



Eric Boyd

LHCONE - Stockholm

May 4, 2012

# LHCONE DIAGNOSTIC SERVICE

# Progress Since Berkeley

- LHCONE Diagnostic Service Proposed
  - Based on existing diagnostic service implemented by several network operators
  - Not “complete” ... something to start with
- Whitepaper released to architecture group
  - Comment period (not a lot of comments)
- Recommendation
  - Proceed with implementation of monitoring of LHCONE Multipoint Service
  - Extend diagnostic service definition to be compatible with evolving LHCONE P2P Service definition



# Bandwidth Measurements

- All LHCONE domains will establish bandwidth measurement points in their network. The anticipated uses of active bandwidth measurements are:
  - Identify paths that cannot sustain high bandwidth TCP sessions.
  - Demonstrate paths can sustain high bandwidth TCP sessions.
  - Generate test data streams that can be analyzed to characterize network performance problems



# On-Demand Measurements

- The diagnostic service will support on-demand achievable bandwidth measurements between all of the participating bandwidth measurement points.
- The diagnostic service will support regularly scheduled achievable bandwidth measurements between all of the participating bandwidth measurement points.



# Latency

- One Way Delay Measurements:
  - Characterizing loss on a path.
  - Characterizing queuing delay on a path
  - Identifying asymmetric routing on a path
  - Characterizing duplication, reordering and hop-count on a path
  - Identifying re-routing events on a path





# Historical Results

- The diagnostic service will provide access to historical network measurement results via perfSONAR. Historical measurement results should be maintained for at least 12 months.
  - Bandwidth Measurements
  - Latency Measurements



# Looking Glass

- The looking glass should provide the following capabilities:
  - Ability to see router interface details & counters including discards, queue drops, etc
  - Ability to see BGP routes and their attributes
  - Ability to ping arbitrary destinations
  - Ability to traceroute to arbitrary destinations

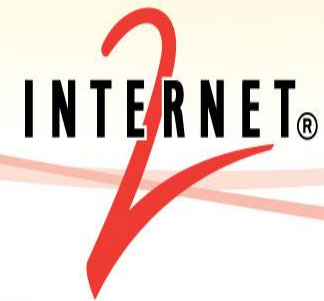


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Internet2