

Delay-Tolerant Transport Protocols

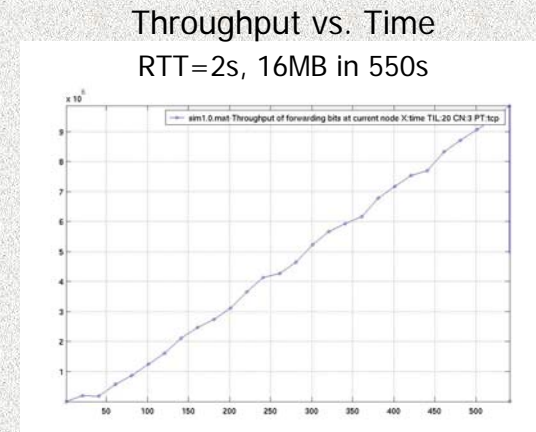
Justin Rohrer and James P.G. Sterbenz – www.ittc.ku.edu/resilinet

DTN Overview

- DTN (delay-tolerant networking)
 - part of survivable and resilient networking
- Variety of causes of delay
 - network component failure
 - line of sight obstruction
 - congestion
 - distance
- Focus area
 - high RTT interplanetary links

Current Behavior (TCP/IP)

- Slow-start
 - inefficient bandwidth
 - multiple RTTs
- Packet loss exacerbates problem



Research Thrusts

- Simulation (ns-2) models
 - various DTN solutions
 - enabling direct comparison
- Corruption/congestion/delay discrimination methods
- Open loop control
- Context-aware initial conditions

SCPS-TP

- Recognized standard
 - developed by JPL for satellite comms
- Addresses some issues
 - loss discrimination
 - initial conditions
- Requires
 - extensive manual configuration
 - total control of network traffic
- No simulation model available
 - needed for performance comparisons