draft-vpolak-mkonstan-bmwg-mlrsearch-02

IETF-105 Montreal BMWG Meeting
Authors: Vratko Polák, Maciek Konstantynowicz
Presented by: Maciek Konstantynowicz
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:
  - General project info:
    - [https://wiki.fd.io/view/CSIT](https://wiki.fd.io/view/CSIT)
    - [https://git.fd.io/csit/](https://git.fd.io/csit/)
- MLRsearch Python package published on PyPI:
  - [https://pypi.org/project/MLRsearch/](https://pypi.org/project/MLRsearch/)
Next Steps

- Welcome more reviews from BMWG
- Draft adoption by BMWG
draft-vpolak-mkonstan-bmwg-mlrsearch-02

IETF-105 Montreal BMWG Meeting
Authors: Vratko Polák, Maciek Konstantynowicz
Presented by: Maciek Konstantynowicz

THANK YOU!