

3.3 report

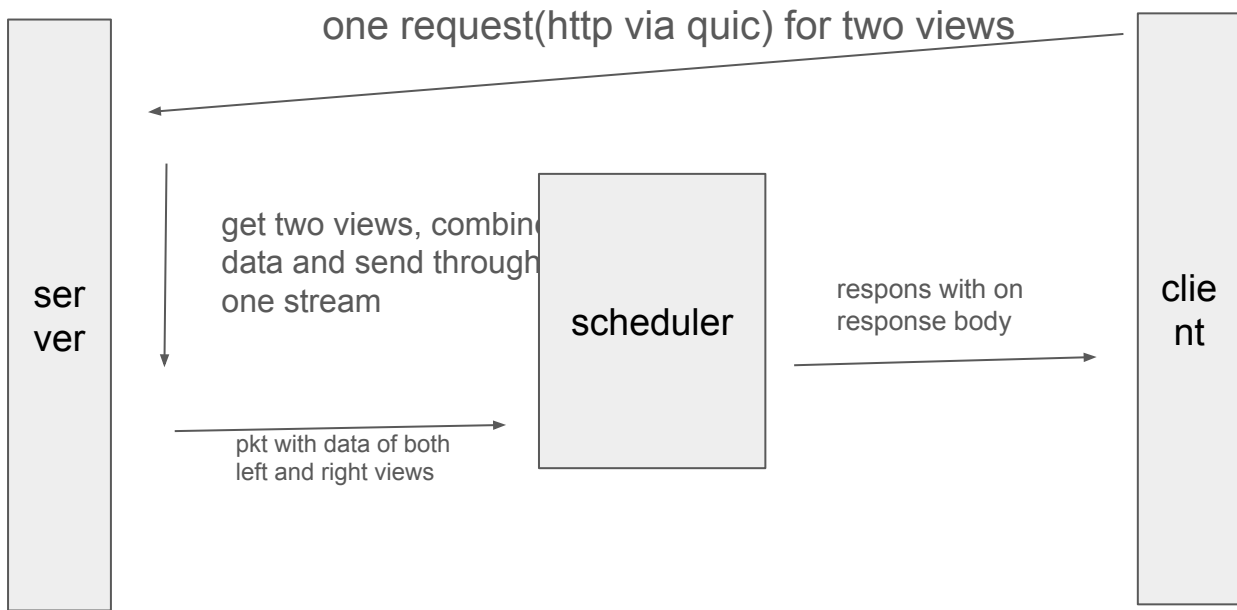
Zhewen Yang

Progress

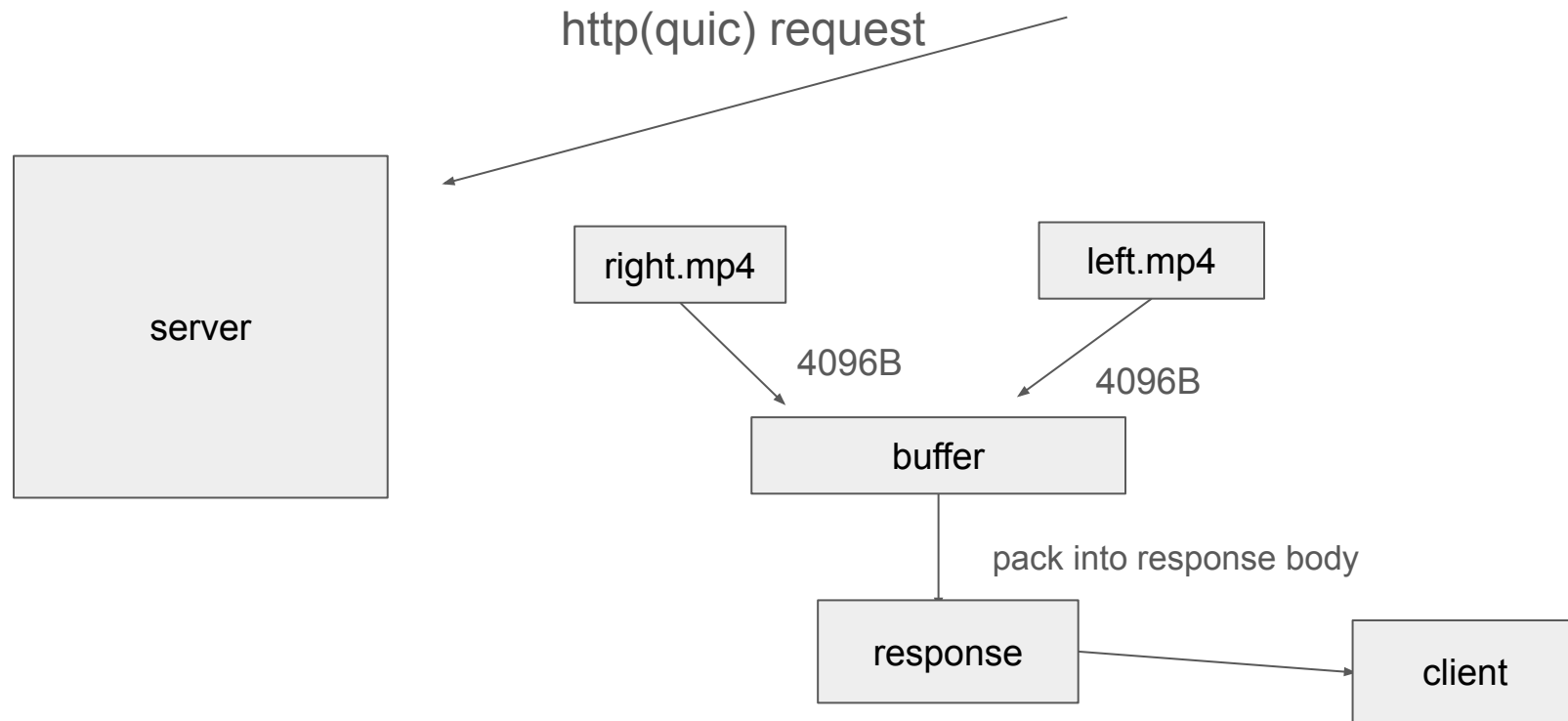
1. Modified http server and client able to transmit two views through mpquic
2. mp-quic modified to able to stream two views at the same time
3. have a first but terrible version of stream code (have already talked with Malleesh about this, doing improvement not)
4. Second version almost done.

