

# Benchmarking Methodology for **Segment Routing**

draft-vfv-bmwg-sr-bench-meth-00

## **IETF 119 Update**

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# Draft Overview

- There is no standard method defined to compare and contrast the foundational SR packet forwarding capabilities of network devices.
- This document aims to extend the efforts of [RFC1242], [RFC2544], [RFC5180] and [RFC5695] to SR network.
- The SR architecture can be instantiated on two data-plane:
  - SR over MPLS (SR-MPLS) : SR is directly applied to the Multiprotocol Label Switching (MPLS) architecture [RFC8660]. A segment is encoded as an MPLS label. An SR Policy is instantiated as a stack of labels.
  - SR over IPv6 (SRv6): SR is applied to the IPv6 architecture with a new type of routing header called the SR Header (SRH) [RFC8754]. An instruction is associated with a segment and encoded as an IPv6 address. An SRv6 segment is also called an SRv6 SID. An SR Policy is instantiated as an ordered list of SRv6 SIDs in the routing header. The active segment is indicated by the Destination Address (DA) of the packet.

# Draft History – Recap

- Started with 2 drafts (draft-vfv-bmwg-srv6-bench-meth, draft-vfv-bmwg-srmpis-bench-meth). Version -00 submitted on March 2022.
- Version -01 of both drafts presented at IETF 113. Since then, new versions always presented and discussed at every IETF.
- Version -08, presented at IETF 118, incorporated the text from referenced RFCs in order to be a stand-alone document to read.
- The two drafts received several comments during their journey (Gabor, Bruno, Luis, Boris, Carsten).
- At IETF 117 Carsten raised the point about the merge but there was still consensus to keep the two drafts separated (Sarah started a poll about that).
- At IETF 118 we addressed all the comments. Carsten and Maciek still suggested to integrate the two drafts.
- The co-authors decided to merge and produce this new draft that replaces the previous two.

# New TOC

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Sections integrated from both drafts

Sections integrated and expanded

# Latest changes

- Apart the integration of the two drafts, some extensions have also been included:
  - SID Depth is tested up to the maximum allowed by the device
    - That way the performance impact of a large SID list can be determined.
    - Ideally, all SID Depths should be tested. Tests may be performed automatically adding one SID at each iteration.
  - Explicitly stated that for SRv6 forwarding IPv6 flow label must be set (support for ECMP), as per RFC 8754.
- Section 1 (Introduction) reviewed to avoid duplications with section 2 (SR-MPLS forwarding) and section 3 (SRv6 forwarding).
- Editorial review.

# Next Steps

- Considering the long history, the authors think the draft is stable enough for WG adoption.
- The two previous drafts received a considerable amount of comments.
- Boris, Luis have publicly shared they already did tests. Informally, we know several network operators did or are doing tests on both SR-MPLS and SRv6.  
A WG-adopted document would help the draft to get additional traction.
- Once adopted it was also suggested by Bruno/Luis to present this work in SPRING WG.

Thank you