

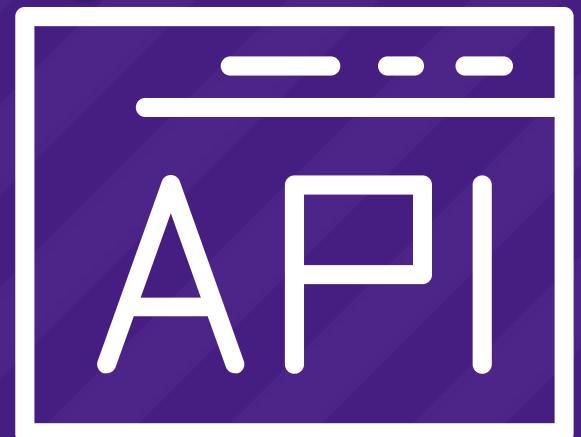


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# 6 ways to 10x your API Speed

# *System Design*

SWIPE →



# Step 1

**First of all you need to identify what are the bottle necks that are decreasing your api's performance such as:**

- Inefficient and complex code
- Inadequate caching mechanism
- Ineffecient DB queries.

# #01

## Caching

If you have any endpoint which is being frequently accessed with same parameters, you can cache its response using redis to avoid unnecessary database queries.

## #02

## Connection Pooling

In connection pooling we maintain a pool of connections to execute our database calls, rather than opening a new connection everytime we need a database operation. opening new connection everytime is a very expensive operation which can overwhelm database

# #03

## Avoid N+1 query Problem

Avoid N+1 query problem, which is fetching a record then fetching its associations one by one, rather than use eager loading where it is necessary to fetch associations of a record in one db call, so 1 db call for record and one for associations

# #04

## Pagination

If your API response is very big which may slow down your response time, divide your response in chunks to fetch them page wise separately using limit and offset in database.

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# #05

## Response Compression

If your API response is large, you should consider compressing your response to make it lighter, then client will decompress the response to use it.

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# #06

## JSON Serialization

Fast JSON serialization libraries can help you speed up your api responses by decreasing the time of data conversion to JSON before sending the response

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*Thanks*



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