynote 4: Prof. Vasilis Maglaris, Ph.D. (GÉANT2)
- Thursday, 24 May 2007
 - Keynote 5: Keith C. Goodman (IBM)
 - Keynote 6: Dr. René Wies (BMW)

State Minister Erwin Huber Bavarian Minister of Economic Affairs, Infrastructure, Transport and Technology

Erwin Huber was appointed State Minister and Head of the Bavarian State Chancellery in 1994. He held the office of Bavarian State Minister of Finance from November 1995 to October 1998. From 1998 until 2003 he was State Minister and Head of the Bavarian State Chancellery. In 2003 he became Head of the Bavarian State Chancellery and State Minister for Federal Affairs and Administrative Reform. He has been Bavarian State Minister of Economic Affairs, Infrastructure, Transport and Technology since November 2005.



Keynote: Bavaria – Region of first choice for business and science

Bavaria is proud to host IM 2007, the international IEEE/IFIP conference for IT management. This top-class conference with excellent reputation worldwide now takes place outside of the United States only for the second time. The Free State of Bavaria as a leading region for business and science is honoured to offer a prime setting for all conference attendees to have fruitful discussions. As a leading place in information technology, Bavaria is not only the home of renowned companies but also of distinguished universities and research centers. Bavaria provides this innovative sector an ideal environment.

Ulrich Pfeiffer Regional CTO, Software Global Business Unit, HP

Ulrich Pfeiffer joined HP in 1988 starting as an Application Engineer at the Consulting and Integration organization in Germany. 1994 he became part of the Software Global Business Unit as product manager for HP OpenView Operations. He then actively developed the HP Software pre sales community in Europe, Middle East and Africa (EMEA) and took over the responsibility to manage the HP OpenView Competence Center providing pre-sales services. As a Regional CTO for HP Software Ulrich today works with HP corporate accounts to help develop their Adaptive Enterprise Management strategy and influences the HP Software engineering plans and roadmaps.



Keynote: From Network to Service Management - How to Optimize Your Business Outcome

Picking up the theme of this year's conference Ulrich will take you on an evolutionary journey how IT can move from managing the bits to delivering real business value.

The key challenges and technologies used along the way will be described and are accompanied by customer examples and a live demonstration. Starting from network management over to service driven operations, IT service management including CMDB techniques up to business service management. Of course the relevance of ITIL v2 is included, as well as the soon to be published version 3.

Towards the end Ulrich will briefly outline how HP's Business Technology Optimization (BTO) solutions can be used to cope with the challenges introduced earlier. BTO management software and services help you understand the impact of technology on your business outcomes and help to make your most important strategic initiatives succeed.

Prof. Dr. Wolfgang Gentsch
Coordinator of the German D-Grid Initiative



Dr. Wolfgang Gentsch is head of the German D-Grid Initiative. Before, he was managing director at MCNC Grid Computing and Networking Services and lead the North Carolina Grid initiative, and he was Sun's senior director of grid computing. He is member of the standards Open Grid Forum Steering Committee, responsible for coordinating the major grid projects around the world. He is Co-Chair of the CEC e-Infrastructure Reflection Group (e-IRG) which targets at building one e-Science infrastructure for all Europe. He is adjunct professor of computer science at Duke University in Durham and at the University Charlotte, and visiting scientist at the Renaissance Computing Institute of the University of Chapel Hill. He also serves on US President's Council of Advisors on Science and Technology (PCAST).

Keynote: Grid Computing: Extreme Makeover - from Early Steps to Community Adoption

Rebuilding our distributed computing and data infrastructures - Grid edition

Over the past decade, due to the promising potential of the client-server paradigm, our IT infrastructures have grown along with our changing research and business needs, with often ad-hoc add-ons and fixes, as globalization proceeded to flatten the world. Today, many businesses and research communities face the need to restructure and align their existing IT infrastructures to achieve the flexibility and efficiency needed to compete in a rapidly changing world.

During the same time, the grid computing paradigm has evolved, providing 'piping' technology and tools to virtualize the whole IT stack, from the network and hardware resources up to the application and services layer. Still, our experts in multiple locations work on different building blocks, like the Open Grid Services Architecture (OGSA), the Service Oriented Architecture (SOA), or the Web Oriented Architecture (WOA), within local or global settings. Just because we are using different names must not mean that they are so different. Therefore, one aim of our presentation should be to analyze the differences and commonalities of these architectures, and demonstrate their strengths with the aid of practical use cases. This presentation has a slight grid-bias, in concert with the perspective and experience of the speaker.

Prof. Vasilis Maglaris, Ph.D.

Chairman of the GÉANT2 National Research and Education Networks Policy Committee, NTUA Athens



Vasilis Maglaris is a Professor of Electrical & Computer Engineering at the National Technical University of Athens (NTUA) since 1989. He holds an Engineering Degree from NTUA (Athens, Greece, 1974) and a Ph.D. degree from Columbia University (New York, USA, 1979). Before joining the faculty at NTUA, he held industrial and academic positions in the USA for ten years, all in advanced electronic communications. Apart from teaching and performing research on Computer Networks, he was responsible for developing the NTUA Campus LAN and for the establishment of GRNET (the Greek National Research & Education Network - NREN). He served as GRNET's Chairman from its inception (1995) until June 2004. From 1994 to 1996, he was the Executive Director of the National Hellenic Research Foundation (NHRF). He also served on the board of the Greek National Regulatory Authority on Telecommunications and Posts for two five-year terms (1995-2005). Since October 2004, he serves as the Chairman of the National Research & Education Networks Policy Committee (NREN PC). The NREN PC harmonizes policies amongst the 31 NRENs in the extended European Research Area; it is also responsible for the Pan-European advanced network platform GEANT. He is currently directing the Network Management & Optimal Design (NETMODE) Laboratory within the School of Electrical & Computer Engineering at NTUA. He authored more than 100 research papers and regularly delivers lectures on Internet advances.

Keynote: Multi-Domain Management: Results Achieved and Future Challenges Using the Example of GÉANT

Multi-domain management has been an open issue throughout the evolution of electronic communication networks, not necessarily due to technical but also to political, organisational or business aspects. Judged from the user perspective interoperability is required at the data plane, the control plane and also at the provisioning plane. It is interesting to note that there have been only two success stories in multi-domain control plane interoperability: SS7 for telephony and BGP for the Internet. The latter is by large responsible for the booming of the global Internet as it resolves routing across multiple Autonomous Systems.

The complexity behind multi-domain service provisioning becomes more evident in cases where different technologies need to interwork at the data plane, different protocols appear at the control plane and different resource allocation policies and AAI mechanisms are used at the business layer. It is a delicate issue for a domain administrator to allow provisioning by a third party, be it an end-user or another domain's administrator. The GÉANT community of 31 European National Research & Education Networks (NREN's) is investigating the issues emerging from multi-domain monitoring

and bandwidth-on-demand services in a diverse environment. A key element to support the development and operation of multi-domain services and applications is the definition and development of a common Network Information Service that incorporates some multi-domain abstractions on top of domain specific objects.

End-to-end monitoring is a prerequisite to multi-domain operations and especially the willingness of network administrators across an end-to-end path to share domain state information. The GÉANT Consortium has established a community of trust allowing for the development and deployment of active and passive measurement tools in all participating domains. The participation in this effort of our US colleagues from Internet2 and ESNet was instrumental for extending our global outreach.

In the past, bandwidth-on-demand VPN services were performed for IP or MPLS based domains. Recently, we gained considerable experience from the establishment of Optical Private Networks, implemented by combining DWDM services offered by NREN's and GÉANT2 to power end-users (e.g. large super computing and/or Grid facilities). The Consortium is currently reaching the latest phase in developing pilot monitoring and automated provisioning tools, which will enable end-to-end management across heterogeneous data and control plane domains in hybrid (i.e. Packet-IP and Circuit Switched) optical networks.

Apart from providing tools to network operators and demanding end-users in a multi-domain hybrid environment, our prototyping activities aim at further investigating a number of technical issues. These include interoperability of domain management systems (policies, architecture, protocols - web services, topology inference, information schemata) and algorithms for multi-domain reservations based on incomplete mutual information (path discovery, near real-time and quasi-static scheduling, QoS and SLA issues).

Keith C. Goodman
IBM Distinguished Engineer and CTO for IT Strategy and Architecture Services

Keith C. Goodman is an IBM Distinguished Engineer and CTO for IT Strategy and Architecture Services in IBM Global Technology Services (GTS). He is responsible for the technical strategy and content in IT consulting and design service products, including IT service management. He is a member of several architecture boards and is active in a number of Communities of Practice. He is also an experienced IT management consultant with over 30 years experience helping clients plan, design, and build IT management solutions.



Keynote: From Systems Management to Service Management: Enhancing the Business Value of IT Services

Best practices in IT service delivery have evolved from a focus on resource management, past systems management to the new era of service management. Leading IT organizations are implementing a services oriented framework that shifts the focus from a reactive to a proactive model that delivers high value services aligned to business needs. This presentation will discuss several best practices and case studies for this evolution in service delivery management.

Dr. René Wies
BMW Group, Vice President, Head of IT for BMW's Engineering and Purchasing Division

Dr. René Wies, born in 1967, grew up in Germany and Zimbabwe. He studied Computer Science in Munich (TU Munich) and later Business Administration in Japan and USA (Boston Univ.). During his time at the Munich Network Management Team (MNM Team) he received a Ph.D. for his research in policy-based network and systems management. After three years in the consulting business, he joined BMW in 1997. Following a number of international assignments in the IT and in corporate strategy, he became head of IT for BMW's Engineering and Purchasing Division.



Keynote: Integrated Systems Management - Can it be applied to Automotive Development?

Approx. 20 years ago, researchers at McDonalds submitted a number of papers to ISNM (later IM), drawing the attention of reviewers to the need for network and systems management in some very practical cases. It was amazing how policy-based IT management was applied to the hamburger industry. With its world wide presence, McDonalds needs to run what is probably one of the most distributed and heterogeneous IT environments, and has to meet some breathtaking requirements regarding the IT service delivery. However, the complexity of these requirements arises from the purchasing and logistics processes - not the final product.

In the automotive industry, the product "car" is becoming an increasingly complex IT system in itself: In a modern car we find several heterogeneous networks i.e. buses, connecting up to 100 different software-based control units and various other systems. The requirements being faced in their management are not limited to general performance and reliability questions, but also need to take into account information security and privacy concerns (for infotainment solutions) as well as critical car safety issues.

Adding yet further to this complexity: the car is no longer autonomous! It is becoming integrated in an IT infrastructure with a multitude of heterogeneous communication partners (e.g. in car-to-car and car-to-environment communication), services (e.g. toll collect systems, traffic control and information systems) and management domains (e.g. legal, organizational, technical domains).

The keynote will discuss similarities and differences regarding systems management techniques and challenges between "traditional" IT infrastructure and service environments and the automotive environment.

Distinguished Experts Panel

IM2007 features a Distinguished Experts Panel on Grid Computing - Moving from Bits to Business Value on Thursday at 15:00h. We are happy to introduce our panelists:

Dr. Joe Betser (Panel Chair) **The Aerospace Corporation**

Joe Betser is a Senior Project Leader for Strategic Planning, Knowledge Management, and Business Development with the Aerospace Corporation. Joe Betser joined Aerospace in 1991, established the network management laboratory, and served as a DARPA Principal Investigator for networking and information assurance programs. He received multiple commendations including the GPS Program Recognition Award, and awards for serving as a Program Chair and General Co-Chair of the Ground System Architectures Workshop (GSAW). Dr. Betser served as the Vendor Program Chair of the IFIP/IEEE IM 1993 in San Francisco, recruiting 39 company sponsors and leading five networked technology centers demonstrating SNMPv2, OSI, RMON, OMNI-Point, & Applications. Joe was commended repeatedly for spearheading university outreach activities, and also received international citations from the IEEE and IFIP for leading global activities. Joe serves on multiple boards, including the President's Corporate Advisory Committee of Harvey Mudd College. He has a B.S. in aerospace engineering, M.S. and Ph.D. degrees in computer science, and an executive MBA from the University of California, Los Angeles.



Prof. Dr. Arndt Bode **Technische Universität München**

Prof. Bode has been working in the fields of parallel and distributed computing for 30 years. Since 1987 Arndt Bode holds the chair for computer technology and computer organization at Technische Universität München. He runs a variety of research projects in the field of computer architecture, tools and applications for parallel and distributed systems. He is member of the board of Leibniz Supercomputing Center, the German Supercomputer Center of the Bavarian Academy of Sciences and Humanities. Since 1999 he is Vice President and CIO of Technische Universität München and general editor of the widespread professional magazine "Informatik-Spektrum".



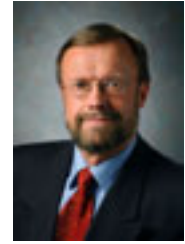
Dr. Mike Fisher **British Telecom**

Mike Fisher leads the Distributed Computing Research group at BT which has a focus on management of large-scale distributed IT infrastructure, including Grids, and is contributing to IT-related aspects of BT's 21st Century Network architecture. Mike's research interests in 18 years with BT have included optical materials and devices, network design, distributed middleware, active networks and policy-based management. His group is currently leading the Business and Operational Issues work package in the European collaborative project NextGRID. He is Chairman of the ETSI Technical Committee on GRID and represents BT on the Steering Committee of the NESSI (Networked European Software and Services Initiative) European Technology Platform in which he is also co-chair of the Service Oriented Infrastructure Working Group.



