P802.1Qbh

Submitter Email: tony@jeffree.co.uk
Type of Project: Modify Existing Approved PAR
PAR Request Date: 07-Feb-2011
PAR Approval Date:
PAR Expiration Date:
Status: Unapproved PAR, Modification to a Previously Approved PAR for an Amendment
Root PAR: P802.1Qbh **Approved on:** 09-Dec-2009

1.1 Project Number: P802.1Qbh
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use

2.1 Title: Standard for Local and Metropolitan Area Networks---Virtual Bridged Local Area NetworksAmendment: Bridge Port Extension

Old Title: Standard for Local and Metropolitan Area Networks---Virtual Bridged Local Area Networks Amendment: Bridge Port Extension

3.1 Working Group: Higher Layer LAN Protocols Working Group (C/LM/WG802.1)
Contact Information for Working Group Chair
  Name: Anthony Jeffree
  Email Address: tony@jeffree.co.uk
  Phone: +44-161-973-4278
Contact Information for Working Group Vice-Chair
  Name: Paul Congdon
  Email Address: paul.congdon@hp.com
  Phone: 916-785-5753

3.2 Sponsoring Society and Committee: IEEE Computer Society/LAN/MAN Standards Committee (C/LM)
Contact Information for Sponsor Chair
  Name: Paul Nikolich
  Email Address: p.nikolich@ieee.org
  Phone: 857.205.0050
Contact Information for Standards Representative
None

4.1 Type of Ballot: Individual
4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 12/2011
4.3 Projected Completion Date for Submittal to RevCom: 08/2012

5.1 Approximate number of people expected to be actively involved in the development of this project: 30
5.2 Scope: This amendment specifies protocols, procedures, and managed objects to support Port Extension. A Port Extender attaches to a MAC port of an 802.1Q controlling bridge and provides additional MAC ports that are logically ports of the 802.1Q controlling bridge to which it is attached (i.e. the "Controlling Bridge"). The protocols, procedures, and managed objects specified in this amendment are expected to specify new behavior in bridges that support port extension as well as the behavior of Port Extenders themselves. In addition, the protocols, procedures, and managed objects specified in this amendment support the cascading of Port Extenders. To the extent technically reasonable, all frame filtering and relay functions remain in the Controlling Bridge. A new on-the-wire indication (e.g. a new tag) is envisioned to support unicast and remote replication for purposes including frame flooding and group address support. It is expected that this amendment will result in the definition of a new device (a Port Extender)

Old Scope: This amendment specifies protocols, procedures, and managed objects to support Port Extension. A Port Extender attaches to a MAC port of an 802.1Q bridge and provides additional MAC ports that are logically ports of the 802.1Q bridge to which it is attached (i.e. the "Controlling Bridge"). The protocols, procedures, and managed objects specified in this amendment are expected to specify new behavior in bridges that support port extension as well as the behavior of Port Extenders themselves. In addition, the protocols, procedures, and managed objects specified in this amendment support the cascading of Port Extenders. To the extent technically reasonable, all frame filtering and relay functions remain in the Controlling Bridge. Use of a Service Virtual LAN Tag (S-TAG) for Multichannel capability as being defined in Edge Virtual Bridging is envisaged to achieve this objective. A new on-the-wire indication (e.g. a new tag) is envisioned to support remote replication for purposes including frame flooding and group address support.

eofand optional augmentation of the functionality of the VLAN aware
bridge component to support
Port Extenders.

5.3 Is the completion of this standard dependent upon the completion of another standard: Yes
If yes please explain: Edge Virtual Bridging Services, under development in P802.1Qbg, are intended to be utilized in this amendment.

In addition, it is expected that Port Extenders would take advantage of other standards currently under development, e.g., Priority-based flow control (P802.1Qbb), Enhanced transmission selection (P802.1Qaz), and Congestion Notification (P802.1Qau). However, completion of this standard is not dependent upon the completion of these other standards.

5.4 Purpose: The purposes of this project include:

- To reduce the management cost of networks comprising large number of bridges (such as those commonly found in a data center environments) through significant reduction in both the number of devices to be managed and the management traffic required.

- To decrease total cost of ownership by reducing initial capital expenditure along with management and operational costs.

5.5 Need for the Project: Management of large networks, including those using Proider Bridging technologies, is highly complex. This complexity may be reduced by aggregating the more complex bridging functions onto fewer bridges and by collapsing bridge layers from a management perspective.

The EVB project is defining reflective relay and multichannel capabilities. The Port Extension project extends these capabilities by providing a remote replication service. In addition, a Port Extender device will be specified that utilizes the EVB capabilities and remote replication service. This is intended to reduce management complexity by aggregating the more complex bridging functions onto fewer bridges.

The Port Extender device may be used to collapse layers in the network resulting in reduced capital expenditure, points of management, and management traffic and thus reducing total cost of ownership.

5.6 Stakeholders for the Standard: Developers, distributors, and users of networking services and equipment for data center environments including networking IC developers, switch and NIC vendors, and users.

Intellectual Property
6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?: No
6.1.b. Is the Sponsor aware of possible registration activity related to this project?: No

---

7.1 Are there other standards or projects with a similar scope?: No
7.2 Joint Development
   Is it the intent to develop this document jointly with another organization?: No

---

8.1 Additional Explanatory Notes (Item Number and Explanation): During development of the draft, it was realized that Port Extension should be made compatible with Provider Bridges. The change to Need reflects this. For compatibility with Provider Bridge use of S-TAGs, the tags to support Port Extension were changed (the new tag is used by Port Extension on all frames instead of using an S-TAG on some frames) which required an update to Scope.