

L  
Internet-Draft  
Intended status: Standards Track  
Expires: 3 September 2023

R. chen  
Sh. Peng  
ZTE Corporation  
P. Psenak  
Cisco Systems  
2 March 2023

**Algorithm Related Adjacency SID Advertisement**  
**draft-chen-idr-bgp-ls-algo-related-adjacency-sid-01**

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.

Status of This Memo

This Internet-Draft is submitted in full conformance with the provisions of [BCP 78](#) and [BCP 79](#).

Internet-Drafts are working documents of the Internet Engineering Task Force (IETF). Note that other groups may also distribute working documents as Internet-Drafts. The list of current Internet-Drafts is at <https://datatracker.ietf.org/drafts/current/>.

Internet-Drafts are draft documents valid for a maximum of six months and may be updated, replaced, or obsoleted by other documents at any time. It is inappropriate to use Internet-Drafts as reference material or to cite them other than as "work in progress."

This Internet-Draft will expire on 3 September 2023.

Copyright Notice

Copyright (c) 2023 IETF Trust and the persons identified as the document authors. All rights reserved.

This document is subject to [BCP 78](#) and the IETF Trust's Legal Provisions Relating to IETF Documents (<https://trustee.ietf.org/license-info>) in effect on the date of publication of this document. Please review these documents carefully, as they describe your rights and restrictions with respect to this document. Code Components extracted from this document must include Revised BSD License text as described in Section 4.e of the [Trust Legal Provisions](#) and are provided without warranty as described in the Revised BSD License.

## Table of Contents

<a href="#">1.</a>	Introduction . . . . .	<a href="#">2</a>
<a href="#">2.</a>	Requirements Language . . . . .	<a href="#">2</a>
<a href="#">3.</a>	BGP-LS Extensions for link Attribute . . . . .	<a href="#">2</a>
<a href="#">3.1.</a>	Adjacency SID per Algorithm TLV . . . . .	<a href="#">3</a>
<a href="#">3.2.</a>	LAN Adjacency SID per Algorithm TLV . . . . .	<a href="#">4</a>
<a href="#">4.</a>	IANA Considerations . . . . .	<a href="#">5</a>
<a href="#">5.</a>	Acknowledgements . . . . .	<a href="#">5</a>
<a href="#">6.</a>	Normative References . . . . .	<a href="#">5</a>
	Authors' Addresses . . . . .	<a href="#">6</a>

**[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.

**[2.](#) 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.

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

The following link attribute TLVs are defined:

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



### 3.1. 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:

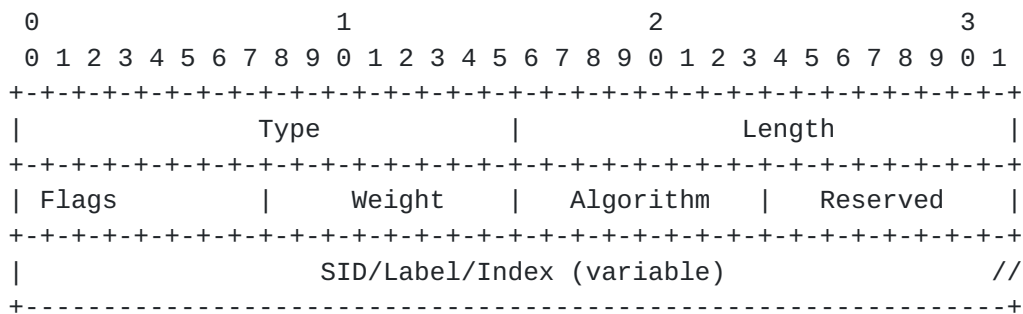


Figure 1: Adjacency SID per Algorithm TLV

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([\[I-D.ietf-lsr-algorithm-related-adjacency-sid\]](#)).

