

Application VLAN TLV

A Discussion of Issues

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Overview

- Introduction
- Application Priority vs Application VLAN ID
- Single VLAN ID or multiple VLAN IDs?
- Always need an application?
- Application VLAN ID TLV and link aggregation
- Multichannel operation

Introduction

- This presentation discusses some of the issues related to the Application VLAN ID TLV
- These issues have come up in formal and informal discussions

Application Priority Vs Application VLAN

- The priority of a frame determines which queue the frame is put into
- The VLAN ID determines the set of ports to which the frame may be forwarded
- The VLAN ID has tie-ins with Layer 3 protocols
 - For example, with IP, typically a VLAN is an IP subnet
 - This constrains the propagation of broadcasts (e.g. ARP) appropriately

Single VLAN ID or Multiple VLAN IDs?

- With a single VLAN ID *per application*, the end station would just need to figure out which “L3 interface” an application is running on
 - This is straightforward
- With multiple VLAN IDs per application, the end station needs to have a way to resolve which “L3 interface” the VLAN ID corresponds to
 - This is non-trivial
 - e.g. In the case of iSCSI, the end station needs to know which IP subnet the VLAN ID corresponds to

Disambiguating Multiple VLAN IDs

- Send an “interface ID” along with the VLAN ID
 - The interface ID would be provisioned at both ends
 - Negates the value proposition of Qcd which is to reduce manual configuration
- Treat the problem as out of scope
 - Potential for interoperability issues
- Use in conjunction with a protocol like DHCP
 - End station obtains the correct IP address for the VLAN via DHCP

Single VLAN ID vs Multiple VLAN IDs

What Should We Specify?

- Simpler to specify a single VLAN per application
- Multiple “interfaces” for an application on the same port is not common, and when done usually involves manual configuration
 - The VLAN can be configured as a part of that

Always Need an Application?

- Send a VLAN ID for end station use without an specifying an application?
- For example, this can be the “default application” VLAN which is used by all applications other than those for which an Application VLAN ID exists
- Probably not restricted to DCB only
 - Need a different PAR for this?

Application VLAN ID TLV and Link Aggregation

- In the case of link aggregation, should the TLV be sent on individual member links or on the aggregator?
- Sending it on the aggregator is probably fine
- Sending it on individual links is also OK as long as the same value is sent on all links within the LAG

Multi-channel Operation

- In the case of multi-channel, the Application VLAN ID may be different for different channels
- Therefore, the standard should allow the option of sending the Application VLAN ID TLV per channel

Summary

- There are several issues that need to be addressed in P802.1Qcd
- This presentation discusses several issues and possible resolutions

THANK YOU