Physics Worldwide: Network Performance Monitoring

The data referenced in this exhibit will be distributed via the Internet to each experiment's collaborators at Universities and Institutes throughout the world. In order to achieve the required high performance networking SLAC is coordinating end-to-end performance monitoring.

HENP Networks
High Energy and Nuclear Physics (HENP) is a world-wide activity and high performance networking is vital for a successful collaboration.

The BaBar experiment at SLAC has collaborators in 10 countries in North America, Europe and Asia.

The DZero experiment at Fermilab has more than 65 collaborating institutions across North and South America, Europe and Asia.

HENP traffic crosses more than 50 networks with connections up to OC48 (2.4 Gbps).

Ping Monitoring
High performance bulk data transfer is very packet loss sensitive.

Some applications require a uniform spacing between the arrival of packets. The inter-packet arrival time or jitter can be an important factor in the performance of an application.

Most applications perform adequately with moderate packet loss.

Non-Interactive applications such as email can operate even at high rates of packet loss or with high round-trip times.

Performance Images
SLAC co-ordinates the Internet End-to-end Performance Monitoring (IEPM) project.

In September 2000, monitoring from SLAC, Fermilab and 30 other locations involved 600 end-stations at 420 sites in 72 countries. The IEPM is the largest known performance monitoring project in the world.

Analysis of the raw data, development of Tools and development of visualization techniques are a major area of work.

For Further Information, please visit http://www-iepm.slac.stanford.edu
Or send email to iepm@slac.stanford.edu Ask for a copy of the IEEE Magazine article on this project.