Packet Reordering Metric for IPPM

http://www.ietf.org/internet-drafts/draft-ietf-ippm-reordering-03.txt

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Changes in 03: Much Clarification, and

- Followed outline proposed at IETF-56
- Working issue of Fragmented Packets
- More references to earlier work
- Clarified the Gap metric - Distance between Reordering Discontinuities.

```
1, 2, 4, 5, 3, 6, 7, 9, 10, 11, 8, 12,...
      |-----Gap------|
```

  - ➔ Packets 4 and 9 are Reordering Discontinuities associated with reordered packets 3 and 8, respectively.
  - ➔ Gap is the distance between them

- Added Reordering Free-Run metric:

```
1, 2, 4, 5, 3, 6, 7, 9, 10, 11, 8, 12,...
Runs        4                   7 ...
```

Outline for ippm-reordering draft 03

- **Problem Statement -**

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

- ➔ **Section 3 (Type-P-Non-Reversing-Order)**

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 04

- Reordering by any other name...
- More Ideas and text to cover Fragmentation
- Jon's comments on Reordering-free Run Def.
- Comments/Results from today's discussion