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BGP SR Policy Candidate Path State Extend Flags
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Abstract

[draft-ietf-idr-bgp-ls-sr-policy]The SR Candidate Path State TLV conveys the operational status and attributes of an SR Policy at the candidate path level. The SR Candidate Path State is frequently extended to carry new attributes and states for CPaths. However, only a few bits remain unassigned in the Flags field of the current implementation.

This document addresses the issue of insufficient flag bits in the SR Candidate Path State TLV by defining a variable-length SR Candidate Path State Extend TLV for BGP-LS SR-Policy. This enhancement ensures scalability and flexibility in signaling additional attributes and states for SR Policy candidate paths.

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1. Introduction

[draft-ietf-idr-bgp-ls-sr-policy]The SR Candidate Path State TLV conveys the operational status and attributes of an SR Policy at the candidate path level. The SR Candidate Path State is frequently extended to carry new attributes and states for CPaths. However, only a few bits remain unassigned in the Flags field of the current implementation.

This document addresses the issue of insufficient flag bits in the SR Candidate Path State TLV by defining a variable-length SR Candidate Path State Extend TLV for BGP-LS SR-Policy. This enhancement ensures scalability and flexibility in signaling additional attributes and states for SR Policy candidate paths.

1.1. Requirements Language

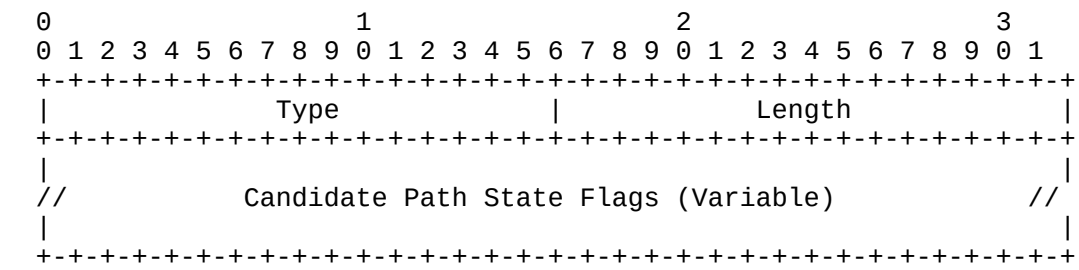
The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in

BCP 14 [RFC2119] [RFC8174] when, and only when, they appear in all capitals, as shown here.

2. Variable-Length SR Candidate Path State Flags TLV

The SR Candidate Path State TLV and The SR Candidate Path State Extend TLV provide the operational status and attributes of the SR Policy at the candidate path level. At most one instance of the SR Candidate Path State Extend TLV is advertised for a given candidate path. If multiple instances are present, then the first valid (i.e., not determined to be malformed as per section 8.2.2 of [RFC9552]) one is used and the rest are ignored.

The SR Candidate Path State Extend TLV has the following format:



where:

- Type: TBD1.
- Length: Variable, dependent on the included candidate path Flags. This indicates the length of the value portion in bytes. The length MUST be a multiple of 4 octets.
- candidate path Flags: Variable. The extended flag field. This contains a variable number of 32-bit flags. Currently, no bits are defined in this document.

Figure 1: SR Candidate Path State Extend TLV

3. Security Considerations

The security requirements and mechanisms described in [I-D.ietf-idr-sr-policy-safi] also apply to this document.

This document does not introduce any new security consideration.

4. IANA Considerations

IANA maintains a registry called "BGP-LS NLRI and Attribute TLVs" in the "Border Gateway Protocol - Link State (BGP-LS) Parameters" registry group.

This document defines a new TLV in the registry "BGP-LS NLRI and Attribute TLVs":

Value	Description	Reference
TBD1	SR Candidate Path State Extend	This document

5. References

5.1. Normative References

[I-D.draft-ietf-idr-bgp-ls-sr-policy] S. Previdi, Individual, K. Talaulikar, Ed., Cisco Systems, J. Dong, Huawei Technologies, H. Gredler, RtBrick Inc., J. Tantsura, Nvidia, "Advertisement of Segment Routing Policies using BGP Link-State", Work in Progress, Internet-Draft, draft-ietf-idr-bgp-ls-sr-policy-17, 6 March 2025, <https://datatracker.ietf.org/doc/html/draft-ietf-idr-bgp-ls-sr-policy-17>.

5.2. Informative References

TBD.

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