Feature Request for Power Management

- Karl Nakamura, Cisco Systems
- karln@cisco.com

Power Management

- Problem: Allowing for the maximum (14 Watts) power per port in large Installations (>50 Ports) is costly and often not necessary
- Solution: Power Management. The Switch, Hub, or Midspan Device (PSE) is allowed to understand the power required to support a specific device on each port

Reason For Standardization

- Enable Flexible and Scaleable Implementations
  - Without Standardization PSEs will either
    - Design for the worst case power out of all ports all the time (increases costs and reduces scalability, or
    - Implement Proprietary solutions for power management
  - Proprietary solutions make it more difficult and expensive for the customer to manage

Solution 1: Differentiate During the Discovery Process

- Add a feature to the Discovery mechanism that allows for the the discovery of the presence AND power demand of the device that is connected
  - Advantages
    - Easier to Standardize
    - Does Not Require a PHY
    - Possible to implement in the mid-span
    - Can be implemented on pairs 1 and 2 OR 3 and 4
  - Disadvantage
    - Makes the Discovery Circuits/Algorithms more complex in the PSE, perhaps not in the DTE
    - May increase the possibility of misdetection or misclassification

Solution 2: Differentiate at the Protocol Level

- Add a feature to the Specification that Requires the DTE to communicate with the Switch at the Protocol Level
  - Advantages
    - Most Flexible
    - Does not add components, cost, or complexity to the discovery process
  - Disadvantages
    - Requires a PHY, Suitable on Pairs 1 and 2 ONLY
    - Difficult to implement in the Mid Span

Proposal

- Adapt Solution 1 with at least X classes of power levels allowed in the DTE(where X > 1)
- Use this requirement as one of the criteria to evaluate the Discovery mechanisms under consideration