



# SRP AND RESERVATION TYPES

CRAIG GUNTHER

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This presentation discusses three types of reservations:

- 1. PLUG AND PLAY (PNP) RESERVATIONS:** as defined by 802.1Q-2014, Clause 35
- 2. PERSISTENT RESERVATIONS:** are just the SR part of SRP (i.e. no protocol is involved)
- 3. PRELOADED RESERVATIONS:** can be stored/saved and immediately recreated upon power-up; these reservations can also be torn down

Note: SRP (Stream Reservation Protocol) uses MSRP to create reservations. SRP can also be configured via the UNI defined in P802.1Qcc-D1.0 Clause 99. This presentation proposes a third way to configure SRP reservations.

## PRO-AUDIO (SRP)

Pro-Audio systems implement PNP RESERVATIONS today

These are the reservations created by the SRP protocol defined in 802.1Q-2014, Clause 35

Reservations are created when an MSRP Talker Advertise and an MSRP Listener Ready are combined in a bridge

MSRP attributes must be defended when the LeaveAll timer expires otherwise the attribute(s) and the associated reservation(s) will be removed

## AUTOMOTIVE (1<sup>ST</sup> GENERATION)

Automotive systems implement this strategy today

Bridges and end stations load reservation<sup>1</sup> information from flash upon power-up and configure egress ports:

- MAC DA forwarding
- operIdleSlope
- VLAN membership
- No concern about SRP Boundary ports

In addition PERSISTENT RESERVATIONS could be configured via Management (Qcc) where some type of central controller could push these reservations into the network without MSRP

These reservations are persistent, they do not need to be “defended” (no LeaveAll timer); they are never torn down by MSRP

Each bridge along the path from Talker to Listener must be similarly configured

1. This information could be stored in a summarized format (e.g. a simple list of MAC DAs, total operIdleSlope of all streams in a class, and a list of VIDs)

## AUTOMOTIVE (2ND GENERATION)

Automotive systems looking for this in the future

Bridges and end stations load reservation information from flash upon power-up and configure egress ports (similar to PERSISTENT RESERVATIONS):

- MAC DA forwarding
- operIdleSlope
- VLAN membership
- Configure SRP Boundary ports

Users may wish to temporarily change configuration loaded by PRELOADED RESERVATIONS because of 100 Mbps (802.3bw) limitations, especially with regards to video stream count

PRELOADED RESERVATIONS behave similar to PERSISTENT RESERVATIONS until SRP is enabled; at that point they behave like PNP RESERVATIONS

- MSRP attributes are also loaded from flash to recover the individual TSpec information and SRP Boundary Ports; more detailed information is required than the summarized information used by PERSISTENT RESERVATIONS

When SRP is enabled:

- LeaveAll timer begins operation (expiring in 10-15 seconds) and reservations must be defended
- MSRP Listener Ready and MSRP Talker Advertise attributes can be withdrawn to tear down a PRELOADED RESERVATION and free up associated bandwidth for another stream
- Other reservations can be added and withdrawn as desired

## WHAT IS THE REQUEST FROM Qcc?

### What changes are requested from Qcc?

- PNP RESERVATIONS are already supported by SRP; Qcc has this already
- PERSISTENT RESERVATIONS ...; Discuss this momentarily
- PRELOADED RESERVATIONS should be added to Qcc

### PRELOADED RESERVATIONS will require:

- R/W access to Clause 12 parameters
  - Table 12-4: SRP Stream Table
  - Table 12-5: SRP Reservation Table
- If PRELOADED RESERVATIONS support is enabled:
  - Disable MSRP LeaveAll timer behavior (i.e. turn off SRP)
  - Load SRP Boundary port information
  - Load Table 12-4 and 12-5 upon startup to create reservations
  - Configure VLAN Membership (MVRP may or may not be running)
- New Clause 12 parameters:
  - Enable/Disable PRELOADED RESERVATIONS support
  - “Turn on” SRP; may as well add ability to “Turn off” SRP
  - SRP Boundary port status
  - Option: A technique to force a snapshot to be taken and used for new PRELOADED RESERVATIONS?

## WHAT ABOUT PERSISTENT RESERVATIONS?

**PERSISTENT RESERVATIONS can be thought of as PRELOADED RESERVATIONS with SRP never “turned on”**

- Current users of PERSISTENT RESERVATIONS would need to store all the detailed information about each stream rather than just a list of Stream DAs,VIDs, and total operIdleSlope
- Current users of PERSISTENT RESERVATIONS would also need to store SRP Boundary Port information

**No request for changes to Qcc!**

## INTERESTING COMBINATIONS

### **What about adding PNP RESERVATIONS on top of PERSISTENT RESERVATIONS?**

- PERSISTENT RESERVATIONS would not be affected by SRP's LeaveAll Timer (note that this specifies a different approach than explained on the previous slide)
- This would allow users to lock-down some reservations that would never be deleted, plus PnP configuration of reservations for the remaining bandwidth

### **An interesting idea with many details to be worked out:**

- What if a PnP Reservation is made for the same StreamID associated with a Persistent Reservation?
- What about collisions between the two techniques when using same Stream DAs?
- Add a flag to each StreamID to define which type of reservation it is?
- ???

### **Is there really any interest in doing this?**

**Recommend no changes to Qcc at this time**



**THANKS!**