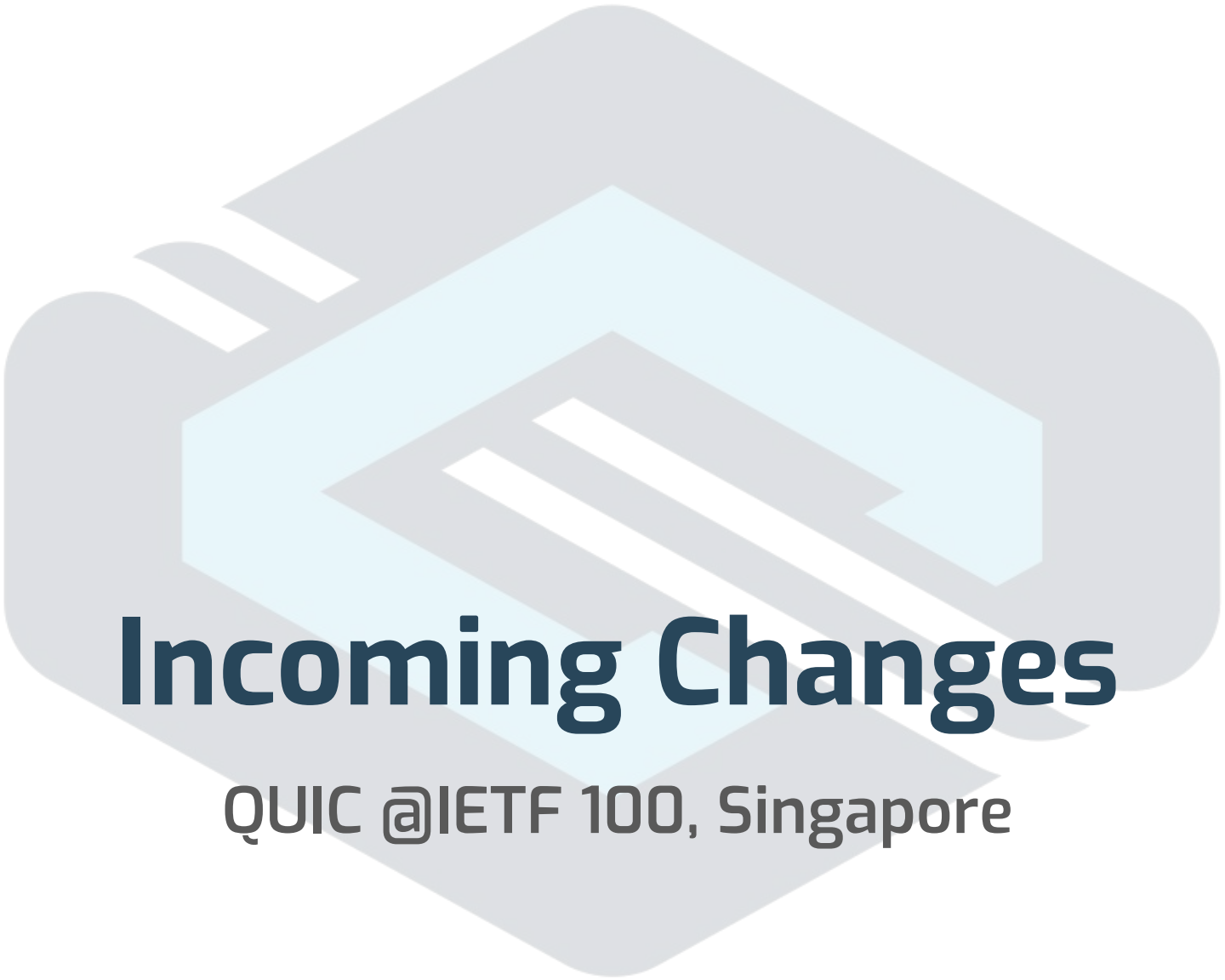


Incoming Changes

QUIC @IETF 100, Singapore

-06 to -07

AEAD_AES_128_GCM “protection” for cleartext packets

1-RTT long header is gone

Closing changes from interim (see next slide)

