Advertising S-BFD Discriminators in IS-IS
draft-ietf-isis-sbfd-discriminator-02.txt

Abstract

   This document defines a means of advertising one or more S-BFD
   Discriminators using the IS-IS Router Capability TLV.

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].

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1. Introduction

[S-BFD] defines a simplified mechanism to use Bidirectional Forwarding Detection (BFD)[RFC5880]. This mechanism depends on network nodes knowing the BFD discriminators which each node in the network has reserved for this purpose. Use of the Intermediate System to Intermediate System (IS-IS)[IS-IS] protocol is one possible means of advertising these discriminators.

2. Encoding Format

The IS-IS Router CAPABILITY TLV as defined in [RFC4971] will be used to advertise S-BFD discriminators. A new sub-TLV is defined as described below. S-BFD Discriminators sub-TLVs are formatted as specified in [RFC5305].

```
                                              No. of octets
                +----------------------------+
                | Type (to be assigned by    |     1
                | IANA - suggested value 20) |
                +----------------------------+
                | Length (multiple of 4)     |     1
                +----------------------------+
                | Discriminator Value(s)     |    4/Discriminator
                :                            :
                +----------------------------+
```

   Inclusion of the S-BFD Discriminators sub-TLV in a Router Capability
   TLV is optional. Multiple S-BFD Discriminators sub-TLVs MAY be
   advertised by an IS. When multiple S-BFD discriminators are
   advertised how a given discriminator is mapped to a specific use case
   is out of scope for this document.

   S-BFD discriminator advertisements MAY be flooded within an area or
   throughout the domain using the procedures specified in [RFC4971].
   The appropriate flooding scope depends on the intended use of S-BFD.
   If S-BFD use will be exclusively within a Level-1 area then area
   scope is appropriate. If S-BFD usage will span different L1 areas
   then domain scope is appropriate.

3. IANA Considerations

   This document requires the definition of a new sub-TLV in the Sub-
   TLVs for TLV 242 registry. The value written below is a suggested
   value subject to assignment by IANA.

```
    Value   Description
    ----    --------------------
     20     S-BFD Discriminators
```

4. Security Considerations

   Security concerns for IS-IS are addressed in [IS-IS], [RFC5304], and
   [RFC5310]. Introduction of the S-BFD Discriminators sub-TLV
   introduces no new security risks for IS-IS.

   Advertisement of the S-BFD discriminators does make it possible for
   attackers to initiate S-BFD sessions using the advertised
   information. The vulnerabilities this poses and how to mitigate them
   are discussed in the Security Considerations section of [S-BFD].

5. Acknowledgements

   The authors wish to thank Sam Aldrin, Manav Bhatia, and Carlos
   Pignataro for input essential to defining the needed functionality.

6. Normative References

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               conjunction with the protocol for providing the
               connectionless-mode Network Service (ISO 8473), ISO/IEC
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   [RFC4971]   Vasseur, JP., Shen, N., and R. Aggarwal, "Intermediate
               System to Intermediate System (IS-IS) Extensions for
               Advertising Router Information", RFC 4971, July 2007.

   [RFC5304]   Li, T. and R. Atkinson, "IS-IS Cryptographic
               Authentication", RFC 5304, October 2008.

   [RFC5305]   Li, T. and H. Smit, "IS-IS Extensions for Traffic
               Engineering", RFC 5305, October 2008.

   [RFC5310]   Bhatia, M., Manral, V., Li, T., Atkinson, R., White, R.,
               and M. Fanto, "IS-IS Generic Cryptographic
               Authentication", RFC 5310, February 2009.

   [RFC5880]   Katz, D. and D. Ward, "Bidirectional Forwarding Detection
               (BFD)", RFC 5880, June 2010.

   [S-BFD]   "Seamless Bidirectional Forwarding Detection (S-BFD),
               draft-ietf-bfd-seamless-base-04(work in progress)",
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