

Design Spotify

Data

1 bn Sign Ups

100 Mn DAU

100Mn Songs

5 songs per day per User

Song

Storage 5Mb

Meta Data 1000B

User Meta 10KB

MATH :

QPS

$5 * 100 \text{ MN} / 24 * 60 * 60$ (86400)

$5 * 10^8 / 10^5$

5000 QPS

Song

Disk Size : $5 \text{ Mb} * 100 \text{ Mn} = 500 \text{ TB}$

replication 3X = 1.5 PB

User Meta

$1 \text{ Bn} * 10 \text{ KB} = 10 \text{ TB}$

Song Meta

$1000 * 100 \text{ Mn} = .1 \text{ Tb} = 100 \text{ GB}$

Meta data ~ 10TB

The diagram illustrates a multi-tier architecture. It starts with a **DNS** icon on the left. An arrow points from the DNS to a server farm icon, with the text **spotify.com** above the arrow and the IP address **192.10.203.121** below it. From the server farm, an arrow points to a **LOAD BALANCER** icon. Finally, an arrow points from the load balancer to a **CDN** icon on the right.

