TCB Control Block Sharing: 2140bis

draft-ietf-tcpm-2140bis-00
IETF 105 - Montreal

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Changes from draft-touch-tcpm-2140bis-06

• Re-issued as draft-ietf-tcpm-2140bis due to WG adoption

• Cleaned orphan references to T/TCP, removed incomplete refs

• Moved references to informative section and updated Sec 2

• Updated to clarify “no impact to interoperability”

• Updated appendix B to avoid 2119 language
Next steps

Currently, document discusses:

1. Ensemble sharing
   • Sharing (initializing from cache) while connections are ongoing

2. Temporal sharing
   • Making cached TCB information available to later connections

   • ...but what is "later"? Not much discussion of timescales...
   • ...and what defines success? Currently, TCP convergence resolves it

→ We plan to add a short section on these issues.
Timescale considerations

• How long is TCB information valid? Depends...

• E.g.:
  • RTTVar reflects current traffic behavior
  • TFO state reflects state from the peer + path state that may last longer
    • Subject to routing changes and equipment configuration / upgrades

• Very long lasting state may benefit from special consideration
  • E.g., some constants that never work may need to be adjusted
Auto-adjusting over long timescales (think, e.g.: months, years)

• **Consider IW**: we now have Exp IW 10 [RFC 6928]
  • Some hosts use much larger values
  • Some use smaller ones

• Could we be a little bit more dynamic?
  • If a large IW to one destination never worked, it's pointless to keep?
  • If snd_cwnd always became much larger to a destination, why limit to 10?

• This would automatically do an ‘experiment’, and auto-adjust to environment
  • I.e., as initially suggested in draft-touch-tcpm-automatic-iw
  • A node on a slow connection or with a small device (IoT) might never increase its IW
  • My office machine (network always upgraded with the rest of the backbone) might
Types of feedback

• Current:
  • Convergence-based
    • Connection end values affect future predictions by how statistics aggregate

• Additional opportunities (also as noted in draft-touch-tcpm-automatic-iw)
  • More direct management of those statistics
  • E.g., discounting values that didn’t work out, amplifying those that do

• Two kinds of additional feedback:
  • Implicit
    • Tracking whether initial conditions persist over a connection
  • Explicit
    • looking for packet exchanges that more directly indicate success