

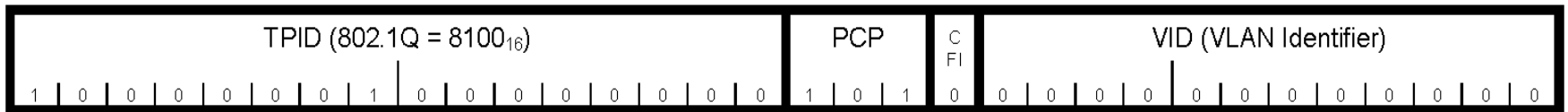


AVB VLAN Tagging

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10 March 2009

Priority & VLAN tagging



Three variations on tagging:

- Untagged frame
- Priority Tagged frame (802.1p)
 - VID = 0
- Tagged frame
 - VID = 1-4094 (4095 reserved)

Real-life Bridge Experiences

- Bridges either egress ALL frames Tagged or ALL frames Untagged, nothing is egressed Priority Tagged
- In Untagged mode:
 - Strip priority tagging (goodbye to Class A/B)
 - Strip VLAN tagging
- In Tagged mode:
 - Assign Default VLAN to Priority Tagged frames
 - Add Default VLAN tag to untagged frames

AVB and Tagging

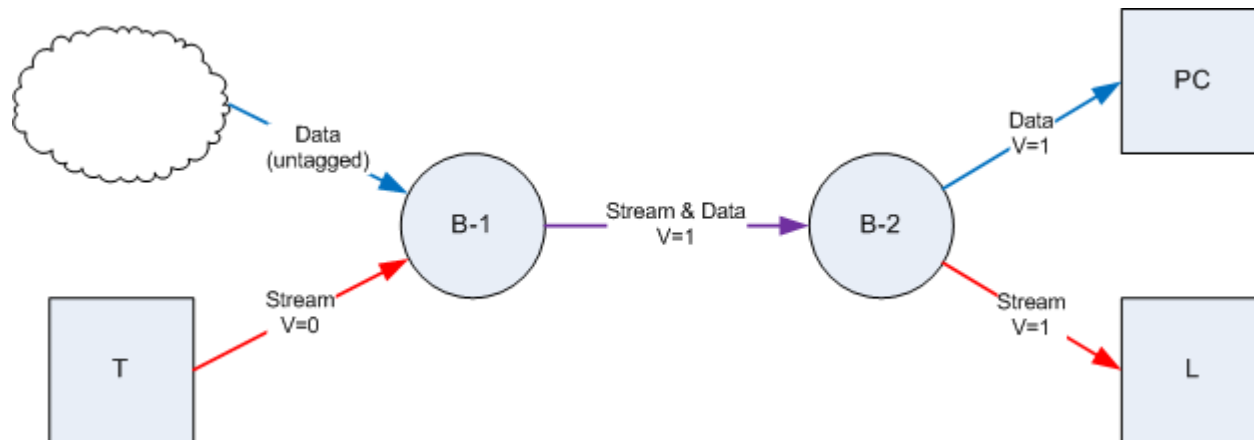
- AVB ports need to run in tagging mode
 - Must pass priority (PCP) to next station
 - 1722/1733 packets assigned to Default VID by bridge
- What defines an AVB port?
 - Use MSRP to decide?
 - Use PTP to decide?
 - Resurrect LLDP to decide?

Quick MSRP Abstract

- Declared vs. Registered
 - Declare TO another stations
 - Register FROM another station
- MSRPDU Declared on ALL ports
- Declarations (and related Registrations) come-and-go with Talkers and Listeners changing participation

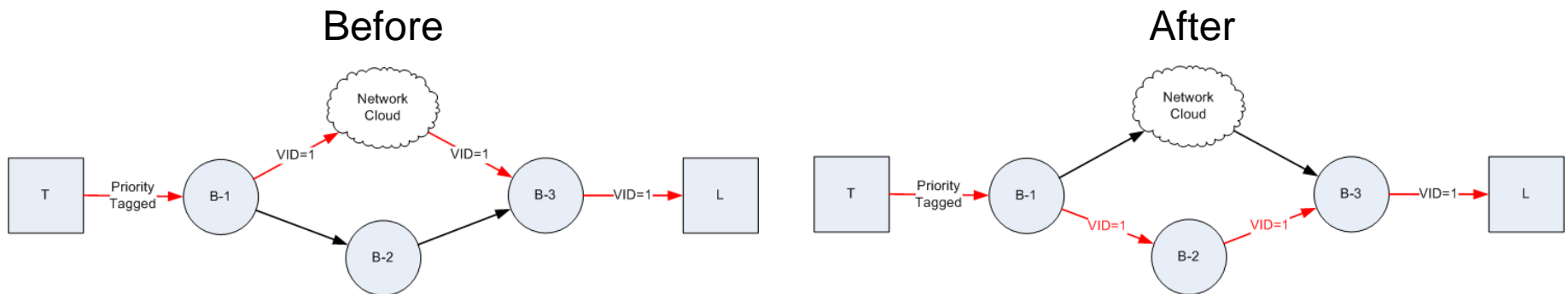
AVB Port determined via MSRP

- Concerns:
 - AVB Port boundary would be fluid
 - Legacy end-point could see packets coming in Tagged and then later Untagged if AVB boundary shrinks*



Effects Of Spanning Tree Changes

- Have the possibility of causing “fluid” AVB Port boundaries
 - STP event occurs which reroutes Tagged traffic as shown below



Conflicting Default VLANs

- Manufacturer A uses Default VID of 1 (802.1Q Table 9-2)
- Manufacturer B uses Default VID of 8
- Problem:
 - Priority Tagged frame enters Mfg-A bridge and comes out Tagged with VID=1
 - Tagged (VID=1) frame then enters Mfg-B bridge and is dropped since it is not in VLAN 8
 - Same problem in opposite direction
- Unacceptable solution
 - Configure bridges to recognize VLAN 1 and VLAN 8
 - AVB networks no longer “just work”
- **802.1BA must say AVB Bridges shall use Default VID=1**

AVB Default Tagging Rules

- Bridge Egress: Tag all egress traffic (VID=1) if any MSRP attributes are registered on that port and the port is asCapable, otherwise Untag all egress traffic.
 - This means the boundary is “fluid”.
 - Add asCapable (802.1AS) so we never force Tagged traffic onto a network via a buffered repeater.
- Station Egress: Stream traffic will be Priority Tagged. Best Effort traffic is untagged.
- Station Ingress: Tags stripped from incoming Best Effort traffic.