

Maintenance Proposal for 802.1AB

Paul Congdon

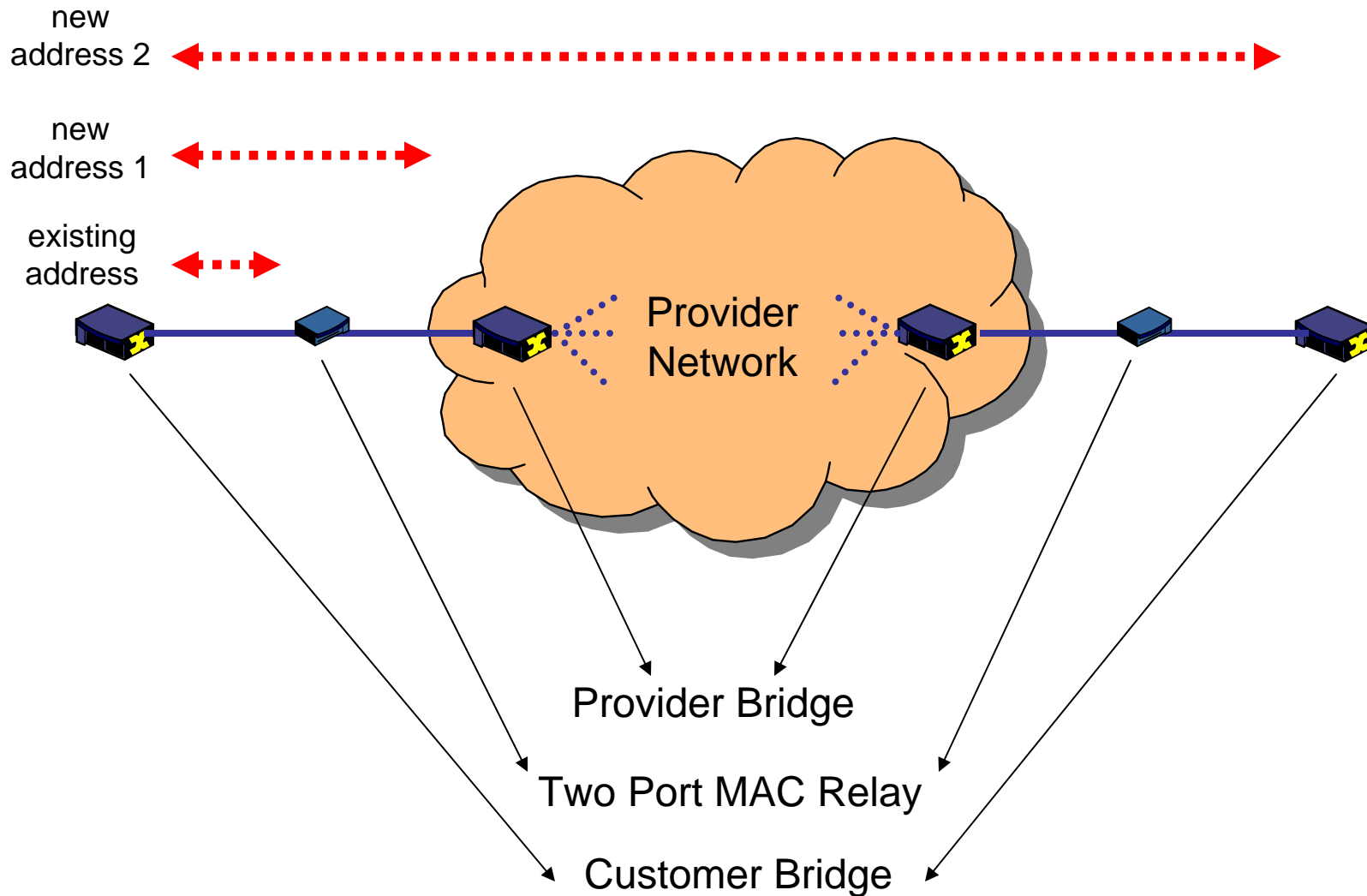
Situation

- Current LLDP specifications are conflicting
 - Some TLVs assume physical link constrained propagation (e.g. 802.3 MAC/PHY Config/Status)
 - Default address for LLDPDUs is forwarded by Provider Bridges, thus not constrained to the physical link.
- Discussion and preliminary directions reviewed
 - [ab-congdon-transparent-devices-0706.pdf](#)
- Other work items considering additions to 802.1AB
 - AVB & CM fast start needs
 - AVB & CM new TLVs?
- Maintenance to existing specs proposed
 - 802.1AB-2005 changes needed
 - 802.1ad changes needed

Preliminary Direction regarding Transparent Forwarding Devices

- Explicitly define that the current LLDP address is not to be forwarded by any 802 relay device. The goal here is to preserve current implementations without modification (e.g. IP-Phones sending LLDP-MED frames).
- Define additional addresses to support transparent forwarding of LLDPDUs as needed.
 - One address that stops at all bridge relays
 - One address that stops at edges of customer LAN
- Define address usage guidelines, internal interactions and management structures (i.e. MIB changes) within 802.1AB
- Update 802.1ad to specify correct address forwarding behavior across Provider Bridges

Multiple Address Scenario



Address Usage

- Existing LLDP Address
 - Propagation constrained to physical link
 - Stopped by all relay devices
- New Address 1
 - Propagation constrained by all bridge ports
 - Used inside provider bridge network
- New Address 2
 - Propagation constrained by customer bridge ports
 - Same coverage as customer-customer MACSec connection

Next Steps

- Begin PAR development for changes to 802.1AB
 - Revision or amendment?
- Begin PAR development for changes to 802.1Q for 802.1ad
- Update 802.1aj to assure LLDP on current address is stopped by TPMRs
 - May not be necessary if TPMR is a bridge
- Discuss solution details

Questions and Considerations

- Which new addresses and how to consider exhaustion concerns?
- How do these addresses relate to the needs of 802.1X, LACP, etc...
- What is the architectural model for stations using multiple addresses at the same time?
 - A single LLDP entity per MSAP?
 - A single LLDP entity with ability to transmit different PDUs on different addresses?
- Modifications to LLDP transmitter
 - How do we select which TLVs are used to build which PDUs?
 - How do we determine which address to put in the frame?
 - Do we update the current transmit frame rate limiter?
- Modifications to LLDP receiver
 - A single receive machine listening for any address or a separate receive machine per address?
 - How do we structure received information from the same peer, but on different addresses?
- What are the modifications to the MIBs