CE-based Virtual Private LAN <draft-lee-ce-based-vpl-00.txt>

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Context of proposal within PPVPN



(modified diagram courtesy of Jeremy DeClercq)

CE-based VPL



(a broadcast domain or VPL)

What does CE-based VPL enable?

1)Simplify VPL config over multiple MAN



•Reduces provisioning required - No need to resort to stacking VLAN tags, or setting up an LSP per VPL between MANs to stitch multiple MANs together

Note: CEs are IP reachable and edge to edge MPLS is not mandatory for VPL connectivity

2) Agnostic to access technology



• A CE at one end may access the provider's network using Ethernet, the other end may be via ADSL

Note: different access networks are connected to an IP network, CEs are reachable using one common addressing (i.e. IP),

What does CE-based VPL enable? (cont)

- 3) If a provider runs out of VLAN IDs to support more VPLs, this solution can be used to increase the number of VPLs supported
- 4) new VPLs can be offered over an existing VLAN network. VPLS will likely require a separate network infrastructure

What does CE-based VPL enable? (cont)

- 5) leverages connectivity (between CEs) infrastructure provided by Ethernet (802.1d)/IP/MPLS, no need to signal specifically for VPL connectivity in the network cf the use of LDP in MPLS VPLS or GVRP in VLAN 802.1q
 - \rightarrow auto-provisioning/setup of VPL connectivity at CEs only
- 6) Easier troubleshooting of VPL service if service is not terminated by CE managed by provider and a provider has no access to a customer owned CE, a provider can't easily determine whether the VPL service is working or not, and a customer may have to debug VPL service problem

Tradeoff

 Higher frame header overhead cf VLAN 802.1q & MPLS VPLS, similar tradeoff in PWE's Ethernet over L2TP

Next Steps

• evaluate suitability of other tunneling technologies and compare header overhead (Ethernet directly over L2TP or over PPP, GRE, IP)

• select a small number of suitable CE auto-provisioning methods (see draft-lee-ppvpn-ce-auto-config-01.txt)