

Impact of Grid Computing on Network Operators and HW Vendors

Grid Computing is an attempt to make computing work like the power grid. When you run a job, you shouldn't know or care where it runs, so long as it gets done within your constraints (including security). However, in attempting to accomplish this, Grid researchers are presenting network access patterns and loads different from what has been typical of Internet traffic. MPI applications are looking for latency critical, bursty, small message traffic, some applications are producing data sets in the 100's of GBs and even Terabytes that need to be moved quickly and efficiently, or you might need remote control of earthquake shake tables and thus require constant jitter. Grid researchers are asking for finer grained control of the network, dynamic optical routes, allowing user apps (via middleware) to alter router configurations, etc. For some network operators, this sounds like their worst nightmare come true. For the network HW vendors, this presents challenges to say the least.

This panel is intended to bring together Grid researchers, network operators, and network HW vendors to discuss what the Grid researchers want and why, what impact that will have on network operations, and what challenges it will bring for the future HW designs.

Panel Moderator:

Bill Allcock, Technology Coordinator, GridFTP, Globus Alliance. Bill is active in all aspects of data management research in Grid computing. His primary focus is the secure, fast, efficient movement of bulk data. GridFTP has become the de facto standard for data movement in Grid computing and is used in production in projects around the world.

Panelists:

- **Bill St. Arnaud**, Senior Director, Advanced Networks for CANARIE Inc., Canada's Advanced Internet Development Organization. <http://www.canarie.ca/~bstarn/>
- **Tal Lavian**, Principal Scientist, Advanced Technology Research, CTO Office, Nortel Networks. Tal is active in Grid Computing and resource orchestration of network services and specifically in optical networks environment. <http://www.nortel.com/drac>
- **Bill Johnston**, ESnet Manager and Senior Scientist, Information Technologies and Services Division Lawrence Berkeley National Laboratory <http://dsd.lbl.gov/~johnston/>
- **Phil Papadopoulos**, Program Director, Grid and Cluster Computing and Acting Group Leader, Grid Development and Deployment, San Diego Supercomputing Center. <http://users.sdsc.edu/~phil/homepage.html>
- **Masum Z. Hasan**, Senior Technical Leader, Cisco Systems, USA. Masum is working on software and networking aspects of Grid Networking. He has a Masters in Computer Engineering from Odessa Polytechnic University in former USSR, and MMath and PhD in Computer Science from University of Waterloo, Canada.
- **Wes Kaplow**, CTO and VP, operations & engineering Qwest government services division. Wes is a recognized expert in a wide range of telecommunications technology, systems, and equipment. His accomplishments include leading the successful technical proposal development for the NIH COOP Program, TSA Network,

NSF Distributed TeraGrid Program, I-WIRE, NASA NREN network, the Energy Sciences Network, Treasury Communications System Network and many others.
http://www.qwest.com/largebusiness/industries/federal_govt/execs/kaplow.html