First version

Goal: stream two views at the same time through mpquic



First version server



Problem

1. If mix in one body, quic have encrypt that can not access the payload of the pkt in the middle (scheduler) and we do not no the view that pkt belongs to scheduler can not separate the views in scheduler.
2. We can not access payload in transmission layer.
3. Client have hard time to separate two views from one payload body.

Second version (Almost done)

We keep in the application layer.

Use http3/quic multiplexing.

Instead of using one respond, we send two respond with two body in one same connection.

Transmission part is done, still modifying the scheduler, can be done shortly.

Potential problem: Two views might have difference in arriving time.

(for now the experience is in loopback, I have not test with network delay yet)

Initial results

two streams with same connection ID

```
Total video size: 58393488
2025/03/02 19:22:39 -> Sending packet 0x2b47 (36 bytes) for connection 122e896fffa4a1df on path 1, forward-secure
2025/03/02 19:22:39 -> &wire.StreamFrame{StreamID: 7, FinBit: true, Offset: 0x0, Data length: 0x0, Offset + Data length: 0x0}
2025/03/02 19:22:39 Info for stream 7 of 122e896fffa4a1df
2025/03/02 19:22:39 Path 0: sent 6 retrans 0 lost 0; rcv 8 rtt 1.181ms
2025/03/02 19:22:39 Path 1: sent 11079 retrans 2 lost 0; rcv 21279 rtt 77µs
2025/03/02 19:22:39 Path 3: sent 12504 retrans 4 lost 0; rcv 24590 rtt 639µs
2025/03/02 19:22:39 -> Sending packet 0x2b48 (36 bytes) for connection 122e896fffa4a1df on path 1, forward-secure
2025/03/02 19:22:39 -> &wire.StreamFrame{StreamID: 5, FinBit: true, Offset: 0x0, Data length: 0x0, Offset + Data length: 0x0}
2025/03/02 19:22:39 Info for stream 5 of 122e896fffa4a1df
2025/03/02 19:22:39 Path 0: sent 6 retrans 0 lost 0; rcv 8 rtt 1.181ms
2025/03/02 19:22:39 Path 1: sent 11080 retrans 2 lost 0; rcv 21279 rtt 77µs
received data 58393488
2025/03/02 19:22:39 Path 3: sent 12504 retrans 4 lost 0; rcv 24590 rtt 639µs
```

Initial results

Two views can be successfully streamed.

```
zhewen-yang@zhewen-yang-R06-Zephyrus-G16-GU605MY-GU605MY:~/work/sbd/mpquic-sbd$ python src/AStream/dist/client/dash_client.py
-m "https://localhost:4244/bb" -p 'basic' -q -mp -sp
2025-03-02 20:54:25,791 - dash_client.py:668 - CRITICAL - Starting Spatial Video Playback
2025-03-02 20:54:25,792 - dash_client.py:530 - INFO - The segments are stored in TEMP_MYLFra
2025-03-02 20:54:25,792 - dash_client.py:535 - INFO - Requesting spatial video from https://localhost:4244/bb_spatial.mp4
download_spatial_videoURL https://localhost:4244/bb_spatial.mp4
SAVING IN TEMP_MYLFra/bb_spatial.mp4
download_seg_SP_raw https://localhost:4244/bb_spatial.mp4
download_seg_SP <conn.GoString object at 0x754ee01de250>
2025/03/02 20:54:25 PROXY MODULE: created http2 QUIC client (MP: true, %s(int=0))
downloadsegmentFileURL: https://localhost:4244/bb_spatial.mp4Spatial video request detected in proxy module
Base name: https://localhost:4244/bb
Left video path: https://localhost:4244/bb_left.mp4
Right video path: https://localhost:4244/bb_right.mp4
Left video size: 29564778
Right video size: 28828710
Total video size: 58393488
recieved data 58393488
2025-03-02 20:54:26,203 - dash_client.py:546 - INFO - Downloaded spatial video https://localhost:4244/bb_spatial.mp4 in 0.4115
733700018609 seconds
```