

DNS/LDP Based Transparent VLAN Service

<draft-heinanen-dirldp-eth-vpns-01.txt>

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Justification



- Adds PE discovery and label distribution mechanism to Lasserre-vkompella
- very simple to configure and operate
- BGP free - based on DNS and LDP
- supports both intra- and inter-AS operation
- works over any (not just MPLS) tunnels

Configuration



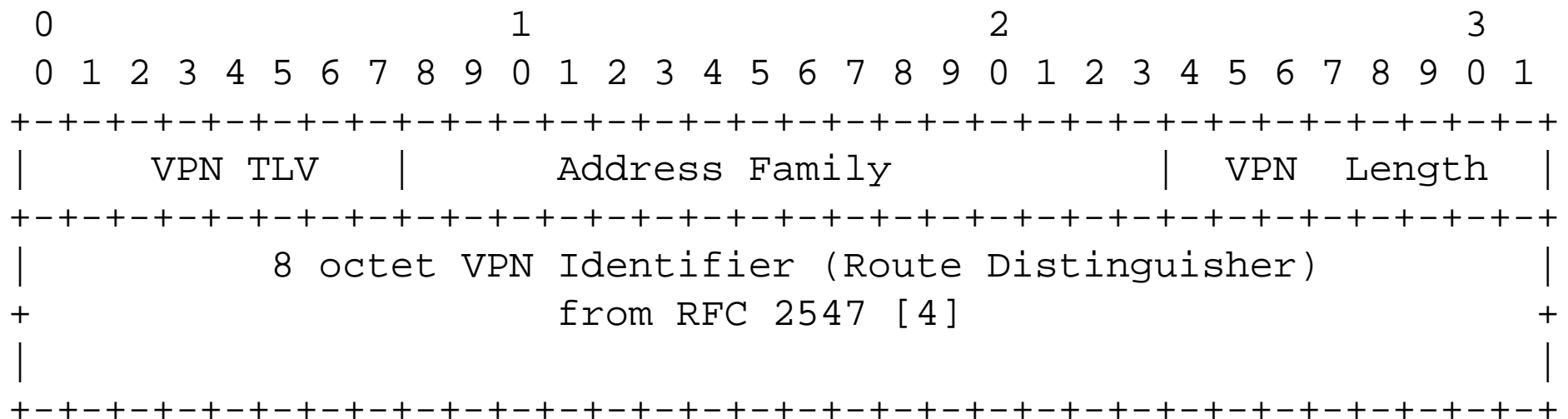
- IP address of each new PE of a VPN is added to DNS, e.g.
 - `vpn#.as#.domain IN A pe-address`
- PEs ports connecting the CEs are configured to belong to the VPN:
 - `<vpn#, as#, domain, "ethernet" >`

Protocol Actions



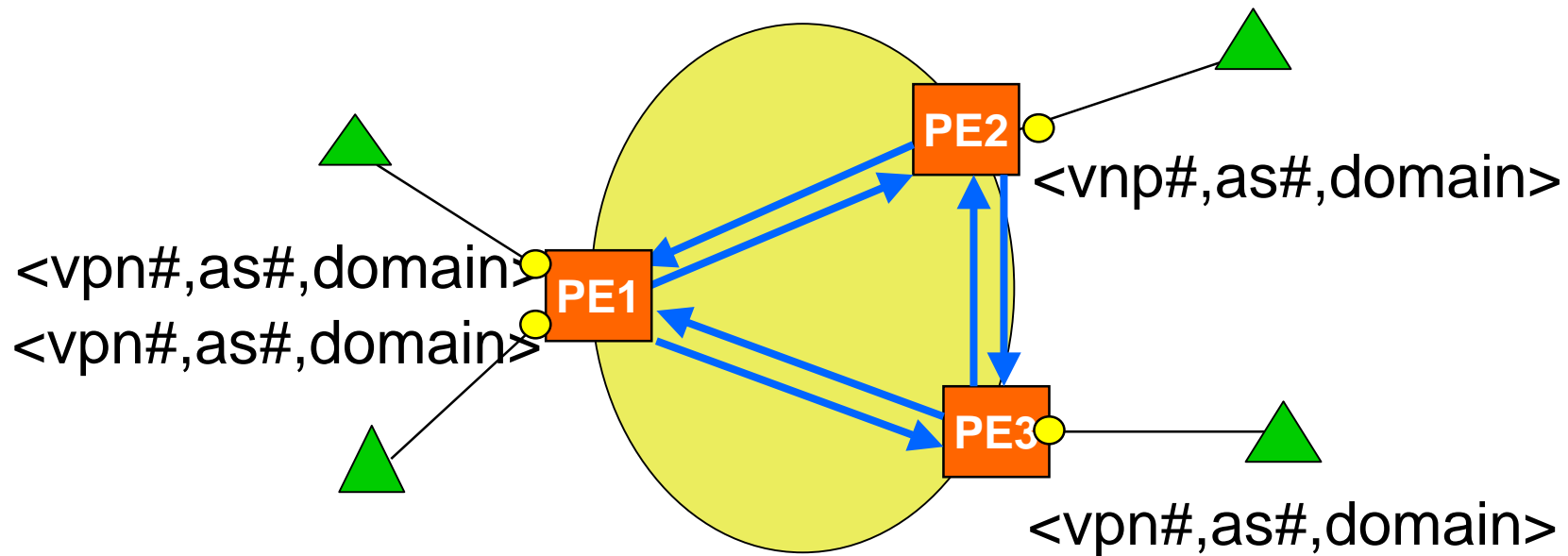
- A PE that is new to a VPN
 - queries DNS for other PEs of the VPN
 - sets up an LDP session with each
 - advertises a label for the VPN to each
- After learning a label for a VPN, a PE
 - advertises a label for the VPN to the other direction (unless one already exists)

VPN FEC Element



Example

vpn-id.domain. IN A PE1
IN A PE2
IN A PE3



Data Plane



- PEs operate as learning bridges as in lasserre-vkompella
- data packets use martini ethernet over mpls encapsulation without the control word
- any tunneling technology (MPLS, GRE, HIP, IPSec, etc.) can be used to send data packets between PEs

Proposal



- DNS/LDP is adopted by the PPVPN WG as one PE discovery/label distribution technology for transparent VLAN services
- PPVNP WG defines a new VPN FEC element containing a globally unique VPN ID or name