Mid Atlantic Crossroads
NGIX - East

8th Annual Global Lambda Grid Workshop

Technical & Control Plane Working Group

Seattle, USA

1-2 October 2008

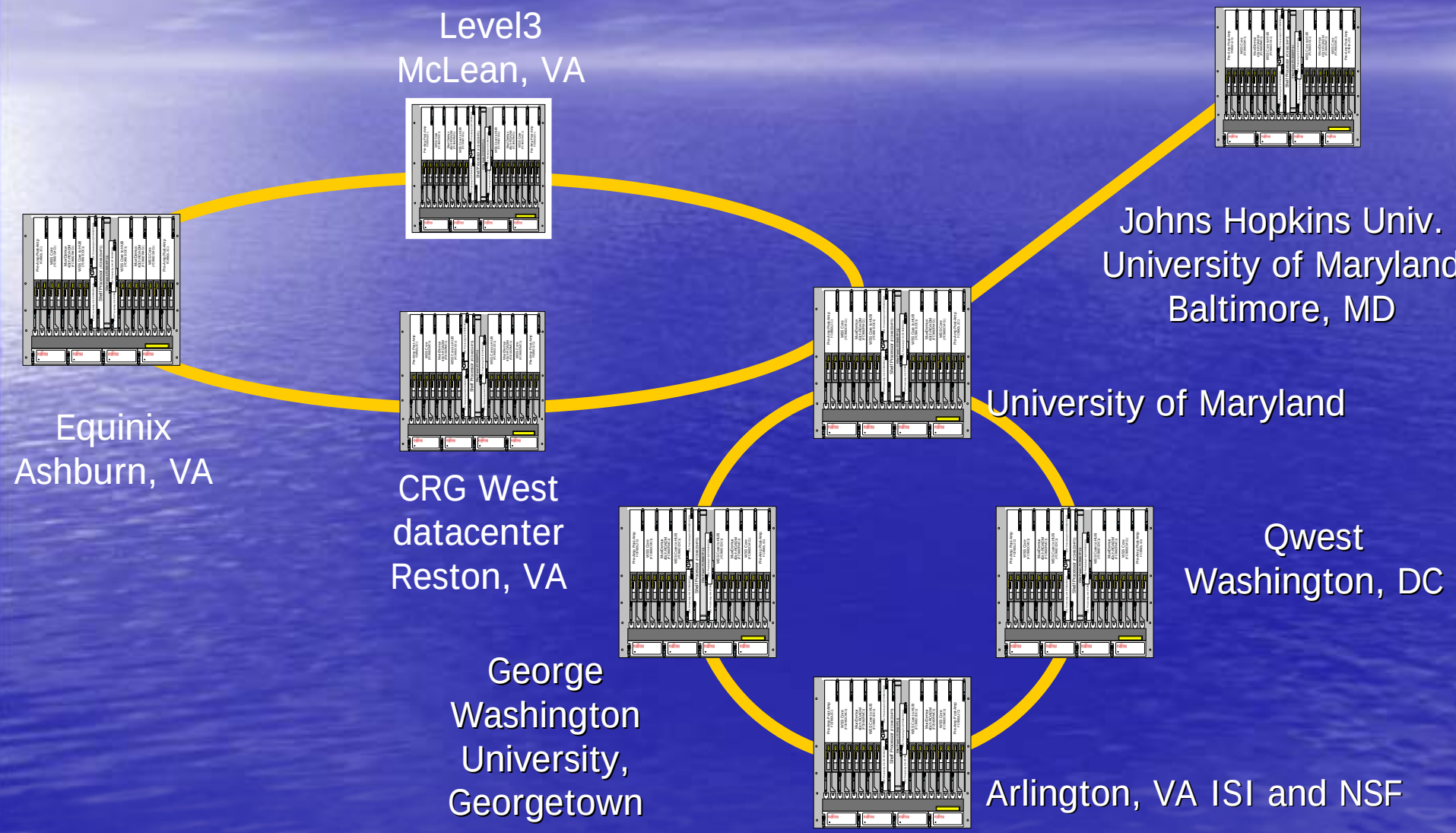
Matt Siniscal

Topics

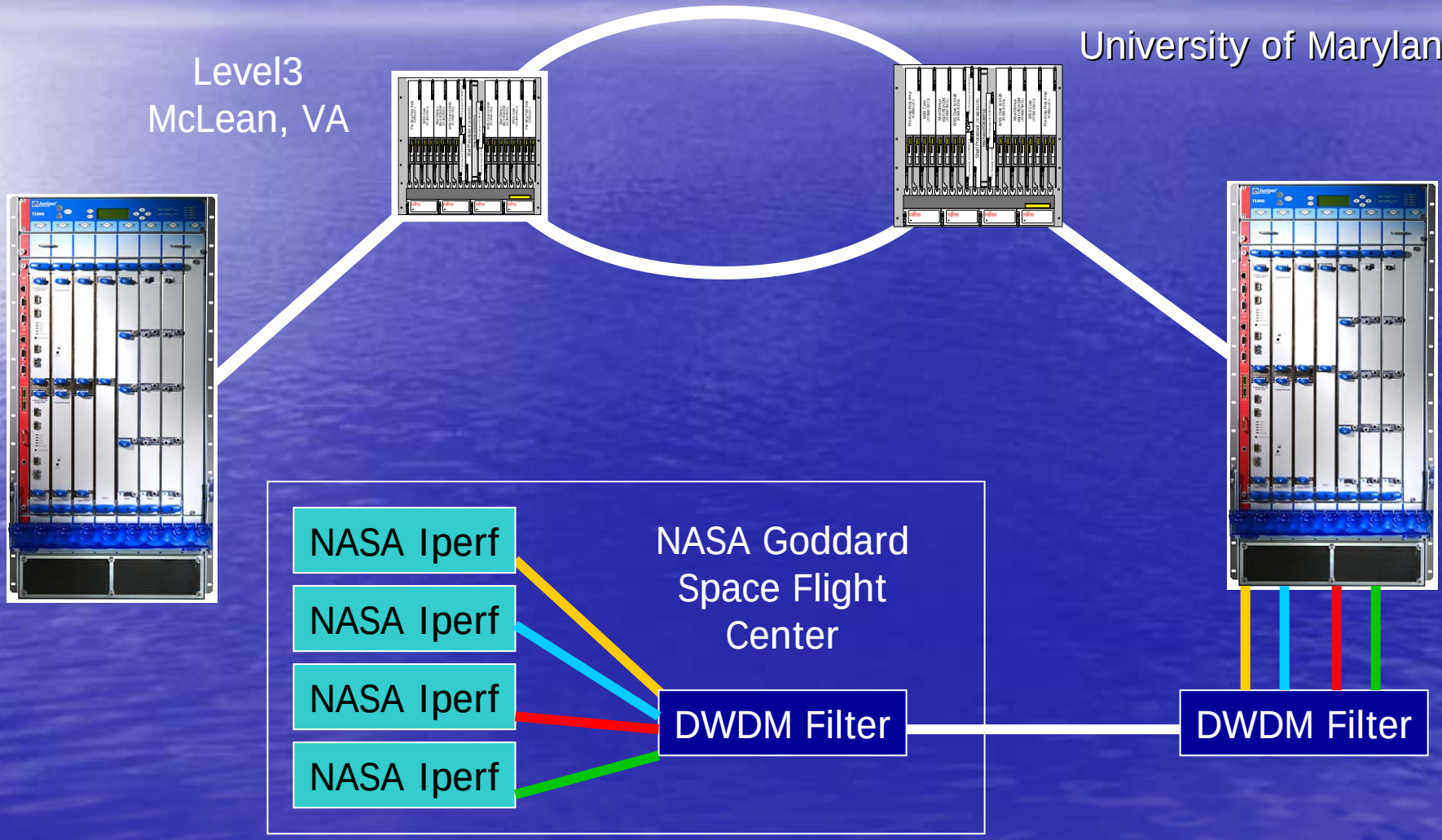
- Optical Network Expansion
- 40G interoperability test
- Trial deployment of VLSR for IDC to MAX production core switch
- Proposal for small static VLAN blocks for non-Dynamic enabled switches
- Low cost VLSR PC for extending IDC closer to end user groups

