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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

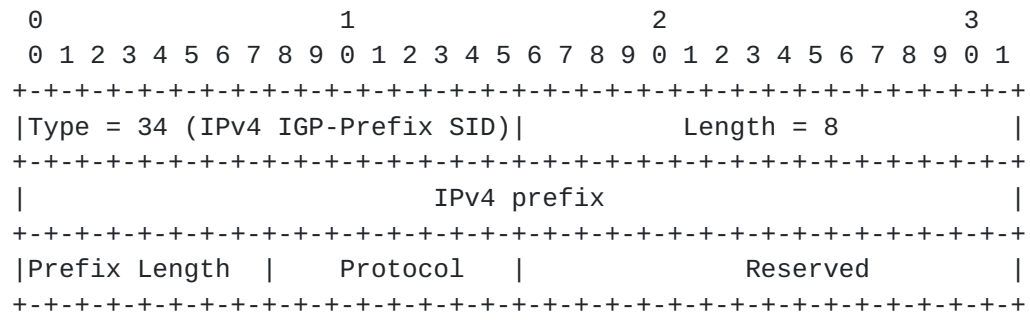
The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC2119] [RFC8174].

## 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.

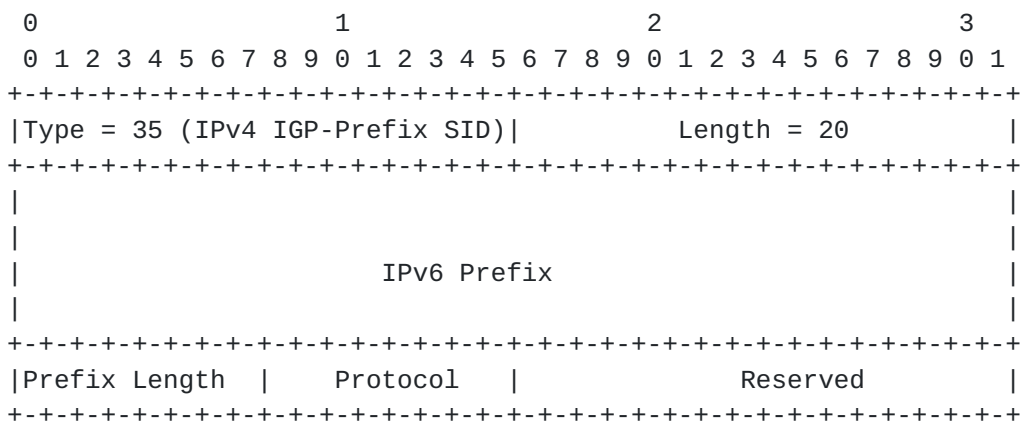
### 4.1. IPv4 IGP-Prefix Segment ID Sub-TLV

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




### 4.2. IPv6 IGP-Prefix Segment ID Sub-TLV

The Sub-TLV length for IPv6 IGP-Prefix Segment ID MUST be set to 20 as shown in the below TLV format:

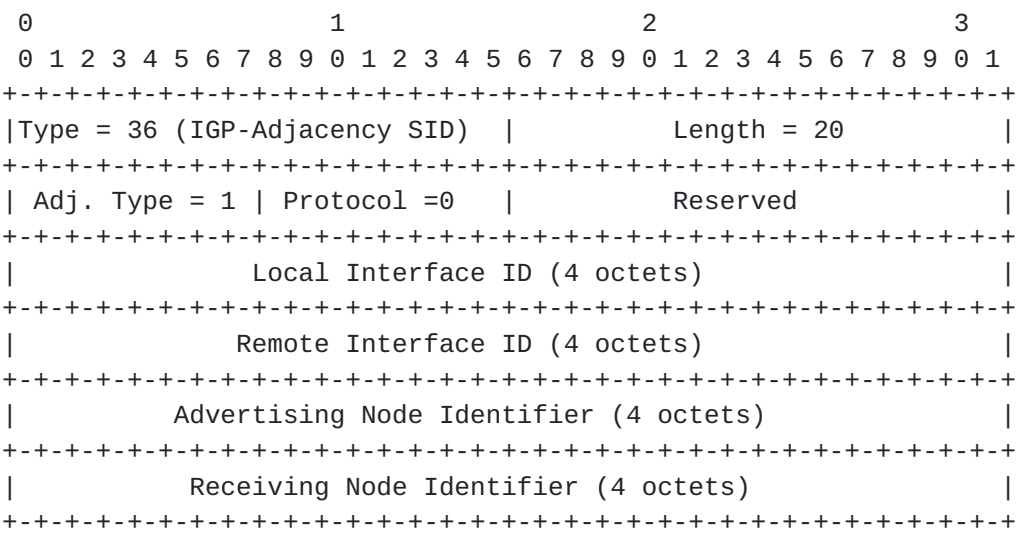



## 4.3. IGP-Adjacency Segment ID Sub-TLV

The Sub-TLV length for IGP-Adjacency Segment ID varies depending on the Adjacency Type and Protocol. In any of the allowed combination of Adjacency Type and Protocol, the sub-TLV length MUST be calculated by including 2 octets of Reserved field. Below is a table that list the length for different combinations.

| Protocol | Length for Adj.Type | | |
|---|---|---|---|
| | Parallel | IPv4 | IPv6 |
| OSPF | 20 | 20 | 44 |
| 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:




## 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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