GVPLS/LPE - Generic VPLS Solution based on LPE Framework draft-radoaca-ppvpn-gvpls-00.txt

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draft-radoaca-ppvpn-gvpls-00.txt

Justification in PPVPN WG

 Provides a VPLS solution which is a L2VPN type, L2VPNs are in the charter of the PPVPN WG

Objectives of GVPLS

- Key goal is to support seamless integration of both distributed and non-distributed VPLS models
 - Same signaling mechanism
 - Same auto-discovery mechanism
 - Same provisioning model
- Allow integration of different access topologies across Service Provider network:
 - Hierarchical PE
 - Distributed PE
 - With different technologies
 - SET (MAC-in-MAC), P2P, MP2P, Q-in-Q etc.

Objectives of GVPLS

- Performance & Scalability transparency to the type & number of CE devices
 - layer 2 bridge
 - Router
 - Host devices
- Scalable deployment
 - Incremental build-up
 - # of VPNs
 - Label space optimization
 - # of End-points/VPLS
 - # of customer MAC addresses

Objectives of GVPLS

- Optimization of replication and support for multicast applications
- Interoperability with other VPLS solutions
 E.g. HVPLS
- Integrated OAM capability in Data Plane

GVPLS Reference Model



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GVPLS Building Blocks

- Common Provisioning Model
 - Service VPLS port, VPLS End-point, VPN-ID
 - Network U-PE-ID, N-PE-ID
- Distribution is logical mapping of VPLS functions on PE device(s)
 - VSI-U (MAC learning and forwarding)
 - VSI-N (Service Label based Forwarding to PW)
- Multi-point to Point PWs -
 - Use of CW* (control word)
 - Other mechanisms possible

GVPLS Building Blocks

- Support for Multicast PWs
 - PW with multicast semantic
- Support for 2 types of U-PE
 - U-PE-s: simple layer 2 bridge
 - U-PE-sf: capable of learning and forwarding to PW (mp2p, p2p)
- OAM Integrated into MP2P PW
- Interoperability e.g. HVPLS
 - Signaling mechanism to identify HVPLS functional remote N-PE
 - Use P2P PWs (do not use CW)

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Commonalities and Differences with Other Solutions

- Updated draft-chen-ppvpn-dvpls-compare-01.txt
- References PPVPN metrics draft (draft-anderssonppvpn-metrics-01.txt) + additional metrics
- Informational

Future Steps...

- Support WG requirement for Functional distribution
- Convergence with other solution drafts
- Convergence on Signaling

 Rosen single-sided draft
- Integrate QoS, Resiliency
- Enhance OAM capabilities