TCP Response to Lower-Layer Connectivity-Change Indications

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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 TCPPM?

• 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

* Protocol Enhancements for Intermittently Connected Hosts.
  Simon Schütz, Lars Eggert, Stefan Schmid and Marcus Brunner.
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