

26

January  
Thursday  
5th Week • 026-339

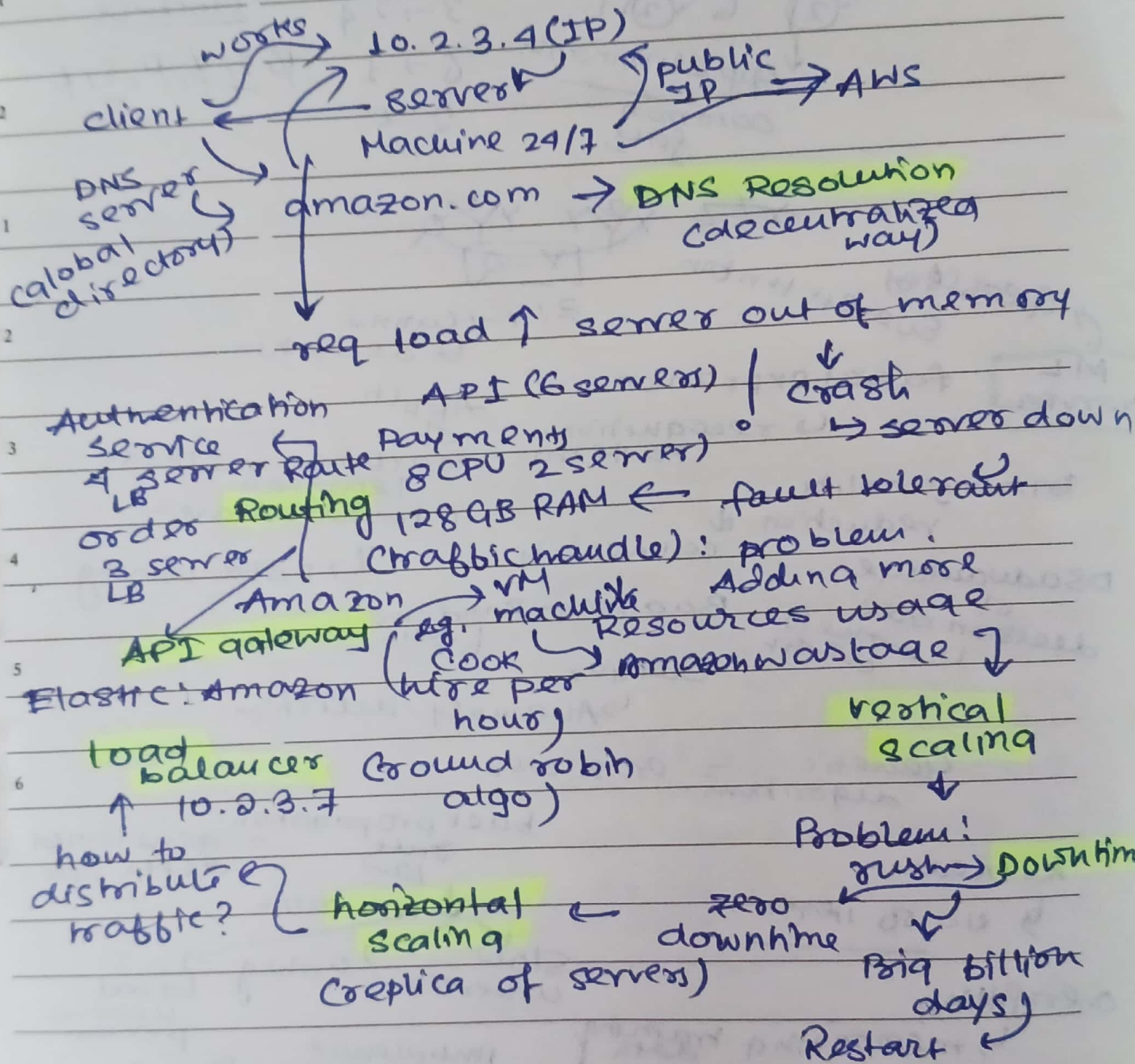
2023

JANUARY						
M	T	W	T	F	S	S
						1
						2
						3
						4
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						7
						8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

20/7/25

## System Design

Amazon (e-commerce app) → traffic = massive  
→ global operation level



We can be happy with little and miserable with much.

