Profile for DCCP Congestion Control ID 4: the Small-Packet Variant of TFRC CC.

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draft-floyd-ccid4-01.txt

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Slides: http://www.icir.org/floyd/talks.html
CCID 4 differences from CCID 3

• **Header size:**
  – The allowed transmit rate includes headers.

• **Minimum sending rate:**
  – A minimum interval of 10 ms. between packets.

• **Loss rates for short loss intervals:**
  – The computed loss rate takes into account the number of packets dropped.
  – If the most recent loss interval is short, it is not included in the calculation of the average loss interval size.

• **The nominal segment size:**
  – The nominal segment size used by the TCP throughput equation is set to 1460 bytes.
New: a CCID 3 Dropped Packets option

---------- Loss Interval ----------
/                                    /
+-----------------------------+-----------------------------+
| Lossless Length | E | Loss Length | Data Length |
+-----------------------------+-----------------------------+
3 bytes                     3 bytes                     3 bytes

The old CCID 3 Loss Intervals Option.

---------- Loss Interval ----------
/                                    /
+-----------------------------+
| Drop Count                  |
+-----------------------------+
3 bytes

The new CCID 3 Dropped Packets Option.
The CCID 3 Dropped Packets Option


- +---------------+-----------+---------------------------
  | 11000011 | Length | Drop Count | More Drop Counts... |
  +---------------+-----------+---------------------------
Type=195 3 bytes
New since draft-floyd-dccp-ccid4-00:

• Feedback from Ian McDonald:
  – Changed the assumed DCCP-Data header size (for 48-bit sequence numbers).
  – Added that the CCID4 sender can send two packets in a burst, if limited by OS granularity.
  – Added that the implementer may track Faster Restart and implement it before an explicit update to the CCID4 RFC.

• Added an example to Section 8.4:
  – Of when errors can occur in using the Window Counter to detect loss intervals of at most two round-trip times.

• Added a subsection:
  – describing calculation of the average loss interval in TFRC-SP.
Next steps:

- I think this is straightforward.
- Ready to become a WG item.
- Ready for WG last call.