Packet Reordering Metric for IPPM

http://www.ietf.org/internet-drafts/draft-ietf-ippm-reordering-04.txt

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Changes in 04:

- **Various Clarifications of the Abstract and ideas in Sections 1 and 2**
  - ➔ **Added the notions of Steady-State and Transient Reordering**
- **New name for the singleton metric in Section 3**
  - ➔ **Type-P-Non-Reversing-Order became Type-P-Reordered**
  - ➔ **Reordering Singleton is True when packet is reordered**
  - ➔ **Definitions in units of Time and Bytes are in a separate section**
- **Text to cover Fragmentation, but more needed**
- **Duplicate Packets treated as in RFC 2679**
- **Jon's comments on Reordering-free Run Pseudo-Code.**

Outline for ippm-reordering draft 04 and beyond

- **Problem Statement -**

1. Determine whether or not packet order is maintained (and which packets are reordered)

- ➔ **Section 3 (Type-P-Reordered)**

2. Quantify the extent of change (this will have many useful solutions)

- ➔ **Section 4 - Metrics that lean to Network Characterization**
  - ✦ **Frequency: ratio of Reordered Packets to total**
  - ✦ **Distance/Offset metrics: Position (extent), Time, and Bytes**
  - ✦ **Packet at a Reordering Discontinuity**
  - ✦ **Reordering Gap**
  - ✦ **Reordering Free Runs**
- ➔ **Section 5 - Metrics Primarily for Receiver Assessment**
  - ✦ **n-reordering (NewReno TCP)**
  - ✦ **place for a generic receiver buffer size estimation?**

Next Steps for draft 05

- **Appendix to cover Fragmentation (see the archive)**
  - ➔ **Four New parameters**
    - ✦ **MoreFrag, the state of the More Fragments Flag in the IP header**
    - ✦ **FragOffset, the offset from the beginning of a fragmented packet, in 8 octet units (also from the IP header).**
    - ✦ **FragSeq#, the sequence number from the IP header of a fragmented packet currently under evaluation for reordering. When set to zero, fragment evaluation is not in progress.**
    - ✦ **NextExpFrag, the Next Expected Fragment Offset at the Destination, in 8 octet units. Set to zero when fragment evaluation is not in progress.**
  - ➔ ***Pseudo-Code (found one bug so far...)***
- **Jon's Examples on Reordering-free Run Definition (Section 4.5)**
- **Comments/Results from today's discussion**