draft-ietf-bmwg-mlrsearch-09

IETF-122 Bangkok, BMWG Meeting

Authors: Vratko Polák, Maciek Konstantynowicz

MLRsearch Update

- draft-ietf-bmwg-mlrsearch-09 posted on 2025-02-25.
- [Changes](#) from -08:
  - Addressed review comments from Gabor (and Eduard). Summarized in [bmwg e-mail](#), more details in next slides.
  - Better distinguished effective durations in appendices ("trial.duration" was outright wrong in -08).
  - Many minor edits (typos, style, capitalization).
- draft-ietf-bmwg-mlrsearch-10 will have been posted on 2025-03-16.
- -10 only adds minimal edits for idnits:
  - Added "Requirements Language" boilerplate chapter to introduce RFC 2119 all-caps words.
  - "NOT REQUIRED" -> "not REQUIRED".
  - Removed brackets of "[RFC2544]" in abstract (idnits says abstract cannot have references).
  - Shortened variable names to fit in line, e.g. "effective_high_loss_sum" -> "effect_high_loss_s".
  - One real typo (not nit) fixed: "Dduration" -> "Duration"
- BMWG next steps
  - Progress WG Last Call.
  - Publish.

08->09 edits: Frame sizes (for Eduard)

- Big edit in subsection 3.8.3 (Manager), it now:
    - Repeats that RFC 2544 section 7 already restricts DUT configuration.
    - Calls the configuration used for most tests the "default configuration".
    - Gives an example of test that deeds different configuration: jumbo frames.
    - Suggests to re-test such different configurations also with traffic profiles that do not need it.
- Together with 3.4.4 (Traffic Profile)…
    - That was already listing requirements for frame sizes (without discussing perf impact),
- … all Eduard's comments on frame size influence on performance are addressed.

08->09 edits: Goal inputs (for Gabor)

- Gabor mentioned Goal Exceed Ratio, but the issue affects other attributes too.

- Inputs and outputs cannot really be _understood_ separately.

- Definitions must be sorted, avoiding "dependency cycles".

- Thus input definitions must remain "nebulous" (not enough for understanding).

- Discussion sections can refer to outputs, they have been expanded.

08->09 edits: Trial forwarding rate (for Gabor)

- The issue is having both per-port and aggregate values mixed in one definition.

- 3.4.2 (Trial Load) is now the first subsection to clarify per-port loads are primary but aggregates are allowed for test report purposes. Short reminder added to every other load-like quantity.

- 3.4.5 (Trial Forwarding Ratio) is first to stress that loss quantities are all based on aggregate counters.

- 3.4.7 (Trial Forwarding Rate) then has only small edits to remind it is a load-like quantity but computed from a loss quantity.

08->09 edits: Goodput (for Gabor)

- Issue: The non-zero goal loss ratio is motivated by TCP tolerating some losses.

- It turns out "goodput" seems to appear in RFC documents first in RFC 2647 section 3.17, but the definition there is quite confusing to us.

- We also did not find a single document, wide and authoritative enough to give proper overview on the relations between frame loss and goodput.

- Instead of RFC 2647, we ended up referencing:
  - RFC 6349 (defines TCP Throughput)
  - Ott-Mathis-Semke-Mahdavi (computes TCP steady state performance)
  - Lencze-Kovacs-Shima (shows corner cases where impact of losses is big or small)

08->09 edits: the rest (for Gabor)

- Why intended (and not offered) loads are tracked:
  - The "hard limit" example is now mentioned also in 3.8.1 (Measurer).
  - 3.4.3 (Trial Input) got a new paragraph with some (weak) arguments why MLRsearch prefers intended quantities.

- MAC learning having different time than ARP in RFC 2544:
  - Added a paragraph to 3.3 (Trial) section.
  - It RECOMMENDS to understand "learning frames" to be any time-sensitive per-trial configuration method, each with possibly different wait time.

- Correctness:
  - Added 3.1.1 (Behavior Correctness) with some insights,
  - but mostly pointing the reader to external documents.

08->09 Design and heuristics

- Moved to an external document.

- Not sure which URL would be the best, -09 uses CSIT documentation page.

- Currently there is only a skeleton, the real content will arrive later (the CSIT documentation page will probably link to a new location).

  o History of early versions in CSIT
  o Design principles
  o Measurer questions
  o Test report
  o Heuristics
  o DUT behaviors
  o Correctness
  o Related test procedures
  o Beyond frames
  o Future improvements
  o Examples?
  o Summarize how MLRsearch addressed the Identified Problems

- Feel free to comment on what is desirable and what to skip.

MLRsearch Work Status

- BMWG Last Call.

THANK YOU !

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