



#AABAC



AVnu Alliance Broadcast Advisory Council

AVB Bandwidth Reservation

Lee Minich, Lab X Technologies

Note: The Technical presentation portion of this session will be recorded and made available online to Broadcast Advisory Council members

Welcome

AVnu Alliance Broadcast Advisory Council



Lee Minich

AVnu Alliance, Chairman, Marketing Work Group

Lab X Technologies, President

Note: The Technical presentation portion of this session will be recorded and made available online to Broadcast Advisory Council members

Agenda

- Brief background / context
- Technical presentation – Bandwidth Reservation
- Open Discussion
- Logistics for Next Session



What/Who is the AVnu Alliance?

- **The industry consortium to lead the adoption of certified open standards-based AV networking**
 - *AVB (Audio/Video Bridging) is the first set of AV networking standards approved by the IEEE.*
- **A non-profit organization defining AVB certification and promotion**
 - *Members include major automotive, professional AV, consumer and silicon/platform manufacturers.*
 - ***Member manufacturers** are given **access** to test tools and plugfests in advance of submission for official AVnu interoperability certification.*



What is the importance of AVB in A/V networking?

- The AVB standards are written by the IEEE, the group that defines Ethernet
 - AVB is free of royalties and open for use by anyone
 - Network engineers have tools to accommodate AV requirements
- Precise and reliable, suitable for rigorous professional applications
 - Data pathway from source to destination is guaranteed
 - Low latency
 - Synchronized

Classic Audio and Video Distribution



- Fixed number of channels per cable



- Unidirectional



- Point to Point

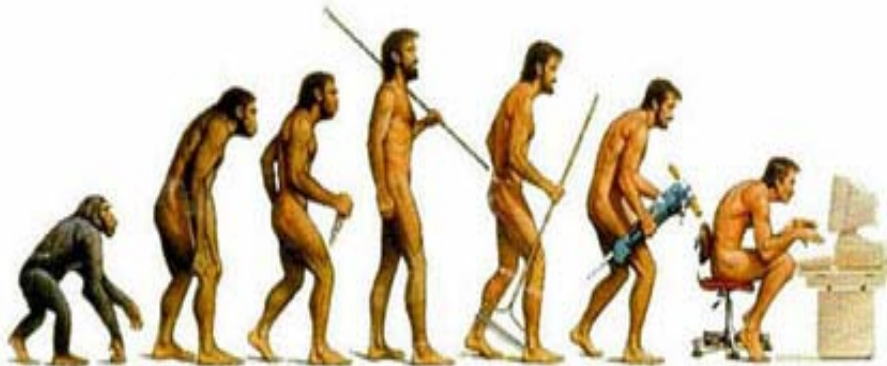


- Industry specific infrastructure



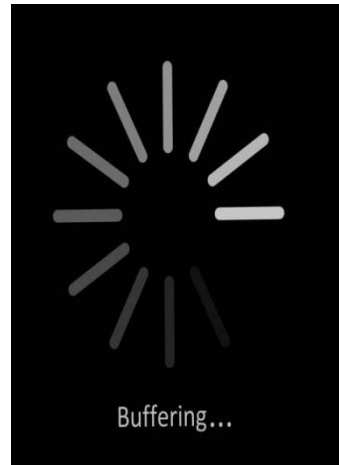
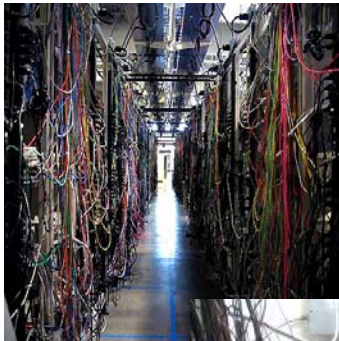
AVB improves the following in Ethernet:

- Best-Effort Delivery Strategy
- Non-Deterministic
- No Concept of Isochronous Delivery
- Is Not Content-Aware



AVB

Audio Video Bridging (AVB)





AVB Terminology

- **Stream** – A “pipe” that contains one or more channels of audio and/or video data in an AVB cloud
- **Talker** – An entity in the AVB cloud that can send a stream
- **Listener** – An entity in the AVB cloud that can receive a stream
- **Controller** – An entity on the network which configures and connects Talkers and Listeners in an AVB network

