

# Reporting IP Performance Metrics to Users

draft-ietf-ippm-reporting-03.txt

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# Context

- Reporting small set of metrics to users on demand (“short term” versus “long-term”, or long-running)
- The set: median delay, loss ratio, delay spread, duplication, reordering

# What's changed in -03?

- Major outstanding item: “references”
- Pointing out existing IPPM metrics that define what is being reported
- All but reordering in -03; reordering delayed because examining the non-normative example in detail caused confusion... it had errors
- Are we on the right track?

# Median delay

- “For more information, refer to section 5.2 (Type-P-One-way-Delay-Median) of RFC 2679 [RFC2679] (A One-way Delay Metric for IPPM), and supporting text.”
- RFC 2679 is added as a normative reference (vs. informative). Does anyone think it should be informative?

# Loss ratio

- “For more information, refer to Section 4.1 (Type-P-One-way-Packet-Loss-Average) of RFC 2680 [RFC2680] (A One-way Packet Loss Metric for IPPM). The Loss Ratio is  $100 \times \text{Type-P-One-way-Packet-Loss-Average}$ .”

# Delay spread

- “For more information, refer to section 5.1 (Type-P-One-way-Delay-Percentile) of RFC 2679 [RFC2679] (A One-way Delay Metric for IPPM), and supporting text. The Delay Spread is the 75th Type-P-One-way-Delay-Percentile minus the 25th Type-P-One-way-Delay-Percentile.”

# Duplication

- “For more information, see section 5.2 (Type-P-one-way-replicated-packet-rate) of RFC TBD-duplicate [I-D.ietf-ippm-duplicate] (A One-Way Packet Duplication Metric). Duplication is  $100 \times \text{Type-P-one-way-replicated-packet-rate}$ .”
- ...Change last to “Duplication is Type-P-one-way-replicated packet-rate expressed as a percentage.
- Issue: dividing by sent (this doc) versus sent and not lost (duplicate draft, ITU defn)

# Reordering

- Proposed, not in -03
- “For more information, refer to section 4.1.3 (Type-P-Reordered-Ratio-Stream) of RFC 4737 (Packet Reordering Metrics), and supporting text.”
- “{Comment: As the non-normative sample code in XXX below shows, this is also related to the amount of 1-reordering (Section 5.3 RFC 4737). It is not, however, the degree of 1-reordering in 5.3; because that divides by the number of all packets received, instead of the number of unique (non-duplicate) packets received.}”
- Sent vs received???



# Reordering

- fraction of sent packets for which the sequence number of the packet received immediately before the first copy of the given packet is not the decrement of the sequence number of the given packet
- Propose “fraction of packets sent but not lost for which...”

# On the example

- I tried working the definitions on the sample input by hand.
- I couldn't reproduce the sample results
- It turns out there were bugs in the code...
  - Last line of input has a newline -> it tries to count a phantom extra line
  - Divisor in n-reordering calculation incorrect. It turns out it is also incorrect in RFC 4737 code 😞
  - Good thing: they are both non-normative...
  - There may also be a bug in the percentile code, not yet verified

# Next steps

- Resolve “sent” vs “sent but not lost”
- Fix duplicate reference
- Fix sample code and results
- Fix any other comments received
- WGLC before next IETF