Benchmarking Methodology for Segment Routing

draft-ietf-bmwg-sr-bench-meth-04

Luis Contreras (Telefonica)
Bruno Decraene (Orange)
Giuseppe Fioccola (Huawei)
Eduard Vasilenko (Huawei)
Paolo Volpato (Huawei)

IETF 123, Madrid, Monday, July 21

Draft Status - Recap

- **Scope**: To define a standard method to benchmark the SR packet forwarding capabilities of network devices.
  - The draft extends RFC1242, RFC2544, RFC5180, RFC5695, and RFC 8402 to SR networks.
  - It covers both SR-MPLS and SRv6 (including Compressed SIDs).
- **Draft history**:
  - Adopted by BMWG after IETF 119 (standalone document).
  - Version -01 (July 2024) addressed fragmentation, throughput test on a destination node, and other editorial changes.
  - Version -02 (October 2024) updated test descriptions with the compressed SID (SRv6).
  - Version -03 (March 2025) fixed references, minor edits. Cross-post to Spring and SRv6OPS.

Cross-post Feedback (1/2)

- Most notable comments from Boris addressed in version -04

Comment	Change
Section 6 does not mention the possibility of multiple methods to build a (long) SID list and test the relative throughput	Fixed in section 6.1 (possibility to test more construction methods and report the results as specified in section 5 on the reporting format)
Test one SR Policy with 1 active Candidate Path with variable Segment Left, SIDs and check the load balancing capability	Addressed in section 6.1 (An SR Policy with one active CP but with variable SL, SIDs, can be tested to check the overall performance and ECMP limits)

- Thanks to all who provided comments.

Cross-post Feedback (2/2)

- Pending comments received from Dan after cut-off

Comment	Proposal for change
Add explicit statement about what is out of scope (e.g., SR service layer benchmarks, TI LFA/FRR, SRv6 network programming behaviors beyond End/End.X).	Indications on what's not in scope already present in introduction. Will highlight it better.
Create appendix with a "Test Matrix" that cross indexes: node role (source edge, transit, etc.), data plane (SR MPLS / SRv6), SID depth, frame size class, traffic direction.	Section 5 already describes the reporting format. Acknowledged a table may improve readability, so an appendix in the next version of the draft can be considered.
Add benchmark that measures throughput/ latency impact while the DUT is inserting SRH or pushing a deep label stack.	Concept is already defined in section 6.1. Review the text to make it clearer. Consider a test to evaluate the impacts on an ancillary traffic?
Spell out separate benchmarks for NEXT C SID vs. REPLACE C SID, and include a note on how "container depth" should be chosen.	Ok. Add reporting parameter on "container depth".
Include maximum FIB / SID table population tests and report memory pressure effects.	Ok. Scalability aspects already mentioned (e.g. maximum SID depth, maximum frame rate). If necessary, add a new test.

Next Steps

- Version -04 published early July.
  - Please feel free to comment on.

- Publish version -05 to address the remaining comments by early October.
  - Include references to public tests -> Thanks Gyan for sharing information.
  - Mention liaison from ITU-T SG11 on the "Method for Verifying Conformance to SRv6".

- If no outstanding issues, ask for WGLC at IETF 124.

Thank you