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RFC8287 Sub-TLV Length Clarification  
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Abstract

[RFC8287](#) defines the extensions to MPLS LSP Ping and Traceroute for Segment Routing IGP-Prefix and IGP-Adjacency Segment Identifier (SIDs) with an MPLS data plane. [RFC8287](#) proposes 3 Target FEC Stack Sub-TLVs. While the standard defines the format and procedure to handle those Sub-TLVs, it does not sufficiently clarify how the length of the Segment ID Sub-TLVs should be computed to include in the Length field of the Sub-TLVs which may result in interoperability issues.

This document updates [RFC8287](#) by clarifying the length of each Segment ID Sub-TLVs defined in [RFC8287](#).

Status of This Memo

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[1.](#) Introduction

[RFC8287] defines the extensions to MPLS LSP Ping and Traceroute for Segment Routing IGP-Prefix and IGP-Adjacency Segment Identifier (SIDs) with an MPLS data plane. [RFC8287] proposes 3 Target FEC Stack Sub-TLVs. While the standard defines the format and procedure to handle those Sub-TLVs, it does not sufficiently clarify how the length of the Segment ID Sub-TLVs should be computed to include in the Length field of the Sub-TLVs which may result in interoperability issues.

This document updates [RFC8287] by clarifying the length of each

Segment ID Sub-TLVs defined in [[RFC8287](#)].

## 2. Terminology

This document uses the terminologies defined in [[RFC8402](#)], [[RFC8029](#)], [[RFC8287](#)] and so the readers are expected to be familiar with the same.

## 3. Requirements notation

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 [[RFC2119](#)] [[RFC8174](#)].

## 4. Length field clarification for Segment ID Sub-TLVs

[Section 5 of \[RFC8287\]](#) defines 3 different Segment ID Sub-TLVs that will be included in Target FEC Stack TLV defined in [[RFC8029](#)]. The length of each Sub-TLVs MUST be calculated as defined in this section.

The figures in [section 5.1](#), 5.2 and 5.3 of [[RFC8287](#)] are replaced by the below figures in [section 4.1](#), 4.2 and 4.3 respectively. The updated figures contain explicitly defined length.

### 4.1. IPv4 IGP-Prefix Segment ID Sub-TLV

The Sub-TLV length for IPv4 IGP-Prefix Segment ID MUST be set to 8 as shown in the below TLV format:

```

      0                   1                   2                   3
      0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
      +---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
      |Type = 34 (IPv4 IGP-Prefix SID)|           Length = 8           |
      +---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
      |                               IPv4 prefix                               |
      +---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
```



ISIS	24	24	48
Any	20	20	44

For example, when the Adj. Type is set to Parallel Adjacency and the Protocol is set to 0, the Sub-TLV will be as below:

0										1										2										3									
0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
Type = 36 (IGP-Adjacency SID)										Length = 20																													
Adj. Type = 1					Protocol = 0					Reserved																													
Local Interface ID (4 octets)																																							
Remote Interface ID (4 octets)																																							
Advertising Node Identifier (4 octets)																																							
Receiving Node Identifier (4 octets)																																							

## 5. IANA Considerations

This document does not introduce any IANA consideration.

## 6. Security Considerations

This document updates [[RFC8287](#)] and does not introduce any security considerations.

## 7. Contributors

The below individuals contributed to this document:

Zafar Ali, Cisco Systems, Inc.

## 8. Acknowledgement

The authors would like to thank Michael Gorokhovsky and Manohar Doppalapudi for investigating the interop issue during EANTC test.

## 9. Normative References

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