Options for Session ID and Control Code for STAMP Message Format

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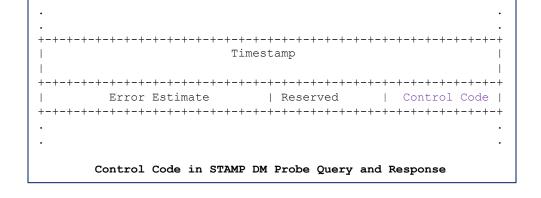
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STAMP Control Code Field

For a Query:

0x0: Out-of-band Response Requested. This is also the default behavior.

Ox1: In-band Response Requested.
Indicates that this query has been sent over a bidirectional path and the probe response is required over the same path in the reverse direction. The bidirectional path does not have to be an SR path.



For a Response -> Need to return Errors

0x1: Error - Invalid Message. Indicates that the operation failed because the received query message could not be processed.

0xN: Additional Error will be defined in future

Option 1: Variable Length Session ID Part of Existing Sequence Number

```
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
                         0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
Session ID / Sequence Number
                                 Sequence Number
Timestamp
                                  Timestamp
Error Estimate
                 Control Code
                            Error Estimate
                                          Control Code
Receive Timestamp
                         MBZ (28 octets)
                           Sender Session ID / Sender Sequence Number
                         Session-Sender Timestamp
                         Session-Sender Error Estimate
                         Ses-Sender TTL
Figure: Sender Message Format in STAMP
                              Figure: Reflector Message Format in STAMP
```

✓ No change for Session ID

Option 2: Using 24-Bit Session ID Field

```
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
                        0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
Sequence Number
                                Sequence Number
Timestamp
                                Timestamp
Error Estimate
                Control Code
                            Error Estimate
                                         Control Code
Session ID
                                 Receive Timestamp
MBZ (24 octets)
                           Sequence Number
                        Session-Sender Timestamp
                        Session-Sender Error Estimate
                        Session-Sender Session ID
                        |Ses-Sender TTL |
Figure: Sender Message Format in STAMP
                            Figure: Reflector Message Format in STAMP
```

- ✓ Session ID has 24-bits
- ✓ Requires the reflector to copy it elsewhere in the packet to return it back not desired

Option 3: 32-bit Session ID in TLV

```
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
                      0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
Sequence Number
                             Sequence Number
Timestamp
                              Timestamp
Error Estimate
               Control Code
                         Error Estimate
                                     Control Code
Receive Timestamp
                      MBZ (28 octets)
                           Session-Sender Sequence Number
                      Session-Sender Timestamp
                      Session-Sender Error Estimate
                      Ses-Sender TTL
Session ID Type
                       Session ID Type
Session ID
                          Session ID
Figure: Sender Message Format in STAMP
                          Figure: Reflector Message Format in STAMP
```

✓ Session ID has 32-bits

Option 4: 16-bit Session ID - 1

```
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
                      0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
Sequence Number
                             Sequence Number
                      Timestamp
                              Timestamp
Error Estimate
           Session ID
                         Error Estimate
                                 Session ID
                      Receive Timestamp
                      MBZ (28 octets)
                           Session-Sender Sequence Number
                      Session-Sender Timestamp
                      Session-Sender Error Estimate
                      Ses-Sender TTL
Control Code Type
                       Control Code Type
                      Control Code
                          Control Code
Figure: Sender Message Format in STAMP
                          Figure: Reflector Message Format in STAMP
```

- ✓ Session ID has only 16-bits
- ✓ Control code not compatible with existing TWAMP message
 - ✓ Not favorable

Option 5: 16-bit Session ID - 2

```
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
                        0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
Sequence Number
                                Sequence Number
Timestamp
                                 Timestamp
Error Estimate
                                    Session ID
            Session ID
                           Error Estimate
Receive Timestamp
TX Control Code
MBZ (24 octets)
                              Session-Sender Sequence Number
                        Session-Sender Timestamp
                        Session-Sender Error Estimate | RX Control Code | MBZ
                        |Ses-Sender TTL
                        Figure: Sender Message Format in STAMP
                            Figure: Reflector Message Format in STAMP
```

Session ID has only 16-bits

Next Steps

- Converge on an option for STAMP message format
- Update the respective drafts with the agreed option

Thank you