Moved stateless reset token to the end

ACK timestamps removed

Closing (partly in -07)

Three termination modes:

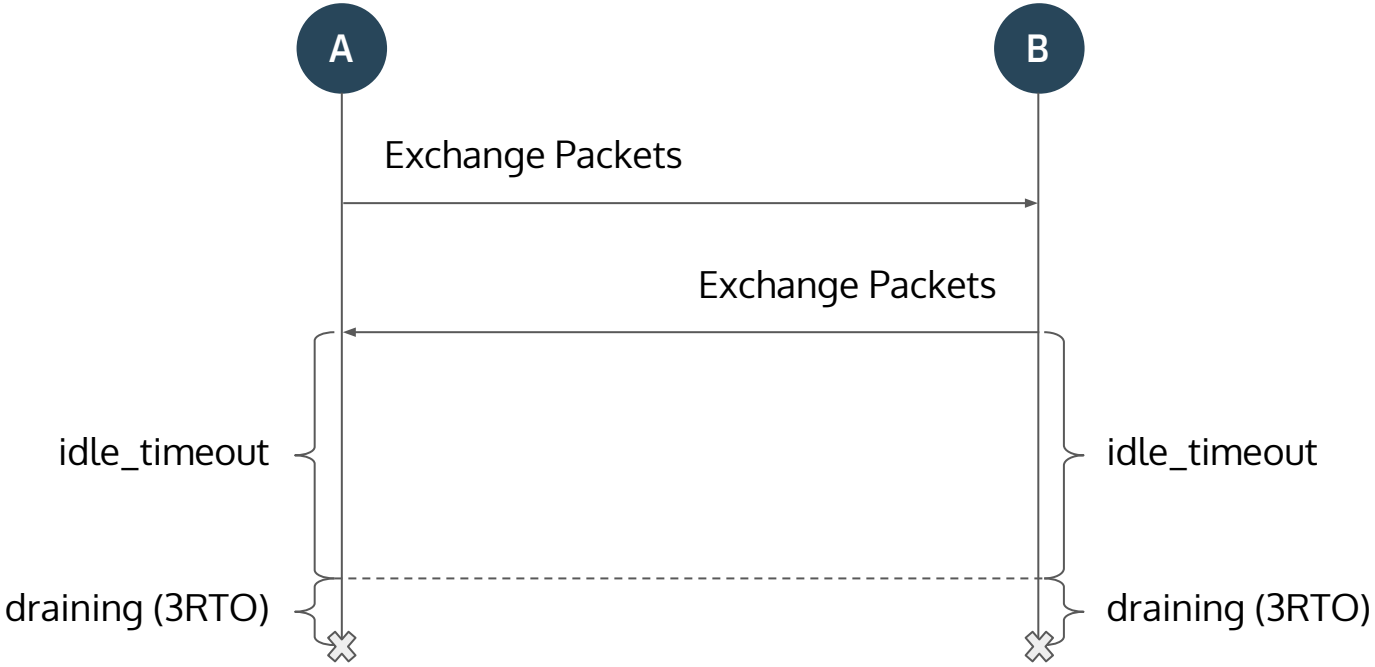
- timeout - determined by idle_timeout
- immediate - APPLICATION_CLOSE/CONNECTION_CLOSE
- stateless reset

Two states prior to termination, these share a timer (3RTO)

