Signaling: Identifying PW Endpoints

- L2VPNs can be built over PWE3 PseudoWires
- L2VPN/PWE3 framework: signaling connects two "Forwarders".
- "Martini signaling": to connect 2 Forwarders by a PW:
 - Provision a 32-bit "name" (VCid)
 - Configure each Forwarder with VCid
 - Each Forwarder independently initiates unidirectional LSP

Problem

- Presupposes provisioning model
 - each PW individually provisioned at each PE device
 - No support for many PPVPN provisioning models
 - No integration with L2VPN autodiscovery
- Solution:
 - Generalize method of identifying remote Forwarder
 - Allow either Forwarder to be the initiator, the other to be the responder

Example 1: VPLS

- Forwarders id'ed by VPN-id
- Current VPLS proposals reuse "Martini" VCid field as VPN-id
- Problem: 32-bit VCid field just too short, esp. inter-provider :
 - All VPN-id proposals use 7-8 bytes, some use arbitrarily long strings
 - Current proposals not viable in long term

2: Distributed VPLS

- Provisioning model:
 - U-PE learns # of PWs it needs per VPLS
 - N-PE learns # of PWs per VPLS per remote N-PE and per local U-PE
- Cannot be done with just VCid or VPN-id

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3: VPWS Full Mesh "Colored Pools"

- Provisioning model:
 - Assign a VPN-id
 - Number CEs from 1-n
 - For each CE, set up n PWs, such that PW_k leads to CE_k
- Cross-connect so PW_k from CE_j matches PW_j from CE_k
- Identifier must include VPN-id, local CE number, remote CE number

4: Switched Connections

- E.g., connecting ATM SVC to PW
- PW setup must be initiated from one side, not from both
- Remote endpoint identifier must include addressing information

Going Forward

- Ensure PWE3 signaling is general enough for PPVPN use (PWE3 draft?)
- Specify use of PWE3 signaling for various provisioning models (PPVPN draft?)