

IEEE P802.1Qay/D4.5 Provider Backbone Bridges - Traffic Engineering comments

Cl 19 SC 19.4 P 86 L 5-10 # 1
 Maarten Visser Huawei

Comment Type ER Comment Status A CFM

The first line reads: "The CFM entities within an MP use the Group addresses for CCM and LTM PDUs listed in Table 8-9 and Table 8-10. In addition, they recognize and in the case of PBB-TE MEPs use the Individual MAC address of the port on which the MP is operating."

The 'use the Individual MAC address of the port on which the MP is operating' in the case of PBB-TE MEPs is only applicable for PBB-TE MEPs located on the CBP associated with a p2p TESI. I.e. when a PBB-TE MEP would be used on a PNP (e.g. case of segment TESI protection or multi-operator TESIs), then the CCM generated/extracted on such PNP must use the ESP-DA/ESP-SA values; i.e. the Individual MAC addresses of the two CBP on which this p2p TESI terminates. This first version of 802.1Qay does not support PBB-TE MEPs on PNP. Nonetheless, it may be expected that the PBB-TE MEP function is added to the VLAN MEP function circuit creating a dual mode MEP. As the VLAN MEP functions are already located on both the CBPs and the PNPs, it would be best to describe the PBB-TE MEP function such that the dual mode MEP circuit can be deployed on both the CBP and the PNP.

For the case of PBB-TE MIPs on PNP the ESP-SA/DA MAC addresses are used instead of the Individual MAC address of the port on which this MIP is operating. The port's Individual MAC address is however used as well by the Loopback function. For consistency with other clauses clause 19.4 should describe the MP addressing for PBB-TE MIPs.

For the case of PtMP ESPs, the CCM must use a Group Address that identifies the n Leaf CBPs. This is already indicated in the text changes in clauses 8.13.1 and 20.1. For consistency it should also include this Group Address for case of PBB-TE MEPs in the text of clause 19.4.

SuggestedRemedy

Change the first sentence to "The CFM entities within an MP use the Group addresses for CCM and LTM PDUs listed in Table 8-9 and Table 8-10 and in the case of PBB-TE MAs, the Individual MAC Addresses or the Group MAC addresses which are associated with the monitored TE service instance (Clause 20). In addition in case of PBB-TE MAs the Individual MAC address of the port on which the MP is located is used for the loopback function."

Response Response Status U

ACCEPT IN PRINCIPLE.

The first sentence of the paragraph will be changed as it is suggested. There is no need to change the second sentence. Correspondingly the referenced text will be changed to "The CFM entities within an MP use the Group addresses for CCM and LTM PDUs listed in Table 8-9 and Table 8-10 and in the case of PBB-TE MAs, the Individual MAC Addresses or the Group MAC addresses which are associated with the monitored TE service instance (Clause 20). In addition, they recognize and in the case of PBB-TE MEPs use the Individual MAC address of the port on which the MP is operating."

Cl 20 SC 20.1 P 87 L 36-3 # 2
 Maarten Visser Huawei

Comment Type TR Comment Status R MAID

This note is not correctly reflecting the definition of the TESI ID. A PBB-TE MEP is operating within a TESI, and is as such identified by the TESI ID. The source_address is part of this TESI ID and a TESI M_UNITDATA primitive can not be delivered to the TESI's PBB-TE MEP when this source_address is not considered as part of the TESI ID. A mistake in configuring a CBP's MAC address will cause a cross-connect error to occur and such cross-connect error can only be detected if there is a unique MAID in the TESI CCM PDUs. The 3-tuple <ESP-DA,ESP-SA,ESP-VID> provides in the PBB-TE TESI layer the same function as a C-VID, S-VID, B-VID or I-SID provides in the C-VLAN, S-VLAN, B-VLAN or BSI layers.

SuggestedRemedy

Make the use of unique MAID in a PBB-TE TESI mandatory.

Response Response Status U

REJECT.

The use of the source_address as an identifier of the service helps in avoiding the type of cross-connect error described in the paragraph just above the referenced NOTE. It is true though that it does not provide full coverage on all possible misconfiguration errors. As a result it has been decided in previous meetings to keep this type of check in TESIs but only as optional (check 20.17.1:b). The last sentence in the referenced text can be improved if it is changed to "Correspondingly the assignment of globally unique MAIDs is not as important for PBB-TE MAs as it is for other types of MAs."

