Stream Schedulers and User Message Interleaving for SCTP

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Status

- draft-ietf-tsvwg-sctp-ndata-05.txt
- Addressed reported issues
- Added a generic description of stream schedulers
- Some additional comments from Karen received.

Implementation Status

- Running Code for FreeBSD (Hackathon)
- Found Issues:
  - Handling of TSNs at the sender and receiver not good enough specified.
  - Negotiation of support of I-FORWARD-TSN chunks not described.
  - Text requiring I-FORWARD-TSN with I-DATA and FORWARD-TSN with DATA missing.
  - API issue on the receiver side on the interleaving of messages on the same stream.

ToDo

- Address Karen's comments.
- Address issues found during the Hackathon.

RFC 4960 Errata and Issues

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Status

- draft-tuexen-tsvwg-rfc4960-errata-02.txt
- 23 issues currently addressed, each one in its own section using the old text / new text style and providing an explanation why the change is done.
- Using an issue tracker at https://github.com/sctplab/rfc4960bis
- The issue tracker currently contains 18 open issues.

ToDo

- Address issues in the issue tracker
- Address upcoming issues
- Address SACK.delay parameter issue, if agreed by the authors of draft-morand-tsvwg-sctp-parameters-update-00
- WG adoption?

Stream Control Transmission Protocol (SCTP) Network Address Translation Support

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Status

- draft-ietf-tsvwg-natsupp-08.txt
- Editorial changes have been made to improve the readability of the document

Features

- SCTP-specific way of doing NAT with NAPT properties.
- It is using the verification tag and the port numbers as an association identifier (46-bit of randomness)
- Doesn't require any changes to the SCTP packet when processed by the NAT box.
- Needs support from the NAT box and the end-points.

ToDo

- Split up considerations for
  - NATs
  - Endpoints
- Cover translation from IPv6 to IPv4 and vice versa.

Additional Considerations for UDP Encapsulation of Stream Control Transmission Protocol (SCTP) Packets

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RFC 6951 in a Nutshell

- RFC 6951 describes the UDP encapsulation of SCTP packets.
- An end-point automatically updates the remote encapsulation port. This includes turning on/off UDP encapsulation.
- RFC 6951 states that you MUST do this update after
  - Finding the SCTP association for an incoming packet
  - Checking the verification tag of the received packet

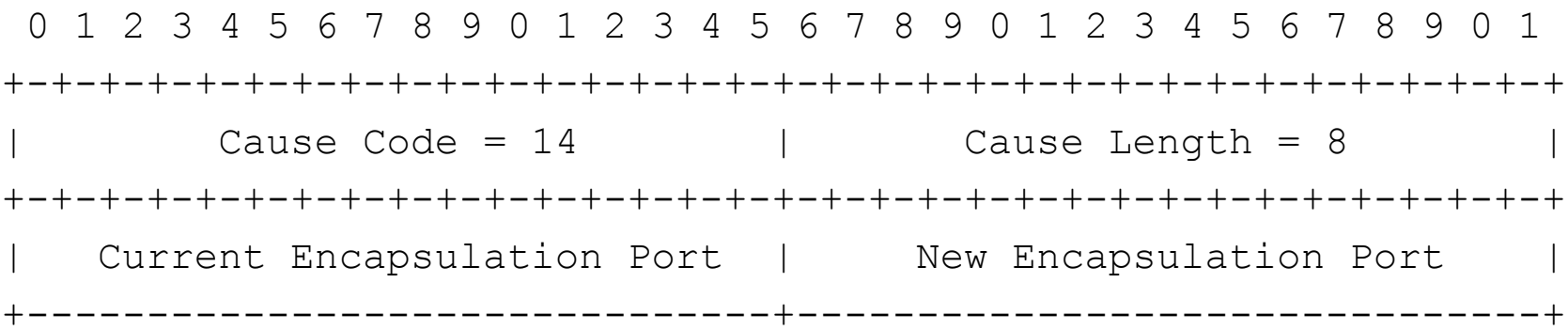
The Issue

- RFC 6951 does not describe what an endpoint does, when it can't perform the required checks.
- How to handle:
  - Out of the blue (OOTB) packets
  - Packets containing an INIT-chunk for an existing association.

The Solution

- For OOTB packets use a "reflection" mode if a response packet has to be sent.
- For packets containing an INIT chunk matching an existing association
  - Don't update the encapsulation behavior.
  - If there is a mismatch between the received packet and the current encapsulation behavior, the end-point MUST send an ABORT and MAY include a new error cause.
  - If the packet matches the current encapsulation behavior, respond with an INIT-ACK.
- Limitation: A client can't change its UDP encapsulation behavior during a restart. Seems acceptable.

"Restart of an Association with New Encapsulation Port" Error Cause



Status

- draft-tuexen-tsvwg-sctp-udp-encaps-cons-00.txt
- Initial version
- Explicitly describing when the ports MUST NOT be updated
- Interoperability improvements based on experience with userland stacks could be added

Way Forward

- Alternatives:
  - Just file an Errata
  - Progress this document to an update of RFC 6951
  - Do an RFC 6951bis.