

Precision Availability Metrics for SLO-Governed End-to-end Services

draft-mhmcsfh-ippm-pam

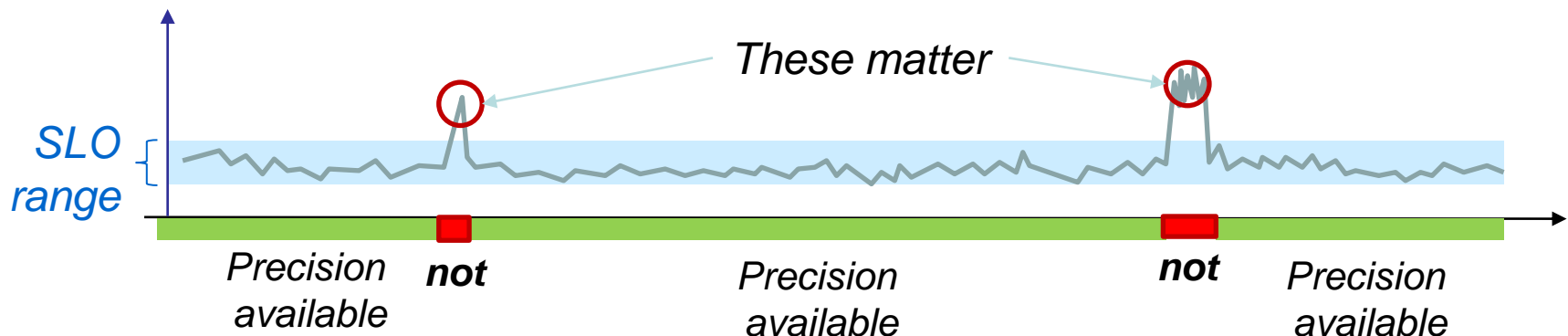
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Precision Availability Metrics

- Observation #1: SLOs are key – you need to count what counts
 - Critical performance metrics reflected a set of SLOs
 - In some use cases, the complete history of each SLO is not needed
 - Capturing violations (and asserting their absence) is often sufficient (and more efficient to retain)
- Observation #2: Analogy between service and system failures
 - Inability to deliver contracted SLOs is a failure
 - Precision Availability is a form of availability



Update

- Welcome Mohamed 'Med' Boucadair
- Addressed comments received
- Moved on terminology

Clarify the Problem Statement

- To express the perceived quality of delivered networking services versus their SLOs, a set of metrics are needed to characterize the quality of the service being provided. Of concern is not so much the absolute service level (for example, actual latency experienced), but whether the service is provided in accordance with the negotiated, and eventually contracted, service levels. For instance, this may include whether the packet delay that is experienced falls within an acceptable range that has been contracted for the service. The specific quality of service depends on the SLO that is in effect.

PAM Usage

- PAM can be used to assess whether a service is provided in compliance with its specified quality, i.e., in accordance with its defined SLOs. This information can be used in multiple ways, for example, to optimize service delivery, take timely counteractions in the event of service degradation, or account for the quality of services being delivered.

Added Metric

- Packets since the last violated packet. (This parameter is suitable for the monitoring of the current compliance status of the service.)

Terminology

- The authors discussed and agreed to use “violated” terms. For example:
 - Violated Interval
 - Severely Violated Interval
 - Violation-Free Interval

Discussion items

- ~~Terminology: “Errored” vs. “Violated”. Is a singleton of non-conformance to an SLO an error or violation of a contract?~~
- Metrics: individual packets that breach SLO(s)?

Future work (beyond this draft)

- YANG data model
- IPFIX Informational Elements
- Support for statistical SLOs, e.g., histogram and/or bucket
- Policies to define violated time unit, configure metrics
- Additional second-order metrics, e.g., “longest disruption of service time”

Next steps

- Welcome comments, questions
- WG adoption

Thank you