Fujitsu Optical Layer Topology

10G and 40G wavelengths, 1 and 10 Gb Ethernet, OC-192 and OC-768



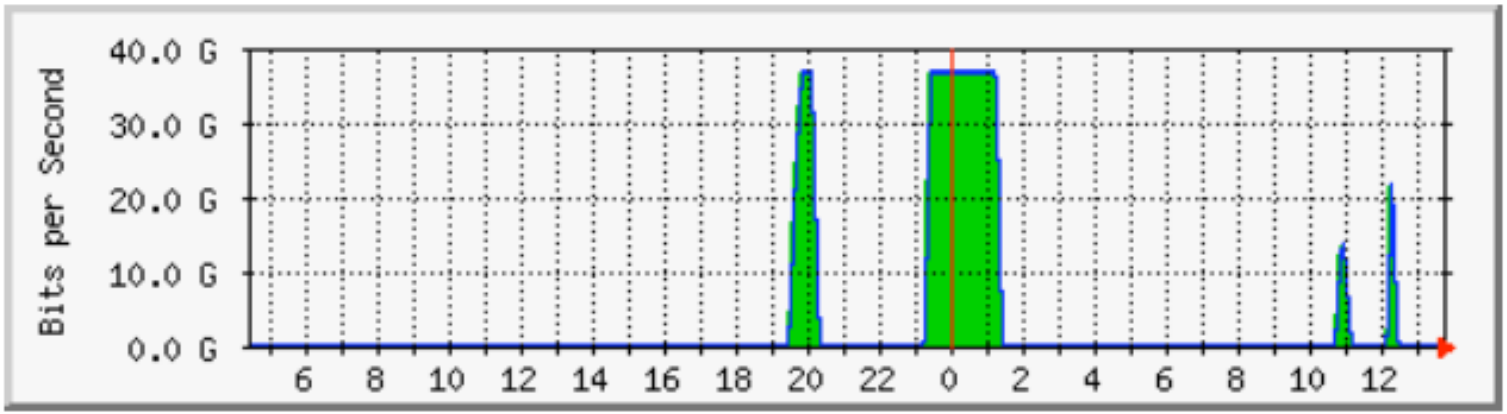
40 G interoperability test
Fujitsu OC-768 transponders
Juniper T1600 PICS
NASA 4x10G Iperf streams



