802.3az Task Force
L2 Fallback States Enhancement
April 2009, Quebec City, Quebec, Canada

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Other Supporters Welcome

Background

- Idea brought up several times in prior meetings
  - Unanimous consensus on L2 April Ad-Hoc call to proceed forward with a proposal
  - Ad-Hoc requested that enhancement be detailed so incorporation into D1.4 would be straight forward
- Goal: 2nd “fall back” preference of RX system when requesting Tw_Sys from TX partner
  - RX systems have discrete states that TX partner is unaware of. TX may have dynamic buffering scheme
  - TX can take this information into account when making an allocation decision
  - Efficiencies / benefits can be realised
- Similar concept exists in P802.3at

Advantages

- Protocol efficiency
  - Assuming same result can be reached by multiple negotiations, this enhancement would minimize the number of iterations and hence increase the negotiation speed
- Link efficiency
  - Assuming same result can be reached by multiple negotiations, this enhancement would minimize the chattiness of the protocol
    - LLDP sends out ALL TLVs supported in LLDPDU
    - Less BW consumed
- Efficient allocation
  - Baring this enhancement, a transmitter is likely to over allocate
    - A reasonable TX implementation may provide the max buffering it can that is less than desired RX value if it cannot allocate RX value
    - A reasonable RX implementation may accept an over allocation
    - E.g. RX requests 100 usecs; fallback would be 60 usecs. TX allocates 80 usecs. RX accepts. 20 usecs over allocated on port

Advantages

- Green-ness incentive on RX systems
  - Having a 2nd preference would encourage designers to think of this upfront in their system design so additional savings can be realized
- Enhanced accommodation of dynamic TX systems
  - TX systems may have pooled buffering for multiple ports. This would enhance that
- Completely optional by design
  - Systems that do not implement a fall back simply send the primary, secondary requests to be identical
  - TX system can ignore information if it wishes
- Insignificant overhead – Just an extra field!
  - Simply an extension of what is in place today for L2

Changes to D1.3

- Changes captured in diab_vetteth_01_0409.fm to ease editorial work and eliminate any technical completeness issues that may arise
  - Management support for enhancement to be done along with rest of L2 work
- Detail of changes
  - TLV
    - Fig 78-3: Extended by 1 fields
    - 78.4.1.3: New section to introduce TLV field. 1 paragraph
    - 78.4.1.4: Old 78.4.1.3. Only change is section number
  - Attributes
    - Table 78-2: Added 1 row
  - Timing and SM
    - 78.4.3: Added 1 sentence to cover new field
    - Initialization state to include variable

Motion

- Move
  - IEEE P802.3az Task Force adopt the fallback states proposal as captured in diab_vetteth_01_0409.pdf pages 2 and 5; and the changes to section 78.4 as shown in diab_vetteth_01_0409.fm. Editorial team to incorporate changes into D1.4.
  - M: A. Vetteth
  - S: W. Diab
  - All Y:14 N:0 A:1
  - Tech (75%)
  - Motion Passes 4.20 PM April 29th 2009