MAC Withdraw Signaling for static PW

draft-boutros-l2vpn-mac-wd-03.txt

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Brief History

- This draft was first introduced in 2011

- Service Providers requesting this feature

- Presented details in IETF-88 and was well received

- Added a new author
 - Sam Aldrin - Huweii

Solution Overview

- MAC withdraw signaling for dynamic PW is described in RFC 4762. It mitigates black holing of the traffic when dual-homed MTU-s switches over to standby PW

- RFC 6478 describes PW status exchange in-band over the OAM channel with acknowledgements from the receiver. The draft uses the similar mechanisms for MAC withdraw signaling.

MAC Withdraw signal

- Sent over OAM channel with sequence number and MAC list TLV as defined in RFC 4762.

- Receiving PE sets the ACK bit in the response

- In absence of ACK, sender retries 3 times at one second interval

- An ACK receipt with higher sequence is implicit ACK for all lower sequence sends

- MAC List Optimization is supported as per http://tools.ietf.org/html/draft-ietf-l2vpn-vpls-ldp-mac-opt-08
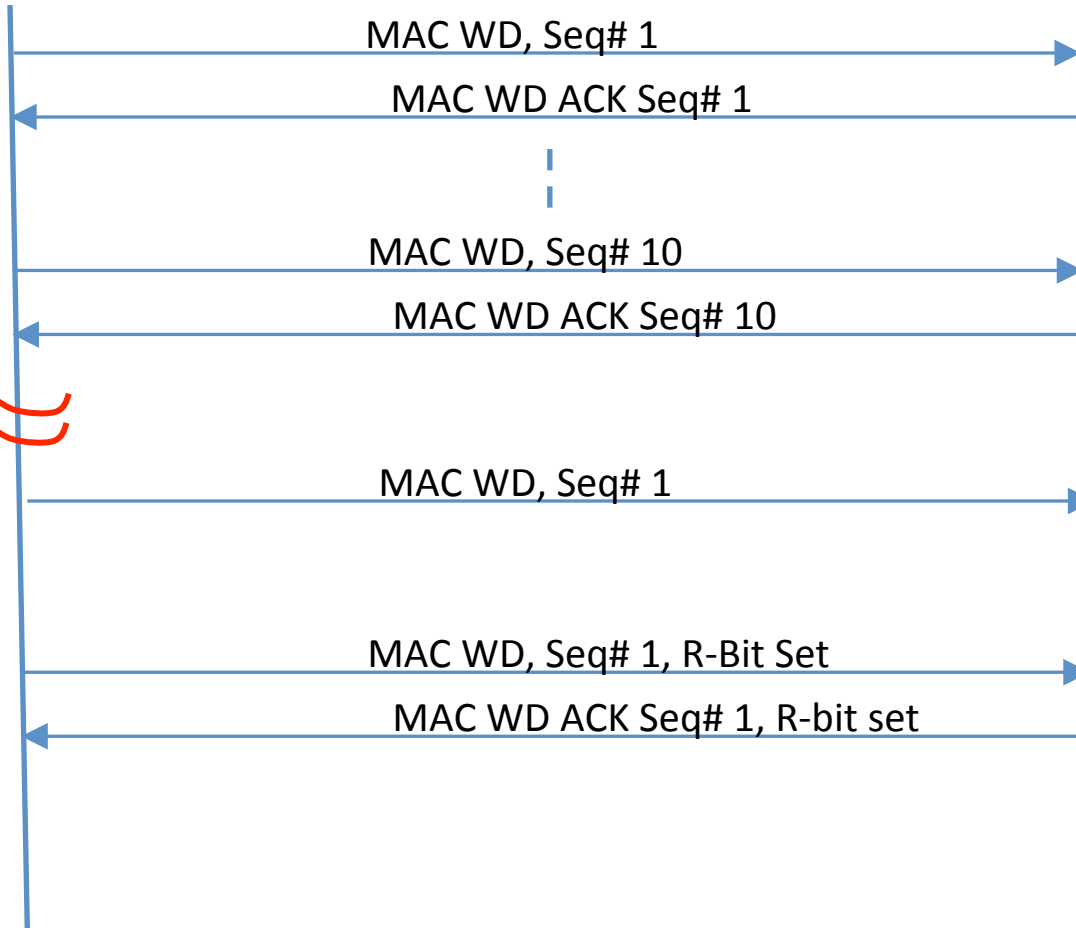