Prof. Dr. Wolfgang Gentzsch
D-Grid

Dr. Wolfgang Gentzsch is head of the German D-Grid Initiative. Before, he was managing director at MCNC Grid Computing and Networking Services and lead the North Carolina Grid initiative, and he was Sun's senior director of grid computing. He is member of the standards Open Grid Forum Steering Committee, responsible for coordinating the major grid projects around the world. He is Co-Chair of the CEC e-Infrastructure Reflection Group (e-IRG) which targets at building one e-Science infrastructure for all Europe. He is adjunct professor of computer science at Duke University in Durham and at the University Charlotte, and visiting scientist at the Renaissance Computing Institute of the University of Chapel Hill. He also serves on US President's Council of Advisors on Science and Technology (PCAST).



Pascale Primet
INRIA

Pascale Vicat-Blanc Primet is a senior researcher at the National Institute of Research in Computer Science (INRIA). She leads the INRIA RESO team within the LIP laboratory of the Ecole Normale Supérieure de Lyon. She is a member of the Grid5000's - French Computer Science - Grid initiative - steering committee, of the scientific "Networks and Telecoms" expert committee of CNRS (National Research and Science Center) and of the French National Research Agency. Her interests include Grid computing and Grid networking, network and Internet protocols, network architecture, quality of service, network measurement, high-speed and low-latency nets, programmable networks. She has co-chaired the GGF Data Transport Research Group, and participates in a variety of International, European and National Grid projects including: DataGRID, DataTAG, eToile, GRID5000, GdX, EC-GIN, HIPCAL, CARRIOCAS. She is co-chair of the PFLDnet and Gridnets conference steering committees and member of numerous international program committees, is member of IEEE and is active in the OGF (Open Grid Forum).



Program Overview

For potential changes in the conference program please see the conference web site
<http://www.ieee-im.org>.

Abbreviations used in the program: TS – Technical Session, AS – Application Session, PS – Panel Session, T – Tutorial, W – Workshop.

Registration

The registration desks are located in the Foyer at the conference location. You can register:

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
15:00 – 19:00	07:30 – 18:00	07:00 – 18:00	08:00 – 19:00	08:00 – 18:00	08:00 – 18:00
	19:00 – 21:00 at Welcome Reception (Old City Hall of Munich)				

Monday, May 21 2007

08:30 - 12:00	T1 - Autonomic Networking - Theory and Practice; John Strassner, Motorola Research Labs, USA (Room 1131), see page 27	T2 - NetFlow, IPFIX, and Beyond: Integrated Routing, Traffic Analysis, and Modeling for Highly Accurate Network Engineering; Cengiz Alaettinoglu, Packet Design Inc., USA (Room 3131), see page 28	W1 - E2EMON 2007 (Room 3101), see page 33	W2 - BDIM 2007 (Room 2111), see page 34	W3 - BcN 2007 (Room 1101), see page 36
12:00 - 13:30	Lunch Break (Officers' Casino)				
13:30 - 17:00	T3 - Peer-to-Peer Networking: State of the Art and Research Challenges; Raouf Boutaba, University of Waterloo, Canada (Room 1131), see page 28	T4 - Efficient Network and Traffic Monitoring; Danny Raz, Technion, Israel (Room 3131), see page 29	W1	W2	W3
19:30 - 21:30	Welcome Reception (Old City Hall of Munich, Marienplatz 15, 80331 München) see page 54				

W1 - 5th IEEE Workshop on End-to-End Monitoring Techniques and Services

W2 - 2nd IEEE International Workshop on Business-driven IT Management

W3 - 2nd IEEE International Workshop on Broadband Convergence Networks

Tuesday, May 22 2007

08:30 – 09:00	Opening Ceremony (Room 0161)		
09:00 – 10:15	Keynote Speeches (Room 0161) Erwin Huber (Bavarian State Minister), see page 10 <i>Bavaria: Region of first choice for business and science</i> Ulrich Pfeiffer (HP), see page 10 <i>From Network to Service Management - How to Optimize Your Business Outcome</i>		
10:15 – 10:30	Coffee Break (Foyer)		
10:30 – 12:10	TS1 - Policy Management (Room 0161), see page 18	TS2 - Virtualization (Room 0101), see page 18	AS1 - Management solutions for network operators (Room 0131), see page 21
12:10 – 13:30	Lunch Break (Officers' Casino)		
13:30 – 15:10	TS3 - Security Management (Room 0161), see page 18	TS4 - Workload Management (Room 0101), see page 19	PS1 - Policy Analysis and Refinement (Room 0131), see page 24
15:10 – 15:40	Coffee Break (Foyer)		
15:40 – 17:00	TS5 - Self-Management (Room 0161), see page 19	TS6 - Management of High-speed Networks (Room 0101), see page 19	AS2 - Managing authentication, authorization, identities and access control (Room 0131), see page 22
17:00 – 18:00	Poster Session 1 (Foyer), see page 23		
18:00 – 19:30	Students' Reception, sponsored by IBM (Room: Officers' Casino)		

Wednesday, May 23 2007

08:45 – 10:15	Keynote Speeches (Room 0161) Prof. Dr. Wolfgang Gentzsch (D-Grid), see page 11 <i>Grid Computing: Extreme Makeover - from Early Steps to Community Adoption</i> Prof. Vasilis Maglaris, Ph.D. (GÉANT2), see page 11 <i>Multi-Domain Management: Results Achieved and Future Challenges Using the Example of GÉANT</i>		
10:15 – 10:30	Coffee Break (Foyer)		
10:30 – 12:10	TS7 - Monitoring (Room 0161), see page 19	TS8 - Business-Driven Management (Room 0101), see page 20	PS2 - Merging Application Development and Operational Management (Room 0131), see page 24
12:10 - 13:30	Lunch Break (Officers' Casino)		
13:30 – 15:10	TS9 - Measurements and Quality of Service (Room 0161), see page 20	TS10 - Change and Configuration Management (Room 0101), see page 20	PS3 - Can we Trust Management Systems? (Room 0131), see page 25
15:10 – 15:40	Coffee Break (Foyer)		
15:40 – 17:00	TS11 - Security Analysis and Enforcement (Room 0161), see page 20	TS12 - SOA Management (Room 0101), see page 21	AS3 - Managing upcoming systems and infrastructures (Room 0131), see page 22
17:00 – 18:00	Poster Session 2 (Foyer), see page 23		
19:15 – 01:00	Symposium Banquet (Augustinerkeller, Arnulfstrasse 52, 80335 München), see page 54		

Thursday, May 24 2007

08:45 – 10:15	Keynote Speeches (Room 0161) Keith C. Goodman (IBM), see page 12 <i>From Systems Management to Service Management: Enhancing the Business Value of IT Services</i> Dr. René Wies (BMW), see page 12 <i>Integrated Systems Management - Can it be applied to Automotive Development?</i>		
10:15– 10:30	Coffee Break (Foyer)		
10:30 – 12:10	TS13 - Service Management (Room 0161), see page 21	AS4 - Network and service analysis and optimization (Room 0101), see page 22	PS4 - Virtual Machine Management: Old Wolf in New Sheep's Clothing? (Room 0131), see page 25
12:10 - 13:30	Lunch Break (Officers' Casino)		
13:30 – 14:50	TS14 - Mobility Management (Room 0161), see page 21	AS5 - Management infrastructure development (Room 0101), see page 22	PS5 - What's IT management worth to the business? (Room 0131), see page 26
14:50 – 15:00	Coffee Break (Foyer)		
15:00 – 17:00	Distinguished Experts Panel <i>Grid Computing – Moving from Bits to Business Value</i> (Room 0161), see page 13		

Friday, May 25 2007

08:30 – 12:00	T5 - Modern Web Applications with Ajax and Web 2.0; Andreas Eberhart, HP, Germany (Room 1131), see page 30	T6 - Assessing and Hacking Network Security; Radu State, LORIA, France (Room 3131), see page 30	W4 - FeBID 2007, (Room 2111), see page 37	W5 - MUCS 2007, (Room 3101), see page 38	W6 - ACNM 2007, (Room 1101), see page 39
12:00 - 13:30	Lunch Break (Officers' Casino)				
13:30 – 17:00	T7 - IT Service Management in a Service-oriented Environment: Best Practices, Challenges, and Shared Experiences; Claudio Bartolini, HP Labs, U.S.A., Chris Ward, IBM Research, U.S.A. (Room 1131), see page 31	T8 - Traffic Engineering and Quality of Service Management for IP-based Next Generation Networks; George Pavlou, University of Surrey, U.K. (Room 3131), see page 31	W4	W5	W6

W4 - 2nd IFIP/IEEE International Workshop on Feedback Control Implementation and Design in Computing Systems and Networks

W5 - 4th Internat. Workshop on Managing Ubiquitous Communications and Services

W6 - 1st IEEE Workshop on Autonomic Communication and Network Management

Technical sessions

Tuesday, 22 May 2007

Technical Session 1: **Policy Management** (Session Chair: Emil Lupu)

CLID: A general approach to validate security policies in a dynamic network	Yanyan Yang, Charles U. Martel, Felix Wu (University of California, Davis, USA)
A model for checking consistency in access control policies for network management	Vincent Cridlig, Radu State, Olivier Festor (LORIA - INRIA Lorraine, France)
Towards simplified specification of policies in different domains	Kris Verlaenen, Bart De Win (Catholic University of Leuven, Belgium)
Issues in Designing a Policy Language for Distributed Management of IT Infrastructures	Jorge Lobo, Seraphin Calo (IBM T.J. Watson Research Center, USA) Dakshi Agrawal, Kang-Won Lee (IBM, USA)

Technical Session 2: **Virtualization** (Session Chair: Xiaoyun Zhu)

Efficient resource virtualization and sharing strategies for heterogeneous grid environments	Pawel Garbacki (University of Technology, The Netherlands) Vijay Naik (IBM T.J. Watson Research Center, USA)
Compass: Cost of Migration-aware Placement in Storage Systems	Akshat Verma, Upendra Sharma, Rohit Jain, Koustuv Dasgupta (IBM India Research Lab, India)
Towards an Accounting System for Multi-Provider Grid Environments	Gabi Dreo Rodosek, Matthias Goehner, Mario Golling, Michael Kretzschmar (University of Federal Armed Forces Munich, Germany)
A Service Middleware that Scales in System Size and Applications	Constantin Adam, Rolf Stadler (KTH (Royal Institute of Technology), Sweden) Chunqiang Tang, Michael Spreitzer (IBM, USA) Malgorzata Steinder (IBM Research Labs, USA)

Technical Session 3: **Security Management** (Session Chair: Morris Sloman)

Evaluation of a Decentralized Architecture for Large Scale Collaborative Intrusion Detection	Chenfeng Zhou (The University of Melbourne, Australia)
Interactive Informatics on Internet Infrastructure	Fan Zhao, V. Rao Vemuri, S. Felix Wu, Fei Xue, S. J. Ben Yoo (University of California, Davis, USA)
Real-Time Analysis of Flow Data for Network Attack Detection	Gerhard Muenz, Georg Carle (University of Tuebingen, Germany)
VoIP Honeypot Architecture	Mohamed Nassar, Radu State, Olivier Festor (LORIA-INRIA Lorraine, France)

Technical Session 4: Workload Management (Session Chair: Yixin Diao)

Dynamic Placement of Virtual Machines for Managing SLA Violations	Norman Bobroff (IBM Research, USA) Andrzej Kochut, Kirk Beaty (IBM T.J. Watson Research Center, USA)
Self-Adaptive Capacity Management for Multi-Tier Virtualized Environments	Italo Cunha, Marcos dos Santos, Jussara Almeida, Virgilio Almeida (Federal University of Minas Gerais, Brazil)
Server virtualization in autonomic management of heterogeneous workloads	Malgorzata Steinder (IBM Research Labs, USA) Ian Whalley, David Chess (IBM T. J. Watson Research Center, USA) David Carrera (Barcelona Supercomputing Center, Spain) Ilona Gaweda (AGH University of Science and Technology, USA)
Capacity and Performance Overhead in Dynamic Resource Allocation to Virtual Containers	Zhikui Wang, Xiaoyun Zhu, Sharad Singhal (HP Laboratories, USA) Pradeep Padala, University of Michigan, USA

Technical Session 5: Self-Management (Session Chair: Kurt Geihs)

Deterministic Models of Software Aging and Optimal Rejuvenation Schedules	Artur Andrzejak (Zuse Institute Berlin, Germany) Luis Silva (University of Coimbra, Portugal)
Panacea - towards a self-healing development framework	Onn Shehory (IBM Haifa Research Labs and Bar Ilan U., Israel) David Breitgand, Ealan Henis, Maayan Goldstein (IBM Haifa Research Lab, Israel) Yaron Weinsberg (The Hebrew University Of Jerusalem, Israel)
Autonomic Software Release Management for Communications Networks	Pratik Biswas (Avaya Inc., USA)

Technical Session 6: Management of High-speed Networks (Session Chair: Marcus Brunner)

Management of Multidomain End-to-End Links, A Federated Approach for the Pan-European Research Network GEANT2	Mark Yampolskiy, Matthias Hamm (DFN, working at Leibniz Supercomputing Centre, Germany) Karin Schauerhammer, Klaus Ullmann (DFN, Germany)
Using the Network Description Language in Optical Networks	Jeroen van der Ham, Paola Grosso, Cees DeLaat (Universiteit van Amsterdam, The Netherlands) Ronald van der Pol, Andree Toonk (SARA, The Netherlands)
Path Computation Algorithms for Dynamic Service Provisioning in SDH Networks	Madanagopal Ramachandran, Timothy Gonsalves (Indian Institute of Technology Madras, India) Usha Rani (NMSWorks Software Pvt. Ltd, Chennai, India)

