

Congestion control algorithm for lower latency and lower loss media transport – initial draft

draft-ohanlon-rmcat-dflow-00

Piers O'Hanlon

Ken Carlberg

DFlow: Objectives

- **Lower Delay:** Needed in today's bufferbloomed Net
 - Should stay below 150ms [ITU.G114] (not exceed 400ms)
- **Lower Loss:** Loss is bad for media (limited retransmit)
 - Low delay usually implies low loss as queues not full
- **Smoothness:** Codec output generally smooth
 - Within constraints of the media, codec, and network path.
- **Fairness:** Should aim to be reasonably fair
 - Initially we aim for self fairness and we aim to tackle TCP fairness in later rev.

Objectives (Planned)

- **[Burst Management]**: Mechanisms to handle the bursty nature of media
 - E.g. Allow bursts when conditions permit
 - Providing for smoother quality
- **[Loss-based mode]**: Mechanisms to allow for 'fair' thrupt against loss-based CC flows
 - Without additional network support (e.g. Codel) delay (and loss) would be largely beyond control.

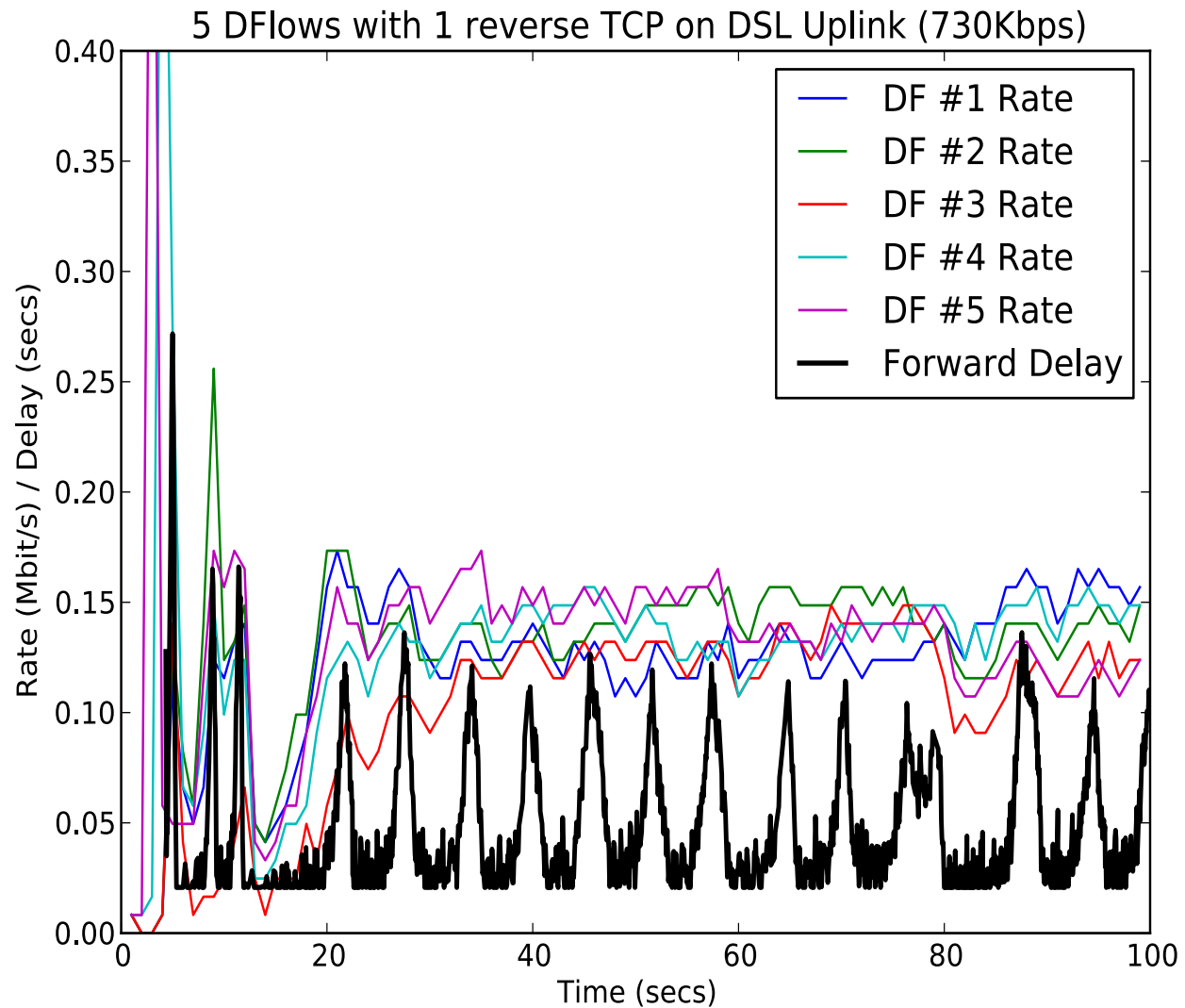
Design Outline

- Loosely based on TFRC design
 - Disabled delay-based oscillation smoothing
- TCP equation to derive an operating rate
- Utilises ‘delay losses’
 - Based on relative delay and its derivative
- Building ‘congestion event history’
 - Based on TFRC ‘loss event history’ mechanism

Discussion

- This is preliminary work and we're seeking feedback
- More simulations and testing

Simulation: DFlow



Simulation: TFRC

