

T3P or Modified LLDP?

Dec 08, 2009

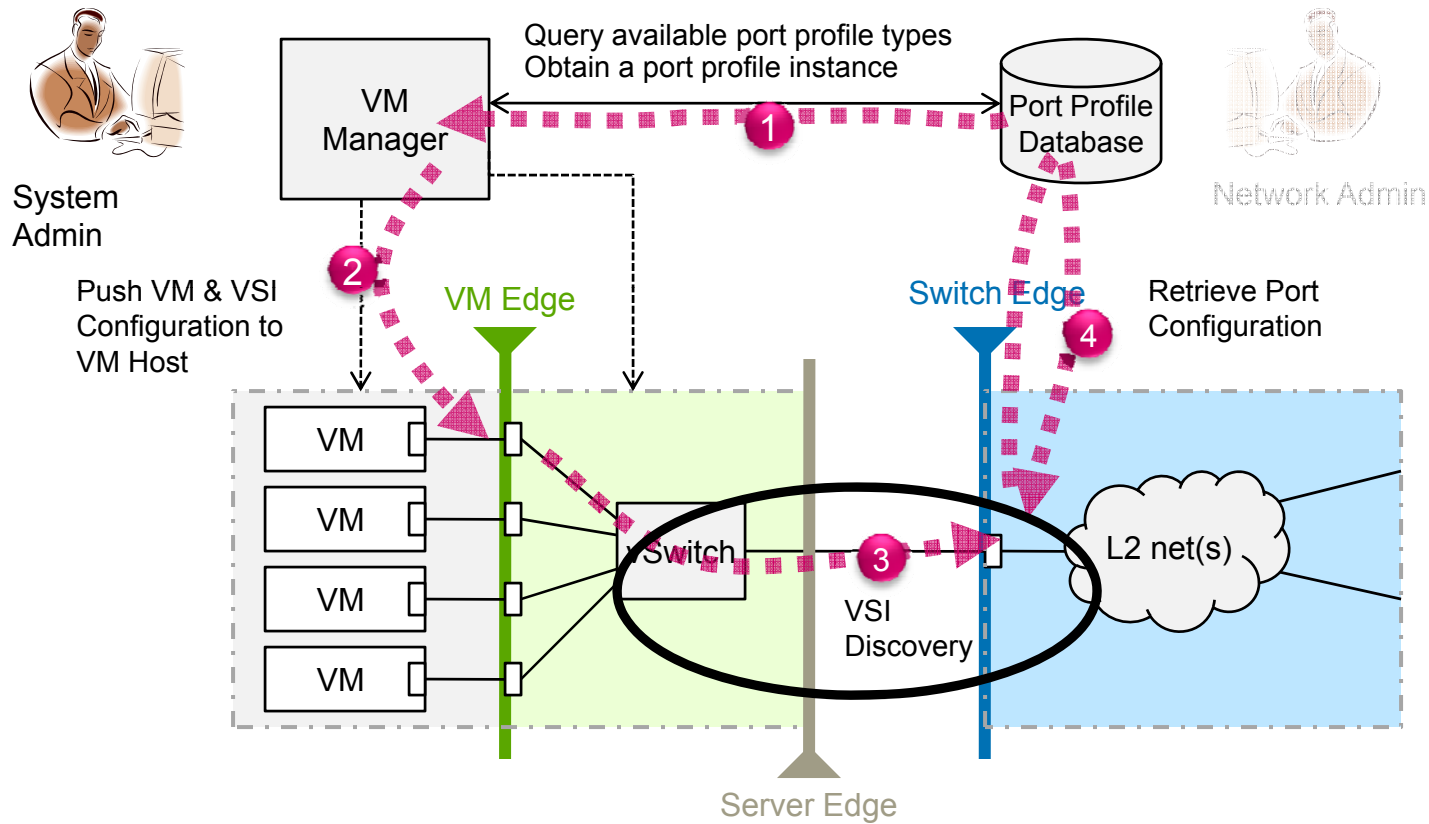
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Goals of presentation

- Understand differences between LLDP and VDP/T3P requirements
- Explore LLDP modifications that can support T3P enhancements
- Not a final proposal – but proposed direction

Steps for Configuring Edge Connections (VSIs)



Need for VDP/T3P

- EVB allows bridge to have “insight” into virtual server
- “Insight” results into information about VSIs supported inside station
- Bridge needs to maintain per VSI information
 - VDP to allow exchange of such information
 - T3P to allow transport of such information between two directly connected nodes

Revisiting VDP/T3P needs

(Ref: v0.1 presentation on 11/23/09)

| LLDP | VDP/T3P |
|--|---|
| Requires ALL TLVs in every LLDP exchange. Limited to 1500 bytes, no fragmentation. | Assumes subsets of TLVs can be passed in a frame. Total size of TLVs can significantly exceed 1500 bytes. |
| Assumes that information is exchanged (no state maintained). | Assumes that TLV exchanges can be stateful and that state can be maintained for each TLV type. |
| Delivery is confirmed by regularly retransmitting (and fast retransmit) the full set of information. | Successful delivery is confirmed by other approaches: <ul style="list-style-type: none">•TLV-specific ACKs/NACKs may not be required•Transmission of a signature of the last TLV sent or of current state may not be required.•Etc. |
| Requires repetition of information that is not... | Only transmits TLVs that are new or changed. |

