

Goals for Ethernet links in 802.1Qbu networks

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Primary goal:

- Short statement: minimum delay for time-critical traffic while minimizing the effect on non-time-critical traffic.
- Details: reduce the delay for time-critical traffic between two endpoints even if there is interfering non-time-critical traffic to something close to what would be the case if there was no interference. The effect on the non-time-critical traffic should also be a minimal delay (not much more than the time taken to transmit the time-critical traffic)

“Delay?”

- the time between presenting the last byte of a packet to the transmitting MAC and the time the receiving MAC presents that byte to the attached higher layers.

Non-solutions

- slowing down the new time-critical traffic to something less than the link speed
 - the point is minimum delay for control traffic, in particular
- forcing any retransmissions
 - we don't want non-time-critical traffic to be delayed any more than necessary to get the control traffic through

From the .I Qu PAR

- “5.2 Scope: This amendment specifies procedures, managed objects, and protocol extensions that:
 - Define a class of service for time-critical frames that requests the transmitter in a bridged Local Area Network to suspend the transmission of a non-time-critical frame, and allow for one or more time-critical frames to be transmitted. When the time-critical frames have been transmitted, the transmission of the preempted frame is resumed. A non-time-critical frame could be preempted multiple times.
 - Provide for discovery, configuration, and control of preemption service for a bridge port and end station.
 - Ensure that preemption is only enabled on a given link if both link partners have that capability.”
- We **thought** we needed preemption to do this, but we are open to other solutions that provide minimal delay for time-critical frames with minimal interference for non-time-critical traffic.

Thank you