CATS Metrics Definition

IETF CATS interim 2025-01-15

draft-ietf-cats-metric-definition-00

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Draft updates since version draft-ysl-cats-metric-definition-01:

Primary updates:

• Add Luis and Jordi as co-authors

• Absorb most of the comments from Med #13, and polish metrics definitons (section 3)

• Add more examples in metrics representation(section 4)

Summary of comments:

• Total 13 comments in github, #1 to # 5 from IETF 121 meeting

(Med, Ketan, Haomian, Meiling, Jing)

• Other comments received after IETF 121 and before the interim

meeting(Adrian, Joel, Med, Lindar, etc)

• Some issues are raised during the discussion among co-authors

https://github.com/ietf-wg-cats/draft-ietf-cats-metric-definition/issues

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⊙ 13 Open   ✓ 0 Closed

⊙ CFA Comments from Adrian
#15 opened 4 days ago by boucadair

⊙ CFA Comments from Joel
#14 opened 4 days ago by boucadair

⊙ CFA Comments from Med
#13 opened 4 days ago by boucadair

⊙ Considerations on IANA registry and standard track of CATS metrics
#11 opened on Nov 20, 2024 by bpatient78

⊙ L2 metric: just one aggregated metric or one for compute and one for network?
#10 opened on Nov 19, 2024 by luismcontreras

⊙ No service metrics defined yet
#9 opened on Nov 19, 2024 by luismcontreras

⊙ section 4.2.5 needs better wording
#7 opened on Nov 19, 2024 by muzixing

⊙ Unit of metrics in examples.
#6 opened on Nov 19, 2024 by muzixing

⊙ On energy and security metrics IETF121
#5 opened on Nov 14, 2024 by giralt

⊙ On the normalization of L2 metrics IETF121
#4 opened on Nov 14, 2024 by giralt

⊙ On L0 metrics for decision making IETF121
#3 opened on Nov 14, 2024 by giralt

⊙ On other routing metrics IETF121
#2 opened on Nov 14, 2024 by giralt

⊙ On the need for storage metrics IETF121
#1 opened on Nov 14, 2024 by giralt

Comments to be addressed:

- On the **scope** of CATS metrics(#15 from Adrian and #13 from Med, #1)
  - **A. This document is about only computing metrics.** In which case, we probably need to drop the sections and references about networking metrics, and think very hard about the storage metrics.
  - **B. This document is about all CATS metrics.** In which case we need to work out whether that is in scope for the working group, and carefully change some pieces of text.

Authors:

- [KY]I'm inclined to choose B, since some of network metrics are useful for derivation of L1 and L2 metrics, just as Adrian mentioned in the e-mail, there might be scope for define aggregation mechanisms for these metrics. For storage metrics, I agree that they can be merged into the category of computing metrics, and there is no need to define a category for storage metrics.

- co-authors will very carefully think about the choices and have a formal reply to the list in the next version update.

Comments to be addressed:

Other comments related to metrics definition and representation(#15 from Adrian):

- Add new references on network performance metrics, e.g., RFC8911,8912(section 1)
- L0 don't need to be classified(section 3.2)
- Change figure 1, and add the connection between L0 and L2 metrics.(section 3.3)
- provide additional explanations.(Abstract, section 1)
- Fix other typos and format issues (Abstract, section 1, section 3.3)
- need to explain whether to encode floating point into the fields of packets.(section 4.1.1)
- If so, should provide examples as well as references for the use of floating points, for example FP8. (section 4.1.1)
- Consider more carefully on the field space for each unit. (section 4.1.2)
- Explain whether integers should be signed or unsigned. (section 4.2)

Other constructive comments on the overall considerations:

- Alignment with CATS framework on the usage of metrics in CATS components.(#15 from Adrian, section 5)
- How should independent implementors of a given service normalize metrics such that the ingress node can make comparisons. (#14 from Joel)
- IANA registries(#11)

Next steps

- Address the comments from the list and github
- Think carefully about the scope of the definition
- Align with the work from CATS framework, and think about how to normalize metrics, where to normalize metrics and how to compare the metrics.
- Carefully design the metrics representation, and start to quantify the information and its variance frequency.
- Authors will upload a new version before IETF 122.

- Any comments?