

IEPM.

Warren Matthews (SLAC)
Presented at the ESCC Meeting
Miami, FL, February 2003.

Overview

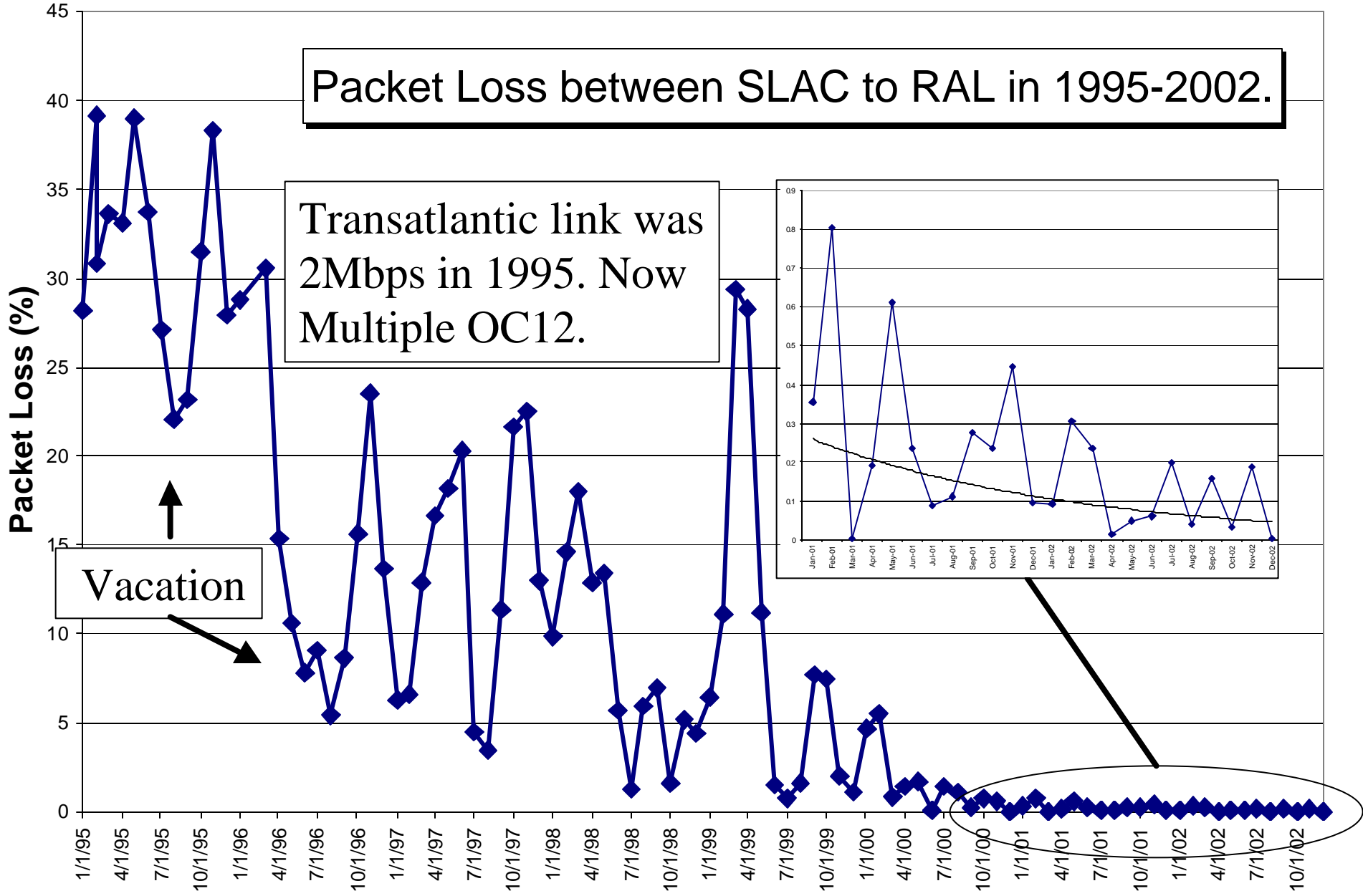
- Internet End-to-end Performance Monitoring (IEPM)
 - PingER
 - IEPM-BW
 - MAGGIE
- Web Site

<http://www-iepm.slac.stanford.edu>

PingER

- Ping End-to-end Reporting
- 10x100 Byte pkts, 10x1000 Byte pkts
- Started in 1995
- Currently 36 monitoring sites in 14 countries
- Long term trends and short term glitches
- Continues to prove useful
 - Project with ICTP/eJDS on Digital Divide