Traffic Analysis for MAX's 40-GigE Interface Between CLPK and MCLN

The statistics were last updated **Tuesday, 23 September 2008 at 13:47**

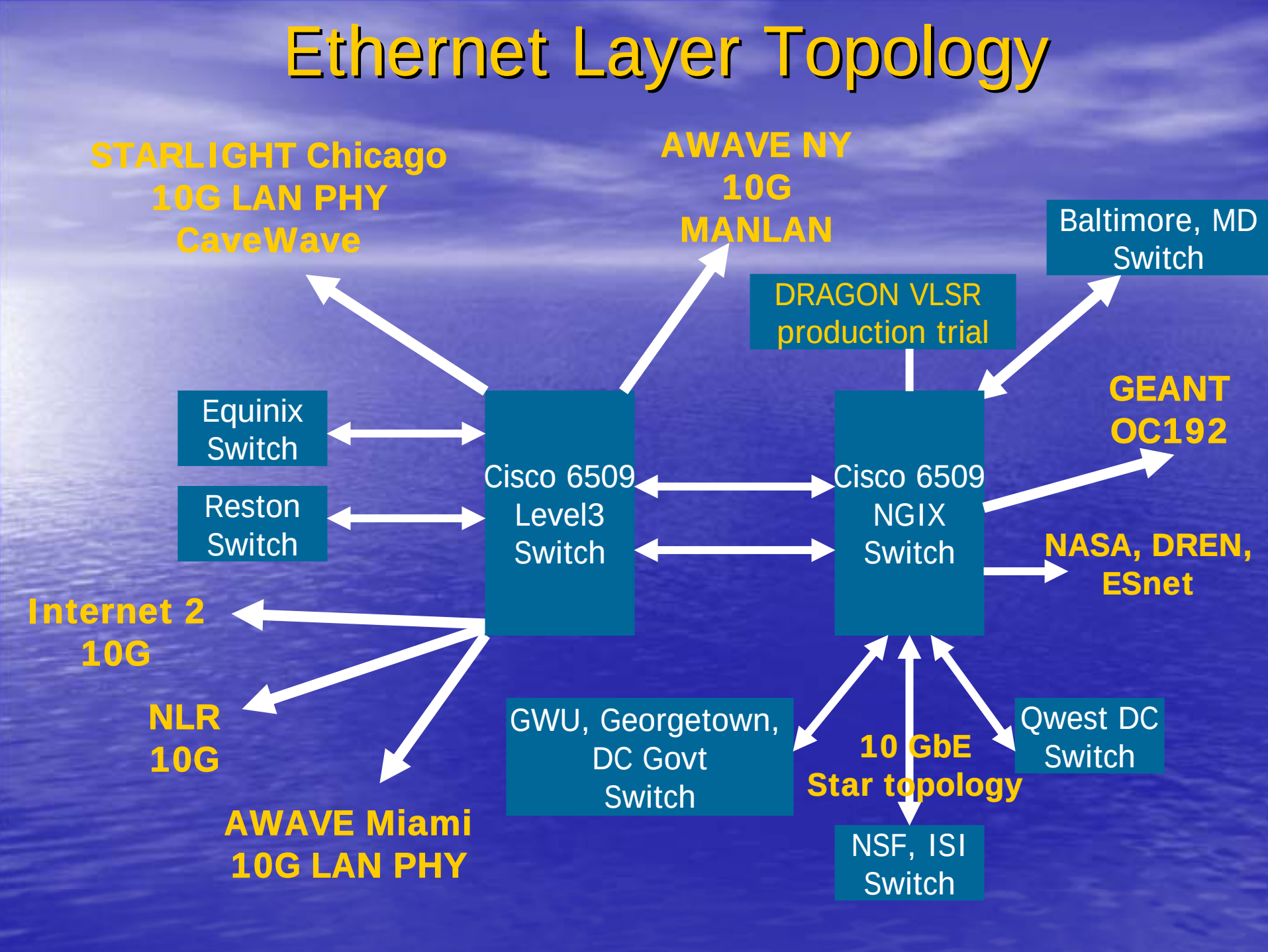
`Daily' Graph (5 Minute Average)



Max In:37.1 Gb/s (93.2%)Average In:3087.6 Mb/s (7.8%)Current In:2256.0 b/s (0.0%)
Max Out:37.1 Gb/s (93.3%)Average Out:3087.6 Mb/s (7.8%Current Out:2320.0 b/s (0.0%)

Snapshot taken during MAX NASA JUNIPER FUJITSU 40G INTEROP Test: One 10G stream from each of two pair of NASA line-rate nuttcp-servers is hard looped between some Juniper T1600 10G interfaces to fill the Juniper OC768c interfaces and Fujitsu 40G optical transponders set up between MAX POP's at College Park, MD and McLean, VA.

Ethernet Layer Topology



Call for a Static VLAN Range among GLIF members

- Dynamic VLAN provisioning not available on all edge switches
- This requires VLAN translation or mutually agreed VLAN for all switches within the circuit path which requires more iterations as VLANs among switches are used up
- One block has already been agreed upon by Awave, Starlight and Netherlight VLANs 451-500
- Setting additional 50 VLAN blocks are needed for the future and are a more practical solution for getting around existing VLANs in use
- If a member switch in the VLAN circuit path already has a VLAN in use, the group provisioning can skip to the next one.
- The sooner VLAN ranges are agreed upon, the less conflict between tags will arise.

Virtual Label Switch Router
for $300

http://dragon.maxgigapop.net/twiki/bin/view/DRAGON/EmbeddedVLSR

GOLE Related Activities

- VLSR trial for Mid Atlantic Crossroads production Cisco core switches
- Working on porting code for Juniper switches
- Deploy VLSR to aggregation switches by JAN 09
- VLANs currently provisioned statically to migrate to dynamic