Ongoing TCP Research Related to Satellites

draft-ietf-tcpsat-res-issues-00.txt

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Purpose

- Document mitigations that *may* help networks with satellite channels.
  - These mechanisms may be fine for private networks, but not safe for the shared Internet.
  - These mechanisms may be safe for all networks, but have are not yet on the IETF standards track.

Draft Overview

- Satellite Characteristics
  - Very brief; See other draft for more in-depth coverage
- Satellite Architectures
  - Asymmetric satellite networks
  - Hybrid satellite networks

Draft Overview (cont.)

- Define a general format for outlining various mitigations.
  - Description
    - Brief description of the mitigation and motivation behind it.
  - Research
    - Briefly discuss the research that has been performed and give pointers to it.

Draft Outline (cont.)

- General Format (cont.)
  - Implementation Issues
    - Outline any implementation concerns regarding the mitigation.
    - Outline where the mitigation needs to be implemented (client, server, gateway, etc.)
  - Topology Considerations
    - Discuss impacts of network architecture on the given mitigation.

Draft Outline (cont.)

- Mitigations currently included
  - T/TCP
  - Larger Initial Windows
  - Different ACK Handling Mechanisms
    - Byte-counting
    - No delay-ACKs during slow start
  - *ssthresh* estimation

Draft Outline (cont.)

- Mitigations to be added
  - New loss recovery mechanisms
    - NewReno
    - SACK/FACK
    - Detecting corruption loss
    - Use of ECN and RED
  - Spoofing

Draft Outline (cont.)

- Mitigations to be added (cont.)
  - Multiple TCP connections
  - TCP pacing
  - ACK spacing
  - Header Compression
  - Sharing TCP state

Issues

- Re-visit the architecture section, taking comments from the list into consideration.

- Suggestion: Combine T/TCP and state sharing into one section

- Other mitigations?

- Volunteers Needed!