System Design Master Template

Client

DNS

Load Balancer

Authentication
Authorization
Caching
Transformation
Rate Limiting
Reverse Proxy
Monitoring
Logging
Serverless Functions

Notification Service

API Gateway 1   API Gateway 2

CDN

Search Index (ElasticSearch)

Cache

Storage

Control

Data

Static Content

Notification Queue

Metadata Server

Block Server

Image/Thumbnail Storage

Video Storage

Search query

Read/write metadata

Distributed File Storage

Search Results Aggregators

Directory based partitioning

Cache (Redis/Memcached)

Video processing task

Feed Generation Queue

Shard Manager

Replication and Partitioning

Video Processing Service

Video Processing Queue

Feed Generation Service

Metadata DB   Metadata DB   Metadata DB

Worker   Worker   Worker

Data

Coordination Service (Zookeeper)

Distributed Logging

Distributed Tracing

Data Processing Systems

(Hadoop/MapReduce, Spark)

Reports Viewing & Data analysis

Distributed Scheduler

Output (Metrics, Reports, etc)

Database

Workers

Data Warehouse