1. Why are we not chunking the video into pieces on the ingestion side?

   The original video will be broken into chunks of equal size, and assigned to different worker nodes in the system. As these chunks are processed into different resolutions and codecs, we push the results to a distributed file system like S3.

   We are mainly interested in the hot chunks of the video (last 60 seconds) as most of our viewers want to view the video live.

2. What are the tradeoffs in building a CDN solution vs. hiring one?

   In this chapter, we decided to offload last mile delivery to existing CDN solutions.

   If we choose to build our own CDN solution, the advantages are:
   a. Customised as per requirements
   b. May be cheaper in the long run
   c. Higher control over it's execution, future extensions and internals

   The disadvantages are:
   a. High initial cost
   b. May be expensive as compared to available solutions
   c. Is not as well tested as existing solutions
   d. Existing solutions may improve and get better by the time our custom solution is launched

3. Can we use a map reduce architecture to process the video data pipelines?

   Please watch the "Design an analytics engine" chapter for more details.

   The response time of a map reduce system is dependent on how we choose to transmit data from one layer to another (pull vs. push vs. job scheduler), the level of fault tolerance in the system (intermediate tables), the frequency of jobs and the time spent waiting by a job to be accepted by a machine.

   In the case of live video, we can have machines process video by pushing results to the next map-reduce layer, and asynchronously storing intermediate results in file storage.