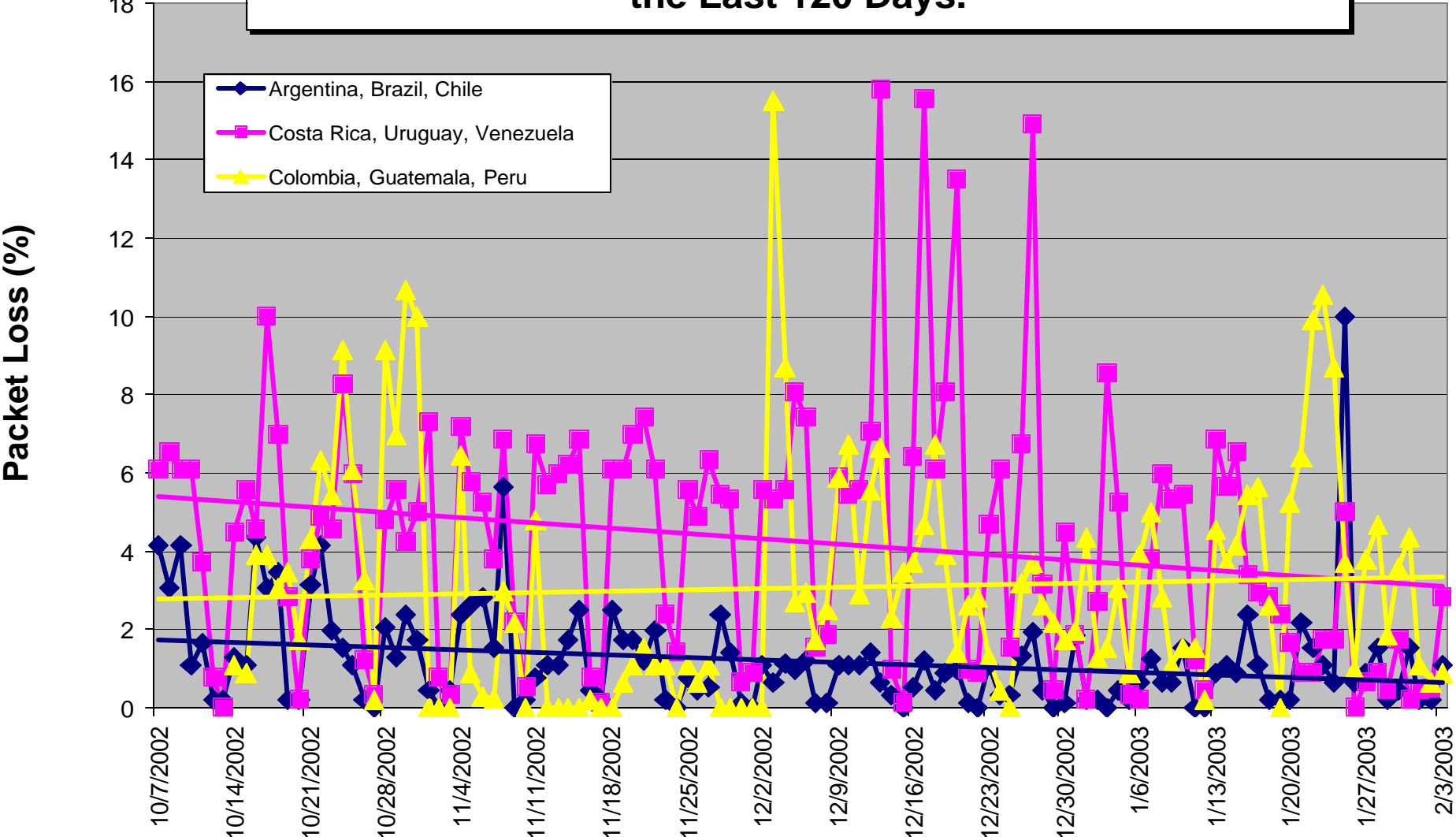
Packet Loss between SLAC to RAL in 1995-2002.