### 3.2. 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:

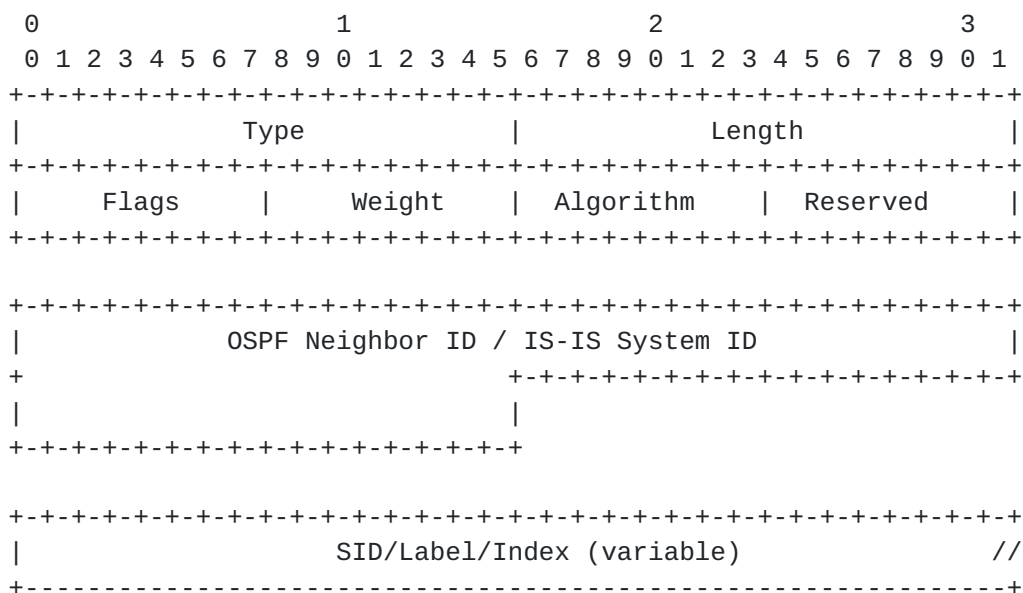


Figure 2: LAN Adjacency SID per Algorithm TLV

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([\[I-D.ietf-lsr-algorithm-related-adjacency-sid\]](#)).

#### 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
+-----+	

#### 5. Acknowledgements

TBD

#### 6. Normative References

[I-D.ietf-lsr-algorithm-related-adjacency-sid]  
 Peng, S., Chen, R., Talaulikar, K., and P. Psenak,  
 "Algorithm Related IGP-Adjacency SID Advertisement", Work  
 in Progress, Internet-Draft, [draft-ietf-lsr-algorithm-related-adjacency-sid-04](#), 20 December 2022,  
<https://datatracker.ietf.org/doc/html/draft-ietf-lsr-algorithm-related-adjacency-sid-04>.





- [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>>.
- [RFC8174] Leiba, B., "Ambiguity of Uppercase vs Lowercase in [RFC 2119](#) Key Words", [BCP 14](#), [RFC 8174](#), DOI 10.17487/RFC8174, May 2017, <<https://www.rfc-editor.org/info/rfc8174>>.
- [RFC8402] Filsfils, C., Ed., Previdi, S., Ed., Ginsberg, L., Decraene, B., Litkowski, S., and R. Shakir, "Segment Routing Architecture", [RFC 8402](#), DOI 10.17487/RFC8402, July 2018, <<https://www.rfc-editor.org/info/rfc8402>>.
- [RFC9085] Previdi, S., Talaulikar, K., Ed., Filsfils, C., Gredler, H., and M. Chen, "Border Gateway Protocol - Link State (BGP-LS) Extensions for Segment Routing", [RFC 9085](#), DOI 10.17487/RFC9085, August 2021, <<https://www.rfc-editor.org/info/rfc9085>>.

#### Authors' Addresses

Ran Chen  
ZTE Corporation  
Email: chen.ran@zte.com.cn

Shaofu  
ZTE Corporation  
Email: peng.shaofu@zte.com.cn

Peter Psenak  
Cisco Systems  
Email: ppsenak@cisco.com

