

# Title

- PAR for an amendment to an existing Standard 802.1Q
- P802.1Qbi (or Qbj, etc., as appropriate)
- IEEE Standard for Local and Metropolitan Area Networks---Virtual Bridged Local Area Networks - Amendment: Customer Backbone Bridging

# Scope

- This standard specifies procedures and managed objects supporting the interconnection of Customer Bridged Networks (CBNs) across a Provider Backbone Bridged Network (PBBN) in such a way that individual Customer VLANs (C-VLANs) can be mapped to particular Backbone Service Instances and supporting a C-tagging Service Interface utilizing an I-component based on a C-VLAN relay entity and supporting Provider Instance Ports.

# Purpose

- This project allows the operator of a LAN carrying C-VLAN traffic, for example a Data Center, to deploy a backbone network such that each C-VLAN can be associated with a distinct Backbone Service Instance.

# Need

- It is anticipated that the operators of Data Centers and types of LANs that carry CVLAN traffic will increasingly require the hierarchical structure of a backbone network. This may be motivated by, for example, a desire to reduce the number of MAC addresses visible in the Filtering Database (FDB) of bridges in the core of the network or a desire to deploy the form of Shortest Path Bridging (SPB) that requires deployment of a PBBN (SPBM)

# Stakeholders

- Vendors, users, administrators, designers, customers, and owners of Customer Bridged Networks such as Data Centers.

# Other standards with similar scope

- There are no standards providing backbone interconnection of Customer Bridged Networks such that the individual C-VLANs can be associated with particular Backbone Service Instances.

# Five Criteria

# Broad Market Potential

A standards project authorized by IEEE 802 shall have a broad market potential. Specifically, it shall have the potential for:

- Broad sets of applicability.
  - The commercial provision of Data Centers based on CVLAN service is a large and growing business. This existence of backbone technology in this environment would be advantageous.
- Multiple vendors and numerous users.
  - The same The same large body of vendors and users having a requirement for Customer VLAN Bridging. Balanced costs (LAN versus attached stations).
- Balanced costs
  - This project does not materially alter the existing cost structure of Provider Backbone Bridged Networks on which it is based.



# Compatibility

- IEEE 802 defines a family of standards. All standards shall be in conformance with the IEEE 802.1 Architecture, Management and Interworking documents as follows: 802. Overview and Architecture, 802.1D, 802.1Q, and parts of 802.1f. If any variances in conformance emerge, they shall be thoroughly disclosed and reviewed with 802:
  - This project will be compatible with existing 802.1 Architecture, Management and Interworking standards.
- Each standard in the IEEE 802 family of standards shall include a definition of managed objects which are compatible with systems management standards:
  - Such a definition will be included.

# Distinct Identity

Each IEEE 802 standard shall have a distinct identity. To achieve this, each authorized project shall be:

- Substantially different from other IEEE 802 standards.
  - This project will amend the only IEEE 802 standard defining Customer Backbone Bridged Networks.
- One unique solution per problem (not two solutions to a problem).
  - There are no other standard solutions to the backbone interconnection of Customer Bridged Networks such that each C-VLAN can be mapped to an individual Backbone Service Instance;
- Easy for the document reader to select the relevant specification.
  - This project will amend the only IEEE 802 standard defining Provider Backbone Bridged Networks.

# Technical Feasibility

For a project to be authorized, it shall be able to show its technical feasibility.

At a minimum, the proposed project shall show:

- Demonstrated system feasibility.
  - The function technically is similar to Provider Backbone Bridging which is currently specified by amendment 802.1Qah to 802.1Q, and which has been successfully implemented.
- Proven technology, reasonable testing.
  - The function can be implemented using existing bridge behaviors. Compliance with the project can be tested using straightforward extensions of existing test tools for bridged networks.
- Confidence in reliability.
  - The reliability of the modified protocols will be not be measurably worse than that of the existing Provider Backbone Bridged networks.

# Economic Feasibility

**For a project to be authorized, it shall be able to show economic feasibility (so far as can reasonably be estimated) for its intended applications. At a minimum, the proposed project shall show:**

- Known cost factors, reliable data.
  - This project introduces no hardware costs different from those associated with existing Provider Backbone Bridging.
- Reasonable cost for performance.
  - This project has the same cost for performance characteristics as existing Provider Backbone Bridged Networks..
- Consideration of installation costs.
  - The cost of installing upgraded devices is more than balanced by the benefits derived from deployment of a backbone in a Customer Bridged Network such as a Data Center.