Traffic on ESnet doubles every year

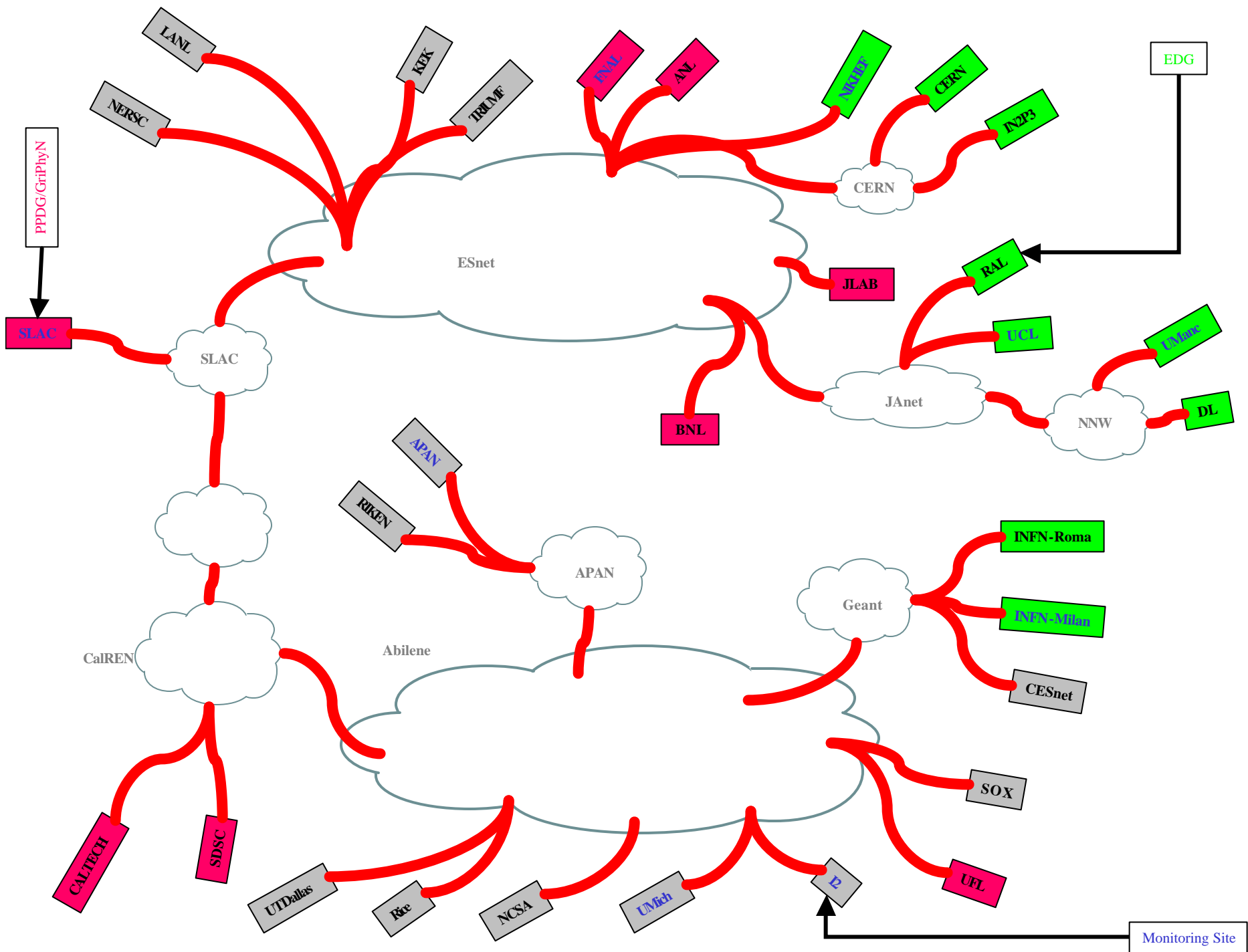


Packet Loss Between SLAC and Hosts in Latin America for the Last 120 Days.

