General DRNI Model
with an additional IB-BEB case

Version 01

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• A previous presentation (http://www.ieee802.org/1/files/public/docs2011/axbq-haddock-multicomponent-models-1111-v02.pdf) develops logical component models and distributed component models for 7 cases of DRNIs involving single and multi-component bridge.

• From those, a single generalized model is developed.

• This presentation discusses an 8th case.
  – I didn’t include this case in the original presentation because I didn’t see an obvious need for it.
  – I think Maarten may have a use case for it however.
Q, PB, PEB, and RCSI cases to consider

Cases 1, 2, and 7 of the original 7 cases
BEB cases to consider

Cases 3, 4, 5, and 6 of the original 7 cases
Developing Case 8

1. Start with Case 3 and 4.

2. Change it from a simple Link Aggregation to a DRNI

3. Implement with two IB-BEBs rather than two I-BEBs and two B-BEBs.

Now are creating a distributed aggregation of the internal PIP/CBP links!
• In the scenarios I am accustomed to an ENNI is a demarcation on a link connecting two devices in two independently operated networks.
  – By this view, case 8 is not interesting as an ENNI solution.
  – I did come up with a use case within a network, but it seemed pretty obscure and not worth pursuing.

• In Maarten’s world the ENNI can be a device, not a link, with the demarcation between two networks being somewhere inside the device.
  – By this view, case 8 is an interesting way of making a redundant ENNI.
Applying the General Model to Case 8
Comparing Case 8 to Case 5 or 6

- Could also form DRNI aggregations with some (or all) of the network links attaching to the IB-BEBs.
  - These are separate Case-1 DRNIs.
  - If an aggregation attaches to the I-components (as shown), the combination of Case-8 and Case-1 looks a lot like Case-5, but the resulting models are different. Why is that?
  - If an aggregation attaches to the B-component (not shown), the combination of Case-8 and Case-1 would look a lot like Case-6, but the resulting models are different. Why is that?
Comparing Case 8 and Case 5

• Case 5 is an optimization given the constraint that all the links connecting to one I-component are part of the same aggregation. This case is worth optimizing because:
  1. It is likely to be common.
  2. It is analogous to the PEB cases that always have this constraint.
  3. It is a much more efficient model when the IB-BEB has multiple I-components with one aggregation to each I-component.

• A combination of Case 8 and Case 1 is also a valid model.
  – The model is more complex than necessary given the above constraint (1:1 relationship between aggregations and I-components).
  – It is a necessary model if both the I-component and B-component have multiple aggregations.
Comparing Case 8 to Maarten’s model

• If all network connections attaching to either the I-component or the B-component are DRNI aggregations to both IB-BEBs,
  – Then it should be possible to select the active gateway for each service on each side of the aggregated CBP-PIP links such that no frames traverse the Intra-DAS Links associated with the Case-8 aggregations.
  – In that case, the functionality of the distributed B-relay, distributed S-Relay, and both Aggregators in the Case-8 model reduces to “wires”. The distributed relays still have significance in the control plane, but in the data plane they effectively disappear, and you are left with just two CBP-PIP connections sharing an address.
  – I think that this is what is implied in the last slide of Maarten’s presentation: