Data Channels

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Outline

- Recent changes
  - draft-ietf-rtcweb-data-channel-07
  - draft-ietf-rtcweb-data-protocol-03
- Open Issues

draft-ietf-rtcweb-data-protocol-03

- Clarifications, text improvements
- Protocol, Label are UTF-8 encoded
- Data Channel Establishment Protocol (DCEP)

draft-ietf-rtcweb-data-channel-07

- Clarifications, text improvements
- 65535 streams are required
- Path MTU clarified
- Removed PPID based fragmentation/reassembly. Deprecated the PPIDs.
- Message size limitation via SDP added.
- Nagle algorithm disabled.
- PPID names improved.
- Streams of a data channel have the same SCTP stream identifier.

Open Issue 1 (Reopened)
Message Size Limit

- If NDATA is available, arbitrary messages can be transferred.

- If NDATA is not available, stream monopolization can happen at the sender side. The sender must limit message sizes to avoid monopolization.

- Receiver Side Limits can be negotiated by SDP.

- Remove receiver side limits?

Open Issue 2
Reaction on IP Address Change

- ICE notifies SCTP to retest PMTU.

- Shouldn't SCTP do slow start with cwnd=Initial CWND.

Open Issue 3
SCTP Parameters

- RFC 4960 suggests
  - path.max.retrans = 5
  - association.max.retrans = 10
  - HB.Interval = 30 Seconds
- RTCWeb
  - SHOULD use path.max.retrans = association.max.retrans
  - association.max.retrans = 10, taking 1 + 2 + 4 + 8 + 16 + 32 + 60 + 60 + 60 + 60 + 60 = 363 Seconds for failure detection.
  - association.max.retrans = 5, taking 1+2+4+8+16+32 = 63 Seconds for failure detection.
  - STUN consent freshness is about 5 seconds (less or equal 15 seconds)
  - Turn off HEARTBEATs?

Open Issue 4
Alternate SCTP CC

- Currently there is only one CC specified.
- In several places negotiation of CC is mentioned, however not specified yet.

Open Issue 5
Error Handling

- What does a receiver if
  - the message sequencing is definitely incorrect
  - a user message with unknown PPID is received
- Possible actions:
  - Reset the channel
  - Report the error (onerror callback)
  - Ignore

Open Issue 6
Protocol

- Sub protocol

- What is needed for registering at IANA? (Currently: Name and Reference)

- Also applies to out-of-band negotiated channels. So it should be moved to the draft-ietf-rtcweb-data-channel?

Open Issue 7
Priority

- (S)RTP and non-(S)RTP streams have priorities according to requirements.

- W3C currently doesn't specify priorities at all.

- We agreed on using non strict priorities, like weighted fair queuing.

- Some W3C actions are needed.

- Implication for DCEP: Is priority of type int16_t or uint16_t

Open Issue 8
Support of DCEP

- Currently the support of DCEP is a MUST.
- Make the requirement weaker?

Open Issue 9
U-C 7: Proxy Browsing

- U-C 7 has security implications.

- Either
  - Remove proxy browsing from the specification
  - Add appropriate text to the security section