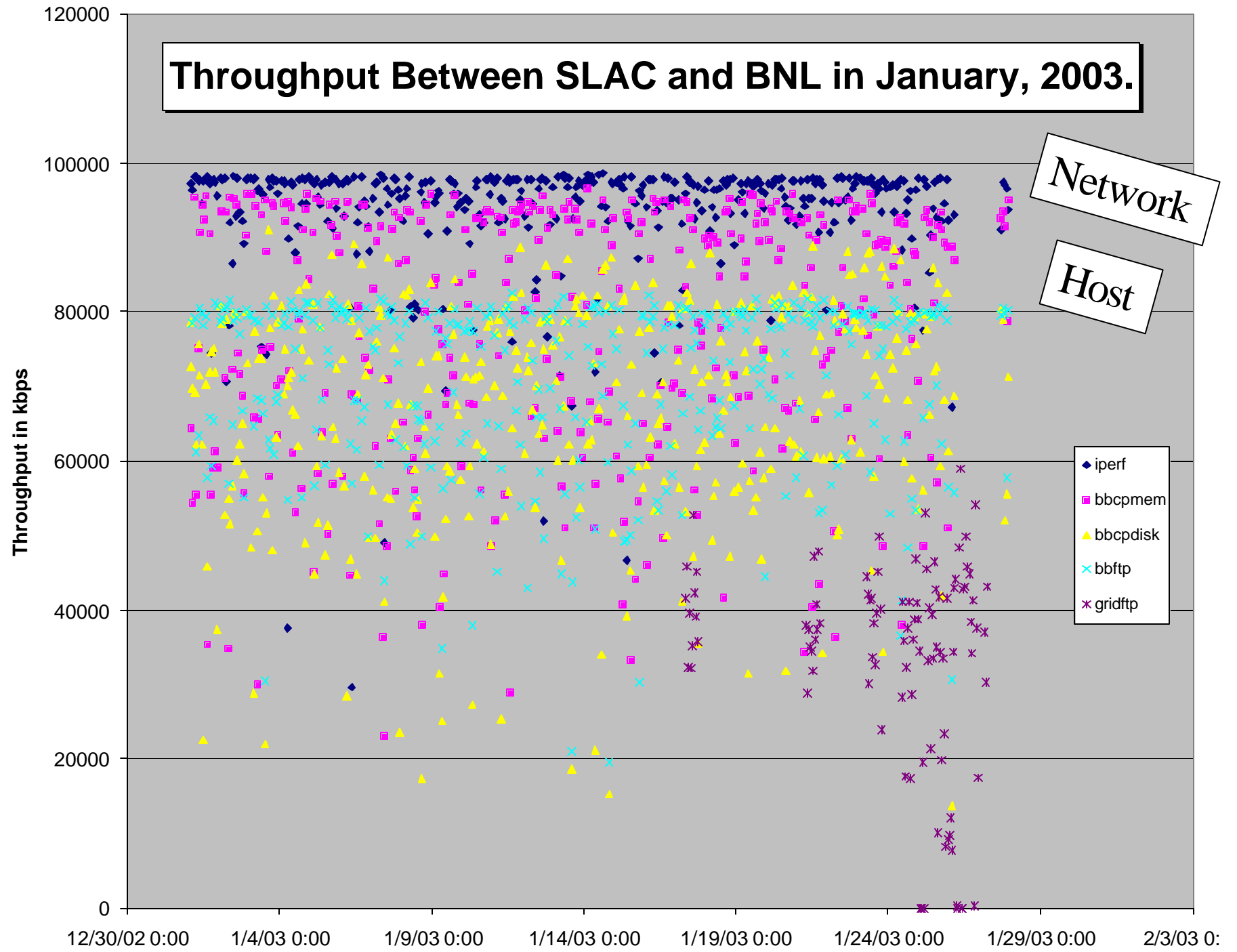


IEPM-BW

- Direct Monitoring
- Currently 10 monitoring sites
 - North America, Europe and Asia
- 1-6 target sites each (40 at SLAC)
- Iperf, bbftp, bbcp, gridftp, udpmon ...
 - Network and applications



