Application VLAN TLV PAR & 5 Criteria

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PROJECT AUTHORIZATION REQUEST

Scope

This standard specifies the protocols, procedures, and management objects for an Application VLAN ID TLV within the Data Center Bridging eXchange (DCBX) protocol defined in IEEE 802.1Qaz. For networks that already make use of DCBX, an Application VLAN ID TLV will simplify the management of the end station by allowing the VLAN ID for the application to be communicated via DCBX rather than requiring manual configuration.

Completion dependent on another standard?

No

Purpose

Converged network deployments where multiple networks such as LAN/Storage/HPC are operated over the same physical infrastructure make use of the DCBX protocol to provision services such as PFC, ETS, and Application Priority. In these deployments, it is highly desirable to be able to provision the VLAN ID for an application via DCBX, instead of requiring manual provisioning.

Need for project

There is significant customer interest, deployment, and market opportunity for bridged networks that use DCBX. This project further enhances DCBX to simplify manageability of these networks by allowing the bridge to provision the VLAN ID for use by an application at the end station.

5 CRITERIA

Broad market potential

a) Broad sets of applicability: Data center bridges are used in many data centers for operating protocols such as FCoE, iSCSI, RoCE, etc. The deployment of these continues to grow. The Application VLAN ID TLV would greatly simplify the management of such networks.

b) Multiple vendors and numerous users: There are many vendors that build silicon and systems for bridges and end stations that would benefit from the standard definition of an Application VLAN ID TLV in DCBX.

c) Balanced costs (LAN versus attached stations): The introduction of this standard does not change the cost dynamics of bridges versus end stations, which both already implement DCBX and the Application Priority TLV.

Compatibility

The proposed standard will be an amendment to IEEE 802.1Q, and will interoperate and coexist with all prior revisions and amendments of the IEEE 802.1Q standard. No new changes to the frame format are required.

Additional MIB objects would be required and these would be backwards compatible with the existing MIB module.

Distinct identity

a) Substantially different from other IEEE 802 standards: There is no other standard that defines the functionality equivalent to that of the Application VLAN ID TLV.

b) One unique solution per problem (not two solutions to a problem) : The proposed standard is the only standard for providing information about the VLAN ID for use by an application from a bridge to an end station.

c) Easy for the document reader to select the relevant specification: IEEE 802.1Q is the natural reference for vendors and users of data center bridges.

Technical feasibility

a) Demonstrated system feasibility: IEEE 802.1Qaz is widely implemented by data center bridges and end stations, and deployed in data centers. The proposed standard is a minor enhancement to IEEE 802.1Qaz.

b) Proven technology, reasonable testing: Mechanisms similar to what is being proposed exist in IEEE 802.1Qaz and have been shown to be reasonably testable.

c) Confidence in reliability: DCBX is already widely deployed and the proposed standard is a minor enhancement to DCBX.

d) Coexistence of 802 wireless standards specifying devices for unlicensed operation: Not applicable.

Economic feasibility

a) Known cost factors, reliable data: The proposed amendment will not make any changes to the cost factors of bridges or end stations.

b) Reasonable cost for performance: The proposed amendment simplifies management of end stations in networks that use DCBX. The cost of implementing and testing an additional TLV for this is considered reasonable.

c) Consideration of installation costs: The proposed standard will simplify management of end stations thereby reducing the cost of installation.

THANK YOU