

LEDBAT App Practices and Recommendations

draft-penno-tana-app-practices-
recommendation-01

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Goals

- This draft
 - This document clarifies the current practices of application design and reasons behind them, and discusses the tradeoffs surrounding the use of many concurrent TCP connections to one destination and/or to different destinations. Other resource types may exist, and the guidelines are expected to comprehensively discuss them.

Goals

- This Presentation
 - Agreement on overall P2P behavior
 - Get WG input and analysis on current practices
 - Agreement on Pros/Cons of multiple TCP connection

Terminology

- **Bandwidth:** A measure of the amount of data that can be transferred per second. So, if a 1Gb file were transferred within one second the bandwidth consumption during the transfer would be 1Gb/s. If it were transferred within a day, it would be approximately 0.0002Gb/s.
- **Volume:** The total number of bytes transferred during a long time period. In both examples above the volume within a day would have been 1Gb.
- **Capacity:** The maximum bandwidth a link can sustain continuously.
- **Long-lived connection:** A TCP connection that is in the established state but not necessarily continuously transferring data.

P2P & Multiple Connections

- Pros
 - Resiliency/Reliability
 - Faster download times
- Cons
 - Increased bandwidth consumption (this a con from other subscribers' point of view, of course)
 - Congestion, burstiness have impact on delay sensitive traffic
 - More state needed within TCP termination devices and middleboxes

Recommendations

- Current thinking:
 - Congestion control algorithm that yields to TCP
 - Scavenger class
 - AQM suggestions?
 - Aggressive Idle/Session timeout for P2P TCP control connections (PEX, etc) in middleboxes?
 - Number of TCP connections
 - How many TCP connections are actually needed for the swarm to be healthy and avoid (bad) localization issues?
 - How many TCP connections a client needs to other peers? How does number of connections impact information gathered through DHT/PEX? How does it impact download time?

Next Steps

- Revise draft based on WG inputs on current practices and Pros/Cons of the same
- Introduce recommendations section
- Understand better number TCP connections a client really needs to other peers and relationship with information gathered through DHT/PEX vs. download time.