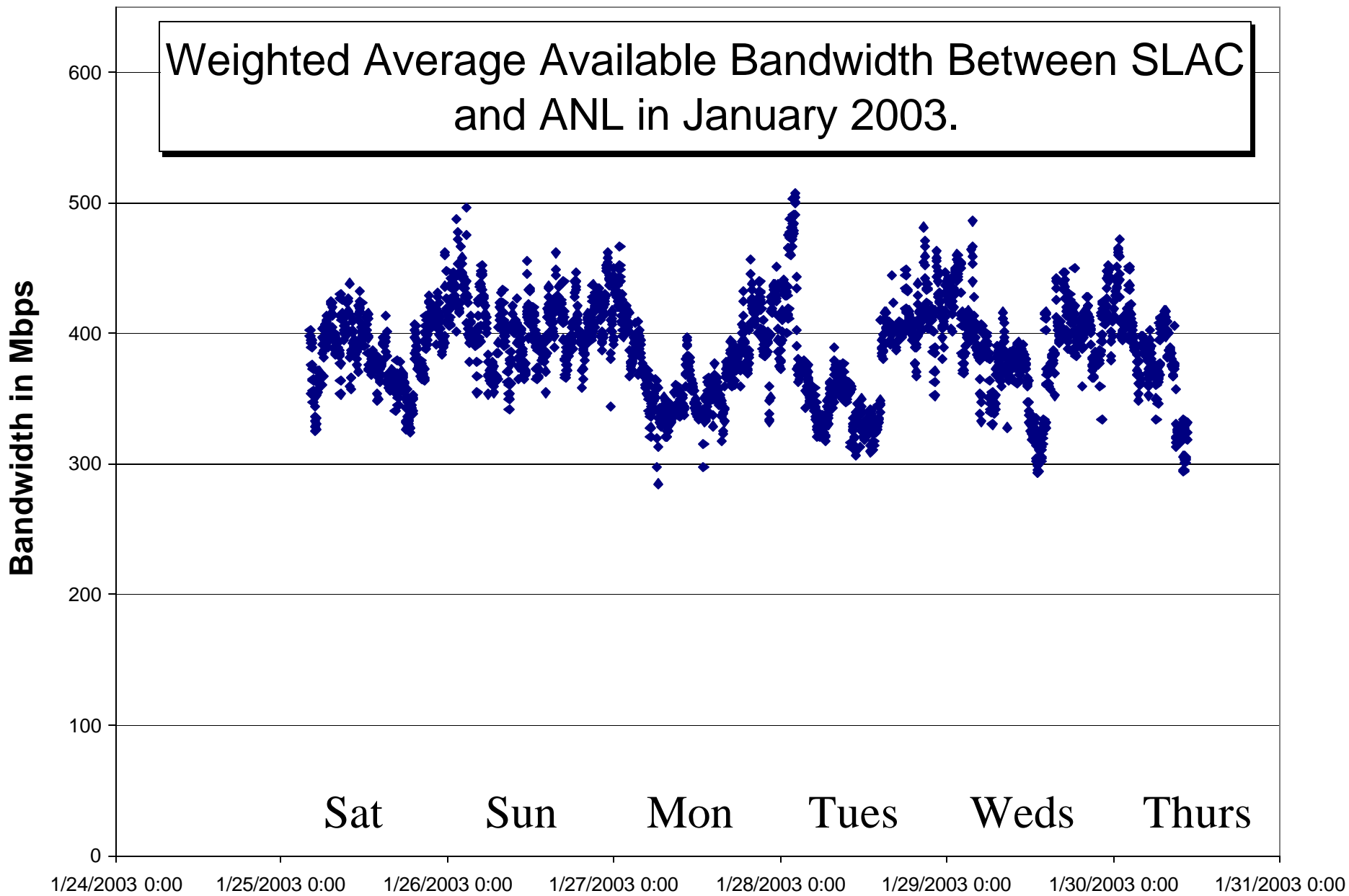
Throughput Between SLAC and BNL in January, 2003.



Available B/width Estimator

- Tests impact the network
 - Can cause problems for “real” traffic
 - Can trip over each other
- Prefer low-impact tools
 - Can also be run more often
- ABwE
 - INCITE (SLAC/RICE/LANL)
 - Results comparable to high impact tools

Weighted Average Available Bandwidth Between SLAC
and ANL in January 2003.



MAGGIE

- Measurement and Analysis for the Global Grid and Internet End-to-end Performance
 - A secure, scalable measurement infrastructure providing measurement, analysis and access to data.

Features

- IEPM-BW + SCIDAC + Other tools
- Security
 - Akenti/Shibboleth
- Access to Data
 - MDS, Web Services
 - Troubleshooting tools survey other sources
- Deploy in DoE Science Community
- Work closely with PIPES (Internet2)

The Need

- A need for a ubiquitous monitoring infrastructure ?
 - DOE Science Community
 - SCIDAC testbed
 - Large Scale Networking
 - Grid (especially resource brokers)
 - Troubleshooting / E2Epi

Toward a Monitoring Infrastructure

- The pieces are coming together
 - Many monitoring projects
 - Internet2 NG with built-in monitoring
 - E2e PIPES
- Join in !

End

- SLAC team led by Les Cottrell
- Warren Matthews
- Connie Logg
- Jiri Navratil
- Jerrod Williams
- Fabrizio Coccoletti (INFN)
- Frank Nagy, Maxim Grigoriev (FNAL)
- And all the local administrators/supporters.
- Funding by DoE MICS / SCIDAC