Preface

End-to-end monitoring has received a tremendous amount of attention by the academic and industrial research communities for many years. Due to the "stateless" nature of the Internet, as well as the problems associated with collecting management information from inter-connected domains, the end-applications get more eager to observe and infer the characteristics of the network paths and services, without any network support. End-to-end monitoring is important to observe the dynamic network and service conditions in real-time and provides feedback information to applications or users to maintain seamless network operations. In the recent few years, we have witnessed the creation of many new network technologies including peer-to-peer, overlay, content delivery networks, multicast, grid, ad-hoc and sensor networks. These emerging technologies require efficient end-to-end monitoring techniques to perform real-time resource adaptation, service restoration and dynamic network configuration. The end-to-end monitoring information is also important for network management tasks such as capacity planning, service tuning and provisioning, enforcement of service level agreement, detecting distributed attacks, and for adaptive network control protocols such as congestions/rate control, adaptive multimedia error concealment, and constrained-based routing in sensor and P2P networks.

Many challenges are to be addressed in order to provide efficient monitoring systems. First, the end-to-end monitoring must scale to large number of peers or service-points without causing significant overhead on the network bandwidth and the resources. Second, for on-line end-to-end monitoring, the process of information collection, filtering and analysis must be performed in a timely fashion to allow for reactive management actions. Third, the monitoring process itself has to be dynamic in the sense that the monitoring tasks can be automatically re-configured to match the changing network conditions and application target. Fourth, end-to-end monitoring systems must be capable of correlating events from distributed points in the network in order to construct the global network condition.

The IEEE International Workshop on End-to-End Monitoring Techniques and Services 2005 is the third in its series aimed at stimulating technical exchange in the merging field of monitoring networks and services. The IEEE E2EMON is an advanced workshop that attracts quality papers from various research communities. The aim of this workshop is to offer a forum for exploratory research and practical contributions from researchers all over the world, and to provide an intimate setting for discussion and debate through panels and group work.

The program this year covers a variety of research topics in the area of monitoring, i.e., network path analysis, P2P monitoring, QoS monitoring, multicast monitoring, traffic analysis, SLA validation, bandwidth measurement, distributed monitoring as well as active monitoring.

In closing, we would like to thank the members of the Program Committee and the reviewers who helped us put together this year's program. We are also indebt to Gautam Kar and Raouf Boutaba for generously providing their assistance in all the logistics of this workshop, and for James Won-Ki Hong and Hazem Hamed for their help in producing these proceedings.

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