Internet over a Bi-Directional Satellite Link

Jim Griner
Mark Allman
Paul Mallasch
David Stewart

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Internet over a Bi-Directional Satellite Link

• Comparison of HTTP over several network channels
  - 33.6k modem connection
  - Satellite connection, standard TCP stack and typical application settings
  - Satellite connection, optimized for satellite networks
    • larger window sizes
    • larger initial congestion window
    • TCP bug fixes
    • new versions of the HTTP protocol
• By using appropriately tuned applications and TCP settings, we demonstrate improved performance of HTTP when compared to today's off-the-shelf software

Optimizations are based upon findings from experiments conducted between satellite research networks at NASA Lewis Research Center and Ohio University.
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Demonstration Setup

- Path1: Modem
- Path2: Satellite, typical settings
- Path3: Satellite, optimized

T1 Wireless Link

33.6 K Baud Modem Link

GEO Satellite Link

ACTS

Sheraton Airport Hotel

NASA LeRC

Internet over a Bi-Directional Satellite Link

- HTTP Comparison Pages
  - 20 pages gathered from several Ohio related sites
  - Pages with varying attributes
    - Number of images from 1 to 27
    - Image sizes from 177 bytes to 360 kilobytes

- Demonstration setup in Dulles
  - Three computers, one for each of the network channels
  - Pages are synchronized to start at the same time
  - The computers will pause for one minute, before moving on to the next page
  - The 20 pages will repeat continuously, for the duration of the workshop