The nits-tools gives the following warnings that you should take care of:

 == Line 109 has weird spacing: '... The scope ...'

 == Line 227 has weird spacing: '...ntended dest...'

 -- Looks like a reference, but probably isn't: 'RFC2119' on line 117

Loa- 1: This warning comes about because RFC2119 is defined as [3] in the in the reference sections, but you use [RFC2119].

Loa-2: I prefer references that look like [RFC2119], but this is a preference. I think that the RFC Editor will want to use the style [[RFC2119].

 == Unused Reference: '1' is defined on line 269, but no explicit reference

 was found in the text

This defines a reference for RFC4379, you actually never use this reference, but I think you should, e.g. in the IANA section.

 == Unused Reference: '2' is defined on line 272, but no explicit reference

 was found in the text

This defines a reference to RFC5085, you never use this reference.

 == Unused Reference: '3' is defined on line 276, but no explicit reference

 was found in the text

This creates the reference to 2119 - Please see above.

]

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 Definition of Time-to-Live TLV for LSP-Ping Mechanisms

 draft-ietf-mpls-lsp-ping-ttl-tlv-05.txt

Abstract

 LSP-Ping is a widely deployed Operation, Administration, and

 Maintenance (OAM) mechanism in MPLS networks. However, in the present

 form, this mechanism is inadequate to verify connectivity of a

 segment of a Multi-Segment PseudoWire (MS-PW) from any node on the

 path of the MS-PW. This document defines a TLV to address this

 shortcoming.

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1. Introduction

 A MS-PW can span across multiple service provider networks. In order

 to allow Service Providers (SP) to verify segments of such MS-PW from

 any node on the path of the MS-PW, any node along the path of the MS-

 PW, should be able to originate an LSP-Ping echo request packet to

 any another node along the path of the MS-PW and receive the

 corresponding echo reply. If the originator of the echo request is at

 the end of a MS-PW, the receiver of the request can send the reply

 back to the sender without knowing the hop-count distance of the

 originator. For example, the reply will be intercepted by the

 originator regardless of the TTL value on the reply packet. But, if

 the originator is not at the end of the MS-PW, the receiver of the

 echo request MAY need to know how many hops away the originator of

 the echo request is so that it can set the TTL value on the MPLS

 header for the echo reply to be intercepted at the originator node.

 In MPLS networks, for bidirectional co-routed LSPs, if it is desired

 to verify connectivity from any intermediate node (LSR) on the LSP to

 the any other LSR on the LSP the receiver may need to know the TTL to

 send the Echo reply with, so as the packet is intercepted by the

 originator node.

 A new optional TTL TLV is being proposed in this document this TLV

 will be added by the originator of the echo request to inform the

 receiver how many hops away the originator is on the path of the MS-

 PW or Bidirectional LSP.

 The scope of this TTL TLV is currently limited to MS-PW or

 Bidirectional co-routed MPLS LSPs.

2. Terminology

 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].

 LSR: Label Switching Router

 MPLS-OAM: MPLS Operations, Administration and Maintenance

 MPLS-TP: MPLS Transport Profile

 MS-PW: Multi-Segment PseudoWire

 PW: PseudoWire

 TLV: Type Length Value

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 TTL: Time To Live

3. Time To Live TLV

3.1. TTL TLV Format

 0 1 2 3

 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1

 +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

 | Type = TBD | Length = 8 |

 +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

 | Value | Reserved | Flags |

 +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

 Figure 1: Time To Live TLV format

 The TTL TLV has the format shown in Figure 1.

 Value

 The value of the TTL as specified by this TLV

 Flags

 The Flags field is a bit vector with the following format:

 0 1

 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5

 +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

 | MBZ |R|

 +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

 One flag is defined for now, the R bit; the rest MUST be set

 to zero when sending and ignored on receipt.

 The R flag (Reply TTL) is set signify that the value is

 meant to be used as the TTL for the reply packet. Other bits

 may be defined later to enhance the scope of this TLV.

