IP over DSL, Cable, and Private VLANs

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Adopt as WG document?
Why should we care?

- Key issue around dual routers (VRRP, HSRP, or neither)
- Increased dependence on Internet means dual routers more likely over time
- Applies to IPv4 and IPv6
Topology Example

Router 1

Router 2

Community 1

Host 1

Host 2

Isolated Host 3

Isolated Host 4

192.168.1.0/24

2001:DB8:1:2::/64
Proxy ARP/ND

Host 1
Host 2
Isolated Host 3
Isolated Host 4

Router 1
Router 2

Community 1

Request
Replies

192.168.1.0/24
2001:DB8:1:2::/64
Proxy ARP/ND - forwarding loop?

Packet to H3

192.168.1.0/24
2001:DB8:1:2::/64
Backup
Intentionally Partially Partitioned?

- Looks to IPv4/6 as a link; has subnet prefix
- Doesn’t forward packets at L2 uniformly
  - Typically hosts can talk to routers but not H-2-H
- Several examples
  - Split horizon for DSL (TR-101)
  - Cable labs (DOCSIS-MULPI)
  - Private VLANs (RFC 5517)
- Private VLANs is superset
  - Promiscuous, community and isolated ports
  - Allows multiple promisc i.e. multiple routers
Protocol issues

- **ARP**
  - Proxy-ARP and ACD (RFC 5227) requires care
  - ARP request from one router answered by other rtr?

- **IPv6/ND**
  - Proxy-DAD (RFC6957) works even with dual routers
  - RA with L=0 works for global addresses
  - Forward link-locals with dual routers??

- **Multicast from isolated or community ports?**
  - Forward down to receivers without duplicates?

Q: Should this be an intarea WG document?