



## Capacity Estimation & Constraints

Traffic  $\rightarrow$  Our System will be read heavy

100 : 1  
read : write

Assume 500M Url shortening per month

$$\begin{aligned} \text{read} &\Rightarrow 500M \times 100 = 500,000,000,000 \\ &= 50B \end{aligned}$$

$$\begin{aligned} \text{Query} &: 500M \times (30 \times 24 \times 3600) \\ &\sim 200/s \text{ (New URL Shortening)} \end{aligned}$$

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## Read Operations

$$200 \times 100 = 20,000 = 20k/s$$

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## Storage Estimation: 5 year Estimation

$$500M * 12 * 5$$

$$500 * 60$$

$$= 30000M \quad \{ 100 \text{ Million} = 1 \text{ Billion}$$

$$= 30B$$

Assume each object will be 500 bytes

$$30B * 500 \text{ byte}$$

$$15000B \text{ bytes}$$

$$= 15TB$$

## Band Width Assumption

500 bytes Ass

## Write Estimation

$$200 * 500 = 100000$$

$$= 100KB/S$$

Read: Total Outgoing Data

$$20k * 500 = \sim 10MB/S$$