IEEE P802.1Qay/D4.5 Provider Backbone Bridges - Traffic Engineering comments

Cl 20 SC 20.2.1 P 89 L # 3
 Maarten Visser Huawei

Comment Type TR Comment Status R PNP

In clause 20.2.1 a PBB-TE MIP TLV is introduced. If PBB-TE MEPs are added to PNPs in future, then it is necessary to use this PBB-TE MIP TLV also to address loopbacks in such PBB-TE MEPs on PNPs. Wouldn't it be better to specify the PBB-TE CFM such that it can be used in PBB-TE MEPs on PNPs? This will make the initial PBB-TE MEP designs future proof.

In clause 22.1.3 the number of UP and DOWN MEPs is listed. It is stated that there are no PBB-TE DOWN MEPs (item d). There are however no statements on the PBB-TE UP MEPs. As long as there are no PBB-TE MEPs at PNPs there is only the need to support just **one** PBB-TE UP MEP in the CBP. This single PBB-TE UP MEP must operate at the top MD level (7) as there can never be a higher level present. This to be consistent with the text in clause 22.2.2 (describes that there can not be any PBB-TE MEP functions on PNPs) and in clause 26.9.3 (describes that PBB-TE MEPs can only be located on CBPs) and the ability to introduce in future other PBB-TE MEPs at PNPs without the need to change then the MD level of the PBB-TE TESI MA terminating at the CBPs.

As there is only a single PBB-TE MD level necessary so far, figure 26-8 should list as MD level value 7 and not values 0 and 1.

If however multiple PBB-TE MEPs on the CBP are to be supported as a preparation for the addition of PBB-TE MEPs on PNPs, then this should be clearly and consistently stated in 802.1Qay. The initial PBB-TE CBP designs will then be future proof.

SuggestedRemedy

Extend the PBB-TE MIP TLV to support also PBB-TE MEPs on PNPs to be future proof.

Align the text in 22.1.3 with text in clauses 22.2.2 and 26.9.3.

Indicate if the CBP should support or may support more than one PBB-TE MEP for each TESI, or should support just one PBB-TE MEP. For the latter case, modify figure 26-8 as described.

Response Response Status U

REJECT.

No inconsistency exists currently. A CBP can support more than one PBB-TE MEPs even if no PBB-TE MEPs on PNPs are allowed in P802.1Qay. In any case a future project can argue for a change in the functionality in P802.1Qay but this topic should be addressed in the discussions related to this new project specially since P802.1Qay is close to completion.

Cl 25 SC 25.10.2 P L 120 # 4
 Maarten Visser Huawei

Comment Type TR Comment Status R Future extensions

Item m states that "the information referenced for forwarding <ESP-DA, ESP-VID> does not change along the length of the ESP."

With the possible introduction of segment TESI protection in a future PAR it is may be necessary to translate the ESP-VID on the PNP at the begin/end of the segment TESI protected domain in order to distinguish Working-segment-ESP from Protection-segment-ESP. PNPs support VID translation, so such ESP-VID translation will not introduce additional functionality in the hardware, it will only introduce additional flexibility in the management of the TESI connections.

SuggestedRemedy

Add a note to indicate that ESP-VID may be changed in future extensions of this standards.

Response Response Status U

REJECT.

P802.1Qay is part of the IEEE802.1Q standard. Any changes related to the functionality requirements of possible new projects should be carried based on the discussions and agreements within these projects.

IEEE P802.1Qay/D4.5 Provider Backbone Bridges - Traffic Engineering comments

CI 06 SC 6.10 P L # 5
 Maarten Visser Huawei

Assuming that PtMP TESI connection must support unicast customer MAC frame transport it is necessary to introduce an adminPointToPointMAC parameter in the PIP function in clause 6.10.

Comment Type TR Comment Status A PtMP

Response Response Status U

802.1Qay specifies PtMP TESIs. Such TESIs consist of one PtMP ESP and n P2P ESPs, and transport one or more BSI signals.

ACCEPT.

In the root to leaf direction all BSI signals will be delivered to the n leaf CBPs and then to the associated PIPs, creating PtMP BSIs.

Unicast MAC frames should be transported by a PtMP ESP. As a result a new parameter enableConnectionIdentifier on the VIP needs to be introduced. The default will be True. When configured to false the connection_identifier is always null on indications and ignored on requests. Detailed changes suggested below.

