IPPM multimetrics draft

Emile Stephan, Lei Liang, Al Morton
Update Overview

• Editorial changes
• Clarifications
  – Path Digest stability
  – Type-P-segment-Packet-loss-Stream
• IPDV metrics definitions
• Draft splitting ?
• Conclusion
Editorial

• Remove of remaining text related to passive metrics;
• Corrections based on Joseph inputs
  – odd capitalization, -, …;
• Completion of IANA Registry section
Path Digest stability

• Move explanations from definition to discussion sections:
  – Definitions are made on stable path digest
  – Path Digest change is covered in the methodology and in the discussion sections

• Segment metrics
  The metric is 'Undefined' when the packet is not observed at the first point of interest.

• Methodology:
  – Change in the path leads to 2 spatial metric measures over time
    Measure(T0 to Tend) → Measure(T0 to Tchange) + Measure(Tchange to Tend)

• Examples
  \{ Src, H1, …, \textbf{Hk}, …, Hn, Dst\} → \{ Src, H1, …, \textbf{Hk}', …, Hn, Dst\}
  \{ Src, H1, …, Hk’, …, Hn, Dst\} → \{ Src, H1, …, Hk, …, Hn, Hn+1, Dst\}
  \{ Src, H1, …, \textbf{Hk}, \textbf{Hk+1}, …, Hn, Dst\} → \{ Src, H1, …, \textbf{Hk+1}, \textbf{Hk}, …, Hn, Dst\}
Type-P-segment-Packet-loss-Stream

• Type-P-segment-Packet-loss-Stream definition
  – Same value as Type-P-One-way-Packet-loss-Stream (RFC2680)
    • '1' still means :
      – Packet observed by the first point of interest and NOT by the second point of interest (after a while),
    • '0' still means :
      – Packet observed by the first point of interest and the second point of interest,
  – New value 'Undefined'
    • Packet not observed by the first hop
      – subcase1 : and not observed by the second hop
        » packet may be lost before (per def)
        » or Path may have change (measure issue),
      – subcase2 : and observed by the second hop
        » Not possible (per def);
        » Path may have change (measure issue)
Segments IPDV metrics

• Which ipdv metrics ?
  – Motivation from as draft-ietf-ippm-delay-var-as

• IPDV between 2 points of interest of a path
  – Type-P-Spatial-Segment-ipdv-prev-Stream
  – Type-P-Spatial-Segment-ipdv-min-Stream

• Extracted from the matrix of Type-P-Spatial-One-way-Delay-Vector over time
Segments IPDV metrics methods

2 steps
- get the stream of delays
- compare each term with the delay of reference

Step1 is common: \(<dT1.b – dT1.a, dT2.b – dT2.a, ..., dTm.b - dTm.a>\)

Step2 of Type-P-Spatial-Segment-ipdv-prev-Stream:
compare to the previous delay
\(<dT2.b–dT2.a – (dT1.b–dT1.a),...,dTm.b-dTm.a –(dTm-1.b-dTm-1.a)>\)

Step2 of Type-P-Spatial-Segment-ipdv-min-Stream
compare to the minimum delay of the stream
\(<dT1.b–dT1.a – min(dTi.ab), dT2.b–dT2.a – min(dTi.ab),...,dTm.b-dTm.a –min(dTi.ab)>\)
Splitting?

• pro
  – smaller documents will encourage review
  – Clear topics: 'multicast', 'spatial'
  – May encourage the adding of more statistic metric;
  – Faster IESG review

• Con
  – Share matrix framework and discussion time vs space
    • Lot of duplicate text in the 2 drafts or unclear dependency
  – 3 meeting ago, use case mixing spatial and multicast metrics

• Author suggestion…
Conclusion

Author suggestion …

• Metrics definition and discussion achieved,

• Matrix methodology and discussion of aggregation order (time and space vs space over time) well achieved

WGLC is the right alternative