Provider Bridging Remote Access PAR and 5c

Version 3

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Title

- PAR for an amendment to an existing Standard 802.1Q

- IEEE Standard for Local and Metropolitan Area Networks---Virtual Bridged Local Area Networks - Amendment: Provider Bridging Remote Access

Scope

- **Enhance the specification of the Provider Bridging S-tagged service interface such that when this interface exists between two independently administered Provider Bridged Networks, and all traffic to/from a customer location attached to one (access) PBN is identified on the interface by a single S-VLAN identifier, the Provider Bridge in the other (primary service provider) PBN can treat that customer traffic as if the customer were directly attached using a Port-based or C-tagged service interface.**

Purpose

- **Metro Ethernet service providers need to provide service to customer locations not directly accessible to their network. Such "out-of-footprint" access may be obtained via other (access) service providers; however, the primary service provider has an interest in minimizing the amount of provisioning required of an access provider.**

- **To meet this need with Provider Bridging technology requires a method that allows the primary service provider to treat customers connected via an access network as if they were directly connected to the primary service provider's network.**

Need

- Metro Ethernet service providers need standardized Provider Bridge functionality that allows customers connected via an independently operated access network to be provided the identical service as if they were directly connected to the service provider's network.

Stakeholders

- Vendors, users, administrators, designers, customers, and owners of Metro Ethernet bridged service networks.

Other standards with similar scope

- There are no IEEE standards specifying the functionality required for handling out-of-footprint customer traffic at the interface between two Provider Bridged Networks.

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 Metro Ethernet services is a large and growing business.

- Multiple vendors and numerous users.
    - The same large body of vendors and users having a requirement for IEEE 802.1Q in service provider networks.

- Balanced costs (LAN versus attached stations).
    - This project does not materially alter the existing cost structure of bridged networks.

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 PAR is for an amendment to 802.1Q, thus ensuring compatibility.

- Each standard in the IEEE 802 family of standards shall include a definition of managed objects that 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 VLAN bridged networks.
- One unique solution per problem (not two solutions to a problem).
    - There are no other standard solutions addressing PB remote access.
- Easy for the document reader to select the relevant specification.
    - This project will amend the only IEEE 802 standard defining Provider Bridged Networking.

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 is similar to existing functions in 802.1Q, which have been successfully implemented.
- Proven technology, reasonable testing.
  - The function can be implemented using existing frame formats. 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 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 significant frame processing beyond that currently specified for VLAN aware bridges.

- Reasonable cost for performance.

  - The cost of upgrading software and configuring access connections is reasonable for providing the features required by Metro Ethernet service providers.

- Consideration of installation costs.

  - The cost of installing enhanced software, in exchange for improved network functionality, is familiar to vendors and users of bridged networks.