# 31

January

Tuesday

6th Week • 031-334

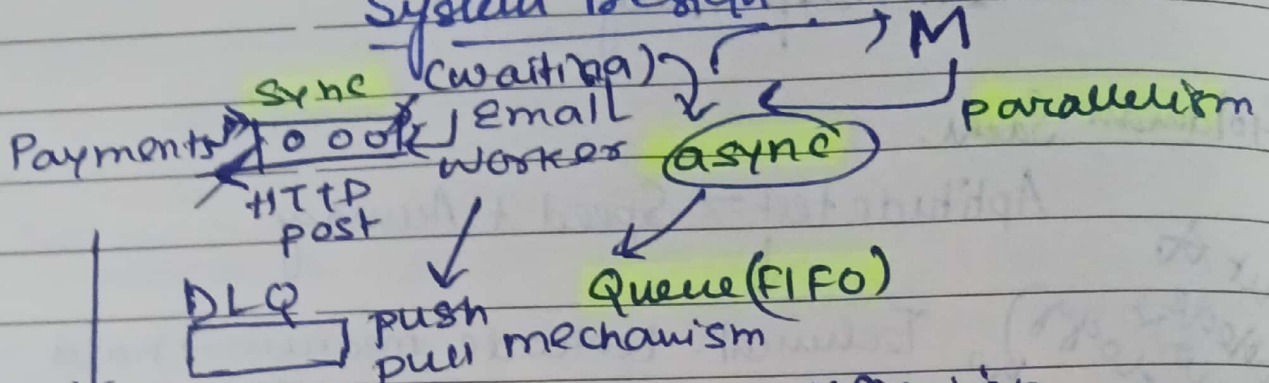
2023

JANUARY

M	T	W	T	F	S	S	M	T	W	T	F	S	S
						1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16	17	18	19	20	21	22
23	24	25	26	27	28	29	30	31					

26/7/21

## System Design



1 event: pub/sub module → Simple notification system (conts)

Event driven architecture

(No acknowledgement)

2 Load Balancer (DDOS) → recover

Rate limiting

Fan-out mechanism

multiple users.

Leaky bucket  
Token bucket

3 Single database overwhelm!

1. optimiz<sup>2</sup> → Read Replica (data delay)  
insert → master DB

2. cache → optim + the no of DB ↓

CDN → Content Delivery Network (cloud front)

nearest cloud ip

machine deploy across world → routing to Load Balancer.

address any case

edge computing = cache

Never look back except to learn.

load on server ↓



MARCH

2023

M	T	W	T	F	S	S	M	T	W	T	F	S	S
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13	14	15	16	17	18	19	20	21	22	23	24	25	26
27	28	29	30	31									

February

Thursday

6th Week • 033-332

02

29/07/25

## System Design

Netflix

traffic

Pre-scale  $\leftarrow$  defend

Burst traffic  $\rightarrow$  spike

(policy)  $\approx$  condition

scaling

adding + removing

Youtube: video streaming platform

Netflix: "

Disruptive "



live streaming

(scale down: moves)

cricket  $\rightarrow$  predict the traffic

Cold start

AWS: Lambda (serverless)

$\rightarrow$  JS

URL  $\rightarrow$  public



1 kb per each req  $\rightarrow$  lightweight func.

Pros: cheap

Cons:

DDoS

vendor lock-in

No configuration + stateless

have more than thou showest, speak less than thou knowest.



MARCH

2023

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February

Saturday

6th Week • 035-330

04

1/8/25

## System Design

Is scaling easy? ✗

80-40 1TB package use → Heavy environment setup

↓  
virtualization OS: deploy → no dependency  
lightweight VM → heavy tuning

scaling ✓ become easier  
↓  
containerization  
↓  
OS: host machine overhead?

Rolling updates  
↓  
Learning based project from scratch  
↓  
Google borg  
↓  
manage massive data cluster  
↓  
donate: cloud native computing

Foundation: Kubernetes

Sunday - 05

Hope is the pillar that holds up the world.

