Peer E-NNI 802.1ah

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A few aspects of the Peer E-NNI

> A Peer E-NNI is formed by connecting the CBPs of two B-Comp together.
> The frames delivered over the demarcation point have B-MAC addresses.
> The frames delivered over the demarcation point are I-tagged frames.
> No B-tagged frames are delivered over the demarcation point.
> D3.3 provides for B-MAC address translation and I-SID translation on each side of the demarcation point.
> With the addition of a per I-SID multicast we also consider the translation of the default multicast group at the E-NNI.
Peer E-NNI Connect - Terminating PBBNs

- IB BEB
- BCB
- B BEB
- CBP

PBBN A

PBBN B

Peer E-NNI Demarcation Point

S-tagged Interface To PBNs

PBN X

PBN Y
Peer E-NNI Connect - Transit PBBN

Peer E-NNI Demarcation Points

S-tagged Interface To PBNs
These are the CFM flows being talked about in the S-space and B-space models.
IB-BEB CFM B-Space Model

Legend:
- MHF
- MIP
- DOWN MEP
- UP MEP
- Frame Flow

Note: Only one of (d) or (f) would normally be used.
IB-BEB CFM S-Space Model

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Peer E-NNI CFM flows

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Peer E-NNI CFM B-Space Model

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Note: Usually only one of (a), (b), or (c,d,e) would be used.
Peer E-NNI CFM S-Space Model

Legend:
- MIP
- DOWN MEP
- UP MEP
- Frame Flow

Note: Usually only one of (a), (b), or (c,d,e) would be used.
IB-BEB VIP Link CFM vs Service CFM

- Both cover a single service instance
- Both have an independent 8 management levels
- Both may have a MEP located in the VIP or in the CBP
- Both may have a MIP located in the CBP
- Neither has any MIPs or MEPs at PBPs or PNPs
- These two flows look like different ways to think of the same CFM flow. If these two flows are not identically they are so close to the same that we should only support one of them.
The S-Space model is a misnamed

> Why is this called an S-Space model?
  • The MEPs identified never extend beyond the VIP
  • The MEP/MIP MAC addresses must have the scope of the MA not the customer network. They are MAC in the backbone (B-MACs) with MA scope.

> Instead of S-Space this should be called Virtual Media CFM
> The model should place all the MEPs/MIPs in B-space not S-space
The B-Space model is misnamed.

I-Component with per I-SID MEPs seems to work.

Subclause 6.10 (was 6.8) performs S-TAG insert/strip and I-TAG insert/strip. If we remove the S-TAG insert/strip from 6.10 what is left is I-TAG insert/strip.

The shim called (Most of) has nothing in it. If there is no shim then the MEPs/MIPs above and below it are the same MEPs/MIPs.

Instead of B-Space this should be called Service CFM
There must be some difference

> Yes, there are differences

> The S-Space model (link CFM) uses a long I-TAG and encodes both a CFM Address as C-MACs and a B-MAC for delivering the CFM frame

> The B-Space model (service CFM) uses a short I-TAG and encodes CFM Addresses in the B-MAC field

> So the biggest difference is the S-Space model encodes the CFM address in the I-TAG and the B-Space model encodes the CFM address in the B-DA
Backup Slides
IB-BEB Internal stackup

I-Comp

802.1ah Forwarding Process S-Space

B-Comp

802.1ah Forwarding Process B-Space

Clause 6.9
I-Tag Insert/Remove (6.12)

I-Comp

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I-SID Per SAP
Peer E-NNI Stackup

PBBN A: B-Comp

802.1ah Forwarding Process B-Space

Clause 6.9
I-Tag Insert/Remove (6.12)

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Demarcation Point

PBBN B: B-Comp

802.1ah Forwarding Process B-Space

Clause 6.9
I-Tag Insert/Remove (6.12)

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1 I-SID Per SAP
Service Level Peer E-NNI

> This E-NNI connects at the S-VLAN layer rather than the .1ah Service layer

> In the S-VLAN Peer E-NNI the PBBNs are completely decoupled

> No PBT tunnel may extend through an S-VLAN Peer E-NNI

> Each device on the sides an S-VLAN Peer E-NNI must learn C-MACs and perform a new mapping to B-MACs.
The Peer Diagram
A Service Level E-NNI

Peer E-NNI Demarcation Point

S-tagged Interface To PBNs

PBBN A

PBBN B

CIP
Peer E-NNI CFM Flows

Demarcation Point

PBBN A

BCB

S-VLAN

PBP

PBBN B

BCB

S-VLAN

PBP

Service Maintenance Levels

Service CFM

Backbone Maintenance Levels

B-VLAN CFM

Link CFM

Per I-SID

Per I-SID

Per I-SID

Per I-SID

Per B-VID

Per B-VID

Per Link

Per Link

Per Link

Per Link

(a) (b) (c) (d)

(e) (f) (g) (h) (i) (k) (l)