

# ESBD 4

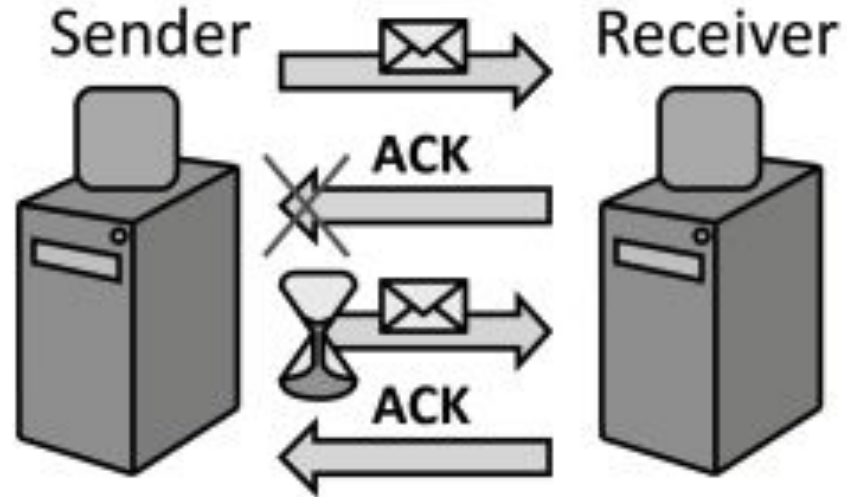
## *Sistemas Distribuídos*



INFORMAÇÃO,  
TECNOLOGIA  
& INOVAÇÃO

# Arquiteturas Orientadas a Eventos

## At-Least-Once Execution



# Arquiteturas Orientadas a Eventos

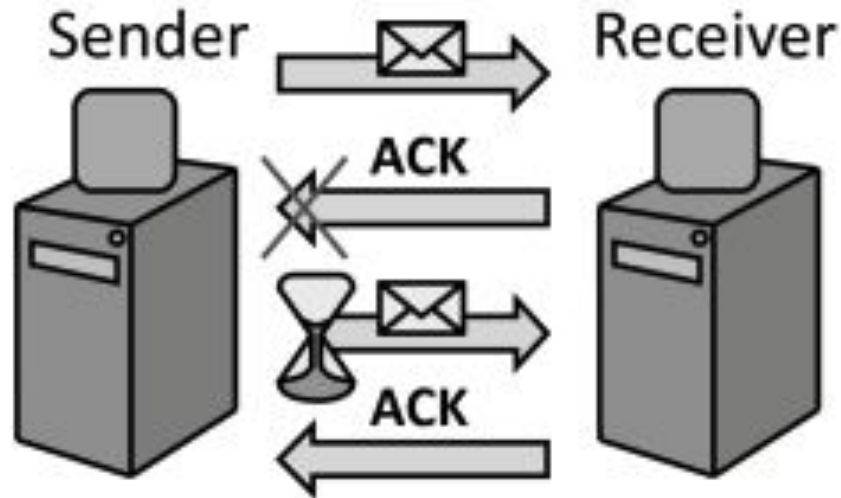
At-Least-Once Execution

E para nos aproximarmos de  
Exactly-Once Execution?



+

Message ID (EPOCH number)



# Arquiteturas Orientadas a Eventos

At-Least-Once Execution

E para nos aproximarmos de  
Exactly-Once Execution?

```
Dispatcher

# Olhar Código 2/semantics/dealer
```

```
Worker

def main():
    m = receber_workload()

    if ja_executada(m.epoch):
        return m.epoch

    work(m)

    marcar_executada(m.epoch)

    return m.epoch
```

# Arquiteturas Orientadas a Eventos

At-Least-Once Execution

E para nos aproximarmos de  
Exactly-Once Execution?

```
Dispatcher

sent_msgs = []
msgs = []

def dispatcher_thread():
    while True:
        m = msgs.pop()
        send(m)
        sent_msgs.append(m)

def reciever_thread():
    while True:
        m = recieve()
        rcvd_msgs.append(m)

def comparer_thread():
    while True:
        for msg in sent_msgs:
            if msg.timeout:
                sent_msgs.remove(msg)
                msgs.append(msg)
```



