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tfj

One control to rule them all

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How we use the Internet today: 3 stories

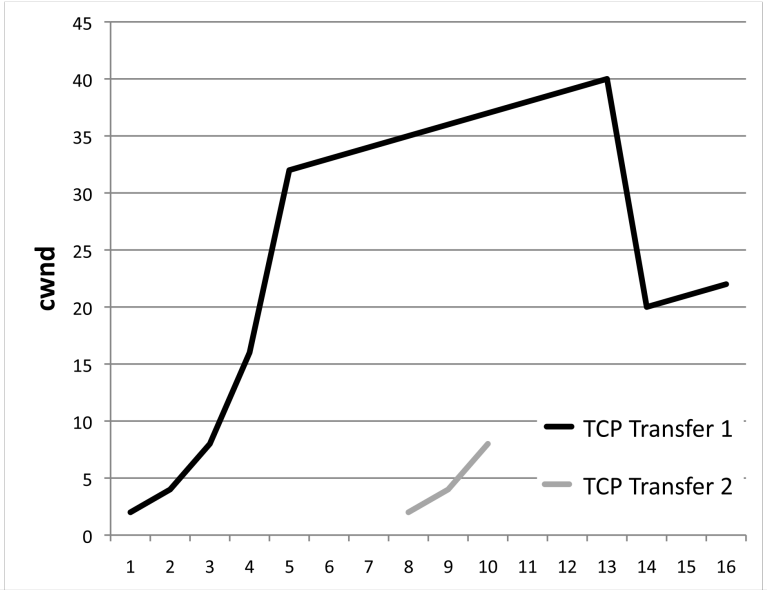
1. I clean our flat while listening to Spotify
   - in parallel, downloading files via my own
   - Suddenly I begin to think:
     "please, dear downloads, don't make the music stop!"

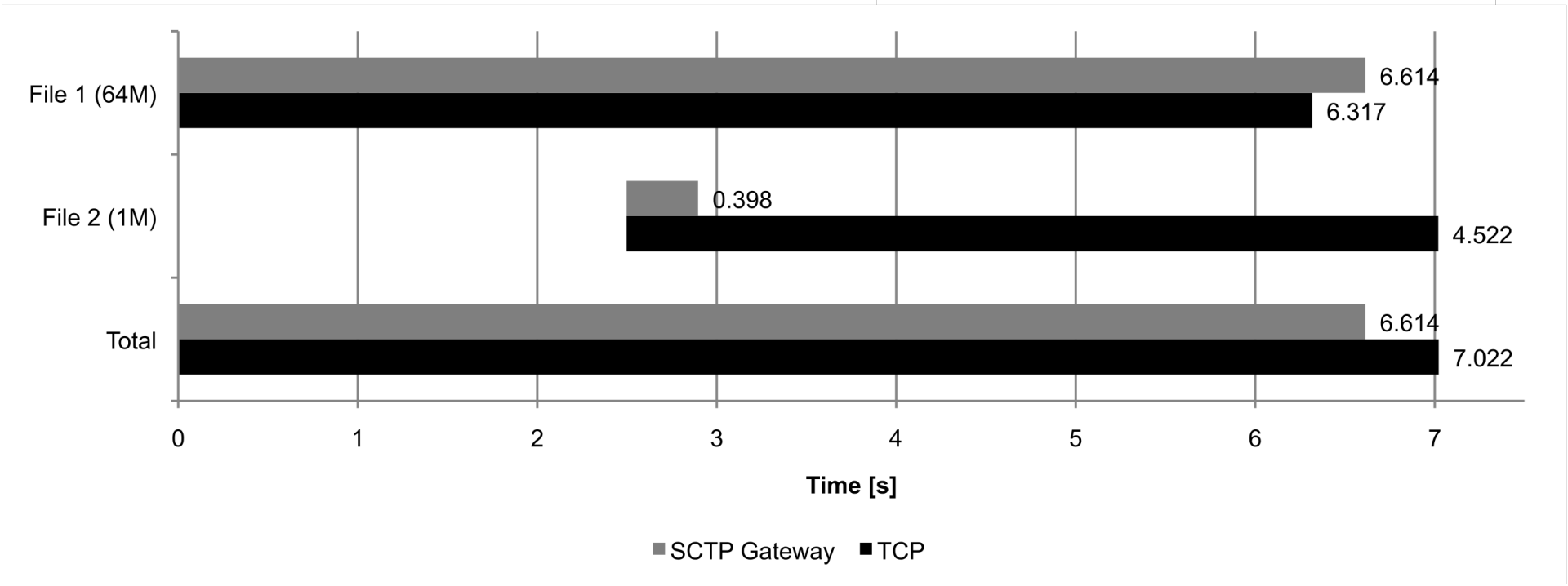
2. I am in a hotel room, using Skype to see my daughter
   - Quality barely good enough; I avoid clicking on anything
   - Note: that's different when I talk to my mother...

3. Downloads can have different priorities, too
   - When I download two files, I try to guess whether the downloads slow each other down

So you care more about "performance"?

- What is it to you?





How to fix this

- The problem can be solved with a single Congestion Control instance (as in RFC3124)
  - But solving it in general is hard – RFC3124 leaves some key issues unresolved + benefits weren't shown
    - shared bottleneck or not?
    - overally less aggressive CC – bad e.g. for short flows?

    ... all at the cost of a complex implementation!

- But we could do this right for rtcweb
  - Common bottleneck is assumed (all-over-one-5-tuple)
  - long connections are somewhat likely

Lots of benefits

- Really able to control fairness
  - outcome is result of a sender-side scheduler, not of "fighting it out" at the bottleneck
- Less queuing delay: only one flow
- Better performance for short or application-limited flows
  - skip slow start; again less queuing delay from slow start overshoot
- Less feedback needed
  - avoid that e.g. data channel feedback (SCTP SACK chunks) is ignored by RTP's CC.