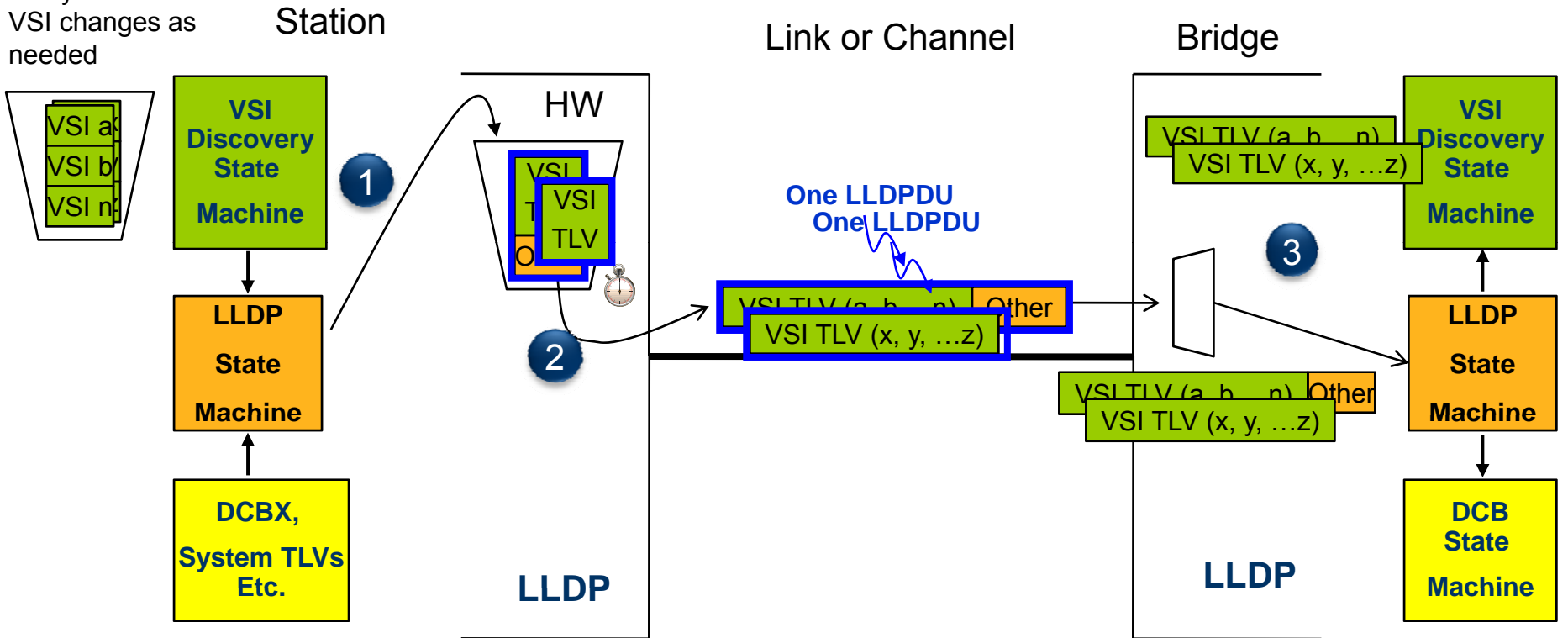
Can these requirements be addressed with LLDP modifications?

Few thoughts: LLDP Modifications per EVB requirement

| EVB Requirements | LLDP Modifications |
|---|---|
| Total size of TLVs can significantly exceed 1500 bytes. | Allow "LLDP Client" to submit multiple TLVs. <u>Modified LLDP to transmit 1500B LLDPDU.</u> <u>Multiple LLDPDUs to be generated to exhaust all "LLDP Client" TLVs</u> |
| Assumes that TLV exchanges can be stateful and that state can be maintained for each TLV type. | State to be maintained in "LLDP Client" e.g. VDP. No state is required in LLDP. |
| Successful delivery is confirmed by other approaches: <ul style="list-style-type: none"> •TLV-specific ACKs/NACKs may not be required •Transmission of a signature of the last TLV sent or of current state may not be required. •Etc. | "Reliability" requirement can be moved to "LLDP Clients" while maintaining "Modified LLDP" simple. Is there strong reason to introduce ACK? |
| Only transmits TLVs that are new or changed. | Allow "LLDP Client" to submit TLVs only for new information. |

Modified LLDP (single direction shown)

Queue up as many desired VSI changes as needed



1 LLDP state machine creates a PDU with Required TLVs and VDP TLVs (or LLDP Client TLVs). If all TLVs can not fit into 1500B, then LLDP creates multiple LLDPDUs.

2 LLDP supports an "immediate PUSH" in case of MIB change. LLDP Timer is used.

3 LLDP delivers TLVs to appropriate "LLDP Clients"

Proposal in Nut Shell

- Reuse LLDP Framework and Protocol
- Explore modification to allow LLDP Clients to submit TLVs with information >1500B
 - LLDP to generate multiple LLDPDUs to exhaust submitted TLVs (each LLDPDU still 1500B)
 - Allow avoiding repetition of “Other TLVs” or “System TLVs” in each LLDPDU
 - Can be achieved by treating “Other TVLs” same as LLDP Client that queues one request per timer or per change
- Explore further “Reliability Needs”