MAC Withdraw signaling – use case
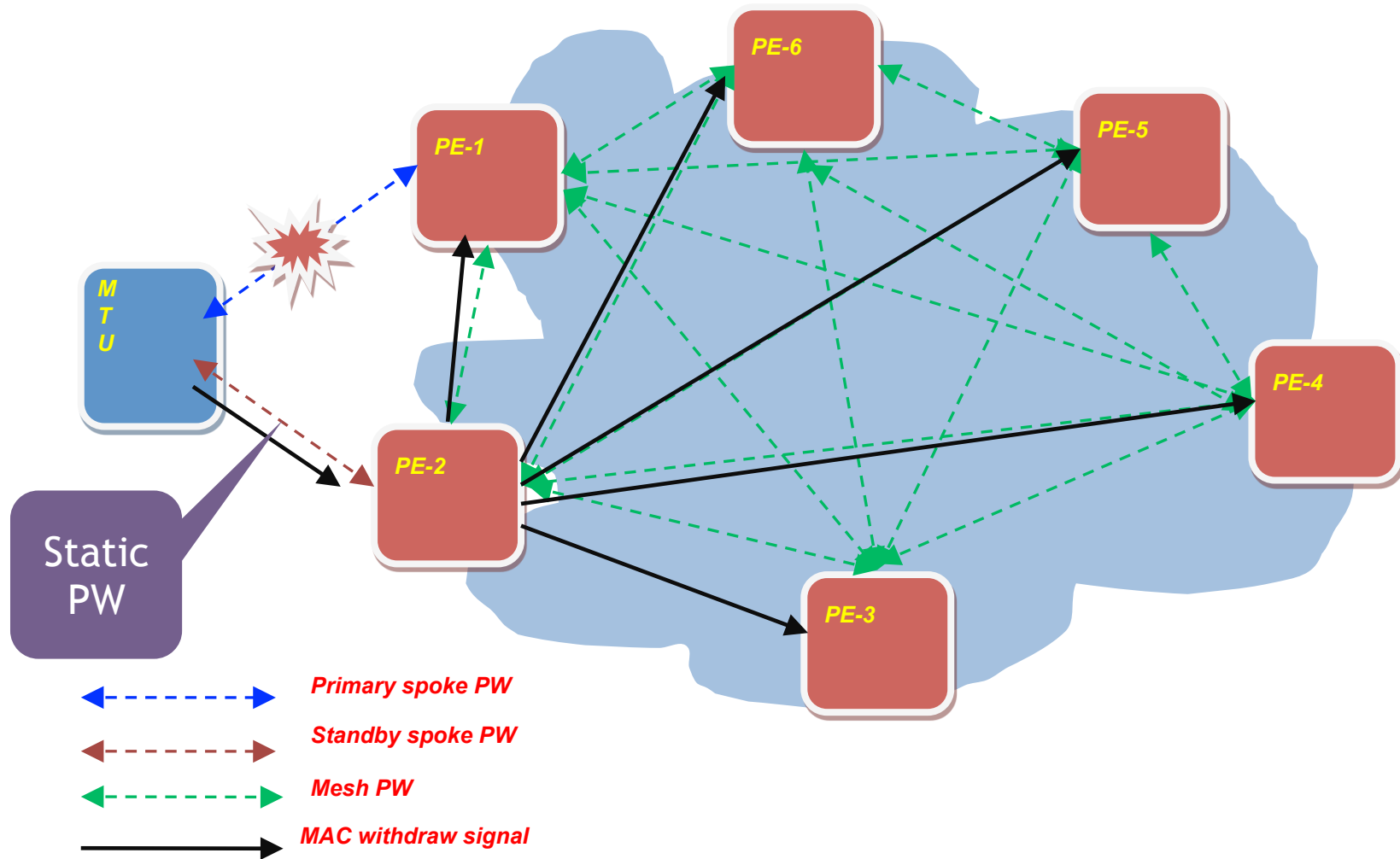
Reset Sequence Number

- The version 03 added logic to signal resetting of the sequence number
- A reset bit is defined in the MAC WD signal
- Needed when a static PW is reset by way of node restart or other configuration changes
- Local node notifies peer to reset send and expected receive sequence number
- This mechanism prevents peer to ignore lowered sequence number MAC WD message from the reset'd node

Reset logic

Node A | Node B

MAC WD, Seq# 1 →

← MAC WD ACK Seq# 1 — Exp recv seq# 2

MAC WD, Seq# 10 →

← MAC WD ACK Seq# 10 — Exp recv seq# 11

Static PW Reset

MAC WD, Seq# 1 →

Ignore!!!!
Less than expected 11

Solution

MAC WD, Seq# 1, R-Bit Set → — Reset send & receive seq#

← MAC WD ACK Seq# 1, R-bit set — Exp recv seq# 2

Use case

- MPLS-TP deployments are taking hold in access networks

- Static provisioning for PWs dovetails to static LSPs

- This necessitates need for PW status (already an RFC) as well as MAC withdraw signaling for H-VPLS deployments with dual-homing

Summary

- Request to adopt as WG document
- Reserve ACH channel type 0x28
- Comments?