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**Advertising Seamless Bidirectional Forwarding Detection (S-BFD)
Discriminators in Layer Two Tunneling Protocol, Version 3 (L2TPv3)
draft-ietf-l2tpext-sbfd-discriminator-05**

Abstract

This document defines a new Attribute Value Pair (AVP) that allows L2TP Control Connection Endpoints (LCCs) to advertise one or more Seamless Bidirectional Forwarding Detection (S-BFD) Discriminator values using the Layer Two Tunneling Protocol, Version 3 (L2TPv3).

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

[I-D.ietf-bfd-seamless-base] defines a simplified mechanism to use Bidirectional Forwarding Detection (BFD) [[RFC5880](#)], referred to as Seamless Bidirectional Forwarding Detection (S-BFD). The S-BFD mechanisms depend on network nodes knowing the BFD discriminators which each node in the network has reserved for this purpose. S-BFD requires the usage of unique discriminators within an administrative domain. The use of Layer Two Tunneling Protocol, Version 3 (L2TPv3) [[RFC3931](#)] is one possible means of advertising these discriminators.

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

[1.1.](#) Terminology

The reader is expected to be very familiar with the terminology and protocol constructs defined in S-BFD (see Section 2 of [[I-D.ietf-bfd-seamless-base](#)]) and L2TPv3 (see [Section 1.3 of \[RFC3931\]](#)).

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

The "S-BFD Target Discriminator ID" AVP is exchanged using the ICRQ (Incoming-Call-Request), ICRP (Incoming-Call-Reply), OCRQ (Outgoing-

Call-Request), and OCRP (Outgoing-Call-Reply) control messages during session negotiations.

2.1. Encoding Format

The S-BFD Target Discriminator Identifier (ID) Attribute Value Pair (AVP), Attribute Type "TBA by IANA", is an identifier used to advertise the S-BFD Target Discriminator(s) supported by an LCCE for the S-BFD Reflector operation. This AVP indicates that the advertiser implements an S-BFD reflector supporting the specified target discriminator(s) 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.

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

S-BFD Target Discriminator ID (ICRQ, ICRP, OCRQ, OCRP):

	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](#)]. 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 [[I-D.ietf-bfd-seamless-base](#)] concerns itself with the advertisement of only one discriminator unless the mapping to discriminators to entities is specified, the AVP encoding allows the specification of an arbitrary number of S-BFD Discriminators (at least one) for extensibility.

When an LCCE uses the S-BFD Target Discriminator ID AVP, multiple S-BFD Discriminators MAY be included, and at least one S-BFD Discriminator MUST be included. When one S-BFD Discriminator is advertised, such S-BFD Discriminator is associated with the L2TPv3 Session. 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.

The S-BFD Target Discriminator ID AVP allows for advertising at least one S-BFD Discriminator value:

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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