Ethernet Port Evolution

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First though

• An Input Ethernet Port and and Output Ethernet Port
• Put all the “interface” information in one place
• Seems simple...

- Ethernet Input Port
  - IPv4 and IPv6 Information
  - VLAN Information
- Physical Media Information
But there are multiple physicals

• So separate that into a distinct LFB
• Different LFB for 10/100/1000 vs high speed optical
• Because they have different properties
• Represents the real physical connection
Reusability and separation

- We need to separate bridging handling from local operations and ethernet clients
- So that we can defer bridging until later
  - But pay attention to what it is likely to require
  - Ether Handler
    - Decide what is local
    - And send some things both ways
  - Local Clients: Ethernet Control, Bridging Control IP, ARP
  - Nonlocal Ops: Simple Bridge Q-in-Q...

But what goes where

• Functionality to look at Ethertype and VLAN to decide which client gets a message
• This may needs to be re-used
  – MAC-in-MAC decides the inner dest is local
• So need a separate LFB
Still more to be spelled out

• Exactly what is the corresponding output decomposition

• Where does input packet validation get done
  – Some special devices want extra functionality after “valid Ethernet Frame” and before “is it for me.”

• What are the components of the PHY LFB
  – What statistics do the PHY and validation (MAC?) LFBs need