

Active and Passive Metrics and Methods (and everything in-between, or Hybrid)

draft-ietf-ippm-active-passive-00

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Definitions

- First, define Performance Metric and Method of Measurement.
- Next, define Active and Passive Methods
- Then, recognize that IPPM's Active Metrics deliberately incorporate some methods in the Metric Definition – therefore, Active Metrics.
- Passive Metric definition follows
- Finally Hybrid Methods are a combination of Active and Passive

Reviews, Comments, Support

- Instructions – Check [I-D.zheng-ippm-framework-passive], be sure there are no holes in the terminology.
- Tiziano Ionta – Direct mention of Hybrid, in title, Intro, Scope, and definition is (3.8).
- Matt M - a new class of metrics: Dual stream testing, Both streams Active, Mixed, Both Passive. Jitter isolation between streams, both passive, in RMCAT (3.6)
- Mirja Khulewind - talk about errors that can creep in because of the choice of method. For example, you can measure a metric with active, you could construct the same measurement with passive, may get two different answers (section 4.1)

Modifications in -00

- Notion of “stream of interest” used consistently.
- With respect to the stream of interest, Hybrid methods fit in the continuum as follows, in terms of what happens at the Source (or Observation Point nearby):
 - If you generate the stream of interest => Active
 - If you augment or modify a stream of interest => Hybrid
 - If you solely observe a stream of interest => Passive

Revised -00 classification:

2 Dimensions

1. The degree to which the stream of interest affects overall network conditions experienced by that stream and other streams. This is a key dimension for Active measurement error analysis.
2. The degree to which stream characteristics are known a priori. There are methodological advantages of knowing the source stream characteristics, and having complete control of the stream characteristics. ...number of packets ... when sent ... what kind ... This is a key dimension for Passive measurement error analysis.

Section 4.1 ends with a paragraph of examples for error associated with each type of method.

Next steps

- Editorial Check/Update.
- WGLC ?

BACKUP

draft-zheng-ippm-framework-passive-03

- * cites metrics of throughput, latency, and errors as active, (sec 4.1)
- >>> These metrics can be measured using many methods
- * uses the phrase "existing traffic" when describing passive measurements, and "existing on the network" when referring to passive metrics (sec 4.2)
- >>> Consistent with IPPM Wg draft-ietf-ippm-active-passive definitions.
- * indicates that definition of Hybrid is a combination of active and passive
- >>> also consistent with draft-ietf-ippm-active-passive definitions (sec 6, Methodology for "IP Passive Performance Measurements" from title)
- BUT cites inserting Y.1731 OAM along with "altering the packet"
- >>> Neither of these are "existing traffic"
- >>> Do detailed methods belong in the framework?

We* didn't start the fire...

- IPPM chartered since 1997, working as part of BMWG before that... RTFM and IPFIX long-timers
- First PAM conference in 2000
- Many terms are in common use in IETF, but *some* lack formal definitions
- The notions of active and passive are well-established, so let's document them.
- Further, let's help classify new methods according to useful criteria

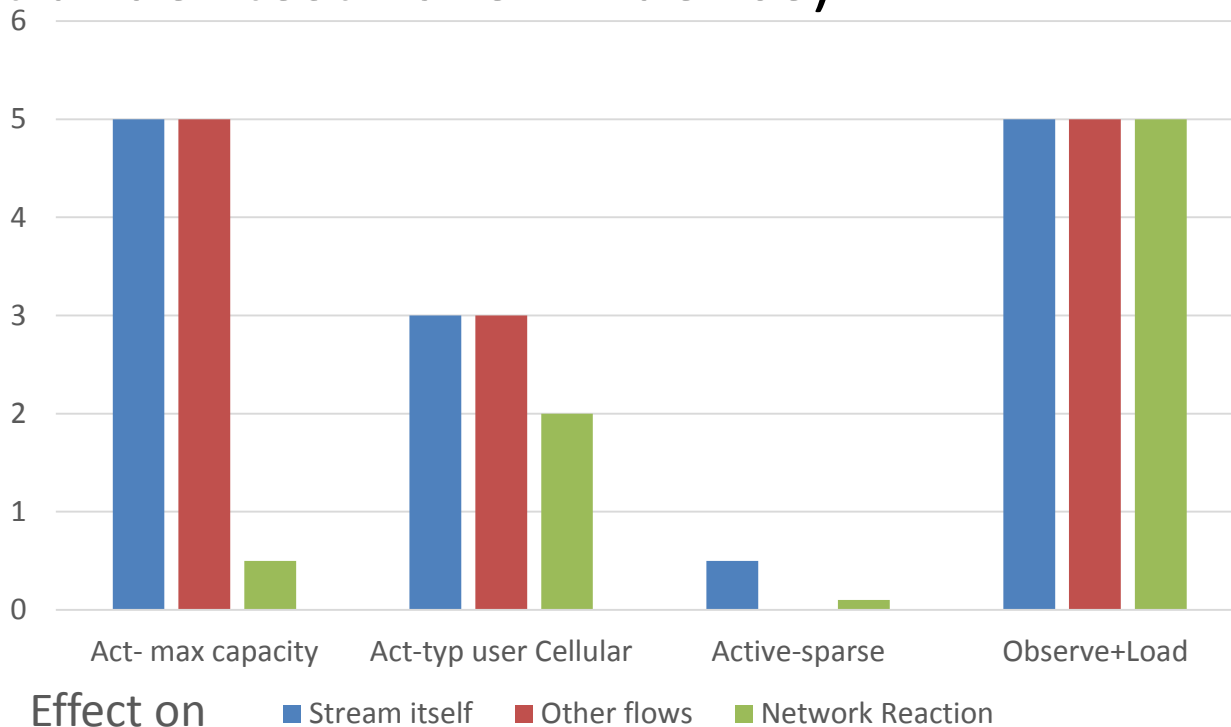
* "we" is likely everyone sitting in the session, except Matt Mathis, Bill Cerveney, and Nevil Brownlee. Al here since '98.

Words and Meaning

- Words can only have strong meaning within a Context (part of the definition)
- We need definitions in Standards Work:
 - Communicate Effectively
 - Avoid Ambiguity
- Start with Fundamental terms and build from there

More Dimensions of Categorization

- Decompose “effect on network conditions” to
 - Effect on the measured stream (itself)
 - Effect on unmeasured flows that share the path
 - Effect on network state or adaptation (features in net under test have influence)



Two Classifications discussed

- PDM
 - Method may have small affect on measured stream
 - Measured stream has unknown characteristics until observed/processed to add PDM header
- Coloring
 - Method may have small affect on measured stream (possibly less than PDM)
 - Measured stream has unknown characteristics until observed/processed to color the header