

draft-vpolak-mkonstan-bmwg-mlrsearch-02

IETF-105 Montreal BMWG Meeting

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Draft changes -01 to -02

- Addressed review comments in FD.io CSIT gerrit.
- Major updates in terminology section.
- Clarified MLRsearch applicability and usability (MLRsearch Background)
- Updated search algorithm overview to improve readability based on comments.
- Other edits for better readability.
- Updated description of FD.io CSIT implementation.
- Added Security Considerations (standard BMWG boilerplate).

Overview: Multiple Loss Ratio search (MLRsearch)

- MLRsearch discovers multiple packet throughput rates in a single search
 - With each rate associated with a distinct Packet Loss Ratio (PLR) criteria
- Provides much shorter execution times for cases when multiple rates need to be found:
 - For example in NFV benchmarking to discover both NDR and PDR throughput
 - NDR: Non-Drop Rate with $PLR=0$, zero packet loss
 - PDR: Partial-Drop Rate with $PLR>0$, non-zero packet loss
 - Instead of running separate binary searches for NDR and PDR.

Overview: Multiple Loss Ratio search (MLRsearch)

- MLRsearch execution time gets reduced even further
 - By using shorter trial durations in the intermediate steps
 - With only the final measurements conducted at the specified final trial duration.
- MLRsearch is a packet throughput search algorithm suitable for deterministic systems
 - As opposed to probabilistic systems

MLRsearch is compatible with RFC2544.

MLRsearch Sample Implementation

- A working implementation of MLRsearch is in Linux Foundation FD.io CSIT project.
 - Used for continuous measurements of NDR and PDR rates of:
 - FD.io VPP
 - DPDK L3fwd
 - DPDK Testpmd
 - Sample throughput results:
 - https://docs.fd.io/csit/rls1904/report/vpp_performance_tests/packet_throughput_graphs/index.html
 - General project info:
 - <https://wiki.fd.io/view/CSIT>
 - <https://git.fd.io/csit/>
- MLRsearch Python package published on PyPI:
 - <https://pypi.org/project/MLRsearch/>

Next Steps

- Welcome more reviews from BMWG
- Draft adoption by BMWG

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THANK YOU!