P802.1Qcz

Submitter Email: paul.congdon@tallac.com
Type of Project: Amendment to IEEE Standard 802.1Q-2014
PAR Request Date: 13-Dec-2017
PAR Approval Date:
PAR Expiration Date:
Status: Unapproved PAR, PAR for an Amendment to an existing IEEE Standard

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

2.1 Title: Standard for Local and metropolitan area networks--Bridges and Bridged Networks
Amendment: Congestion Isolation

3.1 Working Group: Higher Layer LAN Protocols Working Group (C/LM/WG802.1)
Contact Information for Working Group Chair
  Name: Glenn Parsons
  Email Address: glenn.parsons@ericsson.com
  Phone: 613-963-8141
Contact Information for Working Group Vice-Chair
  Name: John Messenger
  Email Address: j.l.messenger@ieee.org
  Phone: +441904699309

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: 8572050050
Contact Information for Standards Representative
  Name: James Gilb
  Email Address: gilb@ieee.org
  Phone: 858-229-4822

4.1 Type of Ballot: Individual
4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 03/2021
4.3 Projected Completion Date for Submittal to RevCom
Note: Usual minimum time between initial sponsor ballot and submission to Revcom is 6 months.: 10/2021

5.1 Approximate number of people expected to be actively involved in the development of this project: 20
5.2.a. Scope of the complete standard: This standard specifies Bridges that interconnect individual LANs, each supporting the IEEE 802 MAC Service using a different or identical media access control method, to provide Bridged Networks and VLANs.

5.2.b. Scope of the project: This amendment specifies protocols, procedures and managed objects that support the isolation of congested data flows within data center environments. This is achieved by enabling bridges to individually identify flows creating congestion, adjust transmission selection for packets of those flows, and signal to the upstream peer. This mechanism reduces head-of-line blocking for uncongested flows sharing a traffic class in lossless networks. Congestion Isolation is intended to be used with higher layer protocols that utilize end-to-end congestion control in order to reduce packet loss and latency.

5.3 Is the completion of this standard dependent upon the completion of another standard: Yes
If yes please explain: This amendment will specify a new Link Layer Discovery Protocol (LLDP) Type-Length-Value (TLV) and its associated YANG model. Project IEEE 802.1ABcu is currently specifying the YANG model for IEEE Std 802.1AB which must be completed in order for this amendment to specify its extension.

5.4 Purpose: Bridges, as specified by this standard, allow the compatible interconnection of information technology equipment attached to

separate individual LANs.

5.5 Need for the Project: There is significant customer interest and market opportunity for large scale, low-latency, lossless Ethernet data centers to support high-performance computing and distributed storage applications. Congestion is the primary cause of loss and delay in these environments. These environments currently use higher layer end-to-end congestion control coupled with priority-based flow control at Layer 2 to avoid performance degradation from packet loss due to congestion. As the Ethernet data center network scales in size, speed and number of concurrent flows, the current environment creates head-of-line blocking for flows sharing the same traffic class. Isolating flows that cause congestion reduces latency for flows not causing congestion and improves the scale and performance of the Ethernet data center network. This amendment will support the identification and isolation of the higher layer protocol flows creating congestion and will interoperate with existing IEEE 802 and higher-layer congestion management. Use of a consolidated Ethernet data center network will realize operational and equipment cost benefits.

5.6 Stakeholders for the Standard: Developers and users of networking for data center environments including integrated circuit developers, switch and end-node adaptor vendors, network operators 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?: Yes
If yes please explain: The project will extend the YANG data model specified in P802.1ABcu identify by a Uniform Resource Name (URN) based on the Registration Authority (RA) URN tutorial and IEEE Std 802d.

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: #5.3: While 'YANG' (developed by the Internet Engineering Task Force) appears to be an acronym its expansion 'Yet Another Next Generation' is not meaningful.
#5.3: IEEE Std 802.1AB refers to IEEE 802.1AB-2016 - IEEE Standard for Local and metropolitan area networks - Station and Media Access Control Connectivity Discovery
#5.3: Project IEEE 802.1ABcu refers to P802.1ABcu - Standard for Local and Metropolitan Area Networks - Station and Media Access Control Connectivity Discovery Amendment: YANG Data Model
#6.1.b IEEE Std 802 IEEE Standard for Local and Metropolitan Area Networks: Overview and Architecture
IEEE Std 802d IEEE Standard for Local and Metropolitan Area Networks: Overview and Architecture Amendment 1: Allocation of Uniform Resource Name (URN) Values in IEEE 802 Standards
RA URN tutorial: http://standards.ieee.org/develop/regauth/tut/ieeeurn.pdf