

draft-ietf-bmwg-mlrsearch-04

IETF-117 San Francisco, BMWG Meeting

Authors: Maciek Konstantynowicz, Vratko Polák

Work Status

- draft-ietf-bmwg-mlrsearch-04 posted on 10th of July 2023
 - Focused on terminology, now updated and made complete
- Added functionality to handle noisy and inconsistent measurements even better
 - Incorporated logic from IETF 116 presentation
 - Results compatible with Binary Search with Loss Verification are now achievable
- Mlrsearch draft
 - Terminology is still not final:
 - Some terms may be renamed
 - Some terms may be marked as optional or omitted entirely
 - There will be a section for recommendations on Measurer behavior
 - An example search would be nice, showcasing how search logic follows from terminology definitions
- BMWG review
 - Review of MLRsearch draft

Terminology example

2.2.5.6.4. Relevant lower bound

For a **target**, a **load** is the relevant lower bound if two conditions hold. Both **optimistic exceed ratio** and **pessimistic load exceed ratio** are no larger than the **target exceed ratio**, and there is no smaller load classified as an **upper bound**.

This is a second place where MLRsearch is not symmetric (the first place was effective bad duration sum).

While it is not likely for a MLRsearch to find a smaller upper bound and a larger load satisfying first condition for the lower bound, it still may happen and MLRsearch has to deal with it. The second condition makes sure the relevant lower bound is smaller than the relevant upper bound.

In some cases, the min load when classified as an upper bound is also effectively treated as the relevant lower bound. (In that case both relevant bounds are equal.)

If that happens for a final target at the end of the search, the controller output may contain min load as the relevant lower bound even if the exceed ratio was 'overstepped', signaling the SUT does not even reach the minimal required performance.

The manager has to make sure this is distinguished in report from cases where min rate is a legitimate conditional throughput (e.g. the exceed ratio was not overstepped at the min load).

Search example

NDR	PDR	TL	TD
waiting	waiting	688	1
waiting	waiting	458	1
waiting	waiting	456	1
ini ext_lo	fin halving	454	1
ini ext_lo	fin halving	446	1
ini ext_lo	fin halving	414	1
ini bisect	fin halving	430	1
ini bisect	fin halving	438	1
ini bisect	fin halving	442	1
ini bisect	fin halving	440	1
fin halving	fin halving	441	10
fin halving	fin halving	441	10
fin upgr_lo	fin halving	440	10
fin upgr_lo	fin halving	440	10
fin ext_lo	fin halving	436	10
fin ext_lo	fin halving	436	10
fin ext_lo	fin halving	420	10
fin bisect	fin halving	428	10
fin bisect	fin halving	428	10
fin bisect	fin halving	432	10
fin bisect	fin halving	434	10
fin bisect	fin halving	435	10
fin bisect	fin halving	435	10
done	fin halving	457	1
done	fin upgr_lo	456	1
done	fin upgr_lo	456	1
done	fin upgr_lo	456	1
done	fin upgr_lo	456	1

Goals:

NDR:

loss ratio: 0.0
exceed ratio: 0.5
final duration: 10.0
duration sum: 20.0

PDR:

loss ratio: 0.005
exceed ratio: 0.0
final duration: 1.0
duration sum: 5.0

common:

initial duration: 1.0
absolute width: 1
preceding targets: 1

Trial results:

Red: trial loss ratio above 0.005

Green: zero trial loss

Orange: non-zero loss below 0.005

THANK YOU !

draft-ietf-bmwg-mlrsearch-04

IETF-117 San Francisco, BMWG Meeting

Authors: Maciek Konstantynowicz, Vratko Polák