Those PtMP BSIs carry one or more S-VLANs and each S-VLAN may contain unicast, multicast and/or broadcast customer MAC flows. Is 802.1Qay assuming that uni/multi/broadcast customer MAC flows are present, or is it assumed that only multicast customer MAC flows are present?

In 6.10 a new item d) after item c) needs to be inserted
 "d) An enableConnectionIdentifier."

This question is raised to understand how to configure the adminPointToPointMAC parameter in the VIP at the root PIP. It can be configured to ForceFalse (default) or ForceTrue.

A new paragraph at the end of 6.10 needs to inserted stating:

For the case it is configured to ForceFalse there will be C-MAC <=> B-MAC learning active. For the case there would be unicast customer MAC frames to transport over the BSI, the B-DA inserted will be one of the leaf PIP/CBP MAC addresses... Frames with such leaf PIP/CBP MAC address in the B-DA will not be transported over the PtMP TESI (those frames will not have the Group MAC address identifying the PtMP TESI's leaf CBPs/PIPs).

"The enableConnectionIdentifier parameter allows the VIP to use the connection_identifier parameter to learn associations between a backbone MAC address and a customer MAC address. The default value is TRUE. This parameter should be configured to FALSE at the root node of a Point-to-multipoint TE service instance."

When ForceTrue would be configured instead, there is no learning and instead the DBD contains the last received B-SA value (with one of the leaf CBP/PIP MAC addresses) and this value is inserted in the B-DA of the generated BSI frame. Again such frames will not be transported over the PtMP TESI (it does not have the Group MAC address of the TESI). Also, multicast customer MAC frames will get one of the leaf CBP/PIP MAC addresses inserted in their B-DA field; again no transport over the PtMP TESI.

In 6.10.1 the paragraph before NOTE-3 need to be changed to:

"In 6.10.1 replace "The connection_identifier parameter references the value of the source_address parameter (B-SA) of the M_UNITDATA.indication primitive received from the PIP-ISS." with "If enableConnectionIdentifier is TRUE then the connection_identifier parameter references the value of the source_address parameter (B-SA) of the M_UNITDATA.indication primitive received from the PIP-ISS; otherwise the connection_identifier parameter is null."

To transport all customer MAC frames inside the S-VLAN(s) over the PtMP TESI it is necessary that ForceFalse is configured and that solely multi/broadcast customer MAC frames are used. The C-MAC <=> B-MAC learning in the I-component for the PtMP BSI signal is performed, but the results are never used. The multi/broadcast customer MAC frames will now be equipped with a B-DA with value BSIG, which value is replaced by the Group MAC address of the PtMP TESI in the CBP.

In the second paragraph of 6.10.2 replace "If the connection_identifier is not null ..." with "If enableConnectionIdentifier is TRUE and the connection_identifier is not null ..."

A new item g) will be inserted in 12.16.3.1.3

"g) enableConnectionIdentifier - A Boolean to determine if the backbone service instance associated with this VIP is point-to-multipoint (6.10)."

If it is required to transport also unicast customer MAC frames over the PtMP TESI it is necessary to introduce an adminPointToPointMAC parameter to disable the learning. Without learning uni/multi/broadcast customer MAC frames will be associated with a 'null' connection identifier and the BSIG value gets inserted in the B-DA field of all frames.

A new item e) will be inserted in 12.16.3.2.2

"g) enableConnectionIdentifier - A Boolean to determine if the backbone service instance associated with this VIP is point-to-multipoint (6.10)."

Unicast customer MAC frames could be unicast LBM or LBR frames used to check connectivity at the S-VLAN level between a S-VLAN MEP upstream of the root PIP and a S-VLAN MIP or MEP on or downstream of a leaf PIP.

A new item a2) will be inserted in 12.16.3.2.3 renumbering the original a2) to a3)
 "a2) Operation rejected because the enableConnectionIdentifier is set True and enableConnectionIdentifier is set to True also;"

A new line will be inserted at the end of the first paragraph of 26.4.1 stating:

SuggestedRemedy

IEEE P802.1Qay/D4.5 Provider Backbone Bridges - Traffic Engineering comments

"When enableConnectionIdentifier of a VIP is set to True the connection_identifier is kept to a NULL value and the correspondingly the B-DA used by frames associated with this VIP is always the Backbone Service Instance Group address"

CI 03 SC 3 P 19 L 25 # 56
 Nurit Sprecher NSN

Comment Type TR Comment Status A Definitions

The statement "that have allocated a common set of B-VIDs to the control of an external agent" is confusing. One could understand that the B-VIDs are used for control messages of external agenets.

