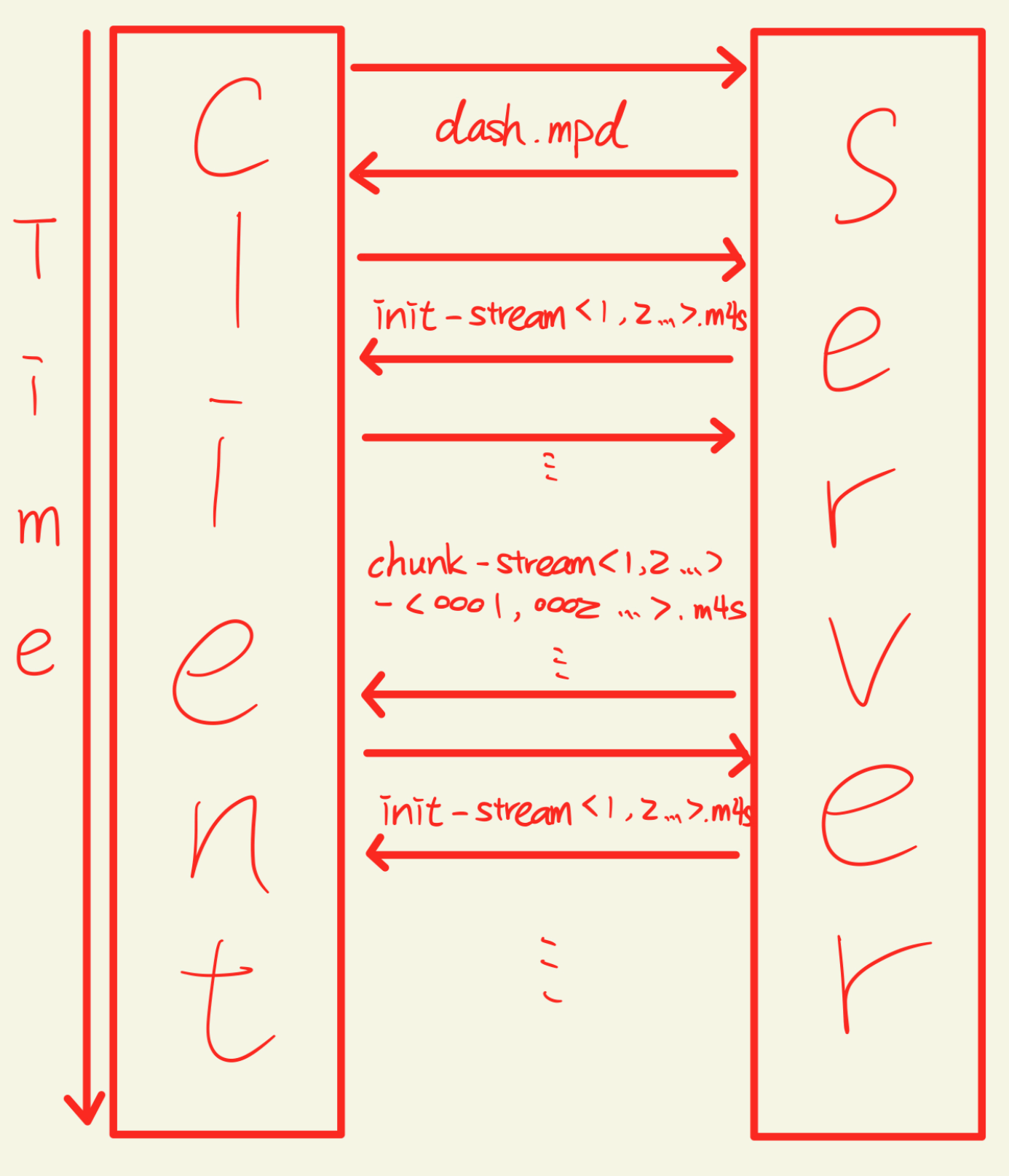


# Computer Network Report

I discuss how to write the code with 李沛宸, 林宸宇, 陳德維, and consult ChatGPT and Copilot.

1.



1. The client will first ask for the file "dash.mpd", which contains the information of video segments.

2. The client will ask for "init-stream.m4s", which contains the information of different resolution.
3. The client will ask for "chunk-stream-.m4s", this contains the chunk of video the client want.
4. Once the video is out of the buffer range or change resolution, it will return back to step 2.

## 2.

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Theoretical: MP4 is a single file, while DASH can divide original video into several small segments, which allows prefetching and adapting to network condition.

Practical: When dragging time axis to a time point, the entire file of MP4 still needs to be downloaded, which consume a large amount of traffic. On the other hand, DASH don't need to download the skipped segments, so the traffic usage is lower.

Ref: [https://support.huaweicloud.com/intl/en-us/mpc\\_faq/mpc\\_08\\_0027.html](https://support.huaweicloud.com/intl/en-us/mpc_faq/mpc_08_0027.html), ChatGPT

## 3.

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Workflow: When a client requests to access an endpoint that require authentication, the server will check whether the row "Authentication: Basic " exists in the HTTP request header. If yes and the account and password is correct, then the server can let client access the endpoint. Otherwise, send 401 Unauthorized with a row "WWW-Authenticate: Basic realm=""\r\n".

I don't think its secure enough because

1. Base64 encoding is easily reversible.
2. The entire authentication process occurs in plaintext, without encryption like HTTPS.
3. Lack of token expiration.

Alternative: OAuth 2.0

Ref: ChatGPT

## BONUS

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How to utilize git: I will push the code after I check it is correct.

Benefit: Since the codebase is large in this homework, it is very likely that you destroy the already finished part. With git, I can easily restore to the old version and check how I messed it up.

I think it is a better way to submit homework via GitHub Classroom because

1. I can utilize version control.
2. TAs can easily know our progress.
3. Online judge.