Workshop on GMPLS Performance Evaluation: Control Plane Resilience

Sunday, 24 June 2007

Co-located with IEEE ICC 2007, 24-28 June 2007, Glasgow, Scotland, UK

It is widely accepted that Generalized Multi-Protocol Label switching (GMPLS) is an attractive intelligent control plane for different network technologies. GMPLS comprises of IP-based protocols to support routing, signalling and link management that, when properly orchestrated, will simplify network operation and offer the possibility of potentially lucrative novel on-demand services. Consequently, there have been significant developments in the standardisation of GMPLS and the salient parts of the GMPLS architecture have been well-defined.

Unsurprisingly, given its attractiveness, GMPLS has attracted significant research and development attention. However, existing work on GMPLS has been predominantly restricted to reporting on isolated field trials and testbeds, presenting the results of exemplar GMPLS implementations and inter-operability tests, or discussing extensions and potential enhancements to different facets of the GMPLS architecture. Hence, it may be said that there is a shortage of detailed and informative quantitative performance evaluation of certain areas of the GMPLS architecture, a key pre-requisite to wide-scale GMPLS deployment. An area that will benefit from further scrutiny and discussion is the resilience of the GMPLS control plane.

As with any network architecture, resiliency is a key requirement of GMPLS controlled networks and so, naturally, a significant body of work has been undertaken on the resilience of the different data plane technologies that GMPLS may be used to control. However, the fact that GMPLS typically necessitates a separation of the data plane and control plane means it is often necessary to consider control plane resilience independently. Consequently, control plane resilience is a topic attracting every-increasing attention. Proposed techniques of obtaining the resilience needed in the GMPLS control plane include minimising the possibility of control plane failures (e.g. by introducing redundancy into the control plane), reducing the deleterious impact of control plane fault (e.g. by proposing techniques to manage existing data plane connections in the presence of a control plane fault) and ensuring the control plane can recover adequately

from faults (e.g. by enhancing the control plane protocols to be able to recover any outdated/lost state after a failure).

The goal of this day-long workshop is to provide a forum in which researchers and developers from industry and academia can present results and exchange ideas regarding the performance of the GMPLS control plane, with an emphasis on control plane resilience. The workshop will consist of invited talks, technical paper presentations and panel discussions. The workshop solicits original contributions in areas including but not restricted to:

- Control plane fault detection and identification
- Graceful restart of control plane protocols
- Maximising efficacy of degraded control plane
- Increasing control plane redundancy
- Inter-protocol interactions
- Control plane/data plane synchronisation
- Control plane/management plane interactions
- Handling multiple failures
- Control channel management
- Control plane security

Workshop Chairs

Olufemi Komolafe & Joe Sventek

Dept. of Computing Science, University of Glasgow, UK

{femi,joe}@dcs.gla.ac.uk

Invited Speakers

Adrian Farrel, Old Dog Consulting, UK

Ulrich Häbel, Siemens, Germany

Jennifer Yates, AT&T, USA (Tentative)

Technical Program Committee

Saleem Bhatti, University of St Andrews, UK

Stewart Bryant, Cisco, UK

Diego Caviglia, Marconi, Italy

Jaume Comellas, UPC, Spain

Maurice Gagnaire, ENST, France

Nasir Ghani, Tennessee Tech University, USA

David Hunter, University of Essex, UK

Thomas Ndousse, Dept. of Energy, USA

Javier Gonzalez Ordas, Telefonica, Spain

Dimitri Papadimitriou, Alcatel, Belgium

Nageswara Rao, Oak Ridge National Lab, USA

Dominic Schupke, Siemens, Germany

Malathi Veeraraghavan, University of Virginia, USA

Key Dates

Submission Deadline: 24 March 2007

Notification of Acceptance: 14 April 2007

Camera-Ready Copy Deadline: 4 May 2007

Workshop Date: 24 June 2007

Submission Information

Please submit original, unpublished manuscripts (6 pages maximum). Papers should be formatted according to the usual IEEE two-column format used for the main ICC conference. Papers should be submitted by emailing a PDF of the manuscript to gmplsworkshop@dcs.gla.ac.uk. The workshop proceedings will be published in IEEE Explore. Please email femi@dcs.gla.ac.uk with any questions regarding paper submission.

Registration Information

Registration for workshop has to be completed through the ICC 2007 registration web page and it is possible to register for only the workshop. Note that at least one author must register before the submission deadline for each accepted paper