

Active and Passive
Metrics and Methods
(and everything in-between)

draft-morton-ippm-active-passive-01

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March 2015

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

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

- Tiziano Ionta – Multiple Comparison Dimensions; Coloring is Hybrid
- Nalini Elkins – Clarified Passive example (first observed packet reveals much about the flow)
- Bill Jouris – Clarified Active Method #1
- Mike Ackerman – posed the problem -> 00
- Phil Eardley – Need to clarify the graphical representation; posed two new methods to categorize

Original -00 classification:

2 Dimensions

1. The degree to which the measurement stream affects network conditions. (this may be too broad)
2. The methodological advantages of known stream characteristics, (from complete control of stream characteristics to none).

On to classification: 2 Dimensions

Affect of the measurement stream on network conditions

^ Max

| * Active using max capacity stream

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|

|

| * Active using stream with load of typical user

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|

| * Active using extremely sparse, randomized stream

|

* PDM

Passive

| Min

*

+-----|

|

|

Stream

None

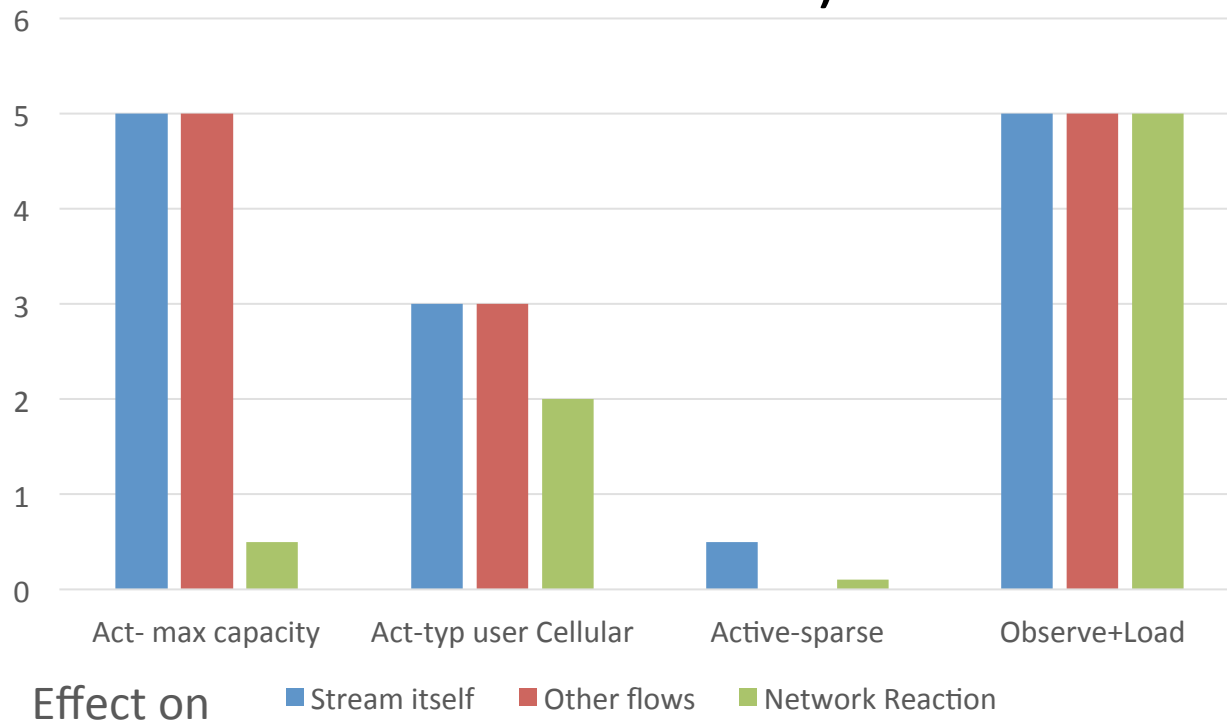
Characteristics

completely

known

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

Next steps

- Continue adding examples in Section 4, Discussion (of classification), and allow refinement from the process
- Consider WG adoption