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BGP-LS Extensions for IS-IS Flood Reflectors

Abstract

This document defines new BGP-LS (BGP Link-State) TLVs in order to carry IS-IS Flood Reflection information.

Status of This Memo

This Internet-Draft is submitted in full conformance with the provisions of BCP 78 and BCP 79.

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This Internet-Draft will expire on 24 April 2022.

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1. Introduction

BGP Link-State RFC7752 [RFC7752] defines mechanisms to advertise information about the underlying IGP in BGP NLRI to an external entity (e.g. a controller). New BGP-LS TLVs are required in order to faciliate IS-IS Flood Reflection [IS-IS-FR] extensions.

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 IS-IS Flood Reflectors

This document defines the following BGP-LS TLV code point value in accordance with RFC7752 rules:

TLV Code Point	Description	IS-IS TLV
TBD1	Flood Reflection TLV	TBD1 (161) [IS-IS-FR]

Table 1: BGP-LS Flood Reflection TLV Code Points

TLV formats are described in detail in subsequent subsections.

3. BGP-LS TLVs for IS-IS Flood Reflection

This TLV advertises Flood Reflector details. The semantics and values of the fields in the TLV are described in [IS-IS-FR].

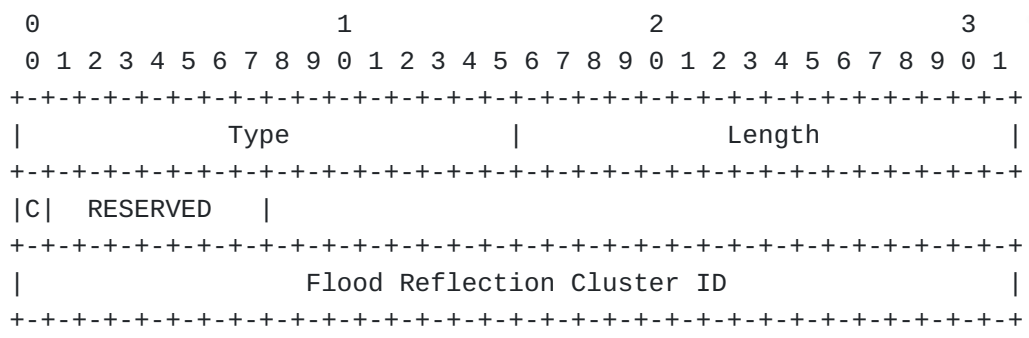

Figure 1: Flood Reflection TLVs

where:

Type: TBD1

Length: 5

4. IANA Considerations

This section requests entries from the "BGP-LS Node Descriptor, Link Descriptor, Prefix Descriptor, and Attribute TLVs" registry for the following TLVs:

4.1. Requested TLV Entries

TLV Code Point	Description
TBD1	Flood Reflection TLV

Table 2: IANA Requests

5. Security Considerations

Procedures and protocol extensions defined in this document do not affect the BGP security model. See the "Security Considerations" section of [RFC4271] for a discussion of BGP security. Also, refer to [RFC4272] and [RFC6952] for analyses of BGP security issues. Security considerations for acquiring and distributing BGP-LS information are discussed in [RFC7752].

The TLVs introduced in this document are used to propagate IS-IS Flood Reflection TLVs defined in [IS-IS-FR]. These TLVs represent IS-IS Flood Reflector state and are therefore assumed to support any/all of the required security and authentication mechanisms as described in [IS-IS-FR] to prevent any security issues when propagating the TLVs into BGP-LS.

6. Acknowledgements

7. References

7.1. Normative References

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[RFC4271] Rekhter, Y., Li, T., and S. Hares, "A Border Gateway Protocol 4 (BGP-4)", January 2006, <https://www.rfc-editor.org/info/rfc4271>.

[RFC4272] Murphy, S., "BGP Security Vulnerabilities Analysis", January 2006, <https://www.rfc-editor.org/info/rfc4272>.

[RFC6952] Jethanandani, M., Patel, K., and L. Zheng, "Analysis of BGP, LDP, PCEP, and MSDP Issues According to the Keying and Authentication for Routing Protocols (KARP) Design Guide", May 2013, <https://www.rfc-editor.org/info/rfc6952>.

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