TCP Response to Lower-Layer Connectivity-Change Indications

draft-schuetz-tcpm-tcp-rlci-01

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Problem to Solve and Basic Idea

- TCP is (mainly) unaware of events in lower layers \ can be inefficient in case of mobility and/or temporary connectivity disruptions

- RLCI
  - uses generic (technology-independent) indications from lower-layers ("something happened")
  - avoids long idle time due to (repetitive) RTOs
  - re-probes path state to adapt faster to changed conditions
  - signals local indications to peer hosts through a new TCP option

Why RLCI at TCPM?

- RLCI provides generic approach to overcome problems in diverse networking scenarios

- handovers
  - adapt faster to new paths
  - friendlier: avoid over-loading new path
  - performance: quickly use available capacity

- connectivity disruptions
  - Increase performance and responsiveness

What's new?

- -00 version was presented at IETF-66
- cleaned up description of connectivity-change indication processing
- specification more formal
- developed preliminary NS-2 prototype
- first simulation results look promising
  - repeated "long disruption" scenarios from Simon's and Lars' CCR paper on retransmit-now mechanism*
  - got similar (good) results on performance improvements
- final simulation results will be made available

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Next Steps

- Would like to start discussion on mailing list
    - Is the problem considered worth being followed up?
    - Is the RLCI approach the right way to go?
    - Are there technical issues with current draft?

- Simulation results should be made available as soon as possible

- Consider it as candidate for Experimental RFC