

Problem overview

We should design YouTube. The solution to this question can be applied to other interview questions like designing some random video sharing platforms (Netflix, Hulu, etc.)

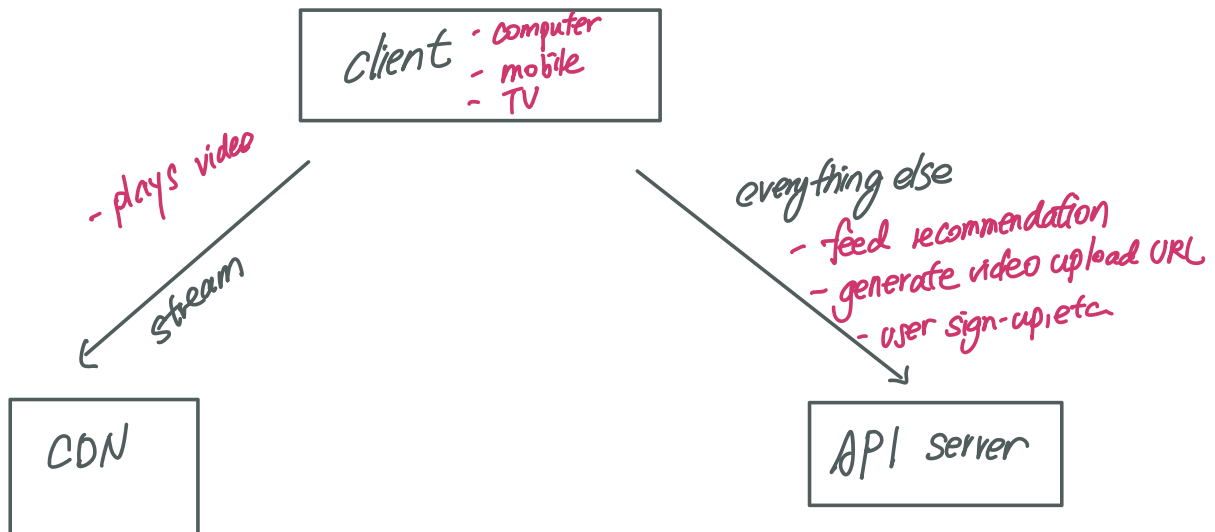
Back of envelope Estimation

The following estimations are based on estimations of

- Assume the product has 5 million daily active user
- User watch 5 videos per day
- 10% of users upload 1 video a day
- Average video size is 300 MB
- Total daily space needed = 5 million * 10% * 300MB = 150 TB (Upload amount)
- **CDN cost (CONTENT DELIVER NETWORK)**
 - When cloud CDN serves a video, you are charged for data transferred out of the CDN
 - Let us use Amazon's CDN CloudFront for cost estimation; average cost per GB is \$0.02. For simplicity, we only calculate the cost of video streaming
 - 5 million * 5 videos * 0.3GB * 0.02 = \$150,000 per day

Propose high-level design and get buy-in

- Assuming we leverage infrastructure:



We then narrow down the problem into two different flows:

1. The video uploading flow
2. The video streaming flow