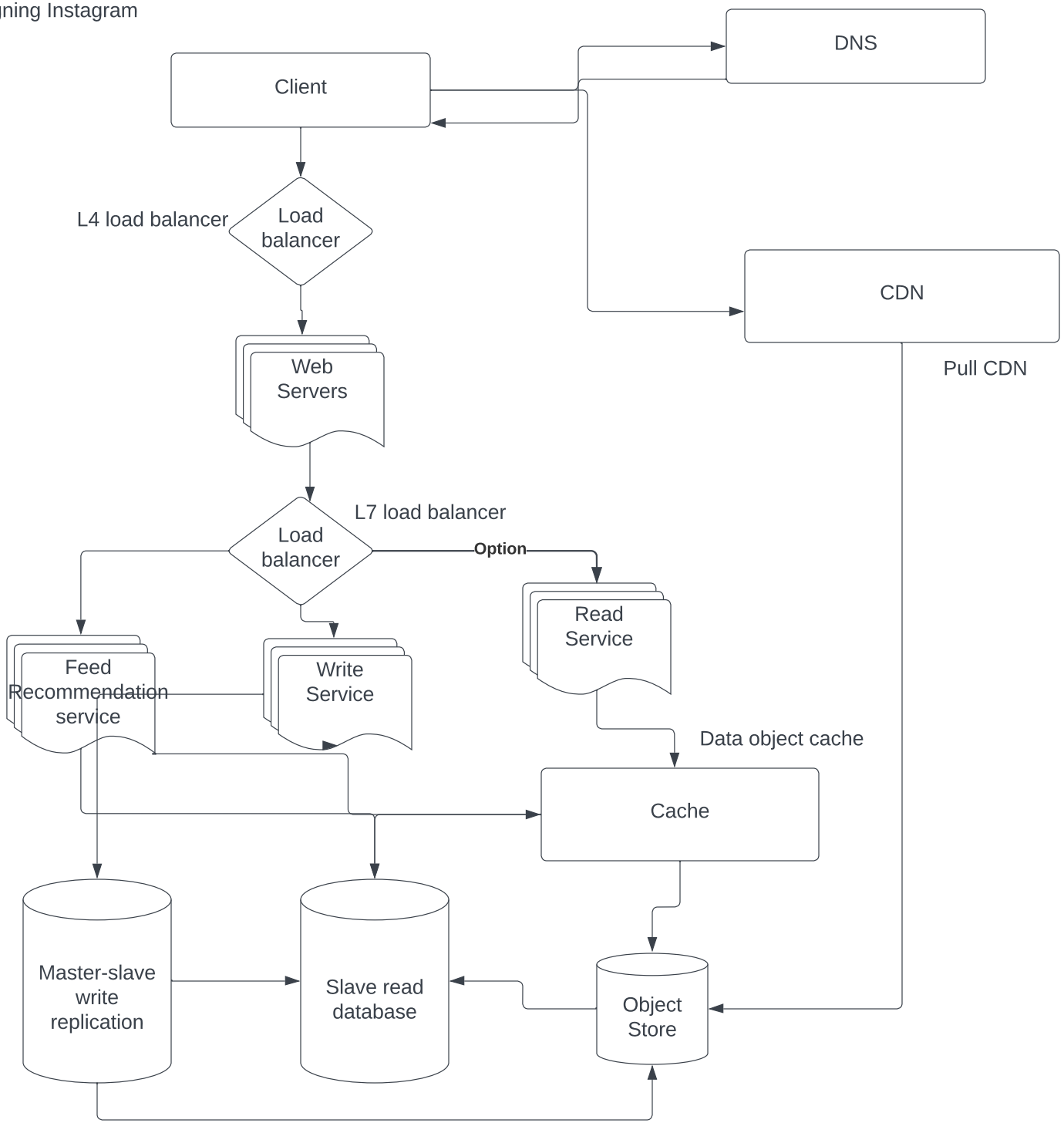
Designing Instagram



Use cases:

1. user uploads an image
2. user views an image
3. user follows another user

users: instagram users, businesses, instagram/fb internal users

use cases not covered:

1. from the admin side, tracking of usage

inputs:

- when user wants to see an image - submit user name, image id via url.
- when user wants to upload an image - image that is uploaded

outputs:

- image that is displayed

esitmations:

- number of users - 10 million.
- content uploaded per person - 5 MB per user.
- 10e7 * 5 * 2(twice a month) = 10e8
- 1000000000 ~ 100 TB of data per month
- throughput - maximum throughput.
- read/write ratio - read heavy.
- eventual consistency
- avaiilability - fail -over
- traffic - distirbuted unevenly/based on trends etc.

high level apis:

- vertical scaling - replicating all of the applications and datatabases
- micro services - breaking up the monolith. read service, write service, feed service
- database - master-slave replicated database
- caching service - at the object data level.
- CDN -
- DNS