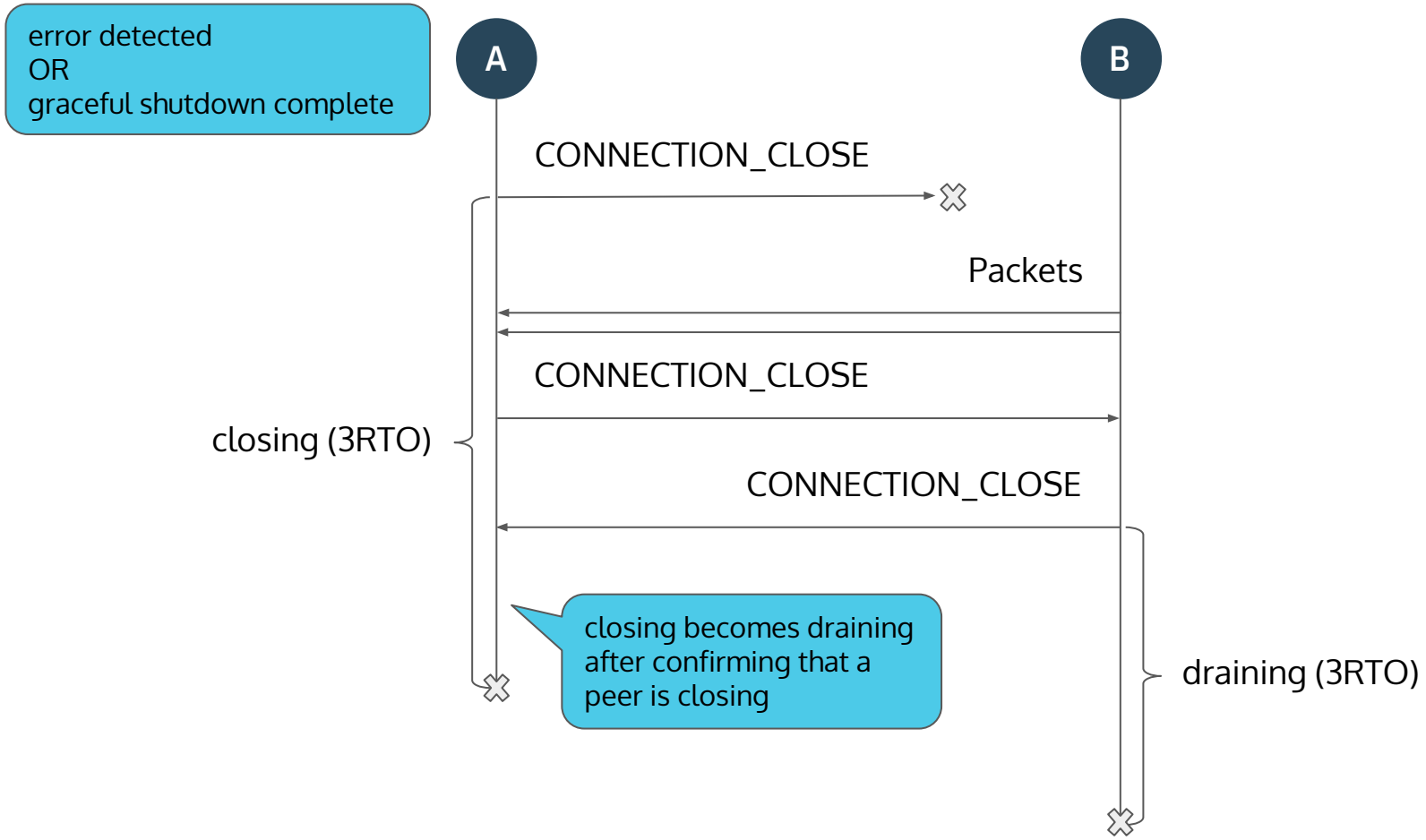
- draining - can't send anything, just absorb packets
- closing - as draining, but allowed to resend closing frame

