Passive Framework
draft-zheng-ippm-framework-passive-01

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Passive Complements Active

- Differences between passive and active measurements
- RFC2330 differences : metric definition and measurement methodology

- Active Measurement Method: The process of measuring some performance or reliability parameter associated with the transfer of traffic by generating and/or receiving packets injected into the network.

- Passive Measurement Method: The process of measuring some performance or reliability parameter associated with the existing traffic (packets) on the network

Characterization of Passive

- Different passive methods:
  1. Observation
  2. Adding a dedicated packet header[draft-PDM]
  3. Changes to an existing header for marking[draft-coloring]

- Passive measurements adds to active measurement:
  - no extra in-band traffic
  - may be done during peak traffic
  - may be more accurate and helpful in troubleshooting and characterization of QoE

Terminology

- Marking : A scheme for modifying a field in the IP header for purposes of measurement. A description of this scheme for IPv4 may be found at [draft-coloring].

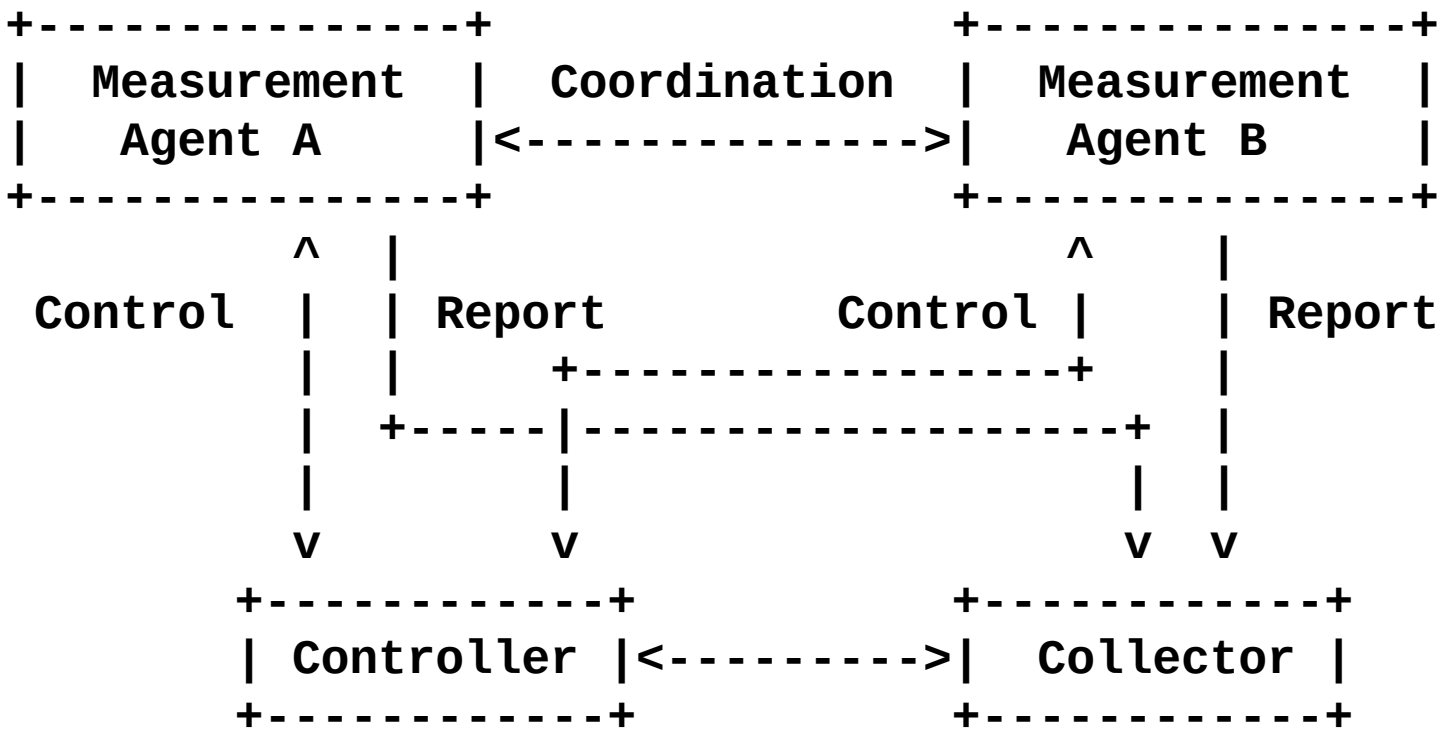
- PDM : Performance and Diagnostic Metrics (PDM) header. An IP header which is appended to packets for the purposes of measurement. A description of the IPv6 version of this header may be found at [draft-PDM].

Nature of Passive Traffic

- RFC2330 defines singleton, sample, and statistics
- Passive: S, S, and S are within captured traffic
- Active: S, S, and S are to generate traffic

- Capture content: type(s) of packet or metric found
- Capture distribution: actual pattern of data in the collected packets
- Capture limits: the way the set of packets or metrics are selected
- Capture methodology: Passive measurement simply collects that which exists
- Unruly Nature of Capture: With reality, there are no guarantees.
- Capture Selection: no way of knowing if a particular desired packet or packet sequence exists in set of packets captured. If do exist, may use a random (or another) sampling method
- Point of View: Where is the measurement being done

Reference Model



Reference Model

- Controller: A entity that exchanges the Control of the Measurement
- Collector: A entity that receives a Report from a Measurement Entity and provides the Report to the Controller for metric calculation / derivation.
- Measurement Agent: An entity that exchanges the Control of the Measurement Task with the Controller, performs Measurement Tasks and sends the Report to Collector.
- Control: The collective description of information exchanged between Controller and Measurement Agent, i.e. configurations, instructions, states, etc. for a Measurement Agent to perform and Report Measurement Tasks.
- Coordination: [TBD. Discuss coordination with MAs and Controller]
- Report: The set of Measurement Results and other associated information as defined by the Control.
- Measurement Task: The act that consists of the single operation of the Measurement Method at a particular time and with all its Input Parameters set to specific values.
- Measurement Result: The output of a single Measurement Task (the value obtained for the parameter of interest or Metric).

- [Note: further discussion and clarifications regarding these borrowed terms from LMAP framework are to be expected, with coordination with [I-D.ietf-lmap-framework].]

Methodology

- Methodology Design Considerations
- Discussion of Errors / Unintended Consequences
- Control Protocol
- Measurement Session Management
- Data Collected Correlation
- Measurement Configuration
- Scalability and Robustness

Next Steps

- Potential overhead (to device, to network)
- Reference model
- What a passive method SHOULD do