Wednesday, 23 May 2007

Technical Session 7: Monitoring (Session Chair: Danny Raz)

Real-time Application Monitoring and Diagnosis for Service Hosting Platforms of Black Boxes	Huadong Liu (University of Tennessee, USA) Hui Zhang, Rauf Izmailov (NEC Labs America, USA)
Robust Monitoring of Network-wide Aggregates through Gossiping	Fetahi Wuhib, Rolf Stadler, Mads Dam (KTH Royal Institute of Technology, Sweden) Alexander Clemm (Cisco Systems, USA)
Toward Globally Optimal Event Monitoring & Aggregation For Large-scale Overlay Networks UAMA: a unified architecture for active measurements in IP networks	Yongning Tang, Ehab Al-Shaer, Bin Zhang (Depaul University, USA) Glederson Santos, Vinicius Guimaraes, Roberto Costa Filho, Jorge Guedes (Pontificia Universidade Catolica do Rio Grande do Sul, Brazil) Jose Augusto Oliveira Neto, Ricardo Balbinot (Vivo, Brazil) Alexandre Vieira (Universidade Luterana do Brasil, Brazil)

Technical Session 8: Business-Driven Management (Session Chair: Claudio Bartolini)

Making Policy Based Management Business Aware, A Web Server Hosting use case	Issam Aib, Raouf Boutaba (University of Waterloo, Canada)
Automated Availability Management Driven by Business Policies	Zhongtang Cai, Vibhore Kumar, Karsten Schwan (Georgia Institute of Technology, USA) Yuan Chen, Dejan Milojicic (HP Labs, USA)
Predicting Labor Cost through IT Management Complexity Metrics	Yixin Diao, Alexander Keller, Sujay Parekh (IBM T.J. Watson Research Center, USA) Vladislav Marinov (International University Bremen, Germany)
The Evaluation of the Efficient Prepaid Scheme TICA for All-IP Networks and Internet Services	Pascal Kurtansky (ETH Zürich, Switzerland) Peter Reichl (Telecommunications Research Center, ftw. Vienna, Austria) Burkhard Stiller (University of Zurich and ETH Zurich, Switzerland)

Technical Session 9: Measurements and Quality of Service (Session Chair: Luciano Paschoal Gaspar)

Estimating End-to-End Performance by Collaborative Prediction with Active Sampling	Irina Rish, Gerald Tesauro (IBM Watson Research Center, USA)
A Generic Application-Oriented Performance Instrumentation for Multi-Tier Environments	Markus Schmid, Thomas Termin, Reinhold Kroeger (Fachhochschule Wiesbaden - University of Applied Sciences, Germany) Marcus Thoss (tang-IT Consulting GmbH, Germany)
Network Instrumentation for End-to-end Measurements	Bengi Karacali, Balaji Rao (Avaya Inc., USA)
SNMP Traffic Analysis: Approaches, Tools, and First Results	Aiko Pras, Jorrit Schippers, Remco van de Meent (University of Twente, The Netherlands) Juergen Schoenwaelder, Matus Harvan (International University Bremen, Germany)

Technical Session 10: Change and Configuration Management (Session Chair: Metin Feridun)

A Light-Weight SQL-Based Validation System for SAN Configuration	Eray Gencay, Wolfgang Kuechlin (University of Tuebingen, Germany) Thorsten Schaefer (IBM Deutschland GmbH, Germany)
A decision support tool to optimize scheduling of IT changes	Rodrigo Reboucas, Jacques Sauve, Antao Moura (Universidade Federal de Campina Grande, Brazil) Claudio Bartolini, David Trastour (HP Labs, USA)
Planning and Managing the IPTV Service Deployment	Dakshi Agrawal, Mandis Beigi, Kang-Won Lee (IBM, USA) Chatschik Bisdikian (IBM Research, USA)
Automation Controller for Operational IT Management	Sven Graupner (HP Labs, USA)

Technical Session 11: Security Analysis and Enforcement (Session Chair: Felix Wu)

Assessing the security of VoIP Services	Humberto Abdelnur, Radu State (LORIA - INRIA Lorraine, France) Isabelle Chrisment (University Henri Poincare, Nancy, France)
A Trustworthy Mobile Agent Infrastructure for Network Management	Alexandros Koliouisis, Joe Sventek (University of Glasgow, Great Britain)
A Hybrid Approach to Operating System Discovery using Answer Set Programming	Francois Gagnon, Babak Esfandiari, Leopoldo Bertossi (Carleton University, Canada)

Technical Session 12: SOA Management (Session Chair: Karsten Schwan)

A Version-aware Approach for Web Service Client Application	Ru Fang, Liana Fong, (IBM, USA) Frank David, Linh Lam (IBM T. J. Watson Research Center, USA) Nan Du (Beijing University of Posts and Telecommunications, P.R. China) Ying Chen (IBM China Research Lab, P.R. China) Christopher Vignola (IBM Software Group, USA)
Flexible Automatic Service Brokering for SOAs	Steffen Bleul (University of Kassel, Germany)
An Evaluation of Service Composition Technologies Applied to Network Management	Ricardo Lemos Vianna, Everton Polina, Clarissa Marquezan, Liane Tarouco, Maria Janilce Almeida, Lisandro Zambenedetti Granville (Universidade Federal do Rio Grande do Sul, Brazil) Leandro Bertholdo (POP-RS, Brazil)

Thursday, 24 May 2007

Technical Session 13: Service Management (Session Chair: Hanan Lutfiyya)

Declarative Specification of Service Management Attributes	Vitalian Danciu, Nils gentschen Felde, Martin Sailer (Munich Network Management Team, Ludwig-Maximilians-University Munich, Germany)
Service Assurance Process Re-Engineering Using Location-aware Infrastructure Intelligence	Hani Jamjoom (IBM Research, USA) Nikos Anerousis, Raymond Jennings, Debanjan Saha (IBM Watson Research, USA)
Service Management in a Dynamic E-Business Environment	Marcus O'Connell, Vincent Wade (Trinity College Dublin, Ireland)
On the Performance of Web Services Management Standards for Network Management - An Evaluation of MUWS and WS-Management	Giovane Moura, Giancarlo Silvestrin, Luciano Paschoal Gaspar, Lisandro Zambenedetti Granville (UFRGS, Brazil) Ricardo Nabinger Sanchez, UNISINOS, Brazil

Technical Session 14: Mobility Management (Session Chair: Hong Li)

Access Point Selection for Improving Throughput Fairness in Wireless LANs	Vasilios Siris, Despina Evaggelatos (University of Crete, Greece)
Design and Evaluation of Distributed Self-configuring Load-Balancing	Giorgio Nunzi, Simon Schuetz, Marcus Brunner (NEC Europe Ltd., Germany)
A toolbox of mechanisms for robust and scalable service discovery in mobile ad-hoc networks	Michael Kreutzer (TU Darmstadt, Germany) Manuel Hartl (FlexSecure GmbH, Germany)

Application Sessions

Tuesday, 22 May 2007

AS1: Management solutions for network operators (Session Chair: Alpna Doshi)

Network Element Autoconfiguration in a Managed Network	Henning Sanneck, Christoph Schmelz, Thomas Baumgarth, Konstantin Keutner (Siemens AG, Germany)
Configuration Management System for Managed Network Service Providers	Kenji Hori (KDDI R&D Labs. Inc., Japan)
The Cost Effective, Efficient Integrated-View Solution : Identification & Personalization for OSS Created Contents	Kyung-hwa Ohk, DeukHan Kim (KTF, Republic of Korea)

AS2: Managing authentication, authorization, identities and access control (Session Chair: Helmut Reiser)

Automated deployment and aggregated access control for SOA composite applications	Indrajit Poddar, German Goldszmidt (IBM, USA)
Management of Biometric Data in a Distributed Internet Environment	Burkhard Stiller (University of Zurich and ETH Zurich, Switzerland) Thomas Bocek, Ming Peter (University of Zurich, Switzerland) Frank Eyermann, Jürgen Sauerland (University of Federal Armed Forces Munich, Germany) Jan Angrabeit (Codecasters, Germany) Mark Voelkl, Jan-Christian Tylka (Biometronix GmbH, Germany)
Towards usable and reasonable Identity Management in heterogeneous IT infrastructures	Sebastian Rieger (GWDG, Germany) Bernhard Neumair (University of Goettingen, Germany)

Wednesday, 23 May 2007

AS3: Managing upcoming systems and infrastructures (Session Chair: Yoshiaki Kiriha)

Building a Grid Infrastructure with Instant-Grid for Demonstration, Test and Development	Ulrich Schwardmann, Christian Boehme (GWDG, Germany)
Managing P2P services via the IMS	Antonio Liotta, Ling Lin (University of Essex, Great Britain)
Experiences in Troubleshooting in SIP Environments	Shiva Shankar (Cisco Systems, Inc., India) Malathi Latha, Deligent LLC, India

Thursday, 24 May 2007

AS4: Network and service analysis and optimization (Session Chair: Ralf Wolter)

A system for measuring Internet Voice Quality - www.TestYourVoIP.com	Mark Saylor, Nagarjuna Venna, Harrison Ripps (Brix Networks, Inc., USA)
Finding elephant flows for optical networks	Tiago Fioreze, Mattijs Oude Wolbers, Remco van de Meent, Aiko Pras (University of Twente, The Netherlands)
Mining Infrastructure Data for System Management Optimization	Chang-shing Perng, Shang Guo (IBM Research, USA)

AS5: Management infrastructure development (Session Chair: José-Marcos Nogueira)

Applying Autonomic Computing with Open Standardized Resource Interface WSDM to Managing Multi-vendor IT Systems	Yoshikazu Sato, Yuhsuke Kaneyasu (IBM, Japan) Satoshi Tutiya (FUJITSU LABS., Japan)
Entity MIB and Virtualization	Shiva Shankar (Cisco Systems, India)
A MIB Development Tool for Search, Design and Review	Shyyunn Lin (Cisco Systems, USA)

Poster Sessions

In addition to regular papers presented in technical sessions, IM 2007 also offers poster sessions for more informal interactions and presenting work in progress. Posters are presented in the foyer, in front of conference rooms.

Posters on Tuesday, 22 May 2007

- A Capacity Planning Framework for Multi-tier Enterprise Services with Real Workloads
- A Classification-Based Approach to Policy Refinement
- A distributed signaling for the provisioning of on-demand VPN services in transport networks
- A Framework for Congestion Control for Reliable Data Delivery in Wireless Sensor Networks
- A Framework for Lightweight QoS Provisioning: Network Planes and Parallel Internets
- A Logic-based Approach for IP Network Services Management and Configuration
- A Model-based Simulation Approach to Error Analysis of IT Services
- A Scalable Modeling Language for Specifying Access Control in Tree Based Structures
- An Algorithm to Detect Packet Forwarding Misbehavior in Mobile Ad-Hoc Networks
- An Autonomic Approach to Verify End-to-End Communication Quality
- An information model for the management of Optical Burst Switched networks
- Artifact Reuse Method using Knowledge Base to Develop Operation Support Systems
- Authentication Optimization for Seamless Handovers
- Automated Management of Disaster Recovery System by Adaptive Scheduling
- Automated Provisioning of Shared Services
- Automatic Structuring of IT Problem Ticket Data for Enhanced Problem Resolution
- Automating the Generation, Deployment and Application of Charging Schemes for Composed IMS Service
- Autonomic Management of Component-Based Embedded Software
- AutoSeek: A Method to Identify Candidate Automation Steps in IT Change Management
- Design of NGOSS TSA Using Web Services Technologies
- Design of the pCASE Platform for enabling Context Aware Services
- Extracting Bulk Configuration Data from a Relational UMTS Management Database

Posters on Wednesday, 23 May 2007

- Fault Management based on peer-to-peer paradigms
- Galapagos: Automatically Discovering Application-Data Relationships in Networked System
- Hierarchically Federated Registration and Lookup within the perfSONAR Framework
- IT Service Management for Campus Environment - Practical Concerns in Implementation
- Learning attack strategies through mining and correlation of security alarms
- OSPF Failure Identification based on LSA Flooding Analysis
- Policy-driven Business Management over Web Services
- Realising Adaptive Web Services through Automated Policy Refinement
- Reducing Complexity of Software Deployment with Delta Configuration
- Reliability of Service Level Estimators in the Data Centre
- Requirements for Managing Distributed Packet Filter Configurations in Carrier-grade IP Networks
- Roles Considered Harmful in Policy-based Management for Dynamic Organisations
- Seamless Integration of Network Management Tools in a Multi- Domain Environment
- Self-Management of Context-Aware Overlay Ambient Networks
- Server Capacity Planning with Priority Allocation for Service Level Management in Heterogeneous Server Clusters
- Service Provider Considerations for IT Service Management
- SML Model-based Management
- Storage Planning and Management Using a Web-Based Management Service
- Towards Automatic Composition of Network Management Web Services
- Towards Autonomic Provisioning of Wireless Grid Services
- Virtualizing Resources: Customer-Oriented Cross-Domain Monitoring for Service Grids

Panel Sessions

Five Panel discussions will be held during IM 2007.

Tuesday, 22 May 2007

PS1 - Techniques for Policy Refinement: The Importance of Going One Level Down!