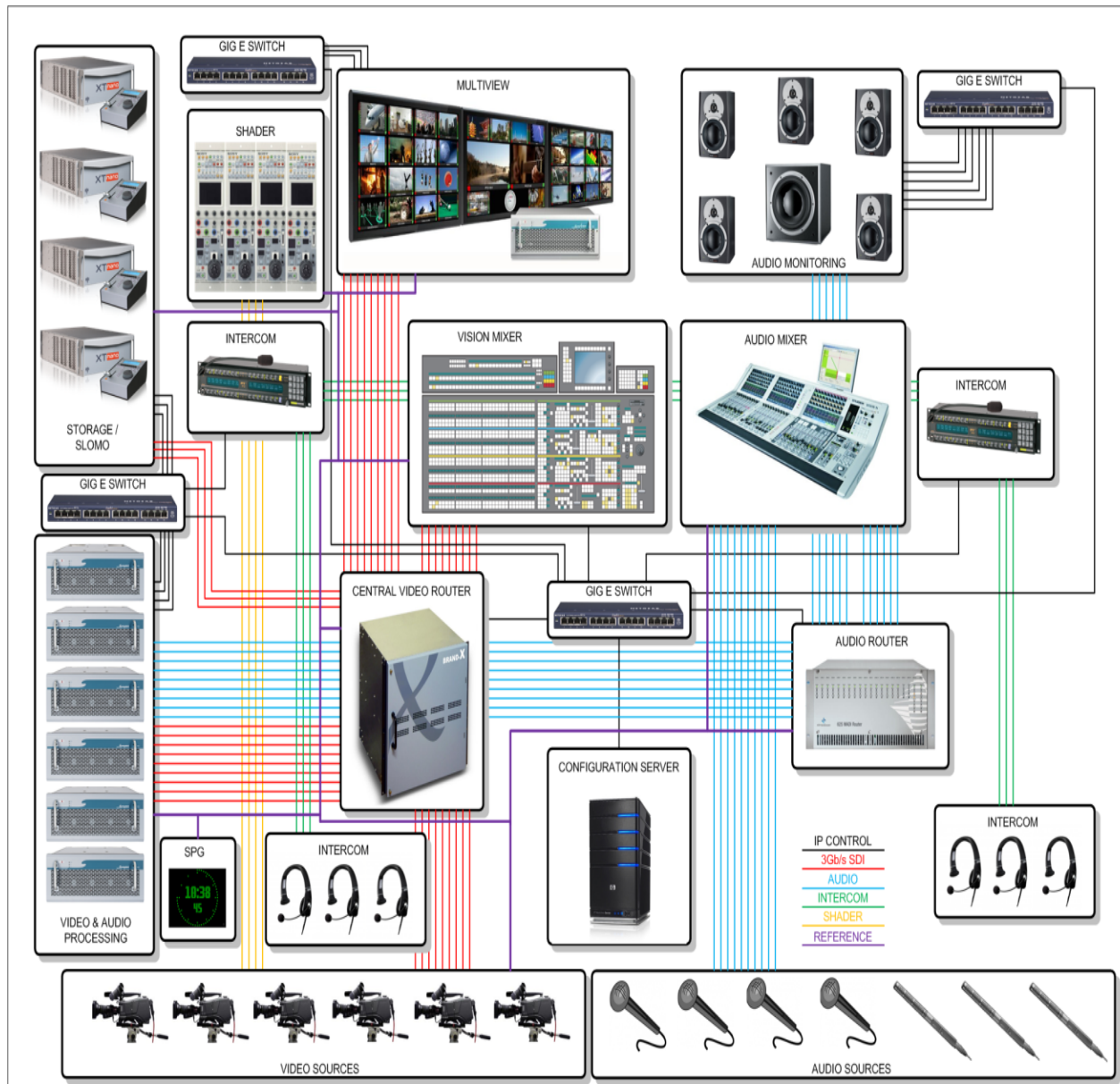
AVB Terminology

- A Controller configures Streams (flow of AV media) between a Talker and Listener

