

802.17 SAS

Topology Signaling Efficient Multicast

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SAS requirements

- SAS needs to know which stations on the ring has the SAS sub layer.
- Current proposals are summarized below:
 - Special multicast address used for “undirected transmissions
 - Use one of the reserved bit in a frame indicating this was transmitted by an SAS.
 - Use one of reserved bits in the “station settings” ATT to indicate that this station supports SAS.

Signaling via topology protocol

- Topology protocol provides a way for stations to advertise their capabilities.
- Use one of the spare bits in the station settings ATT
 - Notes:
 - Information is distributed via topology protocol
 - Information is available to the SAS from the topology database.

Using the SAS capability

- Export the information to the Management layer using the existing MIB structures.
 - Re-use existing infrastructure.
- Use on the frame receive path to determine if a frame should be submitted to the SAS address learning function.
 - Requires access to topology information for SAS learning

Using the SAS capability (cont.)

- Learning issues
 - Need access to topology D/B
 - How to access
 - Another MAC address lookup?
 - Too expensive?
 - TTL math to get entry number?
 - Need to deal with topology changes
 - What happens when topology is changing?
 - Don't learn until context containment is cleared?
 - Discard all learned entries when change notified
 - Issue also being address in SAS D/B pruning discussion.

Efficient Multicast

- “efficient multicast”, scoped to the interested group of stations on the ring
- Useful for support of point to multipoint transmissions, e.g.
 - Video/Audio broadcast
- SAS needs to support “static” or “management” entries for multicast
 - Can have entries programmed from an NMS station
 - Can have entries locally inserted based on protocols like GMRP or IGMP snooping
- Multicast SAS entry contains:
 - Multicast Address
 - Optionally VLAN
 - Transmission scope (furthest station east & west)
 - Assume that ringlet selection is done before entry is inserted.

Discussion?
