AVB V2 Stream Reservation Capabilities

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1. Introduction

The purpose of this document is to provide a list of the capabilities that have been discussed as possible goals of future work for AVB stream reservation. It is not intended to be a prioritized list, nor is it intended to provide solutions for these capabilities. Furthermore, the capabilities may be delivered in multiple ways including the following:

* 1. Set up by protocol.
     1. SPB-V/M
     2. SRP Extensions/Optimizations
     3. Other.
  2. “Traffic engineered” w/o protocol.
     1. Computed by off-line tool (or human).
     2. Configure via SNMP or other means.
  3. Some combination of the above.

1. Capabilities:
   1. Multi-path (Availability).
      1. Primary/Backup for fast fail-over.
         1. “Active-Passive”
         2. Can’t have topology algorithm interfere w/backup path.
      2. Simultaneous transmission over multiple paths.
         1. “Active-Active”.
         2. “1+1 redundancy”.
         3. Listener receives multiple copies of each frame and decides which to use.
         4. Immediate/Lossless recovery.
         5. Can’t have topology algorithm interfere w/backup path.
   2. Multipath (Use more of the network).
      1. Use more of the network than just a single spanning tree (e.g., MSTP/SPB)
      2. Allow the use of more of network than just the shortest path.
         1. Find a route even if resources are not available on the shortest path.
         2. Dynamically determine best route.
      3. Multiple active paths for increased bandwidth.
         1. As in MLPP or LAG.
   3. Pick the “best” path
      1. Reduce latency by using “shortest path” from talker to listener.
      2. Constraint-based routing.
         1. Less jitter.
         2. Less packet loss
         3. Lower bandwidth variance on dynamic network.
         4. Etc.
   4. Solve scalability issues w/ MSRP
      1. Chatty protocol.
      2. Lot’s of information exchanged on a regular basis.
      3. Needs to scale better.
      4. Needs to recover faster/more predictably.
2. Next Steps.
   1. Use Cases per Market.
      1. Home network
      2. Automotive
      3. Industrial
      4. Pro AV
   2. Pick which problems to solve.
   3. Key Questions to Answer.
      1. What does this mean for the FDB Configuration?
      2. What higher-layer protocols exist or are needed to make use of these facilities?