



#ASLI ENGINEERING

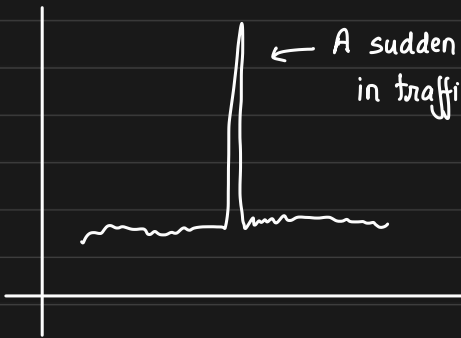
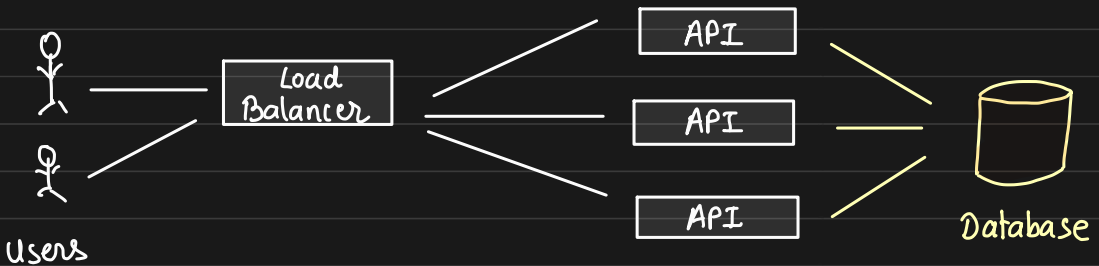
How to handle database outages?



BY

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Handling Common Database Outages



← A sudden spike
in traffic

→ System could not handle it
→ Everything is slow or not working

When your database goes down
Your **priority** is to get thing up back!

As soon as possible

What do you mean by **Database is down**?

- ↳ Queries taking too long to execute
- ↳ API servers are unable to create new connections
- ↳ Database server continuously crashing

Do exhaustive monitoring

Short term solutions

Connections maxed out

↳ Kill the queries that are running from a long time

↳ Quickly scale up your database

Freeing up connections

↳ very quick and hacky fix

CPU operating at 100%

↳ Kill the queries that are running from a long time

↳ If it was due to a recent deployment → revert quickly

↳ Reboot the machine ... it always works!

↳ Quickly scale up your database

Freeing up CPU

↳ Only when you see consistent usage otherwise you are taking an unnecessary big downtime.

long term solutions

Queries should not be scanning whole table

- ↳ Ensure right set of indexes are in-place
- ↳ Check the database configuration parameters

↳ There are some params which if improperly configured might choke your DB

eg: `innodb_cmp_per_index_enabled`

eg: `innodb_commit_concurrency`

eg: `innodb_flush_log_at_trx_commit`

eg: `innodb_flush_method`

eg: `innodb_lock_wait_timeout`

- ↳ Check for notorious N+1 queries

↳ Enable query logs & see check for N+1 problem

eg: Blogs → Author ID

Happens when we use ORM with resolvers

```
SELECT * FROM BLOGS  
LIMIT 10;
```

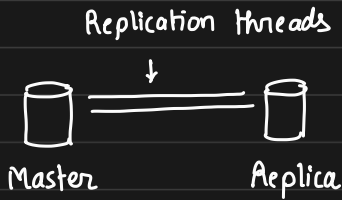
```
SELECT * FROM AUTHOR  
WHERE ID = ?
```

FETCH 10 recent blogs

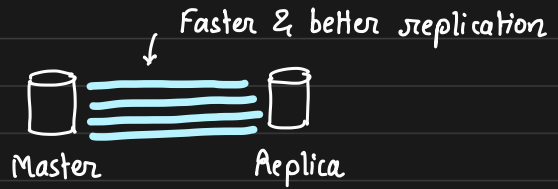
For each blog fetch the AUTHOR information

↳ Upgrade Database to newer version

eg: MySQL 8 has faster ingestion rate for replication,
so it can ingest replication data faster

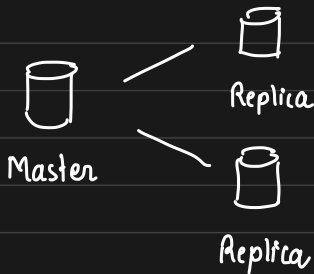


MySQL 5.x

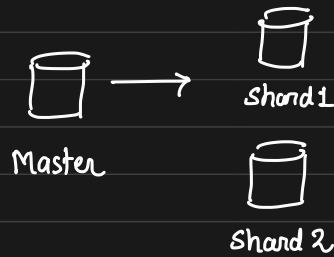


MySQL 8

↳ Evaluate need of Horizontal Scaling



Supporting more READ load



Supporting more WRITE load