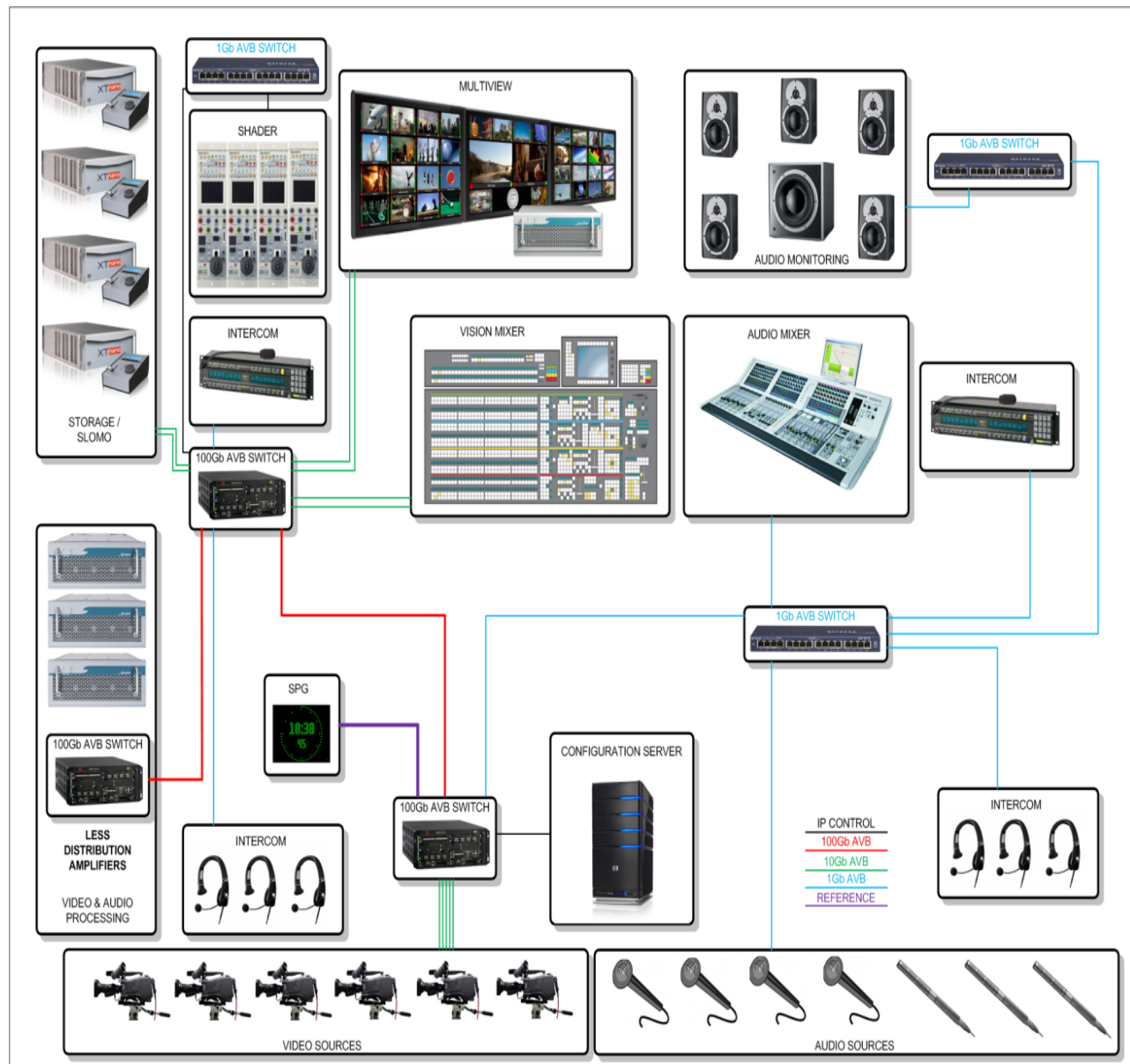


-or many Listeners

Today's (live) broadcast infrastructure



Native AVB infrastructure (tomorrow)





Audio Video Bridging (AVB)

Bandwidth
Reservation

Configuration

Traffic Shaping

Time
Synchronization



Audio Video Bridging (AVB)

Bandwidth Reservation

802.1Q – 2012

802.1Q Forwarding and Queuing for Time-Sensitive Streams (FQTSS)