Chair: Jorge Lobo, IBM T.J. Watson, USA

Policy Refinement refers to the process of deriving concrete implementable policies from higher-level goals or Service Level Agreements. It has been presented often as one of the most desirable research objectives in policy-based management yet one of the most challenging to address. In recent years, several approaches that have made some headway towards addressing this goal have emerged. They include amongst others: goal elaboration and abductive reasoning, model checking, case-based reasoning, and model transformation based on models and ontologies. The aim of this panel is to confront these approaches and in the process a number of questions will undoubtedly arise: are any of these approaches viable? How can refined policies be analysed e.g., for conflicts? How much user intervention is required? When is each approach applicable? Can these approaches be combined?

Panelists:

- Emil Lupu, Imperial College London, Great Britain
- Joan Serrat, Universitat Politecnica de Catalunya, Spain
- Seraphin Calo, IBM T.J. Watson Research, USA
- John Strassner, Motorola Research Labs, USA

Wednesday, 23 May 2007

PS2 - The End of the Waterfall – Integrating Application Development and Operational Management

Chair: Tamar Eilam, IBM T.J. Watson Research, USA

Two trends are pushing the industry towards the merger of application development and operational management, activities that have largely been treated as distinct phases in the software lifecycle.

The first trend, which has been on-going for some time, is that it is very difficult to set up meaningful test environments for distributed applications, with test setup consuming a large fraction of the test time. These difficulties here are a consequence of the need to: (1) have a large scale environment in which to test and (2) access realistic data in order to conduct meaningful tests, and (3) have multiple different test environments for multiple test phases.

The second trend is architectural styles such as SOA, mesh-ups, and Web2.0 in which programmers integrate services from live web sites. Such composites of running services are a very different style of development and deployment from the use of programming frameworks such as J2EE and .NET.

There are several questions that arise from the integration of application development and operational management:

1. How can operational services be constructed and used to facilitate application debugging and testing (e.g., services introspection, on-line help, isolation of test and operational users)?
2. What extensions are needed to applications and application development tools (e.g., ECLIPSE, Visual Studio) in order to support development, debugging, and management in operational settings?
3. How can knowledge of the data center structure, capabilities and constraints, can be used to develop applications optimized for operation in a given data center?

4. How should non-functional requirements such as security and availability be used as input throughout the software life cycle?
5. What additional unique opportunities emerge in merging development and operation? For example, can this merger result in a dramatic acceleration of the iterative programming style advocated by the Rational Unified Process (RUP)?

Panelists:

- Joe Hellerstein, Microsoft, USA
- German Goldszmidt, IBM, USA
- Jerry Rolia, HP Laboratories, USA
- Mark Burgess, University College Oslo, Norway

PS3 - Can Management Systems be Trusted?

Chair: Hanan Lutfiyya, University of Western Ontario, Canada

There is currently a good deal of discussion on the development of autonomic management systems. A question often asked is whether or not IT Managers will trust autonomic management systems. The question should be extended to ask about the level of trust that IT managers have in current management systems. Many IT managers feel that the decisions made by the management system would not be as good as the one they would make. Is there enough of a lack of trust in current management systems that would make it difficult for to IT managers to trust and thus use autonomic management systems? Questions include the following:

- What is the perception that IT managers have of the accuracy of management systems? What do IT managers trust e.g., do IT managers even trust that monitoring is accurate? What sorts of decisions do IT managers trust? How does performance impact trust?
- Perceptions are often different than reality. What should IT managers trust? What should IT managers not trust?
- How much impact does a lack of trust have in going to the next level of automation?
- What features must management systems provide to increase trust?
- How do we measure trust? How should we measure trust?

Panelists:

- Ehab El-Shaer, DePaul University, USA
- Alexander Keller, IBM, USA
- Hong Li, Intel, USA
- Jacques Sauve, Federal University of Campina Grande, Brazil

Thursday, 24 May 2007

PS4 - Virtual Machine Management: Old Wolf in New Sheep's Clothing?

Chair: Omar Cherkaoui, Universite du Quebec a Montreal, Canada

Virtualization allows isolation between applications and portability of applications over OS and hardware resources. But another main challenge of virtualization is to allow the decoupling of infrastructure providers (who deploy and maintain network equipment) from service providers (who deploy network protocols and offer end-to-end services). This new network virtualization will help the deployment of shared experimental facilities, such as PlanetLab and GENI. Those projects try to build this virtual network that will consist of virtual nodes and links that belong to the same service provider.

This panel will try to give an answer to the mains issues behind this new virtual network:

- How can we use virtualization technology (XEN, VMware, etc.) to build virtual nodes?
- Why is an old technology like virtual machines suddenly so important again?
- For what reason to people deploy virtualization technology?
- How do people deal with the increased number of machines that need to be managed, and patched?
- After virtualizing networks, machines, operating systems,..., what is the next thing to virtualize?
- What are the network management functions we need to build and to deploy this new virtual network?

- What are the issues for the network management community to solve the migration and configuration of those virtual nodes?

Panelists:

- Guy Pujolle, University Paris 6, France
- Masum Hasan, Cisco Systems, USA
- Giovanni Pacifici, IBM, USA
- Rene Schmidt, VMware, USA

PS5 - What's IT management worth to the business?

Chair: Claudio Bartolini, HP Laboratories, USA

Enterprises in every industry sector are increasingly demanding that their investment in IT is justified by keeping IT service delivery and support aligned and in synch with their business objectives. Our research community is also growing more aware of the issue, as testifies the theme of this 2007 edition of IM: "moving from bits to business value".

Our panelists will address the following questions and more from the audience.

- What is the business value of managing networks and IT systems?
- How can an enterprise capture this value, or even how can line of business managers be convinced that it pays off in the long run to spend money in management software?
- What's automation really worth?
- Would an IT manager make the same decisions as he/she makes every day if they had better visibility on the business that IT supports?
- How is the network and system management community addressing these issues?

Panelists:

- Mark Burgess, Oslo University College, Norway
- Jacques Sauve, Federal University of Campina Grande, Brazil
- John Strassner, Motorola Research Labs, USA
- John Wilkes, HP Laboratories, USA

Tutorials

IM 2007 features state-of-the-art tutorials from leading experts in their fields on the days before (on May 21, 2007) and after (on May 25, 2007) the technical program. Topics cover different levels, ranging from introductory to highly advanced skills. All tutorials are addressing highly important and relevant subject areas of systems, network, and service management.

Monday, 21 May 2007

08:30 - 12:00	T1 - Autonomic Networking - Theory and Practice - John Strassner, Motorola Research Labs, U.S.A. (Room 1131)	T2 - Netflow, IPFIX, and Beyond: Integrated Routing, Traffic Analysis, and Modeling for Highly Accurate Network Engineering - Cengiz Alaettinoglu, Packet Design Inc., U.S.A. (Room 3131)
12:00 - 13:30	Lunch Break (Officers' Casino)	
13:30 - 17:00	T3 - Peer-to-Peer Networking: State of the Art and Research Challenges - Raouf Boutaba, University of Waterloo, Canada (Room 1131)	T4 - Efficient Network and Traffic Monitoring - Danny Raz, Technion, Israel (Room 3131)

Friday, 25 May 2007

08:30 - 12:00	T5 - Modern Web Applications with Ajax and Web 2.0 - Andreas Eberhart, HP, Germany (Room 1131)	T6 - Assessing and Hacking Network Security - Radu State, LORIA, France (Room 3131)
12:00 - 13:30	Lunch Break (Officers' Casino)	
13:30 - 17:00	T7 - IT Service Management in a Service-oriented Environment: Best Practices, Challenges, and Shared Experiences - Claudio Bartolini, HP Labs, U.S.A. and Chris Ward, IBM Research, U.S.A. (Room 1131)	T8 - Traffic Engineering and Quality of Service Management for IP-based Next Generation Networks - George Pavlou, University of Surrey, U.K. (Room 3131)

Tutorial 1: Autonomic Networking - Theory and Practice

The increasing complexity of computing systems is beginning to overwhelm the capabilities of software developers and system administrators to design, evaluate, integrate, and manage these systems. Autonomic computing is a collection of technologies and mechanisms that enable Systems and components to govern their behavior in accordance with policies. This enables business needs to drive the services and resources available from the network. This tutorial is aimed at giving the participant a reasonably deep understanding of the motivation for autonomic computing, concentrating on the semantic and behavioral aspects of network management. After defining autonomic computing and networking, this tutorial will first describe relevant technologies that are used in building autonomic systems, components, and networks, and then elaborate on different architectural styles of autonomics. A novel autonomic networking architecture will be examined in detail. This theory will be reinforced with use cases and practical examples, including a demonstration of ongoing research work in Motorola Labs.

Biography of the Instructor:

John Strassner is a Motorola Fellow and Director of Autonomic Computing at Motorola Research Labs, where he is responsible for directing Motorola's efforts in autonomic computing, policy management, and knowledge engineering. He is active in both forging partnerships (especially with academia) and international standards, where he is the Chair of the Autonomic Communications Forum and the Vice-Chair of WG6 (Reconfigurability and autonomics) of the WWRF. Previously, John was the Chief Strategy Officer for Intelliden and a former Cisco Fellow. John invented DEN (Directory Enabled Networks) and DEN-ng as a new paradigm for managing and provisioning networks and networked applications. He is also the past chair of the TMF's NGOSS SID, meta-model and policy working groups, as well as being active in the ITU, OMG, and OASIS. He has also authored two books (Directory Enabled Networks and Policy Based Network Management) and written chapters for 3 other books. Finally, John is the recipient of the Daniel A. Stokesbury memorial award for excellence in network management, a TMF Fellow, and has authored over 145 refereed journal papers and publications.



Tutorial 2: Netflow, IPFIX, and Beyond: Integrated Routing, Traffic Analysis, and Modeling for Highly Accurate Network Engineering

Network management has traditionally been carried out using SNMP polling, in some cases augmented by codebook-based correlation. More recently, flow record-based analysis has been utilized to provide further insight into the application and traffic dynamics of IP networks. However, periodic polling falls far short of capturing the complex and dynamic layer 3 operations of IP networks, and flow record based analysis is typically viewed on a link by link basis. These limited viewpoints force network engineers to do the "hard" work of trying to figure out the global state of the network in the present and most perplexingly, in the past, in order to surmise root causes from symptoms and to plan changes effectively. In particular, the routing dynamics of IP networks often lead to unpredictable and intermittent behaviors that leave network managers unable to explain what happened or why. This half-day tutorial looks at the use of flow record-based analysis such as Netflow and the upcoming IPFIX standard, its uses and limitations and how an emerging technology called route analytics is merged with traffic flow analysis to provide network-wide understanding of network and traffic phenomena for better troubleshooting and planning. The tutorial will demonstrate how "route-flow fusion" can be used practically to increase the reliability and predictability of IP networks for ever more sensitive and demanding converged applications.

Biography of the Instructor:

Cengiz Alaettinoglu is a fellow at Packet Design, Inc. Currently he is working on scaling and convergence properties of both inter-domain and intra-domain routing protocols. He was previously at the USC Information Sciences Institute, where he worked on the Routing Arbiter project. He co-chaired the IETF Routing Policy System Working Group to define the Routing Policy Specification Language and the protocols to enable a distributed, secure routing policy system. Alaettinoglu received a B.S. degree in computer engineering in 1988 from the Middle East Technical University, Ankara, Turkey; and M.S. and Ph.D. degrees in computer science in 1991 and 1994 from the University of Maryland at College Park. He was a Research Assistant Professor at the University of Southern California, where he taught graduate and undergraduate classes on operating systems and networking from 1994 to 2000. He has given numerous talks at NANOG, IETF, RIPE and APNIC meetings, as well as at ACM and IEEE conferences and workshops.



Tutorial 3: Peer-to-Peer Networking - State of the Art and Research Challenges

The past few years have witnessed the emergence of Peer-to-Peer (P2P) systems as a means to further facilitate the formation of communities of interest over the Internet in all areas of human life including technical/research, cultural, political, social, and entertainment. P2P technologies involve data storage, discovery and retrieval, overlay networks and application-level routing, security and reputation, measurements and management. This tutorial will give an appreciation of the issues and state of the art in Peer-to-Peer Networking. It will introduce the underlying concepts, present existing architectures, highlight the design requirements, discuss the research issues, compare existing approaches, and

illustrate the concepts through case studies. The ultimate objective is to provide the tutorial attendees with an in-depth understanding of the issues inherent to the design, deployment and operation of large-scale P2P systems.

Biography of the Instructor:

Dr. Raouf Boutaba is an Associate Professor in the School of Computer Science of the University of Waterloo. Before that he was with the Department of Electrical and Computer Engineering of the University of Toronto. Before joining academia, he founded and was the director of the telecommunications and distributed systems division of the Computer Science Research Institute of Montreal (CRIM). Dr. Boutaba conducts research in the areas of network and distributed systems management and resource management in multimedia wired and wireless networks. He has published more than 200 papers in refereed journals and conference proceedings. He is the recipient of the Premier's Research Excellence Award, two NORTEL Networks research excellence Award and several Best Paper awards. He is a distinguished lecturer of the IEEE Communications Society. Dr. Boutaba is the Chairman of the IFIP Working Group on Networks and Distributed Systems, the Chair of the IEEE Communications Society Technical Committee on Information Infrastructure, and the Director of the IEEE ComSoc Related Societies Board. He is the founder and acting editor in Chief of the IEEE Transactions on Network and Service Management, on the advisory editorial board of the Journal of Network and Systems Management, on the editorial board of the KIKS/IEEE Journal of Communications and Networks, the editorial board of the Journal of Computer Networks. He acted as the general and program committees co-chair for several IFIP and IEEE conferences including NOMS, MMNS, ICC and Globecom.



