P802.1Qbh

Submitter Email: tony@jeffree.co.uk
Type of Project: Amendment to IEEE Standard 802.1Q-2005
PAR Request Date: 17-Sep-2009
PAR Approval Date:
PAR Expiration Date:
Status: Unapproved PAR, PAR for an Amendment to an existing IEEE Standard 802.1Q-2005

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

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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/Local and Metropolitan Area Networks (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: 06/2012

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 bridge over an 802 specified ~~full-duplex~~ media 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 (~~i.e.~~e.g. a new tag) is envisioned to support remote replication for purposes including frame flooding and group address support.
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~~au~~), Enhanced transmission selection (P802.1Qaz), and Congestion Notification (P802.1Qau~~bb~~). 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: Data center management today 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

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7.1 Are there other standards or projects with a similar scope?: No
7.2 International Activities
a. Adoption
Is there potential for this standard (in part or in whole) to be adopted by another national, regional or international organization?: No
b. Joint Development
Is it the intent to develop this document jointly with another organization?: No
c. Harmonization
Are you aware of another organization that may be interested in portions of this document in their standardization development efforts?: No

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8.1 Additional Explanatory Notes (Item Number and Explanation):