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**Updates to Algorithm Related Adjacency SID Advertisement in RF9085
draft-chen-idr-bgp-ls-algorithm-related-adj-sid-00**

Abstract

This draft updates [RFC9085] to defines extensions to the Border Gateway Protocol-Link State (BGP-LS) address family in order to carry algorithm Related Adjacency SID.

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[1.](#) Introduction

[I-D.ietf-lsr-algorithm-related-adjacency-sid] defines the algorithm identifier can be included as part of an Adjacency-SID advertisement for SR-MPLS.

[RFC9085] defines extensions to the Border Gateway Protocol-Link State (BGP-LS) address family in order to carry SR information via BGP, and an algorithm identifier is included as part of the Prefix-SID TLV advertisement. This draft updates [[RFC9085](#)] and defines extensions to the Border Gateway Protocol-Link State (BGP-LS) address family in order to carry algorithm Related Adjacency SID.

[1.1.](#) Requirements Language

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC 2119](#) [[RFC2119](#)].

[2.](#) BGP-LS Extensions for link Attribute

[2.1.](#) Adjacency SID per Algorithm TLV

The Adjacency SID per Algorithm TLV is used in order to advertise information related to an algorithm Related Adjacency SID. This information is derived from the Adjacency Segment Identifier (Adj-SID) per Algorithm Sub-TLV of ISIS/OSPFv2/OSPFv3(Section 4 of [[I-D.ietf-lsr-algorithm-related-adjacency-sid](#)]).

The Adjacency SID per Algorithm TLV has the following format:

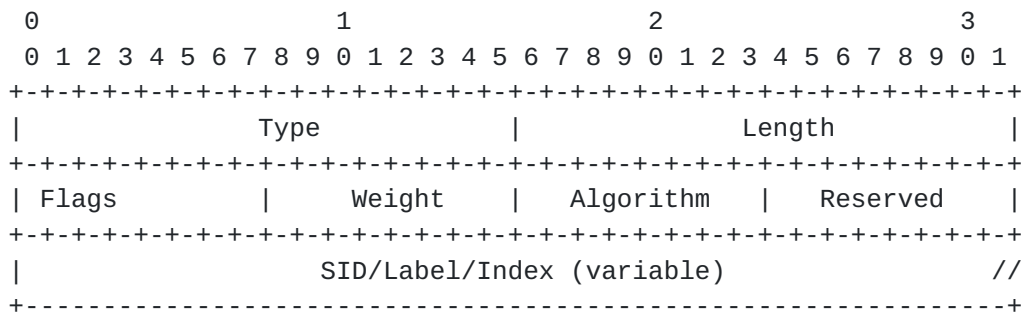


Figure 1

where:

Type: TBD1 (Suggested value to be assigned by IANA)

Length: variable.

Flags: 1-octet value that should be set as:

- * IS-IS Adj-SID per Algorithm flags as defined in Section 4.1.1 of [[I-D.ietf-lsr-algorithm-related-adjacency-sid](#)]).
- * OSPFv2 Adj-SID per Algorithm Sub-TLV as defined in Section 4.2.1 of [[I-D.ietf-lsr-algorithm-related-adjacency-sid](#)]).
- * OSPFv3 Adj-SID per Algorithm Sub-TLV as defined in Section 4.3.1 of [[I-D.ietf-lsr-algorithm-related-adjacency-sid](#)]).

Weight: 1 octet carrying the weight used for load-balancing purposes. The use of weight is described in [Section 3.4 of \[RFC8402\]](#).

Algorithm: Refer to ISIS/OSPFv2/OSPFv3 Adj-SID per Algorithm([I-D.ietf-lsr-algorithm-related-adjacency-sid](#)).

Reserved: 1-octet that MUST be set to 0 and ignored on receipt.

SID/Label/Index: Refer to ISIS/OSPFv2/OSPFv3 Adj-SID per Algorithm([\[I-D.ietf-lsr-algorithm-related-adjacency-sid\]](#)).

2.2. LAN Adjacency SID per Algorithm TLV

This information is derived from LAN-Adj-SID per Algorithm Sub-TLV of ISIS/OSPFv2/OSPFv3(Section 4 of [\[I-D.ietf-lsr-algorithm-related-adjacency-sid\]](#)).

