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IS-IS Extensions for BIER-TE

Abstract

This document describes IS-IS extensions for distributing BitPositions configured on the links in "Bit Index Explicit Replication Traffic Engineering" (BIER-TE) domain.

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 [RFC2119] [RFC8174] when, and only when, they appear in all capitals, as shown here.

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Table of Contents

- [1. Introduction](#)
 - [1.1. Terminology](#)
- [2. Extensions to IS-IS](#)
- [3. Security Considerations](#)
- [4. IANA Considerations](#)
- [5. Acknowledgements](#)
- [6. References](#)
 - [6.1. Normative References](#)
 - [6.2. Informative References](#)
- [Authors' Addresses](#)

1. Introduction

[RFC9262] introduces Bit Index Explicit Replication (BIER) Traffic/Tree Engineering (BIER-TE). It is an architecture for per-packet stateless explicit point to multipoint (P2MP) multicast path/tree. A link in a BIER-TE domain has its BitPositions. For a link between two nodes X and Y, there are two BitPositions for two forward connected adjacencies. These two adjacency BitPositions could be configured on nodes X and Y respectively. The BitPosition configured on X is the forward connected adjacency of Y. The BitPosition configured on Y is the forward connected adjacency of X.

This document proposes IS-IS extensions for distributing BitPositions configured on the links in "Bit Index Explicit Replication Traffic Engineering" (BIER-TE) domain.

1.1. Terminology

BIER: Bit Index Explicit Replication.

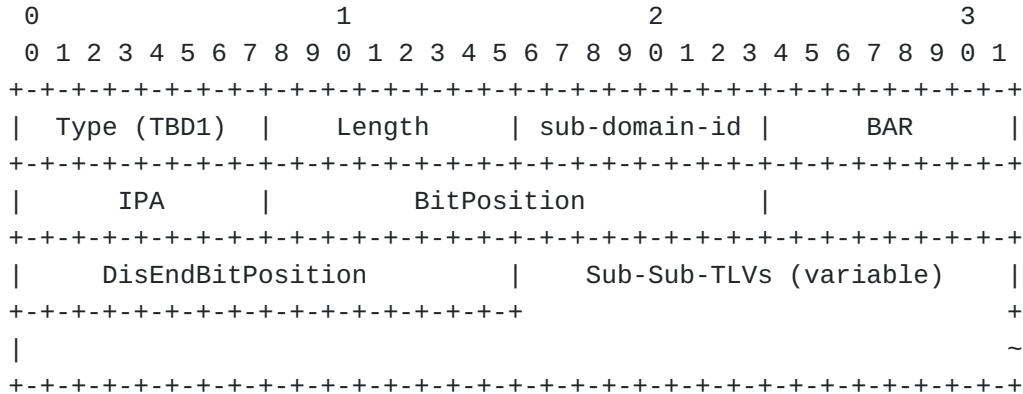
BIER-TE: BIER Traffic Engineering.

BFR: Bit-Forwarding Router.

BFIR: Bit-Forwarding Ingress Router.

BFER: Bit-Forwarding Egress Router.

BFR Identifier. It is a number in the range [1,65535].



BAR:

Single-octet BIER Algorithm used to calculate underlay paths to reach other BFRs. Values are allocated from the "BIER Algorithm" registry defined in [\[RFC8401\]](#).

IPA: Single-octet IGP Algorithm used to either modify, enhance, or replace the calculation of underlay paths to reach other BFRs as defined by the BAR value. Values are defined in the "IGP Algorithm Types" registry.

BitPosition: A 2-octet field encoding the BitPosition locally configured on the link/interface to an Intermediate System neighbor.

DisEndBitPosition: A 2-octet field encoding the BitPosition of the connection on the designated Intermediate Systems (Dis) end. This field is valid when the neighbor is a pseudonode. If the neighbor is not a pseudonode, this field **MUST** be ignored. The DisEndBitPosition may be configured on the link/interface to a transit network (i.e., broadcast link or say LAN).

No Sub-Sub-TLV is defined so far.

3. Security Considerations

Protocol extensions defined in this document do not affect the IS-IS security.

4. IANA Considerations

Under "IS-IS Sub-TLVs for TLVs Advertising Neighbor Information" registry, IANA is requested to assign a new Sub-TLV Type for BIER-TE Info as follows:

Type	Description	22	23	25	141	222	223	reference
TBD1	BIER-TE Info	y	y	n	n	y	y	This document

5. Acknowledgements

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