Tutorial 4: Efficient Network and Traffic Monitoring

Offering reliable novel services in modern heterogeneous networks is a key challenge and the main prospective income source for many network operators and providers. Providing reliable future services in a cost effective scalable manner requires efficient use of networking and computation resources. This can be done by making the network more self-enabled, i.e. making it capable of making distributed local decisions regarding the utilization of the available resources. However, such decisions must be correlated in order to achieve a global overall goal (maximum utilization or maximum profit, for example). A key building block for all such systems is the ability to monitor the network parameters and the relevant traffic, and to infer from these measurements the relevant information needed in each one of the local decision points. Due to the heterogeneous nature of modern networks and to the very high amount of traffic, even monitoring a local location introduces significant difficulties. It is much more challenging to decide what type of traffic or network information should be collected at each network segment in order to acquire the needed global information without investing too much effort in the monitoring process or its management. In fact, efficient network and traffic monitoring may become a very significant ingredient in the ability to provide modern network services in a cost effective way. This Tutorial deals with practical and efficient techniques to retrieve information from modern network devices. We start by examining the SNMP suit and the various methods to collect information from possibly large MIB tables. Then we develop a framework for quantifying resource (bandwidth and CPU) utilization in distributed network management. To demonstrate both the theoretical and practical impact of this framework, advanced techniques for efficient reactive traffic monitoring and efficient QoS parameter monitoring are presented and analyzed together with empirical results indicating the actual overhead reduction.

Biography of the Instructor:

Prof. Raz received his doctoral degree from the Weizmann Institute of Science, Israel, in 1996. From September 1995 until September 1997 he was a postdoctoral fellow at the International Computer Science Institute, (ICSI) Berkeley, CA, and a visiting lecture at the University of California, Berkeley. From October 1997 until October 2001 he was with the Networking Research Laboratory at BellLabs, Lucent Technologies. In October 2000 Danny Raz joined the faculty of the Computer Science Department at the Technion in Israel. His primary research interest is the theory and application of management related problems in IP networks. Prof. Raz has been engaged in network management research in the last seven years. His main contributions are in the field of efficient network management and the use of active and programmable networks in network management. Prof. Raz gave talks and tutorials on this subject in many international conferences, he was the general chair of OpenArch 2000, a program committee member in many of the leading conferences both in the general field of networking (INFOCOM 2002, 2003), network management (IM and NOMS 2001-2007, DSOM 2003-2006), and active and programmable networks (IWAN, OpenArch). He is an editor for the IEEE/ACM Transaction on Networking (ToN), and edited a special issue in JSAC.



Tutorial 5: Modern Web Applications with Ajax and Web 2.0

Web 2.0 is a comprehensive term for a set of interesting, trend-setting advancements of the World Wide Web. With the programming paradigm of Asynchronous Javascript and XML (Ajax) Web 2.0 Sites are characterized e.g. by a high degree of interactivity and user friendliness, which so far was only reached by classical desktop applications. Ajax breaks the rigid request-response interaction pattern between Browser and Web servers and allows to react immediately to user inputs and to adapt contents of the web page dynamically. Ajax loads data in the background, while the application remains usable in the foreground. Furthermore Ajax creates new possibilities of structuring web applications by replacing the unclear mixture of client- and server-side scripts and program fragments. A further advantage is to be able to integrate external data sources by calling programmable interfaces which are accessed via SOAP or REST. In this case Web 2.0 applications serve as the graphic interface for service-oriented architectures (SOA). SOA is considered to be the solution to data and application integration in the backend. However, Web 2.0 portals are increasingly taking over this role in the frontend. The so-called Mashup Sites offer comfortable access to several data sources and make a mix of applications appear as an integrated overall experience. Finally, Web 2.0 prompts a wave of individualization and democratization of the Internets. It promotes a strong commitment of the individual participant, supported by so-called "social" software such as Wikis and Blogs. Social software opens the door to another broad spectrum of applications. Wikis for example are an excellent tool for knowledge management and globally available data sources such as Wikipedia and services such as Google maps can be linked with data which is internal to a corporation. In order to take advantage of these opportunities, one must master this new programming paradigm, the appropriate standards, and the available tools, assess the security implications, and understand the Web 2.0 culture.

Biography of the Instructor:

Dr. Andreas Eberhart is a software architect with HP Germany where, among other projects, he leads the UI development of the Virtual Machine Management and Server Migration products. Before joining HP he worked for Informix Software in Portland, Oregon, at the International University in Germany in Bruchsal as well as the AIFB at the University of Karlsruhe, where he led a number of research projects in the area of the Semantic Web. He also co-authored books on Enterprise Applications, Web services and Java programming.



Tutorial 6: Assessing and Hacking Network Security

The objective of this tutorial is to give a hands-on experience to network security assessment. Looking at your own network through the eyes of an enemy might surprise you in many cases. Some necessary insights about your vulnerabilities and poor security practices might suddenly become visible, thus identifying high security risks. This tutorial presents a comprehensive overview of the technical procedures and techniques that drive such a process. There is a fine line between a full penetration study, in which vulnerabilities are detected and exploited by a red team hired for this purpose (or a malicious hacker), and an assessment procedure, where an overall picture of the potential vulnerabilities and weaknesses is drawn. While some of the tools are common in both activities, including network scanners (tools to detect the network topology and services available on a network), enumeration tools, and automatic vulnerability scanners for network services or Web applications (helpful in identifying whether the target system is exposed to a series of known vulnerabilities), security assessment is less invasive (no fine tuning of exploit code is done to prove the effective exploitation of a vulnerability), and focuses more on providing the overall security level for a network and its available services. This tutorial will provide an introduction to this topic, covering both the operational procedures and the required technical skills and tools.

Biography of the Instructor:

Radu State holds a Ph.D from INRIA and a Master of Science in Engineering from the Johns Hopkins University (USA). He is a researcher in network security and network management with more than 60 papers published in international conferences and journals. He is member in the technical program committees of IEEE/IFIP Integrated Network Management, IEEE/IFIP Network Operations and Management and IEEE/IFIP DSOM. He lectures at major conferences on topics related to security and network management and control. His activities range from network security assessment, software security to VoIP intrusion detection and assessment.



Tutorial 7: IT Service Management in a Service-oriented Environment: Best Practices, Challenges, and Shared Experiences

In this tutorial we will describe the transformation that is taking place within IT organizations to provide IT service management rather than just IT systems management. In this new services oriented paradigm, the traditional focus on technology to provide systems management is augmented with process management to provide a service management focus. The tutorial starts with an introduction to IT organizations and what IT service management entails. The tutorial provides a brief overview of the IT Infrastructure Library (ITIL), and the IT Service Management (ITSM) framework that is based on it, including the service support domain of Configuration Management, Change Management, Incident Management and Problem Management and Release Management, and service delivery domain encompassing Service Level Management, Financial Management, Capacity Management, Availability Management and Service Continuity Management. The tutorial then illustrates how services oriented architecture provides the ideal enabler for process based IT service management, by following the lifecycle of a representative IT service request. The tutorial concludes with a discussion on adoption challenges, including handling process variances, deployment planning process monitoring and education. At the conclusion of the course, participants are expected to have an introductory understanding of IT Service Management including the four major elements: Organization, Process, Technology, and Information. The participants will be conversant in ITIL and understand the basics of the service support domain and the delivery domain. The participants will also understand how Service Oriented Architecture (SOA) enabled ITSM can be deployed for IT service management and the major benefits and challenges.

Biography of the Instructors:

Claudio Bartollini is a senior researcher at the HP Laboratories in Palo Alto, USA. His background is on architecture and design of software systems and frameworks. His current research interest is in methodologies for business and IT alignment. He holds a M.Sc. degree in electronic engineering and computer science from the University of Bologna, Italy. He has published over twenty papers on international journals, conferences and workshop, and contributed to book chapters. He is a co-author of the W3C WSCL specification. He holds a number of patents in various countries. He is a frequent speaker at conferences, and chaired a number of conferences and workshops.



Dr. Ward is a senior Research Staff Member and manager in the IT Systems and Services Management Group in the Service Delivery Department at the T.J. Watson Research Center. He joined IBM in 2000 and is most recently responsible for architecture and development of configuration management process elements for a major IT Service Management product. Prior to researching in IT service management he was responsible for a data management model to represent the complex relationships required for proactive SLA management. Since joining IBM he has received various achievement awards, has chaired selected standards committees and has published many technical papers. Dr. Ward has published extensively on a variety of computer science problems, is author or co-author of numerous patents and is a Senior Member of the IEEE. He received a Ph.D. degree in Computer Science from the University of Florida in 1988.



Tutorial 8: Traffic Engineering and Quality of Service Management for IP-based Next Generation Networks

Next Generation IP-based Networks will offer Quality of Service (QoS) guarantees by deploying technologies such as Differentiated Services (DiffServ) and Multi-Protocol Label Switching (MPLS) for traffic engineering and network-wide resource management. Despite the progress already made, a number of issues still exist regarding edge-to-edge intra-domain and inter-domain QoS provisioning and management. This tutorial will start by providing background on technologies such as DiffServ, MPLS and their potential combination for QoS support. It will subsequently introduce trends in Service Level Agreements (SLAs) and Service Level Specifications (SLSs) for the subscription to QoS-based services. It will then move to examine architectures and frameworks for the management and control of QoS-enabled networks, including the following aspects: approaches and algorithms for off-line traffic engineering and provisioning through explicit MPLS paths or through hop-by-hop IP routing; approaches for dynamic resource management to deal with traffic fluctuations outside the predicted envelope; a service management framework supporting a "resource provisioning cycle"; the derivation of expected traffic demand from subscribed SLSs and approaches for SLS invocation admission control; a monitoring architecture for scalable information collection supporting traffic engineering and service

management; and realization issues given the current state-of-the-art of management protocols and monitoring support. The tutorial will also include coverage of emerging work towards inter-domain QoS provisioning, including aspects such as: an inter-domain business model; customer and peer provider SLAs; an architecture for the management and control of interdomain services; inter-domain off-line traffic engineering; and QoS extensions to BGP for dynamic traffic engineering. Relevant industrial activities such as IPSphere will be also covered. In all these areas, recent research work will be presented, with pointers to bibliography and a specially tailored Web page with additional resources.

Biography of the Instructor:

Prof. George Pavlou holds the Chair of Communication and Information Systems at the Center for Communication Systems Research, Dept. of Electronics Engineering, University of Surrey, UK, where he leads the activities of the Networks Research Group (<http://www.ee.surrey.ac.uk/CCSR/Networks/>). He received a Diploma in Engineering from the National Technical University of Athens, Greece and MSc and PhD degrees in Computer Science from University College London, UK. His research interests encompass network and service management, network planning and dimensioning, traffic engineering, quality of service, mobile ad hoc networks, service engineering, multimedia service control and management, code mobility, programmable networks and communications middleware. He is the author or co-author of over 150 papers in fully refereed international conferences and journals and has contributed to 4 books. He has also contributed to standardization activities in ISO, ITU-T, TMF and IETF. He was the technical program co-chair of IEEE/IFIP Integrated Network Management 2001 and he is co-editor of the bi-annual IEEE Communications Network and Service Management series. See also <http://www.ee.surrey.ac.uk/Personal/G.Pavlou/> for additional information and his publications in PDF.



Workshops colocated with IM 2007

5th IEEE Workshop on End-to-End Monitoring Techniques and Services (E2EMON 2007)

09:15-9:30	Opening Remarks Kamil Sarac and Timur Friedman
9:30-10:30	Key Note Speech: Mining Network Data - From Web2.0 to Intrusion Detection Anja Feldmann (Deutsche Telekom Laboratory/TU Berlin, Germany)
10:30-10:50	Coffee Break
10:50-12:30	Session 1: Traffic Monitoring <i>End-to-End Monitoring of Multidimensional User-Level QoS in Audio-Video IP Transmission</i> Yoshihiro Ito and Shuji Tasaka (Nagoya Institute of Technology) <i>Traffic Trace Artifacts due to Monitoring Via Port Mirroring</i> Jian Zhang, Andrew Moore (University of London) <i>A Novel Visualization Approach for Efficient Network-wide Traffic Monitoring</i> Taghrid Samak, Adel El-Atawy, Ehab Al-Shaer (DePaul University), Mohamed Ismail (Alexandria University) <i>A Hybrid Sampling Approach for Network Flow Monitoring</i> Guang Cheng, Jian Gong (Southeast University, China), Yongning Tang (DePaul University)
12:30-14:00	Lunch
14:00-15:00	Panel: The Challenges of Distributed Monitoring Participants: Timur Friedman (Moderator - Université Pierre et Marie Curie), Gabor Vattay (Collegium Budapest and Eötvös University), Yuval Shavitt (Tel Aviv University), Scott Kirkpatrick (Hebrew University of Jerusalem), Javier Aracil (Universidad Autonoma de Madrid)
15:00-15:50	Session 2: Issues in Internet Topology Mapping <i>An Optimal Median Calculation Algorithm for Estimating Internet Link Delays from Active Measurements</i> Dima Feldman, Yuval Shavitt (Tel-Aviv University) <i>Multipath tracing with Paris traceroute</i> Brice Augustin, Timur Friedman, Renata Teixeira (Université Pierre et Marie Curie)
15:50-16:10	Coffee Break
16:10-17:25	Session 3: Bandwidth Capacity Monitoring <i>A Wireless Mesh Monitoring and Planning Tool for Emergency Services</i> Dries Naudts, Stefan Bouckaert, Abram Schoutteet, Ingrid Moerman, Piet Demeester (Ghent Univ.), Johan Bergs, Chris Blondia (University of Antwerp) <i>Inline bandwidth measurements: Implementation difficulties and their solutions</i> Tomoaki Tsugawa, Cao Le Thanh Man, Go Hasegawa, Masayuki Murata (Osaka University) <i>Exploring Embedded Path Capacity Estimation in TCP Receiver</i> Cesar Marcondes, M. Y. Sanadidi, Mario Gerla (UCLA), Magnos Martinello, Ramon S. Schwartz (Universidade Federal do Espírito Santo)

2nd IEEE International Workshop on Business-driven IT Management (BDIM 2007)

Workshop Program

The program includes the presentation of 10 full papers, 3 invited short papers, 12 posters and a panel session.

