PFC Defense Mode Proposal

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PFC Defense Overview

- As currently proposed, a mis-match in PFC enablement effective results in PFC being disabled
  
  Frames may continue to flow with “best effort” service

- In certain cases, it may be desirable to prevent traffic flow in this case
  
  e.g. Such a mismatch could result in the FCoE LKA mechanism detecting a good link but unreliable performance may result

- In other cases, the current mode of operation is desirable
  
  e.g. iSCSI

- Therefore, the operation of an optional PFC Defense mode is proposed
  
  Utilizes the DCBX Framework Symmetric Parameter Passing with the Defense Mode Option
Proposed Priority-based flow Control TLV

<table>
<thead>
<tr>
<th>TLV Type</th>
<th>TLV Info</th>
<th>802.1 OUI</th>
<th>802.1 Subtype</th>
<th>W</th>
<th>Reserved</th>
<th>PFC Cap</th>
<th>PFC Enable</th>
<th>RDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>127</td>
<td>String Len=6</td>
<td>00-80-C2</td>
<td>11</td>
<td>1 bit</td>
<td>4 bits</td>
<td>3 bits</td>
<td>1 Octet</td>
<td>1 Octet</td>
</tr>
</tbody>
</table>

- Provides negotiation and information of PFC enabled / disabled per priority
- PFC Cap indicates the device's limitation of how many traffic classes may simultaneously support PFC (not negotiated).
- Utilizes Symmetric Parameter Passing with the defense option
  Utilizes qualified willing:
  - Local port is willing if \( W=1 \) and the number of remote priorities with PFC enabled is less than or equal to PFCCap.
- PFC enable has 8 bits (one per priority)
  - A one indicates PFC is enabled on the priority
  - A zero indicates that PFC is disabled on the priority
  - Local policy in each end of the link decides whether to use the priority if the configuration does not match
- RDY has 8 bits (one per priority)
  - If the optional defense mode is administratively disabled for a given priority, its RDY bit is forced to 1.
  - If the optional defense mode is administratively enabled for a given priority, its RDY bit is set in accordance with the Symmetric Parameter Passing Defense Mode Option state machine
    - 1: indicates defenses are off for the priority
    - 0: indicates defenses are on for the priority
PFC Defense Operation

- When PFC Defenses are enabled for a given priority, the port shall:
  - Discard all received frames on that priority except for:
    - Bridge PDUs
    - LLDP PDUs
- The DCBX framework enables a port to know that the remote side defenses are enabled
  - And therefore the futility of frame transmission
Thank You!