Three Step MSRP
Introducing the Query command

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Successful Stream join

- Talker advertises stream via higher layer protocol (e.g. Zeroconf)
- Listener issues MSRP Query
- Talker responds with MSRP Offering
- Listener requests Stream with MSRP Ready
Look more closely at the **Query** and **Offering** stages with multiple bridge ports:

- Assume Listeners $L_a$ and $L_c$ both issue a **Query** for the Stream provided by $T_1$
- Bridge $B$ does not know where $T_1$ is located so it sends a **Query** on all other ports
- Talker $T_1$ receives the **Query** and responds with an **Offering**
- Talker $T_2$ ignores the **Query** because it cannot source that Stream
- Bridge $B$ forwards the **Offering** out all ports that received (registered) the **Query**
MSRP Query, Offering and Ready

A little housekeeping in the Bridge, and then process the Ready:

- Once B has the Offering it can remove the Query from unrelated ports (T₂ and Lₐ)
- When Lₐ is ready to receive the Stream it sends a Ready
- B receives the Ready, configures its queues and sends the Ready to T₁
- Talker T₁ receives the Ready and can begin transmitting the Stream
- When Lₐ becomes ready to receive the Stream it will send a Ready and B will immediately send the Stream down that port (T₁ will not know there are two Listeners)
MSRP Query format

- What’s does a Query look like?
  - **Option 1: Stream ID (64 bits)**
  - **Option 2: Stream MAC DA (MMRP compatible 48 bits)**
    - Might present some interesting problems when multiple Streams can be sent to a single unicast address.
      - How do Talkers know which Stream the Listener wants?
      - All Talkers would have to send info about all Streams going to the unicast address
MSRP Query format (continued)

- Allow a Query value for “all”?
  - Handy for a peeker/sniffer/analyzer
  - We could define these unique Stream IDs:
    - ff:ff:ff:ff:ff:ff:ffff means all Streams from all Talkers
    - ff:ff:ff:ff:ff:ff:ff.0000 means default Stream from all Talkers
New MSRP rules

- Talkers & Bridges must see a **Query** before sending an **Offering**
  - This allows Talkers and Bridges to have a way to re-learn about interested Listeners after a Spanning Tree reconfiguration
  - Listeners can no longer passively discover Streams via **Offering** gleaning, they must rely on a higher layer protocol
  - “29.1.2.2 Listeners” will no longer allow Listener Declarations before Talker Declarations
- Bridges only forward an **Offering** to ports that have registered a **Query**
  - Reduces traffic between bridges
  - Reduces Bridge RAM requirements (TSpec storage)
New MSRP questions

- Should Talkers hear Offerings for a Stream they supply? What if two Talkers supply the same Stream and they want to monitor each other? If we need multi-Talker support someone needs to champion that effort (Annex Z, 2a).

- MRP LeaveAllTimer causes a Declaration/Registration refresh every 10-15 seconds. Will MSRPDUs contain full TSpec every time? There are roughly 64+ bytes per Offering, 24+ bytes per Ready.