08:00 - 08:10	Introductory Remarks
08:10 - 09:00	Keynote Speaker
09:00 - 10:00	Session: Metrics to Link Business and IT <i>Definition of Metric Dependencies for Monitoring the Impact of Quality of Services on Quality of Processes</i> Christian Mayerl, Kai Hüner, Jens-Uwe Gaspar, Christof Momm, Sebastian Abeck (Universität Karlsruhe) <i>Measuring and Improving the Performance of an IT Support Organization in Managing Service Incidents</i> Gilad Barash, Liya Wu (HP Software), Claudio Bartolini (HP Labs)
10:00 - 10:15	Break
10:15 - 11:45	Session: Business-driven IT Management: Challenges and Solutions <i>Research Challenges of Business-Driven IT Management</i> Antao Moura, Jacques Sauve (Universidade Federal de Campina Grande), Claudio Bartolini (HP Labs) <i>Derivation of Response Time Service Level Objectives for Business Services</i> David Breitgand, Ealan Henis, Onn Shehory (IBM - Haifa Research Lab), John M Lake (IBM Tivoli), <i>A Mechanism of Specifying and Determining Pricing in Utility Computing Environments</i> Jinsong Ouyang (California State University Sacramento), Akhil Sahai, Jim Pruyne (HP Labs)
11:45 - 12:15	Short Invited Presentations Leading to Poster Session <i>Making policy-based management business aware</i> Issam Aib (University of Waterloo) <i>Automated availability management driven by business policies</i> Yuan Chen (HP) <i>Predicting labor cost through IT management complexity metrics</i> Yixin Diao (IBM)
12:15 - 13:00	Lunch
13:00 - 13:45	Posters
13:45 - 15:15	Session: Models for Business-driven IT Management <i>Business-driven IT for SAP The Model Information Flow</i> Sven Graupner (HP Labs) <i>A Model Driven Framework for IT Transformation</i> Santhosh Kumaran, Pankaj Dhoolia, Tian Chao (IBM Research) <i>Frameworks for Business-driven Service Level Management: A Criteria-based Comparison of ITIL and NGOSS</i> Thomas Schaaf (Munich Network Management Team, LMU Munich)
15:15 - 15:30	Break
15:30 - 16:30	Panel
16:30 - 17:30	Session: Risk and Security Considerations in Business-driven IT Management <i>Model-Based Mitigation of Availability Risks</i> Emmanuele Zambon, Damiano Bolzoni, Sandro Etalle (University of Twente), Marco Salvato (KPMG Italia S.p.a.) <i>Elevating the Discussion on Security Management - The Data Centric Paradigm</i> Tyrone Grandison (IBM Almaden Research Center), Marcel Graf, Morton Swimmer, Andreas Wespi (IBM Zurich Labs), Nev Zunic (IBM), Mike Bilge (IBM Privacy Services)
17:30	Closing Remarks

Posters at BDIM 2007

The strategic value of the fit between business processes and IT management: The case of the Italian publishing industry

Gian Luca Petruzzi (University of San Marino)

mPRIME: Multiple Project Risk Management Tool

Cristine Gusmao (Universidade Federal de Pernambuco)

Policies for Self-Managing Communities in Agile Organizations

Kevin Feeney, David Lewis, Vincent Wade (Trinity College Dublin)

The Impact of Mobile Technology on Business Processes Results from 5 Case Studies

Bettina Thurnher (University of Applied Sciences Vorarlberg)

A Policy-Based Metrics Framework for Information Security Performance Measurement

Clemens Martin, Mustapha Refai (University of Ontario Institute of Technology)

Refining ITIL/eTOM Processes for Automation in Service Fault Management

Andreas Hanemann (Leibniz Supercomputing Center)

Performance Analysis and Evaluation of Complex EIS Based on Structure Graph

Hongxun Jiang, Yongyan Yang, Jun Su (Information school, Renmin University of China)

Managing the User's Quality of Experience

Florence Agboma, Antonio Liotta (University of Essex)

Understanding and Specifying Information Security Needs to Support the Delivery of High Quality Security Services

Xiaomeng Xu (Telenor),

Damiano Bolzoni, Pascal Van Eck (University of Twente)

Integrating Business-Driven IT Management (BDIM) with Value-Based Software Engineering (VBSE)

Vladimir Tosic (NICTA (National ICT Australia)),

Hanan Lutfiyya (University of Western Ontario)

Utilizing Service Oriented Architecture for the purpose of Distributed Systems Security Evaluation and Quantification

Khalil Abuosba (Philadelphia University),

Clemens Martin (University of Ontario Institute of Technology)

2nd IEEE International Workshop on Broadband Convergence Networks (BcN 2007)

08:00 – 08:30	Registration
08:30 – 08:45	Opening remarks
08:45 – 09:30	Keynote , BcN Network Architecture and Service Provisioning in KT, Dr. Hong-Beom Jeon, KT (Korea Telecom), Korea
09:30 – 12:00	Session 1: Standards and Example Models of BcN <i>IPTV over Next Generation Networks in ITU-T</i> Chaesub Lee <i>A Study on the Development of BcN Standard Model in Korea</i> Kyu-Ouk Lee, Sang-Kwon Kim, Sung-Soo Kang, Young-Sun Kim, Doo-Geon Hwang, Chul-Soo Kim <i>Introduction to KT-BcN: Network Design Concept and a Case Study</i> Jung Yul Choi, Tae Il Chae, Jaebong Lee, Byoung Kwon Shi <i>NGN Platforms for Networked Service Delivery</i> Dietmar Toelle <i>A Broadcasting Enabled Residential Gateway for Next Generation Networks</i> Jaime Garcia, Francisco Valera, Ivan Vidal, Arturo Azcorra <i>On the Accuracy of Signature-based Traffic Identification Technique in IP Networks</i> Yongmin Choi, Won-Ok Kim
12:00 – 13:30	Lunch
13:30 – 15:35	Session 2: Broadband Wireless Convergence Networking <i>Secured Roaming over WLAN and WIMAX</i> Vamsi Krishna Gondi, Nazim Agoulmine <i>Seamless Continuity of Service across WLAN and WMAN Networks: Challenges and Performance Evaluation</i> Tara Ali- Yahiya, Kaouthar Sethom, Guy Pujolle <i>Fixed-Mobile Convergence Based on WIMAX using Spatial Access</i> Giselle M. Galvan-Tejada, Iclia Villordo-Jimenez, Ignacio E. Zaldivar-Huerta <i>Reliability Analysis of IEEE 802.16 Mesh Networks</i> Stephen Dominiak, Nico Bayer, Joachim Habermann, Veselin Rakocevic, Bangnan Xu <i>SIP-based End-to-End QoS Negotiation Scheme for MIH</i> Young-Chul Jung, Byung-Kil Kim, Young-Tak Kim
15:35 – 15:50	Coffee break
15:50 – 17:55	Session 3: QoS provisioning in BcN <i>A Novel Network Architecture for In-Vehicle Audio and Video Streams</i> Mehrnoush Rahmani, Joachim Hillebrand, Wolfgang Hintermaier, Richard Bogenberger, Eckehard Steinhach <i>An Efficient QoS Control Mechanism for IMS based Convergence Network</i> Youngsuk Lee, Mamhi Kang, Seokkap Ko, Younghan Kim <i>Synchronized Interactive Services for Mobile Devices over IPDC/DVB-H and UMTS</i> Philip Leroux, Vincent Verstraete, Filip De Turck, Piet Demeester <i>Modelling and Clustering Analysis of Broadband Convergence Networks</i> Vladimir Denchev, Franz Pernkopf, Dimitar Rade <i>An Adaptive Mechanism to Guarantee BGP Routing Convergence with Policies Conflict</i> Wang Lijun, Wu Jianping, Xu Ke
12:30 – 13:30	Short Paper Session
and	<i>Enhanced WBEM-based Inter-AS SLA Management for QoS-guaranteed Multimedia Service</i> , Jong-Cheol Seo, Young-Tak Kim
15:35 – 15:50	<i>An Efficient Bandwidth-use Scheme over WLAN with IEEE 802.11e Standard</i> , Fang-Yie Leu, Yu-Hsin Chen, Ching-Chien Kuan, Jiunn Deng <i>Reducing End-to-End Delay in Multi-Path Routing Algorithms for Mobile Ad Hoc Networks</i> , Nastooh Taheri Javan, Mehdi Dehghan <i>Hybrid Scaling based Dynamic Time Warping for Detection of Low-rate TCP Attacks</i> , Won-ho So, Young-Chon Kim <i>A Mobility-based Prediction Algorithm for Vertical Handover in Hybrid Wireless Networks</i> , Inwhae Joe, Sungchan Hong <i>A Dynamic Threshold Method of Clustering Update Messages into Routing Events in BGP Measurements</i> , Xia Yin, Min Tang, Zhiliang Wang <i>Heuristic Survivable Routing Algorithm for Multiple Failures in WDM Networks</i> , Lei Guo <i>A Traffic Analysis per Application in a Real IP/MPLS Service Provider Network</i> , Paulo Carvalho, Breni Carneiro, Bruno Giancristoforo, Marcio Deus, Priscilla Solis <i>Comparative Evaluation of TCP Performances on MIPv4 and MIPv6 Protocols in Mobile Mesh Networks</i> , Younho Jung, Jaehyung Park, Yonggwon Won, Bae-Ho Lee, Seung Yoo Na, Min Young Chung <i>A Business View for NGN Service Usage</i> , Emmanuel Bertin, Idir Fodil, Noel Crespi <i>Extended-RACF Mechanism of Resource Management in BcN Environment</i> , Kwangman Koh, Chinchol Kim, Boyoung Rhee, Sunyoung Han <i>Studies on Millimeter Wave 3 Gbps Wireless Access Systems</i> , Nobuhiko Kuribayashi, Wuyi Yue
17:55 – 18:00	Closing remarks

2nd IFIP/IEEE International Workshop on Feedback Control Implementation and Design in Computing Systems and Networks (FeBID 2007)

08:40-08:50	Introduction , Yixin Diao, Chenyang Lu, Anders Robertsson (FeBID 2007 Organizers)
08:50-09:50	Keynote Speech , Tarek Abdelzaher (University of Illinois at Urbana Champaign)
09:50-10:20	Coffee Break
10:20-12:00	Session #1: Virtualized Platforms <i>AutoParam: Automated Control of Application-Level Performance in Virtualized Server Environments</i> Zhikui Wang, Xue Liu, Alex Zhang, Christopher Stewart, Xiaoyun Zhu, Terence Kelly (HP Labs) <i>DPS: A Distributed Proportional-Share Scheduler in Computing Clusters</i> Chang-Hao Tsai, Kang G. Shin (University of Michigan) <i>Adaptation of CCM Applications Based on Lightweight OS Virtualization</i> Jacek Cala, Lukasz Kubica, Wojciech Wisniowski, Krzysztof Zieliński (AGH - University of Science and Technology) <i>Nice Resource Reservations in Linux</i> Martin Ohlin, Martin Kjær (Lund University)
12:00-13:30	Lunch
13:30-14:45	Session #2: Server Performance Control <i>An LPV Approach to Performance Control of Web Servers Under Self-Similar Workloads</i> Wubi Qin, Qian Wang, Anand Sivasubramaniam (Penn State University) <i>SISO PIDF Controller in an Energy-efficient Multi-tier Web Server Cluster for E-commerce</i> Luciano Bertini, Julius Leite (Universidade Federal Fluminense), Daniel Mossé (University of Pittsburgh) <i>Toward Adaptive Control of QoS-Importance Decoupled Real-Time Systems</i> Mehdi Amirijoo, Per Brännström, Jörgen Hansson, Svante Gunnarsson (Linköping University), Sang Son (University of Virginia)
14:45-15:15	Posters and Coffee Break
15:15-16:30	Session #3: Networks and Beyond <i>Design of Lyapunov based controllers as TCP AQM</i> Yann Labit, Ariba Yassine, Gouaisbaut Frederic (LAAS-CNRS) <i>Control Computing Systems as Queueing Systems: The Case of Optimal Dropping Strategy for Internet Routers</i> Xue Liu (HP Labs), Wenbo He (University of Illinois at Urbana Champaign) <i>Control Theory for Service Systems</i> Yixin Diao (IBM Research)
16:30-16:50	Posters and Coffee Break
16:50-17:50	Panel , Moderator: Anders Robertsson Panelists: Anton Cervin (Lund University), Maheswaran Surendra (IBM Research), Xiaoyun Zhu (HP Labs), TBD
17:50-18:00	Closing Remarks , Yixin Diao, Chenyang Lu, Anders Robertsson (FeBID 2007 Organizers)

