broadband forum

TR-221
Technical Specifications for MPLS in Mobile Backhaul Networks

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Issue History

Issue Number	Issue Date	Publishing Date	Issue Editor	Changes
1	October 2011		Doug Hunt, ALU Ron Isler, RAD Santosh Kolenchery, Ericsson Fabien Le Clech, FT Ed Sierecki, AT&T	Original
Corrigendum 1	8 September 2014	23 September 2014	Yuanlong Jiang, Huawei	Corrections and clarifications to TR-221

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Executive Summary

TR-221 provides reference architectures and equipment requirements for MPLS in Mobile Backhaul networks. This document provides corrections to terminology, MS-PW OAM and clarifications on LSP Ping and static PW OAM.

1   Purpose and Scope

1.1   Purpose

This corrigendum provides corrections to TR-221 "Technical Specifications for MPLS in Mobile Backhaul Networks".   These include terminology, corrections to MS-PW OAM, and also clarifications on LSP Ping and static PW OAM.

2   References

Document		Title	Source	Year
[1]	RFC 2119	*Key words for use in RFCs to Indicate Requirement Levels*	IETF	1997
[2]	TR-221	*Technical Specification for MPLS in Mobile Backhaul Networks*	BBF	2011
[3]	RFC 3107	*Carrying Label Information in BGP-4*	IETF	2001
[4]	RFC 3985	*Pseudo Wire Emulation Edge-to-Edge (PWE3) Architecture*	IETF	2005
[5]	RFC 6478	*Pseudowire Status for Static Pseudowires*	IETF	2012

3   Corrections / Clarifications on TR-221

The corrections and amendments made by this Corrigendum are described in the following subsections. Reference is given where and how to correct and amend TR-221 [2] text.

3.1   Corrections to Terminology

In Section 2.4 "Abbreviations" of TR-221 [2], the item "AC Access Circuit" is replaced.
Replace:
AC   Access Circuit
By:
AC   Attachment Circuit

Reason: the definition of AC should be changed to align with IETF RFC 3985 [4].

3.2   Clarification on LSP Ping

In Section 5.2.1 "LSP OAM" of TR-221 [2], replace the following bullets in TR-221 [R15]:

o When using LDP - LDP IPv4 prefix as defined in Section 3.2.1 MUST be supported.
o When using RSVP - RSVP IPv4 LSP as defined in Section 3.2.3 MUST be supported.
o When using BGP - BGP labeled IPv4 prefix as defined in Section 3.2.11 MUST be supported.
o When using LDP - LDP IPv6 prefix as defined in Section 3.2.2 SHOULD be supported.
o When using RSVP - RSVP IPv6 LSP as defined in Section 3.2.4 SHOULD be supported.
o When using BGP - BGP labeled IPv6 prefix as defined in Section 3.2.12 SHOULD be supported.

With the following bullets:
- When LDP is supported - LDP IPv4 prefix as defined in Section 3.2.1/RFC 4379 [29] MUST be supported.
- When RSVP is supported - RSVP IPv4 LSP as defined in Section 3.2.3/RFC 4379 [29] MUST be supported.
- When BGP is supported - BGP labeled IPv4 prefix as defined in Section 3.2.11/RFC 4379 [29] MUST be supported.
- When L3VPNv4 is supported - VPN IPv4 prefix as defined in Section 3.2.5/RFC 4379 [29] MUST be supported.
- When LDP is supported - LDP IPv6 prefix as defined in Section 3.2.2/RFC 4379 [29] SHOULD be supported.
- When RSVP is supported - RSVP IPv6 LSP as defined in Section 3.2.4/RFC 4379 [29] SHOULD be supported.
- When BGP is supported - BGP labeled IPv6 prefix as defined in Section 3.2.12/RFC 4379 [29] SHOULD be supported.
- When L3VPNv6 is supported - VPN IPv6 prefix as defined in Section 3.2.6/RFC 4379 [29] MUST be supported.

Reason: Section 5.2.1 of TR-221 only gives OAM requirements on the LSP layer, while no text is provided for L3VPN OAM. Two bullets are added to resolve the lack of L3VPN OAM issue, TR-221 bullets are further phrased to reflect the equipment requirements.

3.3   Clarification on Static PW OAM

In section 8.2.3.1/TR-221, requirement R -18 provides OAM for the PW established using static provisioning. RFC 6478 [5] provides additional clarification for use of VCCV status notification and Static PW status. Add the following note after R-18.

Note: As per RFC 6478 [5], VCCV status notification and Static PW status signaling cannot be used at the same time.

3.4   Corrections to MS-PW OAM

In Section 5.2.3.2 "Multi-Segment Pseudowire (MS-PW) OAM" of TR-221 [2],
Replace:
 [R25] The S-PE MUST support including the label stack in the Pseudowire Switching Point PE sub-TLV as per the FEC 129 encoding in Section 3.2.10/RFC 4379 [29].

By the following two requirements:
[R25a]   The S-PE MUST support including the FEC 129 of the last PW segment in the Pseudowire Switching Point PE sub-TLV as per the FEC 129 encoding in Section 7.4.1/RFC6073 when LDP FEC 129 is used to signal the PW.
 [R25b]   The S-PE MUST support including FEC 129 in the Target FEC stack TLV in the VCCV echo reply message as per the FEC 129 encoding in Section 3.2.10/RFC 4379.

Reason: There is no label stack in PW Switching Point PE Sub-TLVs according to Section 7.4.1 of RFC6073 or in the FEC 129 of RFC 4379, the FEC 129 support is what we actually require.

End of Broadband Forum Technical Report TR-221