+ TAPS

A Transport Services Mapping for QUIC

draft-taps-quic-mapping

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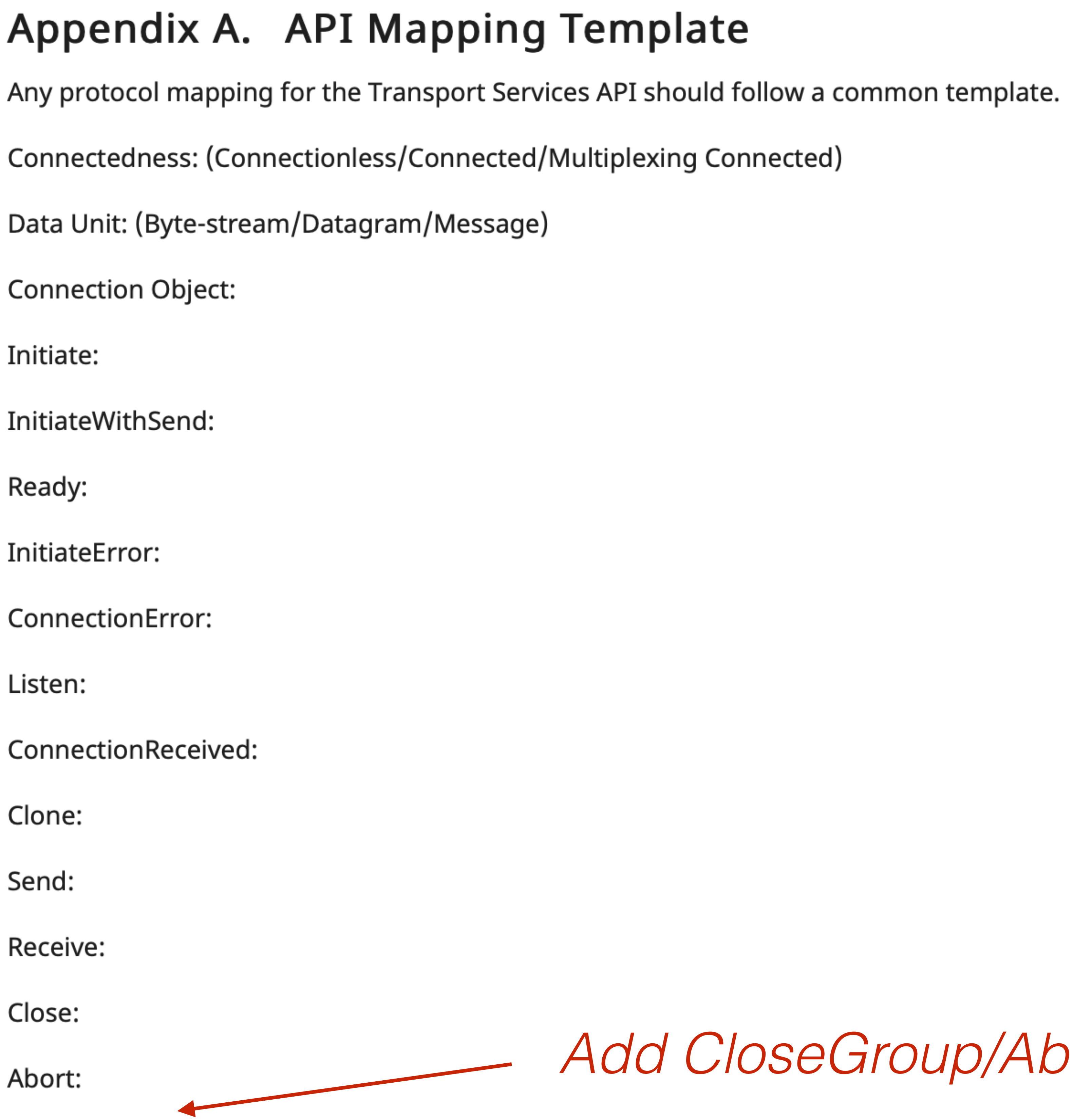
What is a TAPS mapping?

Definition of what happens when you use each Transport Services API call with a different transport protocol



Appendix A. API Mapping Template

Any protocol mapping for the Transport Services API should follow a common template.

Connectedness: (Connectionless/Connected/Multiplexing Connected)

Data Unit: (Byte-stream/Datagram/Message)

Connection Object:

Initiate:

InitiateWithSend:

Ready:

InitiateError:

ConnectionError:

Listen:

ConnectionReceived:

Clone:

Send:

Receive:

Close:

Abort:

Add CloseGroup/AbortGroup

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Copies the style of mappings for TCP/UDP/SCTP in the implementation document

Informed by work on Apple's Network.framework API

A good way to exercise API functions that only apply to multiplexing protocols!

Object mapping

TAPS Connection == QUIC stream

TAPS ConnectionGroup == QUIC connection

Connectedness: Multiplexing Connected

Data Unit: Byte-stream

Connection Object: A Connection object in the Transport Services API maps to a single QUIC stream between two hosts. This stream can be bidirectional or unidirectional.

Function mappings

Initiate: Create new connection if needed, allocate stream ID

Clone: Allocate a new stream ID on an existing connection

Ready: Can send on stream ID, not blocked

ConnectionReceived: New stream received from peer.

Send: Generate STREAM frames for the connection's stream ID

Receive: Handle inbound STREAM frames for the connection's stream ID

Close: Send a FIN on the stream

Abort: Send RESET_STREAM

CloseGroup: Send a FIN, and then CONNECTION_CLOSE once other streams have closed

AbortGroup: Immediately send CONNECTION_CLOSE

Next Steps

Should we adopt this mapping document? Should we start others?

Add a mapping for QUIC datagrams