802.1Qat

Stream Reservation Protocol-(SRP)

Stream Reservation Protocol



- Difference between Priority and Reservation

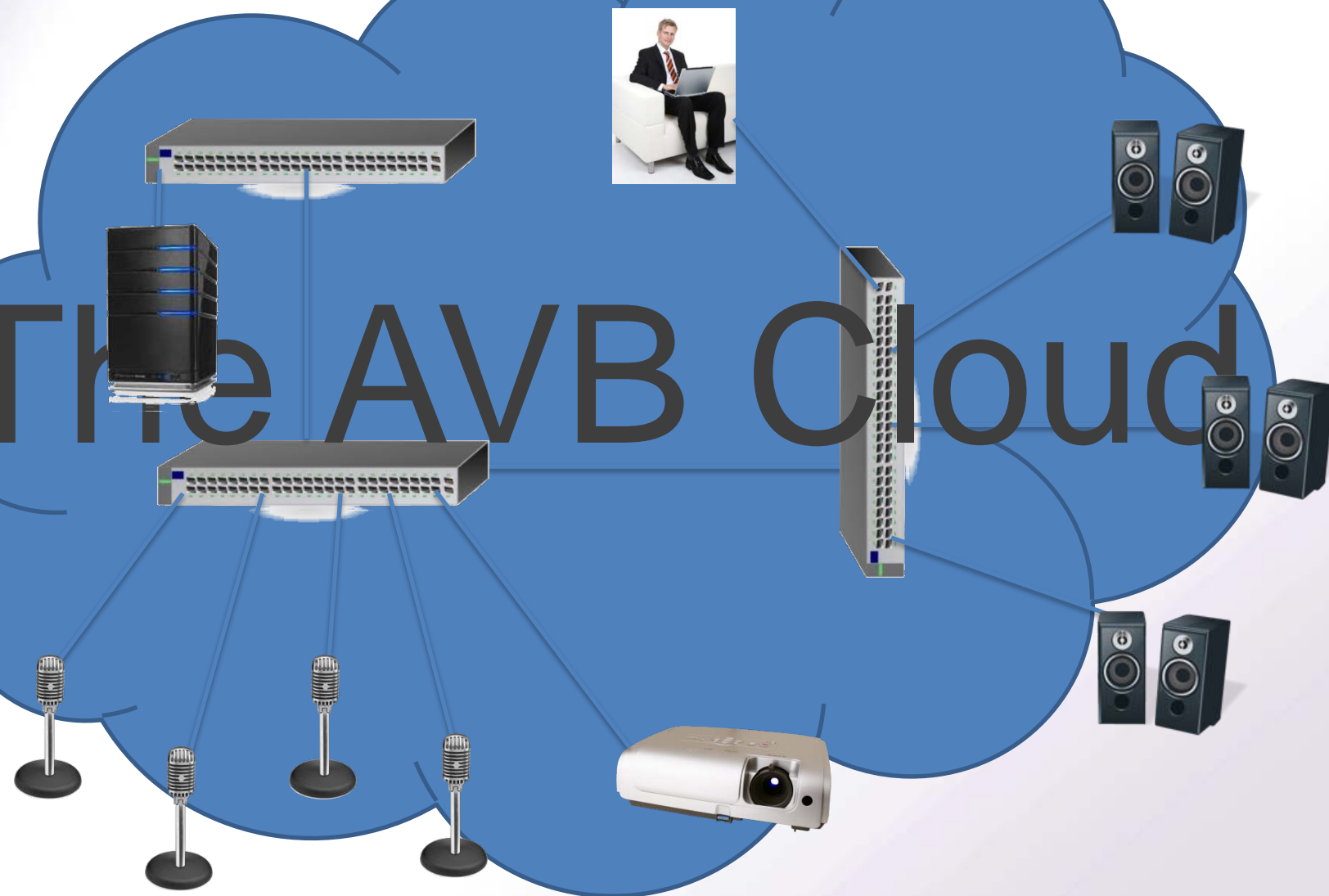
Stream Reservation Protocol

- Guarantees a “First Class Ticket” for your AV media
- Protects your network against rogue traffic / unauthorized devices
- Automatic self configuration.
An IT guy “In the Box”





