Network Tools Tutorial
Salon B
Monday, April 21, 2008
2:45-3:45 pm

Phil Demar (Fermi) gave an overview of the LambdaStation Software and how it uses DCN. He provided several case studies. In the past, it was proposed that alternative traffic forwarding mechanisms would be handled directly by data movement applications (e.g., the storage resource manager at Fermi or Caltech would directly contact the DCN controller to request a circuit). It is very difficult to insert this type of functionality into these types of applications.

An alternative solution was proposed, and is now working, whereby an external network device (LambdaStation) makes requests on behalf of the SRM application. LambdaStation can request DCN circuits either via manually configuration or by a remote process, LambdaStation controllers at both sites communicate and when both sides agree, they configure their routers and the data flows across the circuit. As a second use case, Phil described how they setup alternative traffic between FNAL and UNL via DCN, based on flow analysis. Each of the networks involved (Internet2 and ESnet) have their own IDC. Because Fermi tracks flow data very tightly, they could identify data travelling to UNL and make this part of the LambdaStation software.

Phil reported that they are in solid shape for a few connections; they plan to improve the quality of the distribution package and support multi-platform clients. They plan to enhance the interaction with OSCARs/ESnet and DCN/Internet2 so they can interface with perfSONAR and other monitoring tools/systems. They have begun working with the TeraPaths folks to converge the efforts and, of course, they feel documentation is a big issue.

He reported on a large-scale data recovery via DCN – one week after the Internet2 Fall Member Meeting, UNL lost their Tier-2 data cache; using DCN they've recovered that 48 Terabyte cache in a mere 32 hours without bringing down their campus network. He pointed to other references at www.lambdastation.org (papers and demos).

Jeff Boote spoke about BWCTL. BWCTL hasn't been updated in two years, so Jeff gave an overview of how it works. He explained the main value is that it removes many of the typical road blocks to throughput testing – remote site permissions, start-test coordination, etc.

BWCTL test points are available at all Internet2 IP Network router locations: bwctl.POP.net.internet2.edu, where POP = losa, salt, hous, kans, chic, atla, newy, or wash. Jeff reported that the new release candidate, bwctl-1.3rc1, is available as of today.