Flow-based Performance Measurement

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OUTLINE

- FPM Review
- Update
- Why FPM

FPM Review

- This is an end-to-end flow-based IP performance monitoring method:
  - It can support on-the-spot measurement.
  - Performance measurement in existing flow, no testing flow
  - The OAM packets are injected into the network to carry some parameters related to service flow and some statistic information.
  - The OAM packets are processed by using the same method as its corresponding service flow adopts.
- It involves two parts:
  - Connection Control
    - Connection Activation
    - Connection Deactivation
  - Measurement Process
    - FPM Initiator behavior
    - FPM Responder behavior

Update

- A detailed description of the problem statement
  - Motivation and Scenarios
  - A use case
- Reuse the IPPM metrics
- Revise the description of the measurement procedure

Update

- Reuse Metrics
  - RFC 2679
    - A One-way Delay Metric for IPPM
  - RFC 2680
    - A One-way Packet Loss Metric for IPPM
  - RFC 3393
    - IP Packet Delay Variation Metric for IPPM
  - RFC4737
    - Packet Reordering Metrics

Why FPM

- Compare with TWAMP for real-time application flows measurement
  - TWAMP
    - It has to copy a flow similar to data flow in network in order to get more accurate results if it wants to support real-time measurement of application flows.
    - However, it will increase network load, and has bad effects on the performance of online applications.
  - FPM
    - It injects small number of test packets in application flows, and carries flow-related information in test packets to track and record states of each flow.
    - In this way it can work well to real-time measure application flows with little effect on them.

Why FPM

- Other merits
  - On-the-spot
    - Real-time measurement
    - Measure in existing flow, NO testing flow
  - Novelty
    - Use the method which combines active measurement and passive measurement
    - Use OAM-like packets to measure
  - Accuracy
    - The measurement result reflects the performance of data flow accurately


THANKS