4th International Workshop on Managing Ubiquitous Communications and Services (MUCS 2007)

08:45 - 09:00	Welcome Address , Tom Pfeifer, John Strassner, MUCS 2007 Chairs
09:00 - 10:10	Keynote: Self-Managing Digital Artefacts , Alois Ferscha, Johannes Kepler Universität Linz, Institut für Pervasive Computing
10:10 - 10:30	Morning Coffee Break
10:30 - 12:00	Technical Session 1 - Services and Security <i>A QoS Model for Task-Based Service Composition</i> Mikko Perttunen, Marko Jurmu, Jukka Riekkii, University of Oulu, Finland <i>To migrate or not to migrate management services in wireless sensor networks?</i> Fabrício Silva, Thais Braga, Linnyer Ruiz, José Marcos Nogueira, Antonio A.F. Loureiro, Federal University of Minas Gerais, Brazil Alyson Cardoso, UFMG (UFMG), Brazil <i>Snort-OO: Improving Intrusion Detection Performance by Snort Cooperation</i> Rida Khatoun, Dominique Gaiti, Leila Merghem-Boulahia, Univ. of Technology of Troyes, France Ahmed Serhrouchni Ecole, ENST, France
12:00 - 13:00	Lunch Break
13:00 - 14:00	Poster Session - Work in Progress <i>Managing Augmented Toy Environments A New Perspective for Smart Space Management</i> Steve Hinske, Marc Langheinrich, ETH Zurich (ETH), Switzerland <i>Cross-domain Context Sensing and Knowledge Sharing Ecosystem</i> Paul Malone, Tom Pfeifer, Waterford Institute of Technology (WIT), Ireland <i>A Message Complexity Analysis of Tree-based MANET Multicast Routing Algorithms</i> Sang-Chul Kim, Kookmin University, Korea <i>Policy Based Resource Management for Service Composition in Mobile Ad Hoc Networks</i> Guenter Prochart, Reinhold Weiss, Graz University of Technology, Austria Reiner Schmid, Gerald Kaefer, Siemens AG, Germany <i>Challenges for Human Activity Recognition</i> Venet Osmani, Sasitharan Balasubramaniam, Dmitri Botvich, Waterford Institute of Technology (WIT), Ireland <i>Adaptive Service Access Management for Ubiquitous Connectivity</i> Monique Calisti, Dominic Greenwood, Whitestein Technologies AG, Switzerland
14:00 - 15:00	Technical Session 2 - Policy-based Management for UbiComp <i>Bridging the Policy Gap in Pervasive Access Control: A Semantic Web Approach</i> Anand Dersingh, Allan Jost, Dalhousie University, Canada Ramiro Liscano, University of Ontario Institute of Technology, Canada <i>Policy Based Enforcement of Ubiquitous Role Based Access Control</i> John Strassner, Judy Fu, Motorola Labs, USA
15:00 - 15:20	Afternoon Coffee Break
15:20 - 16:50	Technical Session 3 - Context Modelling and Management <i>An Ontology-Based Solution for Privacy Policy/Preference Expression towards Context-Aware Ubiquitous Computing Environments</i> Ni (Jenny) Zhang, Chris Todd, University College London (UCL), United Kingdom <i>Design of CASP: an Open Enabling Platform for Context Aware Office and City Services</i> Matthias Strobbe, Jan Hollez, Gregory De Jans, Olivier Van Laere, Jelle Nelis, Filip De Turck, Bart Dhoedt, Piet Demeester, University of Ghent, Belgium Nico Janssens, Thierry Pollet, Alcatel, Belgium <i>Modelling of Context and Context-Aware Services for Simulator Based Evaluation</i> Kris McGlinn, Eleanor O'Neill, Dave Lewis, Trinity College Dublin (TCD), Ireland

1st IEEE Workshop on Autonomic Communication and Network Management (ACNM 2007)

09:00 - 10:00	Welcome and invited talk
10:30 - 12:00	Enablers for Autonomic Networks/Management <i>Tempo - A Simple Time-Sensitive Messaging System</i> Daniel Bauer, Luis Garcés-Erice, Sean Rooney, IBM Research, Switzerland <i>Ephemeral State Assisted Discovery of Peer-to-peer Networks</i> Sylvain Martin, Guy Leduc, University of Liege, Belgium <i>An Inter-Access Point Coordination Protocol for Dynamic Channel Selection in IEEE802.11 Wireless LANs</i> Murad Abusubaih, Adam Wolisz, Technical University of Berlin, Germany
12:00 - 13:15	Lunch
13:15 - 14:45	Autonomic Middleware and Management Platforms <i>An Agile Computing Approach to Dynamic and Adaptive Service-Oriented Architectures</i> Niranjan Suri, Matteo Rebeschini, Marco Arguedas, Marco Carvalho, Stefano Stabellini, Maggie Breedy, Florida Institute for Human & Machine Cognition, USA <i>Services Management Using Context Information, Ontologies and the Policy-Based Management Paradigm: Towards the Integrated Management in Autonomic Communications</i> Jaime Martin Serrano, Joan Serrat, University Politecnica de Catalunya, Spain John Strassner, Greg Cox, Motorola Labs, USA Ray Carroll, Micheál Ó Foghlú, Waterford Institute of Technology, Ireland <i>The RASCAL System for Managing Autonomic Communication in Disruptive Environments</i> Roberto Ghizzioli, Dominic Greenwood, Whitestein Technologies AG, Switzerland
15:00 - 17:00	Applications of Autonomic Network/Management Paradigms <i>Context Aware Services Offering for Residential Environments</i> Juan Manuel González, Lozano José Antonio, Telefónica Investigación y Desarrollo, Spain Jorge López de Vergara, Universidad Autónoma de Madrid, Spain Victor Villagrà, Universidad Politécnica de Madrid, Spain <i>Enabling Autonomic Access Network QoS Management through TCP Connection Monitoring</i> Bart De Vleeschauwer, Wim Van de Meerssche, Pieter Simoens, Filip De Turck, Bart Dhoedt, Ghent University, Belgium Tom Van Caenegem, Hans Dequeker, Kris Struyve, Alcatel-Lucent, Belgium <i>Mobile IP Conditional Binding Update</i> Imed Romdhani, Napier University, Great Britain <i>A Policy System for Simultaneous Multiaccess with Host Identity Protocol</i> Sébastien Pierrel, Petri Jokela, Jan Melén, Ericsson Research, Finland

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EMANICS

18th IFIP/IEEE Distributed Systems: Operations and Management (DSOM 2007)

* * * *Managing Virtualization of Networks and Services* * * *

October 29-31, 2007 – Silicon Valley, CA

<http://dsom.manweek.org/2007>

PRELIMINARY CALL FOR PAPERS

The IFIP/IEEE International Workshop on Distributed Systems: Operations and Management (DSOM) is the premier annual workshop in the general area of network and services management. It has built up its strong reputation over a period of almost two decades. The workshop is sponsored by the International Federation for Information Processing (IFIP) Working Group 6.6 on Management of Networks and Distributed Systems, with technical co-sponsorship by the IEEE Communications Society, Technical Committee on Network Operations and Management (CNOM). In its 18th edition, DSOM 2007 will be held October 29-31, 2007 in Silicon Valley, California, as part of the 3rd International Week on Management of Networks and Services (Manweek 2007).

Theme and Topics

The primary theme of DSOM 2007 will be “Managing Virtualization of Networks and Services.” Virtualization, in which properties of a service are decoupled from its physical realization over networking and IT infrastructure, is capturing the imagination of the industry and the research community alike. The goal of DSOM 2007 is to shed light on related research issues, investigating questions such as: what is different about virtualization in 2007 compared to the mainframe era, what advances in network control and self-management may advance virtualization, what new problems we will incur when managing virtualized networks and services, and how management itself may benefit from virtualization. Submissions on topics related to managing virtualization of networks and services are hence particularly encouraged.

Topics of interest include but are not limited to:

- Virtualization of networks and services
- Management implications of virtualization
- Managing security in a virtual environment
- Self-management and virtualization
- Troubleshooting virtualized networks and services
- Performance and QoS management in virtualized environments
- Management patterns and algorithms for scalable management
- Controlling the tradeoffs between overhead, accuracy, robustness, and security
- Distributed, decentralized, and peer-to-peer management
- Management of next generation service networks
- Monitoring and measurements
- Anomaly detection and data mining for management
- Fault management and event correlation
- Management and operations of massively redundant data centers
- Semantic Web techniques for management
- Instrumentation and embedded management
- Implementation, deployment, and operations experiences

Paper Submission

It is planned to publish DSOM 2007 proceedings in Springer-Verlag's Lecture Notes in Computer Science (LNCS) series. Paper submissions must present original, unpublished research or experiences. Late-breaking advances and work-in-progress reports from ongoing research are also encouraged. Papers under review elsewhere MUST NOT be submitted to DSOM 2007. Authors are requested to submit either long or short papers, strictly in LNCS format:

- Long papers (up to 12 single-spaced single-column pages)
- Short papers describing work-in-progress (up to 4 pages)

Submissions exceeding the above mentioned page limits will not be reviewed. Papers must be submitted electronically through the JEMS conference management system at <https://jems.sbc.org.br/dsom2007> (only PDF files are permitted).

Important Dates (preliminary)

- Submission: May 13, 2007 (GMT)
- Notification: July 6, 2007
- Camera ready: August 2, 2007

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CALL FOR PAPERS

IEEE/IFIP Network Operations and Management Symposium (NOMS'08)

(20th Year Anniversary!)

Pervasive Management for Ubiquitous Networks and Services

Salvador - Bahia - Brazil

7- 11 April 2008

The 11th IEEE/IFIP Network Operations and Management Symposium (NOMS 2008) will be held on 7-11 April 2008 in the exiting and lively city of Salvador - Bahia - Brazil. Held in even-numbered years, NOMS 2008 will follow the 20 years tradition of NOMS and IM as the primary forum for technical exchange of the research, standards, development, systems integration, service provider, and user communities. NOMS 2008 will present innovative approaches and technical solutions for integrated systems and services including communication networks, host systems, enterprise applications, service oriented architectures, and delivery of management services. The conference provides a highly selective peer-reviewed program of technical sessions, application sessions, and software tools sessions. In addition, the conference offers tutorials, posters, and panels as well as vendor exhibits covering many aspects of management.

Management gets pervasive and needs to vanish since the networks and systems are vanishing from the users' perception. Users should stay users, not managers of their information and communication platforms and services. Pervasive systems and services require considerations for multi-service and multi-domain environments of heterogeneous technologies, wide range of service offerings, new management strategies, and business models. Pervasive management encompasses provisioning, operation, and maintenance for up-scaled systems and still not bother users and administrator enabling automated management. This broad scope and the distributed nature also call for new approaches to dependability, resilience, quality-of-service, mobility management, and services billing. In particular, these considerations include the combination of wireless and wired (FMC), high and low throughput systems, and small as well as large scale deployments.

NOMS 2008 will offer five types of sessions: technical, application, poster, panel, and software tools. Technical sessions will present very high-quality papers on the latest research results in the network operations and management area. Application sessions will present papers focusing on the experience of IT and telecommunications industries, such as service providers, OSS vendors, and equipment manufacturers. The scope here includes customer requirements, management system implementations, and business practices. Poster sessions will provide an insight into work-in-progress. Panel sessions will focus on business implications, market trends, and emerging applications with panelists that are technology and business leaders. The software tools sessions are targeted for the presentation of software tools including open source management software and demonstrations of research prototypes. Accepted papers will be published in the IEEE Digital Library and the conference proceedings.

