
Report

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Managing New Networked Worlds—A Report on IM 2005

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The Ninth IFIP/IEEE International Symposium on Integrated Network Management, IM 2005, took place May 15–19 in Nice, France, in the week right after the famed Cannes Film Festival that took place nearby, and right before the Monaco Formula 1 Grand Prix only 15 km away. While by all accounts media attention was less than at those events and IM 2005 was attended neither by film stars nor Formula 1 drivers, it did attract many of the “who is who” in integrated management—more than 300 experts from academia and industry who gathered to attend the various presentations and discuss the latest advances in the field of integrated management. IM is an event with a long tradition that takes place in odd numbered years. (please see [1] and [2] for reports on the preceding IMs). For those who did not have the opportunity to be there, here is a brief summary of what you missed.

This year’s IM was under the motto “Managing New Networked Worlds.” Information technology and networking technology evolve more quickly than ever. Context awareness, convergence at every level, virtualization of resources, massive P2P infrastructures, and unprecedented security challenges are all examples where the technology to be managed imposes a significant impact on management. IM explored the challenges in evolving management just as quickly to keep up with those advances.

The Technical Program consisted of 53 papers in two technical tracks. They covered state-of-the-art research across a wide range of topics such as application monitoring, traffic monitoring, cluster and server control, topology management, utility and SAN management, dimensioning and provisioning, pricing, QoS composition and adaptation, policy management, measurements, OSS and middleware, service management, threshold management to allow for more event-driven management, and more. As a general observation, many of the presentations dealt

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with management applications and functionality geared at very specific practical problems; compared to previous events there were fewer papers concerned with generic frameworks, modeling, or management protocols at large. Perhaps this is an indication that the community is coming of age as it is turning more toward solving management problems that are of concern to end users, as opposed to management problems related to providing infrastructure and plumbing that, while a necessary prerequisite to management, does not provide as much immediately perceived value to end users.

The following is a sampling of some of the topics that were presented. These papers, and many more, are published as part of IM's Proceedings [3]. The Best Paper Award went to "A Model of Configuration Complexity and its Application to a Change Management System" by Brown, Keller, and Hellerstein. It is concerned with capturing what makes configuration tasks "hard" and what can be done to simplify them, and applies the lessons learned to a production system. The Best Student Paper Award was awarded to Adam and Stadler for their paper on "Adaptable Server Clusters with QoS Objectives," in which they presented a technique with which load balancing across server clusters can be achieved in a self-organizing manner, using P2P concepts. In "Anomaly Detection for Internet Worms," Al-Hammadi and Leckie were concerned with algorithms that will allow network operators to determine if the network is under attack. "An Integrated Security Framework for XML-based Management" by Cridlig, State and Fester presented a role-based access control framework as well as other security extensions for Netconf-type interfaces. In "Characterization of SNMP MIB Modules," Schönwälder provides an analysis of SNMP MIBs along various criteria giving an indication how SNMP's SMIv2 modeling artifacts are used in practice. In "Distributed Messaging using Meta Channels and Message Bins," Rooney, Bauer, and Scotton described the use of publish/subscribe management communication mechanisms in monitoring tasks.

The technical papers were complemented by 56 posters. In addition to the tracks of the Technical Program, IM also offered a third track with panel discussions and application sessions. The panel discussions were on the topics of policy-based management and its possibilities and inherent limitations, on service level agreements and the issue of how to actually negotiate them as opposed to simply advertising the service level that is offered, and on whether to share honeypot information—vulnerability and remediation security management information gathered from "invited" attacks. Application sessions were a "first" at IM and included 19 presentations that did not focus on research topics but on operations experiences and practical lessons learned.

As usual, the tracks were complemented with various keynotes. IM 2005 featured an impressive selection of distinguished speakers that included Jim Warner, President of the TMF, Patrice Collet, VP at France Telecom, Chris O'Connor, VP at IBM's Tivoli division, Prof. Dr. Paul Kühn of the University of Stuttgart, Prof.

Dr. Makoto Yoshida of the University of Tokyo and NTT, and Robbie Cohen, Group VP at Telcordia. Most of the keynote presentations, as well as the presentations from the Distinguished Experts Panel on Managing New Networked Worlds (the conference theme), can be found on the conference Web site <http://www.ieee-im.org/>.

The program was framed by 12 tutorials that took place right before and after the core of the conference program itself. In addition and as another “first,” IM was accompanied by three workshops—SelfMan 2005—the First IFIP/ IEEE International Workshop on Self-Managed Systems and Services, E2EMON 2005—the Third IFIP/IEEE Workshop on End-to-End Monitoring Techniques and Services, and MICMC 2005—the First IFIP/IEEE International Workshop on Management Issues and Challenges in Mobile Computing.

It has become a tradition at IM to give special recognition to a distinguished individual who has had profound impact on the field. This year’s Daniel A. Stokesbury Memorial Award was presented to John Strassner, creator of the ground-breaking technology behind DEN (Directory Enabled Networking). He joins the likes of Robbie Cohen, Morris Sloman, and Heinz-Gerd Hegering in receiving that honor. Another tradition at IM are the social events. A Welcome Reception was held at the Grand Hotel Aston, with a magnificent view on the Cote D’Azur from the terrace. A symposium banquet was given in a beautiful setting at the Hotel Palais de la Mediterranee, complete with musical entertainment and even a most unusual activity for many engineers, dancing.

Finally, it should be mentioned that IM took place just footsteps away from Telemanagement World, the TMF’s semiannual forum and tradeshow. However, the cross pollination between those two events remained limited, attesting to the fact that IM and TMW had been marketed separately and to different crowds, as well as to the intensity of the programs that did not leave much room for roaming around.

All in all, we found IM 2005 to be a very exciting and highly stimulating event. We are already looking forward to next year’s conference, NOMS 2006, which will take place in Vancouver on the Canadian West Coast.

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