Time delays
in
802.1 AVB Infrastructure

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THOMSON
images & beyond

Use case #1: flow switching (1/2)

- Question: what is the global time delay when a receiver want to switch between different sources?
- Use case: in broadcast environment, a video mixer is able to switch from a source (camera, video server, etc.) to another in a range of one field (20ms)
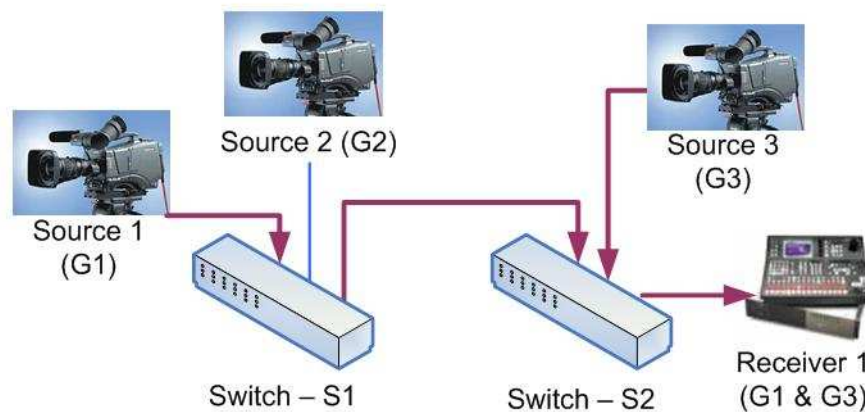
Use case #1: flow switching (2/2)

- Potential solution:
    - Pre-reservation mechanisms: SRP/MSRP extension allowing to pre-reserve various flow schemes and defining a command to switch from a pre-reservation plan to another.

- All involved mechanisms,
    - Source registration
   - Resource reservation
    - Multicast handling

  Should be bounded (in term of time delays) according to the class of application

  ➔ **Part of 802.1Qav & 802.1Qat specifications and/or part of the new 802.1BA objectives?**

Use case #2: infrastructure's resilience (1/2)

- <u>Question:</u> In case of infrastructure's topology change (new core equipment, link failure), what is the global time delay to resume operations on stable configuration?

- <u>Use case:</u> In case of some topology changes (especially in case of a link failure), the current flows could be suspended (or degraded) during hundred of milliseconds (up to several seconds), e.g. STP convergence time and LLDP discovery delay (according to the switches' behavior).

In sensitive environment, such as broadcast studio, it's unacceptable.
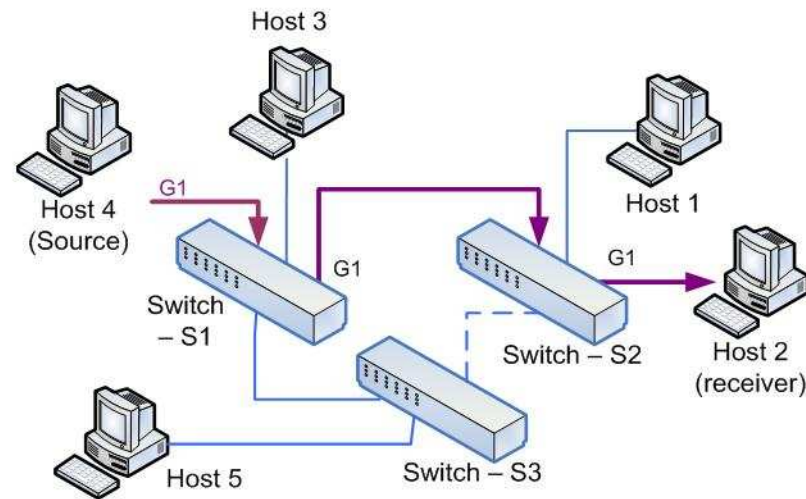
Use case #2: infrastructure's resilience (2/2)

- According to an AVB profile:
  - Need to bound timeout and various delay (STP « hello time » and LLDP response time) to fit our requirement
  - Suggest alternate solution (802.1aq, IEC 62439's PRP - Parallel Redundancy Protocol, etc. ?)

  ➔ **Part of the new 802.1BA objectives?**

Use case #3: infrastructure's security (1/2)

- <u>Question:</u> what is the global time delay added when protecting the access to the AVB infrastructure and streamed data themselves?

- <u>Use case:</u> in broadcast environment, due to the sensitive characteristic of the A/V essence, the infrastructure shall be very secured. In the domestic world, DRM, access control and privacy points impose also to secure the communications (wired and wireless)
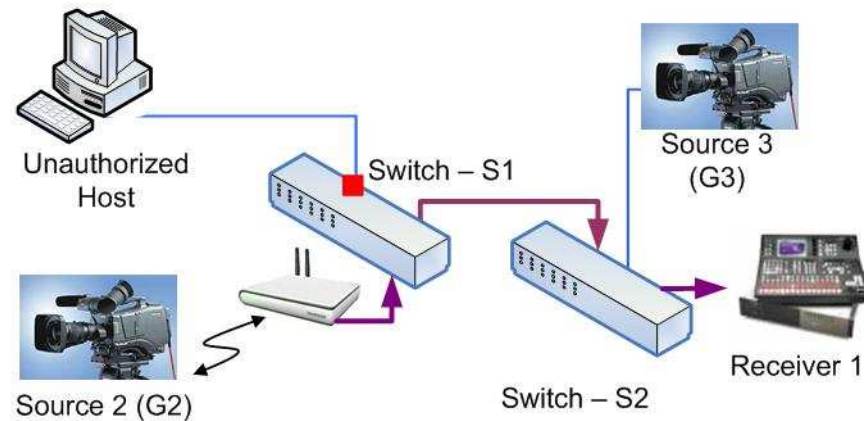
Use case #3: infrastructure's security (2/2)

- According to an AVB profile:
  - Need to bound latencies due to authentication and scrambling mechanisms (802.1X,802.1AE and next) used during streaming operations.

  ➔ **Part of the new 802.1BA objectives?**

Discussion

Thanks

Any comment or question is welcome