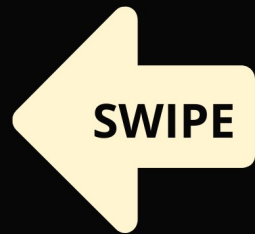




**#ASLI ENGINEERING**

# How Giphy uses CDN to serve millions to GIFs



**BY**

**ARPIT BHAYANI**

# How Giphy uses CDN to serve millions of GIFs

Giphy: host, serve and search GIFs

10 Billion content served every day

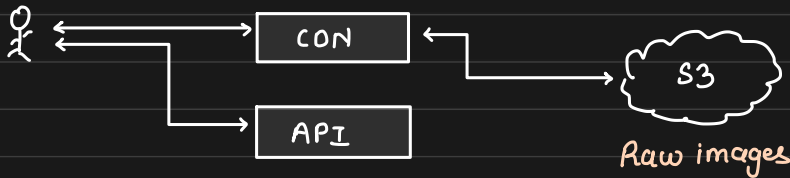
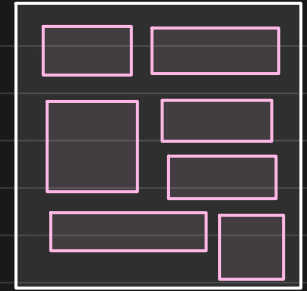
Serving API is easy and efficient

But the real challenge is serving Images!!

↳ because API responses are short

↳ because images/videos are large

Hence to serve them efficiently we need CDN!!



What Giphy caches on CDN?

Media content - images, videos

Because responses do not change often

Search and Discover API responses

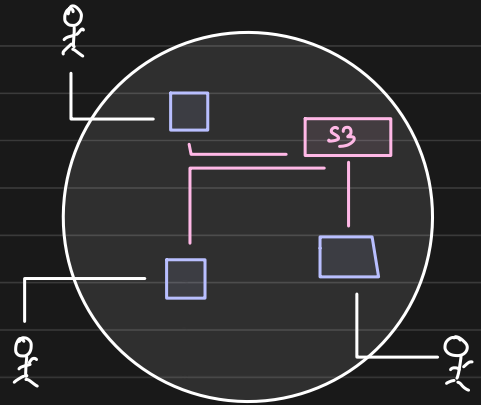
/v1/gifs/trending

/v1/search?q=funny

Why CDN?

- geographical nearness

content is served from the edge servers near to the user.

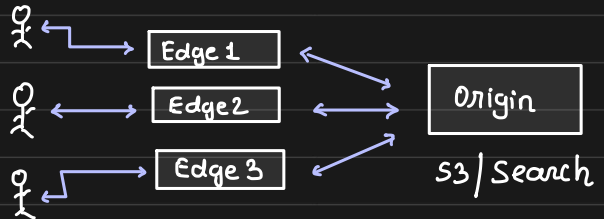


Drawback of single layer

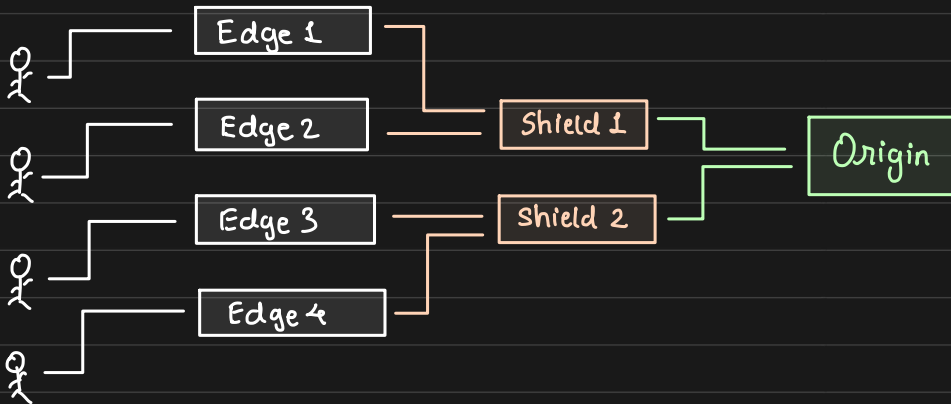
Each edge server has its own cache.

When content goes viral,

- multiple edge gets request
- cache miss
- load on origin



Solution: Multi-layer CDN



## Route specific TTL

Not all content is cached for the same duration

/v1/gifs/trending → cached for smaller duration

/gif/12345.gif → cached for longer duration

## Response configured caching

Response headers `max-age` and `s-maxage`

can tell CDN the duration of caching for specific Origin response

## Cache invalidation by grouping

- invalidate cached API responses that contains a specific GIF
- invalidate all cached API responses from an API key

↳ Giphy provides SDK and API support

- invalidate cached API responses where query contains word 'w'

↳ because something new came up

all of this is achieved through Surrogate keys