

Dual-Homing Protection for MPLS-TP PW

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Background

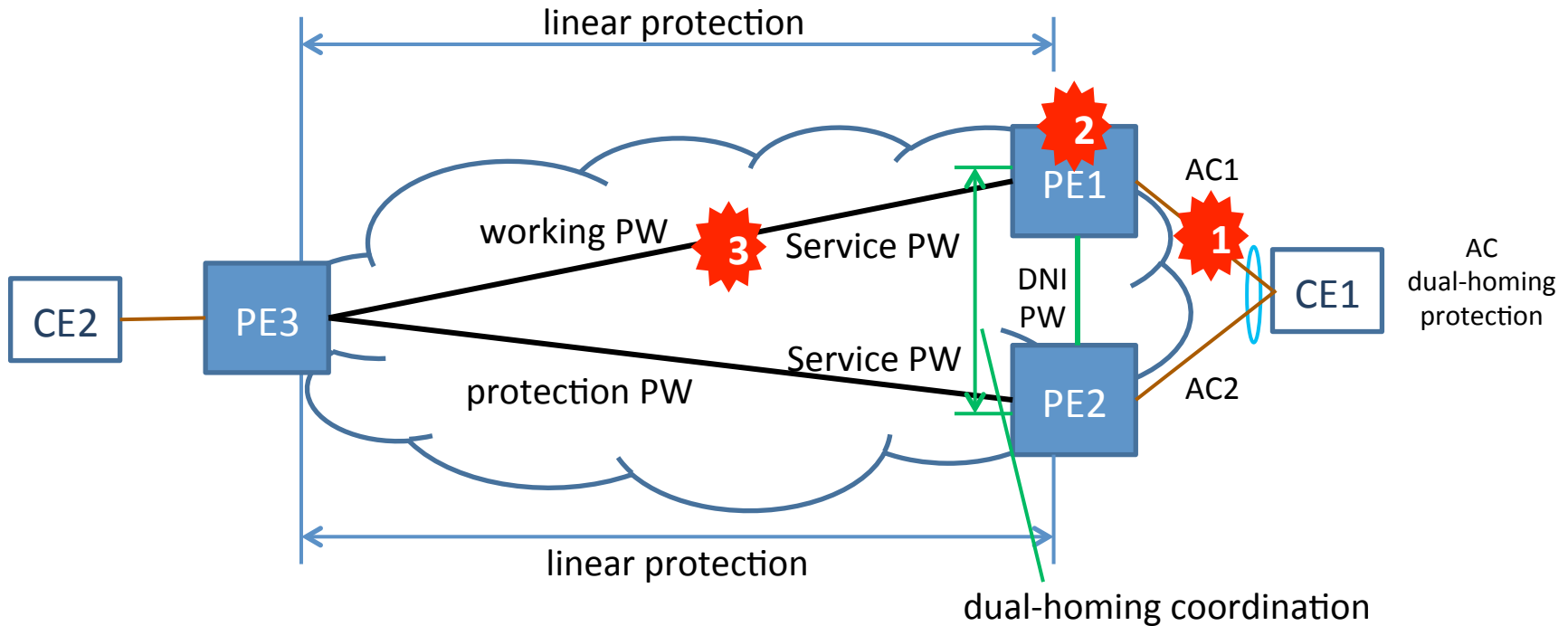
- This draft was written to resolve an MPLS-TP base backhual operational issue
- Was presented in IETF 88
- Revised to solve the received comments
- Renamed as

draft-cheng-pwe3-mpls-tp-dual-homing-protection

Applicability of Different Mechanisms

- PW Redundancy (RFC 6718)
 - Dual-homing protection based on LDP control plane
- MPLS-TP Linear Protection (RFC 6378)
 - End-to-End protection based on PSC
 - Dual-homing not covered
- MPLS-TP PW Dual-Homing Protection
 - Dual-homing protection based on MPLS-TP linear protection
 - Applicable for deployed mobile backhaul networks

Typical Scenario



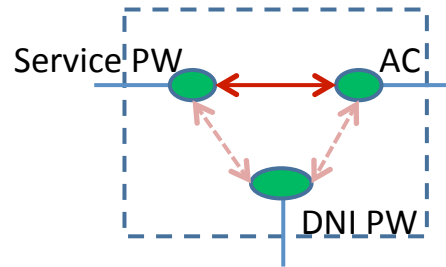
- Provide protection for:
 - AC failure
 - PE failure
 - PSN network failure

Proposed Solution

- MPLS-TP Linear protection is deployed between single-homing PE and the peering dual-homing PEs
- New Dual-Homing Coordination (DHC) message for *state synchronization* and *switching coordination* between the dual-homing PEs
 - New ACh channel type
- Dual-Node Interconnection (DNI) PW for traffic bridging between the dual-homing PEs during failure
 - Enable local protection

Procedures

- Dual-Homing PEs exchange PW status and protection coordination request using the DHC message
- Protection Behavior of dual-homing PEs is determined by:
 - Status of Service PW
 - Status of AC
 - Status of DNI PW



Service PW	AC	DNI PW	Forwarding Behavior
Active	Active	Up	Service PW <-> AC
Active	Standby	Up	Service PW <-> DNI PW
Standby	Active	Up	DNI PW <-> AC
Standby	Standby	Up	Drop all packets

Benefits

- Extends MPLS-TP Linear protection to PW dual-homing scenarios
- Support local protection, avoid PW switchover due to AC failure
- Can work without PSN tunnel protection

Next Steps

- Solicit comments from WG
- Revise the draft
- WG adoption?