Authors are invited to submit complete, unpublished papers that are not under review in any other conference or journal in the following, or related topic areas:

Management Paradigms and Architectures

- Self-managing networks (self-healing, self-optimizing, self-protecting and self-configuring)
- Self-adaptive applications
- Autonomic management of networks, systems, and services

- Self-repairing distributed systems
- Integrated control and management
- Distributed, decentralized, and scalable management
- P2P approaches for scalable network management
- Policy and role based management
- Programmable, active, and adaptive management
- Resilience, dependability, and survivability
- "Plug-n-Play" component-based management
- Customer controlled and managed networks
- Proactive and reactive management
- Biologically inspired management systems and techniques

Theories and Models

- AI techniques for management: knowledge-based, intelligent agents, machine learning, neural networks
- Theory (control, optimization, economic) for management
- Evaluation and benchmarking of management systems and technologies
- Information models and Internet technologies (Web, XML, DEN, CIM, SID)

Management Standards and Enabling Technologies

- Integration and middleware technologies for management
- Service-oriented architectures and management
- Data warehousing, ontology, mining and statistical methods in management
- Next generation operation support systems
- User interfaces and virtual reality in management
- Inter-domain Management

Management and Virtual Environments

- Managing virtual resources and services (VPNs, VLANs)
- Virtualization of operations centers, help desks
- Information modeling in virtual environments

Service Engineering and Operational Challenges

- Service design and quality assurance
- Resource inventory, planning, and allocation
- Service discovery and service negotiation
- SLA and business process management
- Quality-of-Service (QoS) management

- Service portability/mobility (VHE)
- Transaction-oriented services and supply chain management
- "Soft" networks (Soft-switch, Parlay, 3GPP OSA, JAIN) and service switching
- Dynamic service requirements analysis
- Charging and accounting of integrated systems and services
- Self-adaptive e-business services
- Self-organized service deployment

Operation and Management Functions

- Security management, federated identity management
- Mobility management
- End-to-end measurements
- Network, service, and systems monitoring
- Alarm and event correlation and filtering
- Customer care and workforce management
- Process engineering for operators' service and network management
- Performance and fault management
- Configuration and accounting management
- Integration and testing of commercial off-the-shelf products
- Management of content hosting and delivery
- Path Protection and restoration
- Internet service pricing, bandwidth trading
- Decision making in self-* systems

Management of Emerging Networks and Services

- Converged networks and services
- Peer-to-peer and community networks
- Grids, grid services, and grid applications
- Ad hoc and self-configurable networks
- Multi-sensor and self-organizing networks
- Overlay networks, virtual topologies and VPN services
- Wireless broadband networks (2G, 2.5G, 3G, and beyond)
- High speed access, Wireless Local (WLANs) and Personal Area Networks (PANs)
- Optical networks (metropolitan, all optical, WDM, DWDM, optical IP)
- Video and broadband cable networks
- VoIP/NGN infrastructures and services
- IP TV, Video on Demand
- FTTX networks, services, and protocols

- Storage Area Networks (SAN) and ASPs server farms
- Web services and content delivery networks
- Smart homes and networked haptics
- Satellite and interplanetary networks
- e-World (e-health, e-commerce, e-business, and e-government)

Organizational Aspects of IT Service Management

- Process engineering and process frameworks (ITIL, eTOM)
- Quality management for IT service provisioning
- Workflow management for IT service provisioning
- Risk management and IT governance issues
- Business alignment of IT service management

Submission Instructions

Authors are invited to submit original contributions (written in English) in PDF format through the NOMS 2008 web site. Only original, full papers that have not been published or submitted for publication elsewhere can be submitted. Each submission will be limited to 8 pages in IEEE 2-column style (See the author information on <http://www.ieee-noms.org/2008/>). **Papers exceeding 8 pages, multiple submissions, and self-plagiarized papers will be rejected without further review.**

Important Dates

Abstract Registration: August 24, 2007 midnight (GMT)

Submission: September 1, 2007 midnight (GMT)

Notification of Acceptance: December 1, 2007

Camera-ready Copy: February 15, 2007

Further Information

Web: <http://www.ieee-noms.org/2008/>

Technical Program Committee Co-Chairs

Carlos Westphall, Federal University of Santa Catarina, Brazil, westphal at inf.ufsc.br

Marcus Brunner, NEC Europe Ltd., Germany, brunner at netlab.nec.de

General Co-Chairs

Mehmet Ulema, Manhattan College, USA, mehmet.ulema at manhattan.edu

José Marcos Nogueira, Federal University of Minas Gerais, Brazil

NOMS 2008 Poster Sessions

In addition to regular papers presented in technical sessions, NOMS 2008 also offers poster sessions for more informal interactions and presenting work in progress. Short papers (up to 4 pages long, IEEE 2-column style, PDF only) can be submitted for consideration as poster presentations. Posters will be selected from these short papers and regular papers. You can submit your work selecting "Poster session" in the NOMS'08 submission system accessible from the NOMS web site (<http://www.ieee-noms.org/2008/>)

Further questions related to posters should be addressed to the poster co-chairs:

Omar Cherkaoui, University of Quebec at Montreal, Canada, cherkaoui.omar@uqam.ca

Jose Neuman de Souza, Federal University of Ceará, Brazil, neuman.souza@gmail.com

NOMS 2008 Application Sessions

NOMS 2008 will include an Application Session program. Application Sessions aim to complement the Technical Sessions with contributions that emphasize practical experiences and lessons learnt in conjunction with management technology. They will focus on aspects such as real-world deployment scenarios, experiences with the management of new services and technology, industrial applications of management technology, implementation examples of new management technology, organizational impact, and business cases. The intended audience especially includes decision makers and experts from industry.

Papers for the Application Sessions should be written in English. The paper format will be one of annotated slides - papers should have a visual in the upper half of a page and the explanatory text in the lower half. Paper submissions should consist of no more than 15 annotated visuals, including title and references, in PDF only. Detailed author instructions are available on the author information page on the conference web site.

Further questions related to the application sessions should be addressed to the application sessions co-chairs:

Barcin Kozbe, Ericsson, USA, barcin.kozbe@ericsson.com

Bruno Schulze, Brazilian Center of Physical Researches, Brazil, schulze@cbpf.br

NOMS 2008 Workshops

Workshops on specialized topics will be held on the days before and after the NOMS technical program. Contributions to these workshops will be solicited and reviewed separately from those for NOMS. A proposal to organize a full-day workshop should contain the following information:

- A draft of the CFP (includes title, description, topics and dates)
- Why is the topic area important?
- Likely contributors and target audience
- Organizing committee
- Plan for workshop advertising and publicity
- Biography of the main organizer (100-200 words)
- Deadline for submission is September 1, 2008.

For a point of reference, see the workshops held in conjunction with NOMS 2006 at <http://www.noms2006.org> or with IM 2007 at <http://www.im2007.org>.

Workshop proposals should be sent to one of the workshop co-chairs:

Edmundo Madeira, State University of Campinas, Brazil, edmundo@ic.unicamp.br

Rolf Stadler, KTH, Sweden, stadler@imit.kth.se

NOMS 2008 Tutorials

NOMS 2008 will feature state-of-the-art tutorials from leading experts in their fields on the days before and after the technical program. Topics will cover different levels, ranging from introductory to highly advanced skills. All tutorials will address highly important and relevant subject areas of systems, network, and service management. To provide the best possible tutorial offerings, NOMS 2008 solicits proposals and ideas for half-day (3.5 hours) and full-day (7 hours) tutorials. Proposals will be evaluated by the NOMS 2008 Technical Program Committee. Tutorial presenters will receive an honorarium.

A proposal to present a tutorial should contain the following information:

- Tutorial title
- Full name(s) and affiliation(s) of the instructor(s)
- Extended abstract (500-1000 words) detailing (a) the technical subject, (b) its importance, and (c) its relevance and benefits to NOMS 2008 attendees
- Table of content in a medium level of granularity including sections and subsections as well as literature
- Potential attendee profile
- Biography of the instructor (100-200 words)
- If the tutorial or its earlier version has been given before, please indicate those respective events, dates, and content.

If you are interested in presenting a tutorial at this conference or you do have an idea for a tutorial you would like to see offered please contact the tutorial co-chairs:

Lisandro Zambenedetti Granville, Fed. Univ. of Rio Grande do Sul, Brazil, granville at inf.ufrgs.br

Veli Sahin, NEC, USA, veli at ieee.org

Software Tools Sessions

NOMS 2008 will introduce a new kind of session to promote and exhibit research prototypes and not yet commercial software management tools developed or under development by the industrial and academic communities. The objective is to facilitate the interchange of information among developers, potential users, industry's professionals and entrepreneurs. The authors will demonstrate their tools in special software tools sessions and a description of the tool will be included in the proceedings of NOMS 2008. Authors are invited to submit papers describing their non-commercial tools in any of the areas of NOMS. The tools will be evaluated and selected by a special technical committee. The paper must be in English, maximum of four pages long, IEEE 2-column style, and in PDF format. The authors must also include the URL where to get the tool as well the URL of the documentation (installation and user's manual). You can submit your work selecting "Software tools session" in the NOMS'08 submission system accessible from the NOMS web site (<http://www.ieee-noms.org/2008/>)

Further questions related to the tools sessions should be addressed to the co-chairs:

Nazim Agoulmine, Université d'Évry, France, nazim.agoulmine at iup.univ-evry.fr

Elias Procópio Duarte, Federal University of Parana, Brazil, elias at inf.ufpr.br

Important Dates:

Technical Session Papers Abstract Registration: **August 24, 2007 midnight (GMT)**

Deadline for Workshop Proposals: **September 1, 2007**

Deadline for Technical Session Papers: **September 1, 2007**

Deadline for Application Session Papers: **October 1, 2007**

Deadline for Tutorials, Panels and Posters: **October 1, 2007**

Deadline for Software Tools: **October 1, 2007**

Notification of Acceptance: **November 15, 2007**

Final Camera Ready Papers Due: **January 15, 2008**

For more information regarding any topic of the CfP, please contact one of the two Program Co-chairs:

Marcus Brunner, NEC Europe Ltd., Germany, brunner at netlab.nec.de

Carlos Westphall, Federal University of Santa Catarina, Brazil, westphal at inf.ufsc.br

Social Events

Reception at Old City Hall of Munich, Marienplatz 15

All conference attendees are cordially invited to enjoy an evening with colleagues and friends. Be our guest for a selection of hors d'oeuvres and drinks. We will be hosted by Munich's Mayor Christian Ude at the Historical Ballroom in the Old City Hall on Marienplatz, see location on the city map. You can reach it with the metro line U3 and U6 and every S-Bahn line, stop "Marienplatz". From the university campus, take the bus to "Neuperlach Süd", then the U5 and change to U3 or U6 on "Odeonsplatz", exit the next stop "Marienplatz". If you already checked in for the conference, please bring your badge to get access. If you did not yet register on-site you will get your badge and public transport ticket at the Welcome Reception.



Banquet at Augustinerkeller, Arnulfstraße 52

The banquet dinner will be held in a traditional Bavarian setting at the Augustinerkeller in the Munich city center: For more than a century and a half the Augustiner Keller Hall has ranked among the most popular oases for beer lovers in the Bavarian capital. It was first mentioned as a warehouse of beer at the Munich city map of 1812. But it belonged to the Büchl Brewery as far back as the 17th century. And so municipal records referred to it as "Büchlbräukeller" (Büchl Beer Hall) until Georg Knorr bought it in 1842. Knorr was the son of a court clerk from Dachau. In the 1830s he advanced his position through a beneficial marriage from bookkeeper of a Munich merchant house to become its owner.



In 1838 Knorr became co-founder of the Bayerische Hypotheken- und Wechselbank, one of the banks which created today's HypoVereinsbank. One of Knorr's sons purchased the "Latest News" (Knorr & Hirth Publishing House) in 1862. In 1848 the energetic businessman rented the facility, which was then known as "Knorkeller", to Gabriel Sedlmayr. The municipal directory of 1842 classifies the beer garden as one of the most beautiful in Munich and comments: "Although it is situated right across from the site where the city of Munich discharges its sentences of capital punishment, it is frequented by numerous guests." In 1862 the hall was acquired by the owner of the Augustiner Brewery, Joseph Wagner. At the time the fenced square only had a few trees near the horseshoe-shaped hall. Wagner is to be thanked for having more trees planted.

The history of Augustiner Bräu, due to about 670 years of tradition Munich's oldest brewery, has begun in the year 1294, as the cornerstone of the Augustinian Monastery was laid on the Haberfeld at the Neuhauser Gasse. It is documentary acknowledged that already in the year 1328 a brewery existed within the monastery and an excellent beer was brewed there. Therefore, 1328 is considered as the foundation year of the Augustiner brewery, which is thereby the oldest of all existing breweries resident in Munich. Beer brewed according to the Bavarian "Reinheitsgebot" (purity law) has a long tradition with Augustiner Bräu, nowadays they offer eight different types. As always, the so-called "Edelstoff" is served from the wooden oak. Connoisseurs proclaim it to be the best of beers.

Starting at the university campus take the bus to the metro stop "Neuperlach Süd", then go with U5 to "Karlsplatz (Stachus)" and change to any line of the S-Bahn (suburban train) in the direction of "Hauptbahnhof / Laim". Exit at the stop "Hackerbrücke", then turn north, make a right on Arnulfstraße, the location is approx. 200m down the road on the left-hand side.

Please bring your badge to get access.



About the Munich Network Management Team

The Munich Network Management Team (MNM Team) is a group of researchers at the Ludwig-Maximilians-Universität (LMU), the Technische Universität München (TUM), the Universität der Bundeswehr München (UniBW) and the Leibniz Supercomputing Center (Leibniz-Rechenzentrum, LRZ). The team currently comprises 27 researchers, 21 of which are pursuing their Ph.D.s in Computer Science.

Under the direction of Professor Dr. Heinz-Gerd Hegering, holder of the 2001 IFIP/IEEE Dan Stokesberry Award, members of the MNM Team have been among the first in Germany to address research issues in IT management. Since its inception in the early 1980s, the MNM Team has contributed more than three hundred publications to the field of network, systems and service management.



Thanks to numerous joint projects with IT service providers for large commercial enterprises, and the fact that many MNM Team members are filling full-time positions at the LRZ (a national supercomputing center and IT service provider for the Munich universities), the team maintains a sure footing in both theory and practice of IT management. Having academics collaborate closely with IT and network management professionals has created research stimuli and synergies that have benefited the team's work on many occasions.

One current research topic pursued by the MNM Team is developing operational concepts and support tools for multi-domain networks in the context of DFN (Deutsches Forschungsnetz, Germany's national research and education network) and GÉANT2 (the European research and education backbone network). Other projects revolve around management challenges in Grid computing and issues in process-oriented IT service management. Research in the latter tries to address questions regarding the application of relevant frameworks (e.g. ITIL, eTOM) and related topics like tool support for service management processes, service-oriented fault management and service modeling.

In teaching, Prof. Hegering's lecture on network and systems management has been a mainstay for introducing students of LMU and TUM to the field of IT operations and management for nearly 20 years. Cutting-edge topics in IT management are frequently treated within advanced lectures and seminars or are a subject of specialized courses - e.g. the recently offered course on process-oriented IT service management, which has been the first of its kind at a German university.

The MNM Team's web pages are located at <http://www.mnm-team.org/>.

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