The LAN Adjacency SID per Algorithm TLV has the following format:

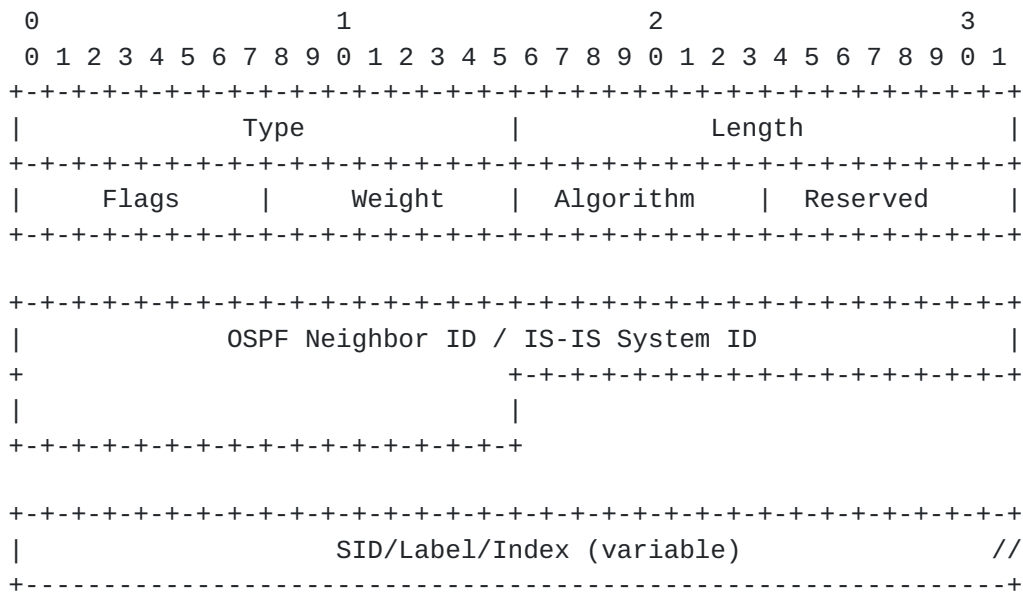


Figure 2

where:

Type: TBD2 (Suggested value to be assigned by IANA)

Length: variable.

Flags: 1-octet value that should be set as:

- * IS-IS LAN-Adj-SID per Algorithm flags as defined in Section 4.1.2 of [[I-D.ietf-lsr-algorithm-related-adjacency-sid](#)]).
- * OSPFv2 LAN-Adj-SID per Algorithm Sub-TLV as defined in Section 4.2.2 of [[I-D.ietf-lsr-algorithm-related-adjacency-sid](#)]).
- * OSPFv3 LAN-Adj-SID per Algorithm Sub-TLV as defined in Section 4.3.2 of [[I-D.ietf-lsr-algorithm-related-adjacency-sid](#)]).

Weight: 1 octet carrying the weight used for load-balancing purposes. The use of weight is described in [Section 3.4 of \[RFC8402\]](#).

Algorithm: Refer to ISIS/OSPFv2/OSPFv3 LAN-Adj-SID per Algorithm([\[I-D.ietf-lsr-algorithm-related-adjacency-sid\]](#)).

Reserved: 1-octet that MUST be set to 0 and ignored on receipt.

Neighbor ID/IS-IS System ID: Refer to ISIS/OSPFv2/OSPFv3 LAN-Adj-SID per Algorithm([\[I-D.ietf-lsr-algorithm-related-adjacency-sid\]](#)).

SID/Label/Index: Refer to ISIS/OSPFv2/OSPFv3 LAN-Adj-SID per Algorithm([I-D.ietf-lsr-algorithm-related-adjacency-sid](#)).

3. Acknowledgements

TBD.

4. IANA Considerations

This document makes the following Link Attribute TLVs registry under the "Border Gateway Protocol-Link State (BGP-LS) Parameter".

| Type | Description |
|------|---------------------------------|
| TBD1 | Adjacency SID per Algorithm |
| TBD2 | LAN Adjacency SID per Algorithm |

Figure 3

5. Security Considerations

Procedures and protocol extensions defined in this document do not affect the BGP-LS security model. See the "Security Considerations" section of [[RFC9085](#)] for a discussion of SR BGP-LS security.

6. References

6.1. Normative References

[I-D.ietf-lsr-algorithm-related-adjacency-sid]
Peng, S., "Algorithm Related IGP-Adjacency SID
Advertisement", DOI 10.17487/I-D.ietf-lsr-algorithm-
related-adjacency-sid, I-D. ietf-lsr-algorithm-related-
adjacency-sid, June 2021,
<[https://www.ietf.org/archive/id/draft-ietf-lsr-algorithm-
related-adjacency-sid-00.txt](https://www.ietf.org/archive/id/draft-ietf-lsr-algorithm-related-adjacency-sid-00.txt)>.

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), DOI 10.17487/RFC2119, March 1997, <<https://www.rfc-editor.org/info/rfc2119>>.

[RFC8402] Filsfils, C., "Key words for use in RFCs to Indicate Requirement Levels", [RFC 8402](https://www.rfc-editor.org/info/rfc8402), DOI 10.17487/RFC8402, July 2018, <<https://www.rfc-editor.org/info/rfc8402>>.

[RFC9085] Previdi, S., "Border Gateway Protocol - Link State (BGP-LS) Extensions for Segment Routing", [RFC 9085](https://www.rfc-editor.org/info/rfc9085), DOI 10.17487/RFC9085, August 2021, <<https://www.rfc-editor.org/info/rfc9085>>.

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