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**Advertising S-BFD Discriminators in L2TPv3
draft-ietf-l2tpext-sbfd-discriminator-00.txt**

Abstract

This document defines a new AVP for advertising one or more S-BFD Discriminators using the L2TPv3 Control Protocol AVP.

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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Table of Contents

1.	Introduction	2
2.	S-BFD Target Discriminator ID AVP	2
2.1.	Encoding Format	3
3.	IANA Considerations	3
4.	Security Considerations	4
5.	Acknowledgements	4
6.	Contributing Authors	4
7.	References	4
7.1.	Normative References	4
7.2.	Informative References	5
	Authors' Addresses	5

[1.](#) Introduction

[I-D.ietf-bfd-seamless-base] 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 Layer2 Tunneling protocol Version 3 (L2TPv3) [[RFC3931](#)] is one possible means of advertising these discriminators. S-BFD requires the usage of unique discriminators within an administrative domain.

This document specifies the encoding to be used when S-BFD discriminators are advertised using L2TPv3.

[2.](#) S-BFD Target Discriminator ID AVP

This AVP is exchanged during session negotiation (ICRQ, ICRP, OCRQ, OCRP).

2.1. Encoding Format

The S-BFD Target Discriminator ID AVP, Attribute Type TBD, is an identifier used to advertise the S-BFD target discriminators supported by an LCCE for S-BFD Reflector operation. This AVP indicates that the advertiser implements a S-BFD reflector supporting the specified target discriminators and is ready for S-BFD Reflector operation. The receiving LCCE MAY use this AVP if it wants to monitor connectivity to the advertising LCCE using S-BFD or BFD.

The Attribute Value field for this AVP has the following format:

S-BFD Discriminator Advertisement (ICRQ, ICRP, ICCN, OCRQ, OCRP, OCCN):

	No. of octets
+-----+	
Discriminator Value(s)	4/Discriminator
:	:
+-----+	

An LCCE MAY include the S-BFD Discriminator Advertisement AVP in a L2TP Control Protocol message (ICRQ, ICRP, OCRQ, OCRP) [[RFC3931](#)]. Multiple S-BFD Discriminators AVPs MAY be advertised by a LCCE. If the other LCCE does not wish to monitor connectivity using S-BFD, it MAY safely discard this AVP without affecting the rest of session negotiation. While current use-cases [[I-D.ietf-bfd-seamless-use-case](#)] of S-BFD require advertisement of only one discriminator, the AVP encoding allows specification an arbitrary number of discriminators for extensibility. When multiple S-BFD discriminators are advertised, the mechanism to choose a subset of specific discriminator(s) is out of scope for this document.

The M bit of the L2TP Control Protocol Message (ICRQ, ICRP, OCRQ, OCRP) [[RFC3931](#)] MUST NOT be set inside the S-BFD Target Discriminator ID AVP advertisement.

3. IANA Considerations

This number space is managed by IANA as per [[RFC3438](#)].

A summary of the new AVPs requested for Attribute Type 0 follows:

Control Message Attribute Value Pairs

Attribute Type	Description
-----	-----
TBD	S-BFD Discriminators

4. Security Considerations

Security concerns for L2TP are addressed in [RFC3931]. Introduction of the S-BFD Discriminator Advertisement AVP introduces no new security risks for L2TP.

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 [I-D.ietf-bfd-seamless-base].

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7. References

7.1. Normative References

- [I-D.ietf-bfd-seamless-base]
Akiya, N., Pignataro, C., Ward, D., Bhatia, M., and J. Networks, "Seamless Bidirectional Forwarding Detection (S-BFD)", [draft-ietf-bfd-seamless-base-05](#) (work in progress), June 2015.
- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), DOI 10.17487/RFC2119, March 1997, <<http://www.rfc-editor.org/info/rfc2119>>.

- [RFC3438] Townsley, W., "Layer Two Tunneling Protocol (L2TP) Internet Assigned Numbers Authority (IANA) Considerations Update", [BCP 68](#), [RFC 3438](#), DOI 10.17487/RFC3438, December 2002, <<http://www.rfc-editor.org/info/rfc3438>>.
- [RFC3931] Lau, J., Ed., Townsley, M., Ed., and I. Goyret, Ed., "Layer Two Tunneling Protocol - Version 3 (L2TPv3)", [RFC 3931](#), DOI 10.17487/RFC3931, March 2005, <<http://www.rfc-editor.org/info/rfc3931>>.
- [RFC5880] Katz, D. and D. Ward, "Bidirectional Forwarding Detection (BFD)", [RFC 5880](#), DOI 10.17487/RFC5880, June 2010, <<http://www.rfc-editor.org/info/rfc5880>>.

7.2. Informative References

- [I-D.ietf-bfd-seamless-use-case]
Bhatia, M., Matsushima, S., Mirsky, G., and N. Kumar,
"Seamless Bidirectional Forwarding Detection (BFD) Use
Case", [draft-ietf-bfd-seamless-use-case-02](#) (work in
progress), April 2015.

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