The AVB Cloud



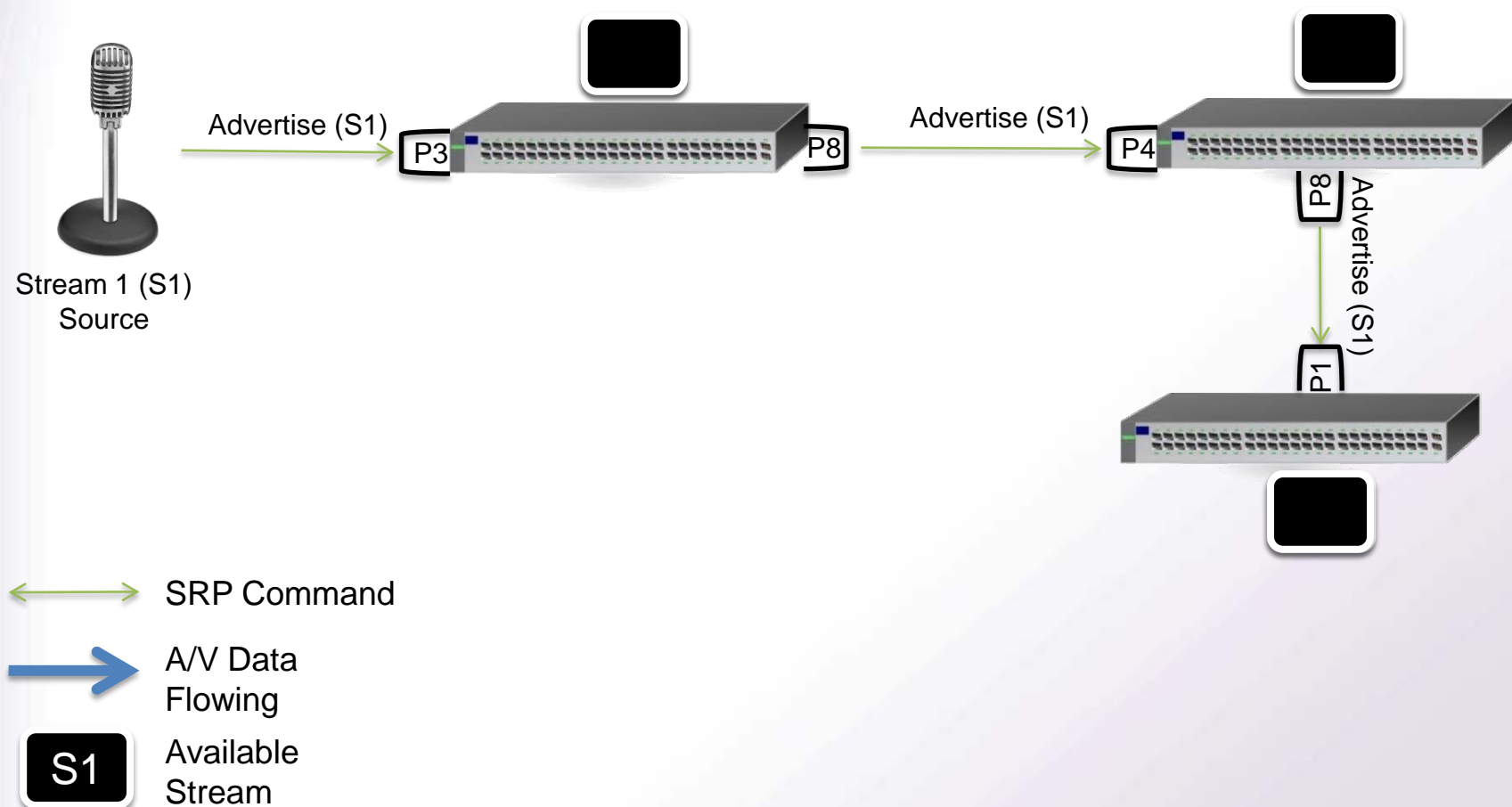


Bandwidth Reservation Protocol

- Enables the cloud to self-manage its bandwidth allocations
- Talkers/Listeners request permission before streams are allowed to flow
- The cloud guarantees a portion of the bandwidth will be available for legacy traffic (per port)
- Priority-based reservations