SuggestedRemedy

Please indicate that the FDB in the PBB-TE region is set by external agent and that in the B-VID space learning, unkown flooding and xSTP are is disabled

Response Response Status U

ACCEPT.

The definition will be changed to

"A PBB-TE Region comprises a contiguous set of IB-BEBs and BCBs, capable of providing TE service instances, that have allocated a common subset of ESP-VIDs to an external agent which provides the active topology construction mechanism within this ESP-VID space and manages the Filtering Database of Bridges within the region to control the forwarding of frames with particular values of ESP-VID and destination MAC address."

In addition the definition of ESP-VID will be modified to state:

"ESP-VID: A VID associated with a special value of the MSTID in the MST Configuration Table, the TE-MSTID, indicating that the VID is under the control of an external agent responsible for setting up Ethernet Switched Paths. Learning is disabled and forwarding is enabled for all frames allocated to ESP-VIDs."

CI 03 SC 3 P 20 L 1 # 57
 Nurit Sprecher NSN

Comment Type TR Comment Status R Definitions

TE protection group - I think it is avoid misunderstnading I think it ie better to indicate explicitly that that this is for point-to-point TESIs only. In future versions we if a mechansim is defined also for point-to-multipoint TESIs we will be able to define point-to-multipoint TE protection group

SuggestedRemedy

Please change the name 'TE protection group' to 'Point-to-point TE portection group'

Response Response Status U

REJECT.

Point-to-point TE protection group is quite long considering the large number (more than 100) of instances in the draft that use the term. The current definition explicitly states that a TE protection group is associated with PtP TESIs. On the other hand it is not clear that possible future editions would need to define a new TE protection group term. Modifying the current TE protection group term might be sufficient

CI 00 SC 0 P L # 58
 Nurit Sprecher NSN

Comment Type TR Comment Status A Multipoint

It is not clear how multipoint services may be delivered over PBB-TE region. Any technology should support any type of services (p2p, p2mp and mp2mp)

SuggestedRemedy

Please clarify.

Response Response Status U

ACCEPT IN PRINCIPLE.

PBB-TE is a method to provide PtP and PtMP TESIs within a PBB network. Multipoint LAN services are by default provided by a PBB network.

IEEE P802.1Qay/D4.5 Provider Backbone Bridges - Traffic Engineering comments

Cl 21 SC 21.6.1.4 P 106 L 18 # 59
Nurit Sprecher NSN

Comment Type **TR** Comment Status **R** Traffic Bit

As discussed, traffic bit cannot satisfy the requirement for synchronization between the edges. We need to wait for the response of ITU-T before we define this mechanism

SuggestedRemedy

Please remove the support for traffic bi

Response Response Status **U**

REJECT.

The Traffic bit is used to detect mismatch defects informing the operator of such occurrences and allowing a corresponding action to be taken. Its inclusion in the draft is fulfilling requirements to identify cases where the state machines in a protection group select diverse TESIs on which to send traffic.

The liaison sent to ITU-T was aimed to inform the ITU-T members about the work on protection switching and the differences between the mechanism described in P802.1Qay and G.8031. A desirable goal for this liaison is for the P802.1Qay defined protection mechanism to be an interoperable PBB-TE mode (i.e., 1:1 bi-directional, no APS signaling) of the revised G.8031 recommendation. The inclusion or not of the mismatch defect mechanism does not depend on the response to this informative liaison. A reply to our Liaison has been already received.

Cl 26 SC 26.10.3.3 P 131 L 6 # 60
Nurit Sprecher NSN

Comment Type **TR** Comment Status **R** FS

It seems that FS should not have higher priority than P.SF

SuggestedRemedy

Please change the priority

Response Response Status **U**

REJECT.

It has been decided in earlier meetings that the operator command FS should have higher priority than p.SF. The precedence of p.SF and FS are inverted in G.8031 since G.8031 relies on an APS protocol to be running on the protection path. Since 802.1Qay does not implement an APS protocol, FS should have a higher precedence than p.SF.