Can transition from closing to draining

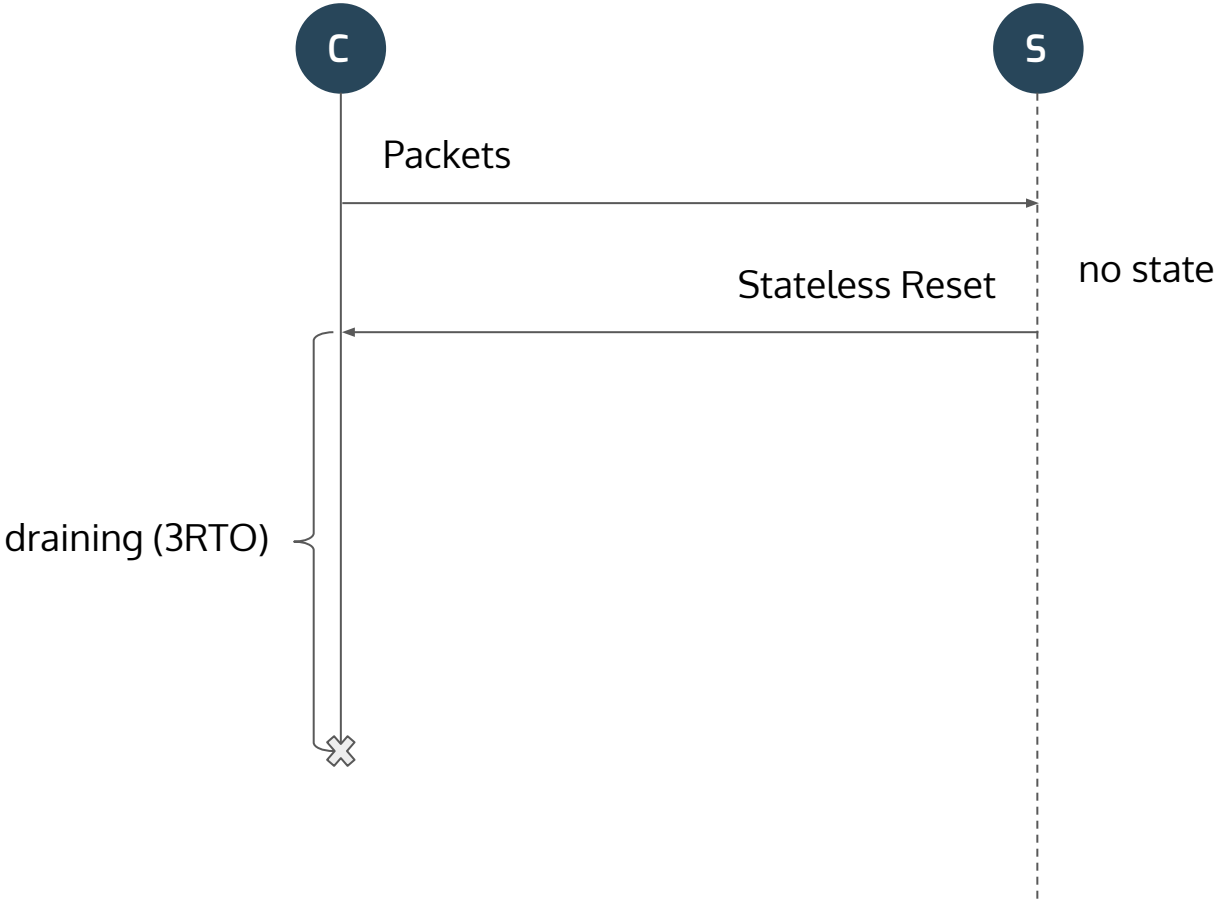
Closing - Timeout



Closing - Immediate



Closing - Stateless Reset



Unidirectional and Bidirectional

We decided to do both plan A and plan B

Unidirectional streams have `stream_id & 2 == 2`

Bidirectional streams have `stream_id & 2 == 0`

Client streams have `stream_id & 1 == 0`

Server streams have `stream_id & 1 == 1`

WARNING!
BIT FLIP!

New state machines coming

Integers

Before, we had a mix of integer encodings

- 8 bit
- 16 bit
- 32 bit
- 64 bit
- 8/16/24/32 bit
- 8/16/32/64 bit
- 0/16/32/64 bit
- bespoke 16-bit floating point

Now just one

2 bits for size (8/16/32/64)

Remainder big endian

- 6 bit: 0x12 = 0x12 = 18
- 14 bit: 0x4567 = 0x567 = 1383
- 30 bit: 0x9abcdef0 = 0x1abcdef0
- 62 bit: 0xe0123456789abcdf = 0x20123456789abcdf

Used in HTTP mapping too

Misc

MAX_STREAM_DATA is octets

PONG frame (for address validation post-handshake)

Renamed packet types and removed client/server split

- Initial, Retry, Handshake, 0-RTT (1-RTT uses short header)