Top caching strategies

ALEX XU
MAR 4, 2022

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What are the top caching strategies?
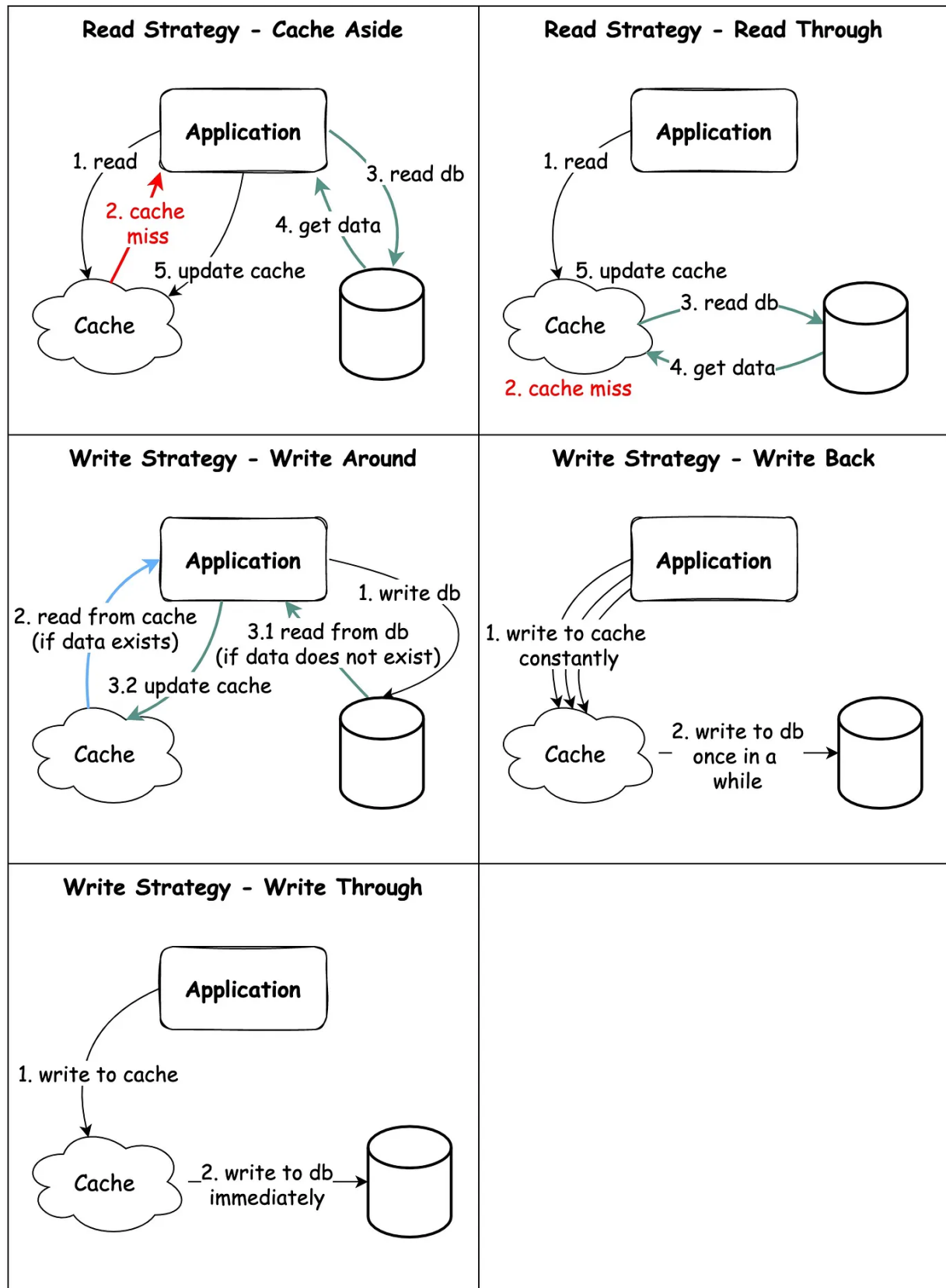
Read data from the system:
- ◆ Cache aside
- ◆ Read through

Write data to the system:
- ◆ Write around
- ◆ Write back
- ◆ Write through

The diagram below illustrates how those 5 strategies work. Some of the caching strategies can be used together.

Top caching strategies

ByteByteGo

Read Strategy - Cache Aside

Application

1. read

2. cache miss

Cache

3. read db

4. get data

5. update cache

Read Strategy - Read Through

Application

1. read

5. update cache

Cache

2. cache miss

3. read db

4. get data

Write Strategy - Write Around

Application

1. write db

2. read from cache
(if data exists)

3.1 read from db
(if data does not exist)

3.2 update cache

Cache

Write Strategy - Write Back

Application

1. write to cache
constantly

Cache

2. write to db
once in a
while

Write Strategy - Write Through

Application

1. write to cache

Cache

2. write to db
immediately

I left out a lot of details as that will make the post very long. Feel free to leave a comment so we can learn from each other.

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SDI-vol1: https://amzn.to/3tK0qQn

SDI-vol2: https://amzn.to/37ZisW9

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6 Comments

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Nic   Jun 28

I think the diagram is just missing the pros and cons of each strategy.

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Akshay Baura   Jul 1, 2022

Write-through: data is written in cache & DB; I/O completion is confirmed only when data is written in both places

Write-around: data is written in DB only; I/O completion is confirmed when data is written in DB

Write-back: data is written in cache first; I/O completion is confirmed when data is written in cache; data is written to DB asynchronously (background job) and does not block the request from being processed

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