DESIGN TINY URL

Questions :
How many digits of Short URL Needed ?
What would be the read to write ratio
Retention Time
Latency of the system

Functional Requirements :
1. Shorl Url Generation
2. Redirection
3.Delete / Update
4.Expiry Time

Non Functional Requirements :
1.Scalability
2.Availabilty
3.Latency
4.Readability
5.URL Generation Unpredictable

Back Of the Envelope Calculations

1. 200 M DAU / Month
2.Read : Write = 100 : 1
3. Each Long Url size is 500 B
4.Short Url size = www.tinyurl/1234567 -> 22B

Storage : 200 Mn * 12 Month * 500 B = 1.2 TB / year
5 years -> 6 TB

No Of Servers -> 100 M / 8000 = 12500 servers

QPS. = 200Mn / 30 * 86400 ~ 75 Urls/sec --> write
Reads => 100* write = 100 *75 =7500 urls

Speed of Data -> Read -> 75 * 500 B * 8bits - 300 Kbps
-> Write -> 100 * read = 30 Mbps

Cache -> 80/20 rule -> (20 /100) * 200 Mn * 500 B
= 66 Mb of cache every day

API :
1. Post (long_URL)
2.Get(short_URL)
3.PUT(Long_url)
4.Delete(Long_URL)

Genration
A. UUID
B SHA -1
C CDCR5

D. Base 10
E. Base 63
F. Base 58

Designed By Diva

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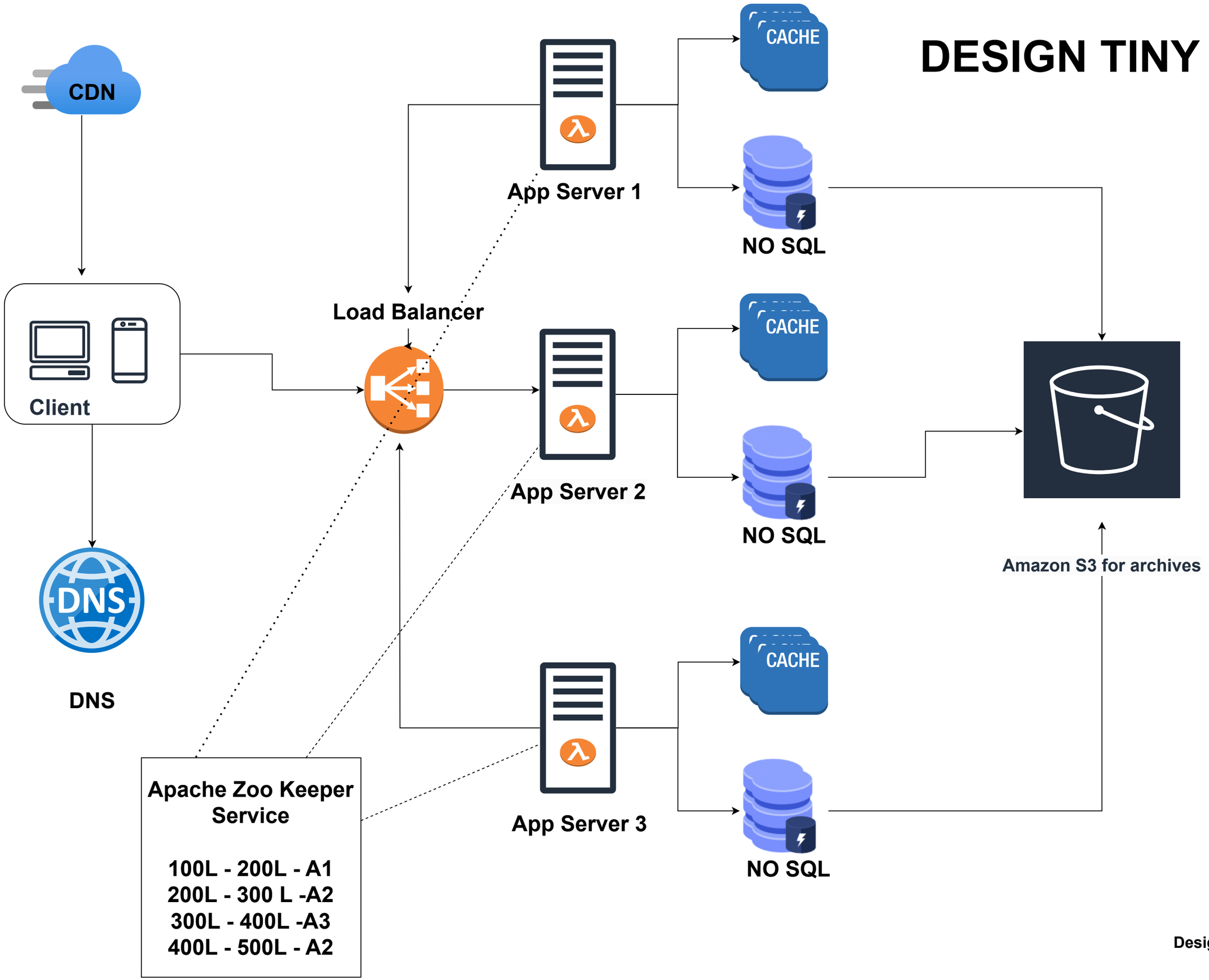

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