INM'07 (Five 9's)
Workshop on Designing and Managing High Availability Internet Services

The design goal for voice networks is traditionally 99.999% or "five 9's" of availability. Though the Internet Protocol was designed to provide "best effort" service, IP networks are now an essential part of our communications infrastructure, with corresponding expectations of high availability. Yet, in many ways, management of IP networks remains a challenge, based more on ad-hoc tools than well-established principles. IP networks are prone to failures not only as a result of hardware faults, but also due to software bugs, misconfiguration, human errors, malicious users, and inadequate network management tools, exacerbated by the huge scale and diversity of the networks. In addition, with the growth of IP overlay applications, service providers must take into account both the health of the network and that of the (typically) distributed applications infrastructure, raising the ante from "simple" network management to end-to-end service management. As a result, while IP networks and applications generally work well, the "last 9" is an elusive goal and the challenges continue to increase.

This workshop broadens the theme of INM'06 to explore both network and application service management, in the context of user expectations of high availability. The scope ranges from large scale backbone networks to end-to-end application performance and availability. We are interested in questions such as the following: What metrics should be used to measure network and service availability and performance? How can overlay applications be designed to be resilient to failures, or to be managed effectively in the presence of failures? Given that routers and servers fail and are taken out of service periodically, what techniques for planned maintenance, redundancy and fail-over can be used, and what is their performance? What approaches are needed for network and software configuration given the thousand's of elements and software modules that must be patched and updated in a live network? Given the large volumes of "telemetry" data that is available from networks and servers, what tools can be used to facilitate rapid fault detection, isolation and remediation? Topics for consideration include:

- measurement of and metrics for service availability and performance;
- designing reliable systems from unreliable components;
- the cost of building available systems;
- analysis of network-wide and systems configuration issues;
- system design, specification, and validation techniques;
- fault and performance management;
- control plane stability and failure resilience;
- data plane performance, availability and management;
- management of distributed application overlays;
- resilient protocols and applications;
- survivability modeling tools and approaches;
- impact of security on availability;
- adaptive networks.

The workshop solicits papers on completed work, position papers, and/or work-in-progress papers on the challenges raised above. Papers that bring out new and interesting approaches at an early stage of their development are very welcome.

Submission guidelines

Submissions must be no greater than 6 pages in length, must be a PDF file, and must follow the formatting guidelines at http://www.sigcomm.org/sigcomm2007/workshop-psg.html. Submissions that deviate from these guidelines will be rejected without consideration. Note that those guidelines state that submissions should **not** be formatted using the SIG style sheets: instead use LaTeX *article* style or equivalent to produce 10pt double-column output with numbered pages. Style sheets and other aids for authors producing camera ready copy may be found at http://www.acm.org/sigs/pubs/proceed/template.html. Reviews will be single-blind: authors name and affiliation should be included in the submission. Papers may be submitted at http://edas.info/ as follows:

1. Create a personal account on EDAS if you do not already have one, and log in.
2. Click on *Submit paper* tab and choose **INM'07** from the list.
3. Register the paper with a short abstract.
4. Upload the PDF of the paper.

Authors of accepted papers are expected to present their papers at the workshop. Submissions must be original work not under review at any other workshop, conference, or journal.

Dates

- Abstract Registration Deadline: 26 April 2007
- Paper Submission Deadline: ~~3 May 2007~~ (extended to) Monday, May 7, 2007, midnight Eastern Time USA
- Notification of Acceptance: 31 May 2007
- Camera Ready Deadline: 13 June 2007
- Workshop Date: 31 August 2007

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- Geoffrey Xie (Naval Postgraduate Institute)

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