Changes in CCID 2 and CCID 3

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Section 5.1: Response to Idle and Application-limited Periods

What does TCP do?

• RFC 2581 says that TCP SHOULD slow-start after an idle period.

• RFC 2861, Experimental, has a slightly more moderate mechanism for TCP.
Section 6.1.1: Detecting Lost and Marked Acknowledgements

- When a packet is lost from DCCP B to DCCP A, DCCP A doesn't know if this was a data packet or an ACK packet.

- For the purposes of Ack Ratio calculation, DCCP A assumes that every loss from DCCP B to DCCP A was an ACK loss.

- (The NDP Count option can give more information.)
Appendix B: **Cost of Loss Inference Mistakes** to Ack Ratio

- The cost occurs when DCCP B is sending roughly the same amount of data and non-data packets, without NDP Count options, with all acknowledgement information in DCCP-Ack packets.
- The cost is moderate.
CCID 3: Changes from draft-ietf-dccp-ccid3-05.txt:

- Response to Idle and Application-limited Periods

- Response to Data Dropped and Slow Receiver

- Other Possible Changes to TFRC

- Added a paragraph on the sending rate when no feedback is received from the receiver. (Specified in RFC 3448.)

- Expanded on the discussion of the packet size s used in the TCP throughput equation. (One could set the packet size s to MSS).
Section 5.1: Response to Idle and Application-limited Periods

• After an idle period, the allowed sending rate is not reduced to less than the initial sending rate.

• After that, the sending rate is at most doubled from one RTT to the next.
Section 5.2: Response to Data Dropped and Slow Receiver

• Adjusting the receive rate after Data Dropped or Slow Receiver events, to limit the sending rate in the next RTT. This is "SHOULD".
Section 10.2: Other Possible Changes to TFRC

Issues listed for future research and engineering:

- Sending fewer acknowledgements when the sending rate is low (less than one packet per RTT)?

- More than doubling the sending rate, from one RTT to the next?

- A higher sending rate after an idle period?

- Follows an old section on Possible Changes to the Initial Window.
Possible new efforts:

- Standardizing QuickStart (for a faster start-up, with feedback from routers).
- A new CCID for VoIP based on RFC 3714, IAB Concerns Regarding Congestion Control for Voice Traffic in the Internet.
- At some point, TFRC-PS, a variant of TFRC for flows that adapt their packet size.