3.2. Usage

 This TLV shall be included in the echo request by the originator of

 request. The use of this TLV is optional. If a receiver does not

 understand the TTL TLV, it will simply ignore the TLV (Type value of

 TLV is assumed to be in the range of optional TLV's which SHOULD be

 ignored if an implementation does not support or understand them). In

 the absence of TTL TLV or if TTL TLV is ignored by a receiver, the

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 determination of the TTL value used in the MPLS label on the echo

 reply is beyond the scope of this document.

 If a receiver understands the TTL TLV, and the TTL TLV is present in

 the echo request, and if the value field is zero, the LSP Ping Echo

 request packet SHOULD be dropped.

 If a receiver understands the TTL TLV, and the TTL TLV is present in

 the echo request, the receiver MUST use the TTL value specified in

 TLV in the MPLS header of the echo reply. In other words, if the

 value of the TTL provided by this TLV does not match the TTL

 determined by other means, such as Switching Point TLV in MS-PW, then

 TTL TLV must be used. This will aid the originator of the echo

 request in analyzing the return path.

4. Operation

 In this section, we explain a use case for the TTL TLV with an MPLS

 MS-PW.

 <------------------MS-PW --------------------->

 A B C D E

 o -------- o -------- o --------- o --------- o

 ------Echo Request----->

 <-----Echo Reply--------

 Figure 2: Use-case with MS-PWs

 Let us assume a MS-PW going through LSRs A, B, C, D, and E.

 Furthermore, assume that an operator wants to perform a connectivity

 check between B and D from B. Thus, an LSP-Ping request with the TTL

 TLV is originated from B and sent towards D. The echo request packet

 contains the FEC of the PW Segment between C and D. The value field

 of the TTL TLV and the TTL field of the MPLS label are set to 2. The

 echo request is intercepted at D because of TTL expiry. D detects the

 TTL TLV in the request, and use the TTL value (i.e., 2) specified in

 the TLV on the MPLS label of the echo reply. The echo reply will be

 intercepted by B because of TTL expiry.

 The same operation will apply in the case a co-routed bidirectional

 LSP and we want to check connectivity from an intermediate LSR B to

 another LSR D, from B.

4.1. Traceroute mode

 In the traceroute mode TTL value in the TLV is successively set to 1,

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 2, and so on. This is similar to the TTL values used for the label

 set on the packet.

4.2. Error scenario

 It is possible that the echo request packet was punted before the

 intended destination. This could be due network faults,

 misconfiguration or other reasons. In such cases, if the return TTL

 is set to the value specified in the TTL TLV then the echo response

 packet will continue beyond the originating node. This becomes a

 security issue.

 To prevent this issue, the TTL value used must be modified by

 deducting the incoming label TTL. If the echo request packet is

 punted before the incoming TTL is deducted, then another 1 must be

 deducted. In other words:

 Return TTL Value = (TTL TLV Value)-(Incoming Label TTL) + 1

5. Security Considerations

 This draft allows the setting of the TTL value in the MPLS Label of

 an echo reply, so that it can be intercepted by an intermediate

 device. This can cause a device to get a lot of LSP Ping packets

 which get redirected to the CPU.

 However the same is possible even without the changes mentioned in

 this document. A device should rate limit the LSP ping packets

 redirected to the CPU so that the CPU is not overwhelmed.

6. IANA Considerations

 IANA is requested to assign TLV type value to the following TLV from

 the "Multiprotocol Label Switching Architecture (MPLS) Label Switched

 Paths (LSPs) Parameters - TLVs" registry, "TLVs and sub-TLVs" sub-

 registry.

 Time To Live TLV (See Section 3). The Suggested value is from the range (32768-49161) of optional TLV's which SHOULD be

 ignored if an implementation does not support or understand them as

 suggested by RFC 4379 Section 3.

7. Acknowledgements

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