“Pushpull” delivery of SETs

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Why this, why now?

- SecEvents defined “Push Delivery” and “Poll Delivery” to deliver SETs
  - WG has since concluded
- Limitations:
  - Push can only deliver 1 SET in one connection
  - Push recipient cannot provide delayed acknowledgement of received SETs
  - Multiple connections required in bi-directional communication
- OpenID Shared Signals Framework (SSF) seeing greater occurrence of workloads that are both transmitters and receivers
  - Need efficient bi-directional transport
Pushpull Delivery: Communication Object

- Common JSON object that contains (all optional):
  - An array of SETs to transfer to the recipient
  - An array of error objects
  - An array of SETs to be acknowledged
- Similar to a HTTP Response in “Delivery Poll” (RFC8936)

```json
{
  "sets": {
          "4d3559ec67504aaba65d40b0363faad8":
            "eyJhbGciOiJub25lIn0.eyJ…d29yZCYWlscyJdfX19."
          "3d0c3cf797584bd193bd0fb1bd4e7d30":
            "eyJhbGciOiJub25lIn0.eyJq…QiOnsicmVzZXRBdl."
            
          },
    "ack": [
          "f52901c4-3996-11ef-9454-0242ac120002",
          "0636e274-3997-11ef-9454-0242ac120002",
          "d563c724-79a0-4ff0-ba41-657fa5e2c811"
            
        ],
    "setErrs": {
          "5c436b19-0958-4367-b408-2dd542606d3b" : {
            "err": "invalid subject",
            "description": "subject format not supported"
            
          }
            
        }

}```
Pushpull Delivery: Transport options

- Always a Communication Object
- HTTP Request Response binding
  - Requests can have an additional "maxResponseEvents" field
- WebSocket binding
  - WebSocket Subprotocol: pushpull
  - Communication Object is the Payload data
- Any initiator can request upgrade to WebSocket, and they must use WebSocket if handshake succeeds