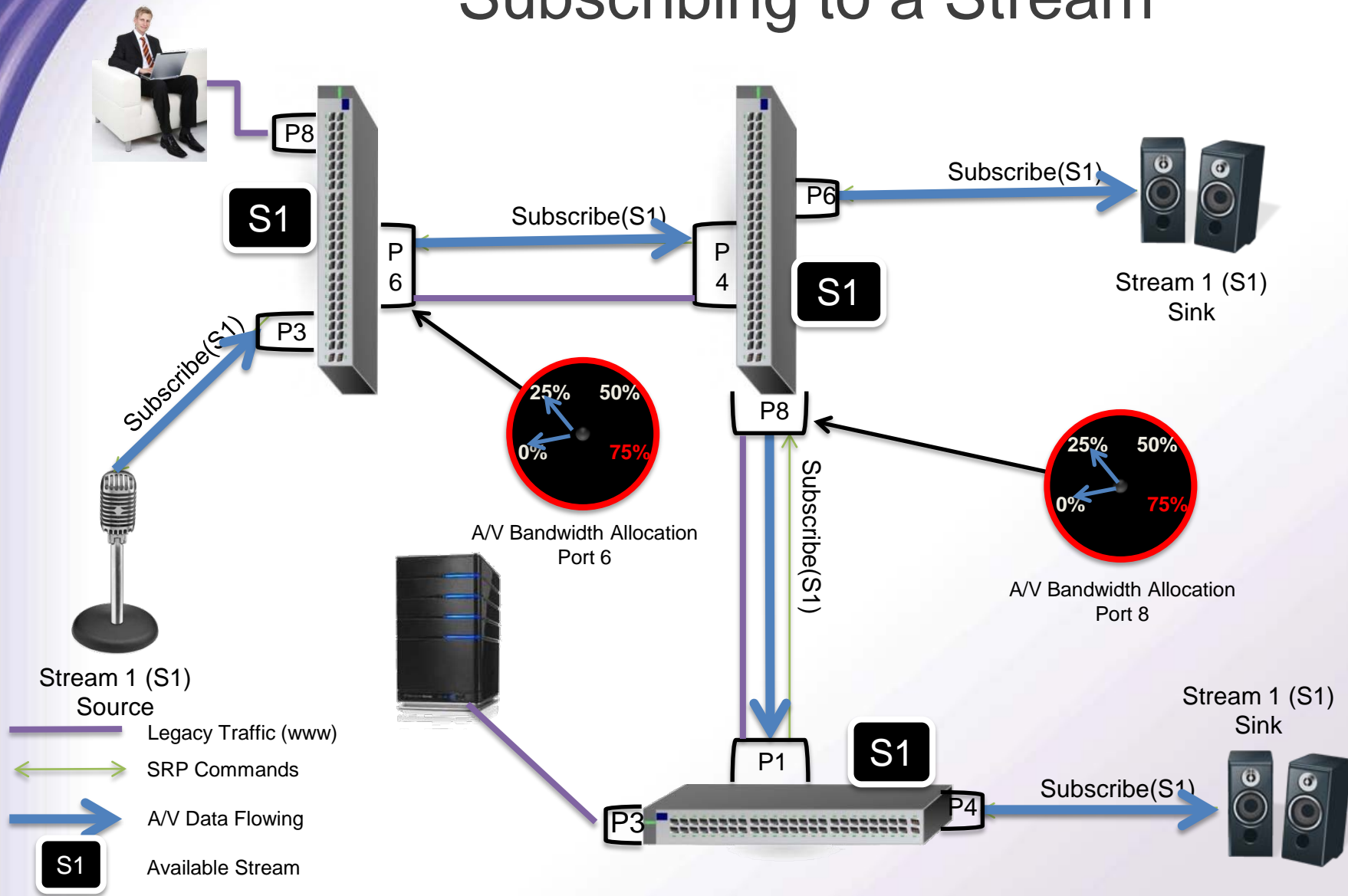


Advertising a stream



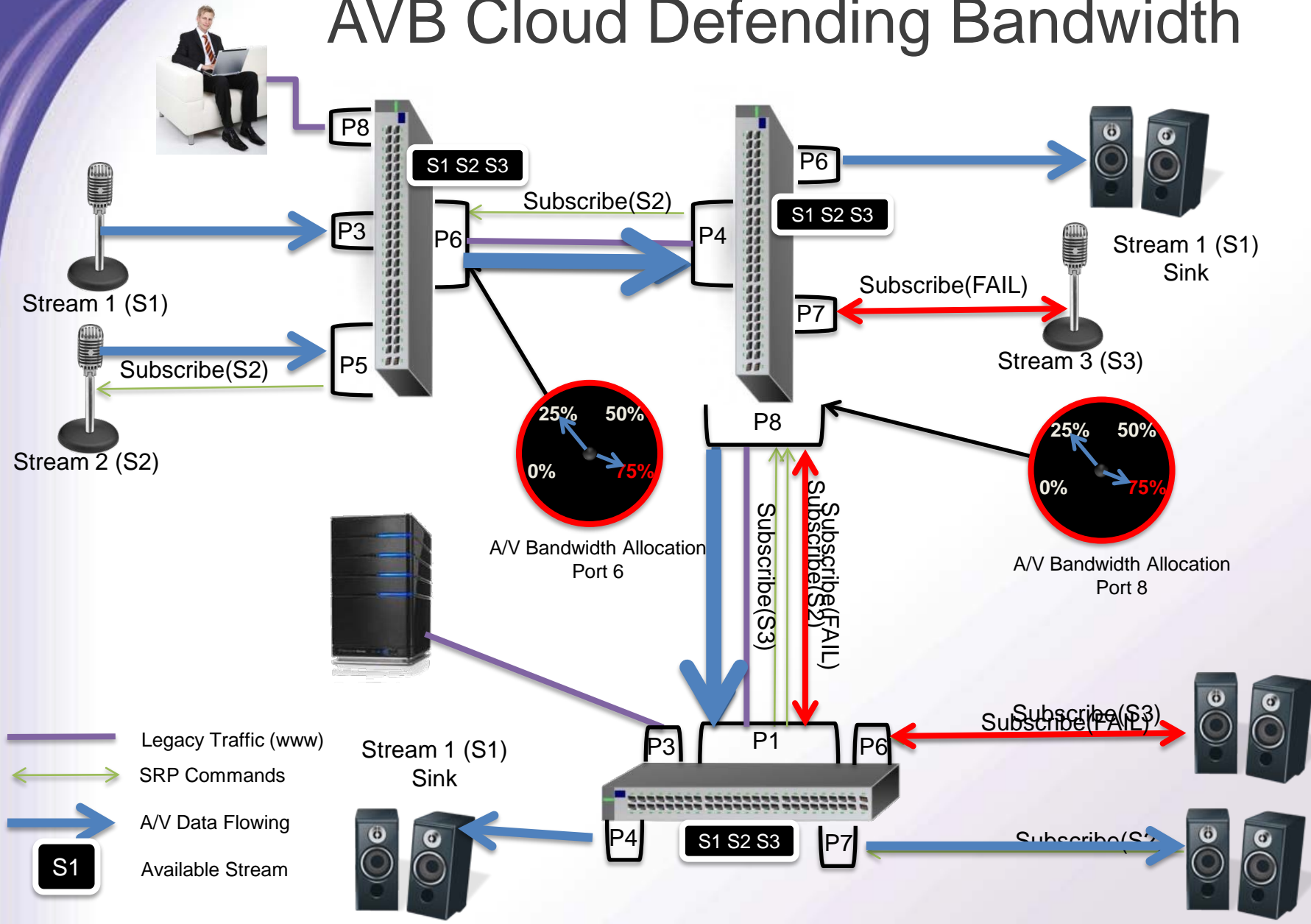


Subscribing to a Stream





AVB Cloud Defending Bandwidth



Stream Reservation Protocol

- Guarantees a “First Class Ticket” for your AV media
- Protects your network against rogue traffic / unauthorized devices
- Automatic self configuration.
An IT guy “In the Box”





Open Discussion

- Next Session
 - Thursday, May 16 2013
 - 8 AM PDT (GMT-7)
 - Topic
 - “How Big do my pipes need to be?” – Traffic Shaping & Infrastructure planning

Feedback on this session



Thank You!



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