# Arquiteturas Orientadas a Eventos

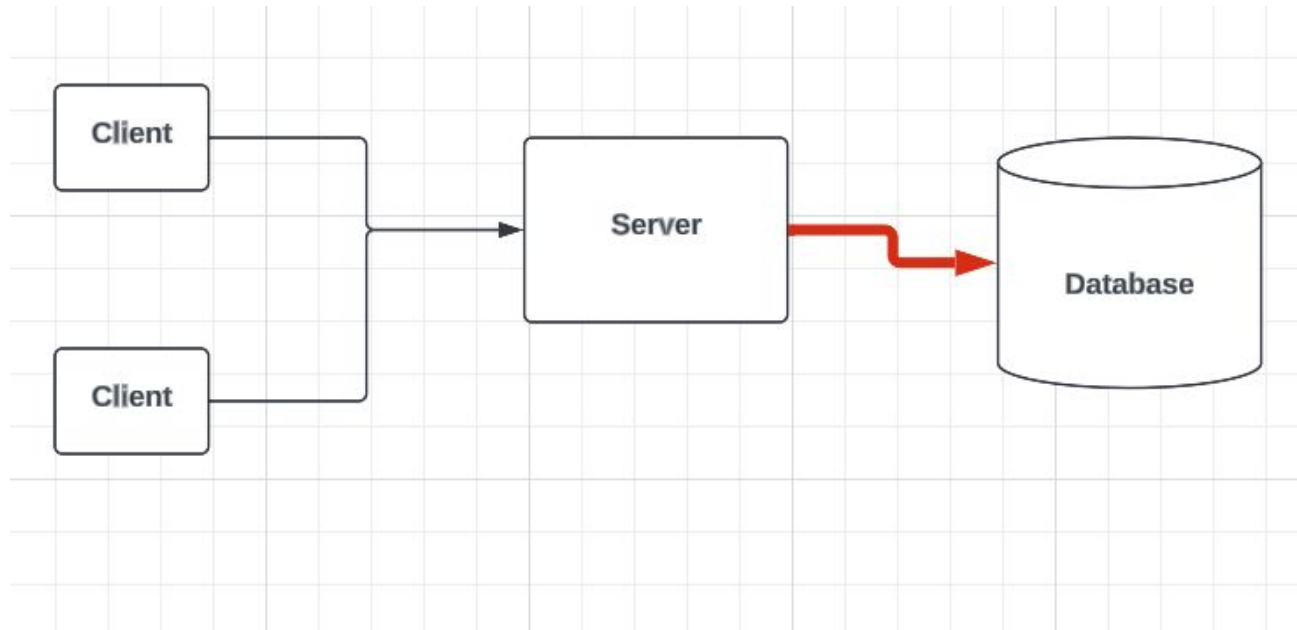
At-Most-Once Execution

Garante **uma única** entrega de workload



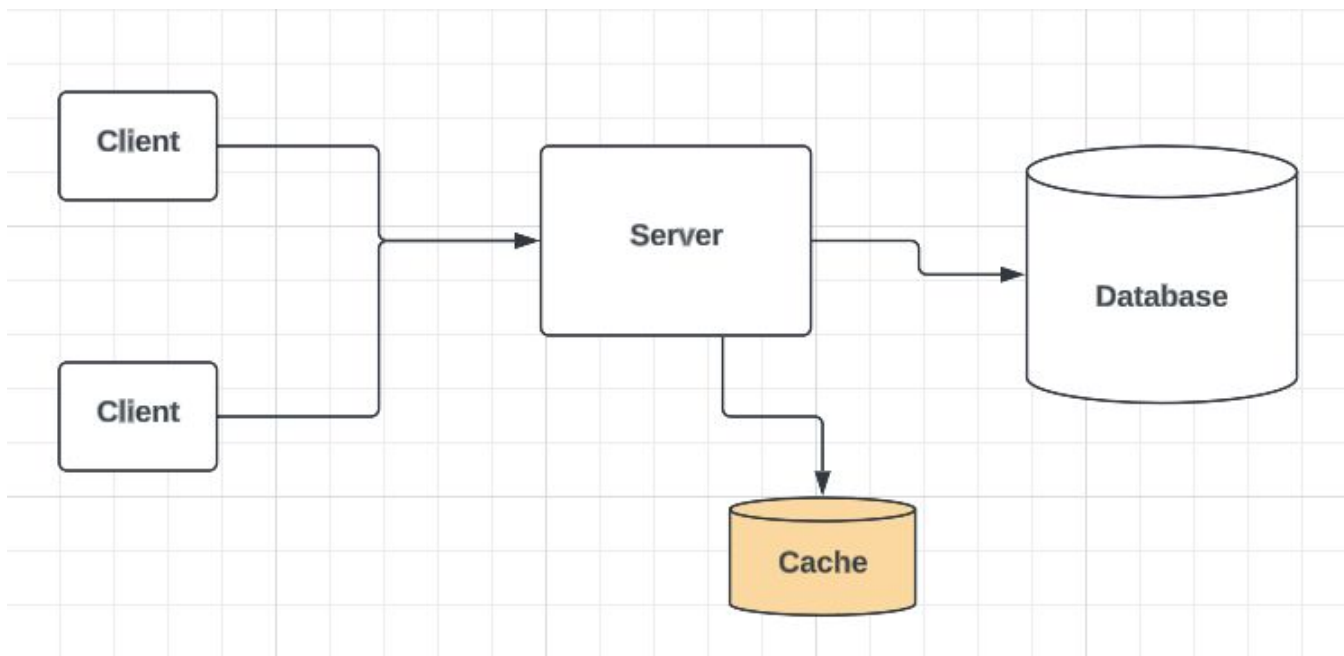
# Coerência de Dados

## Acesso à dados: Bancos Convencionais



# Coerência de Dados

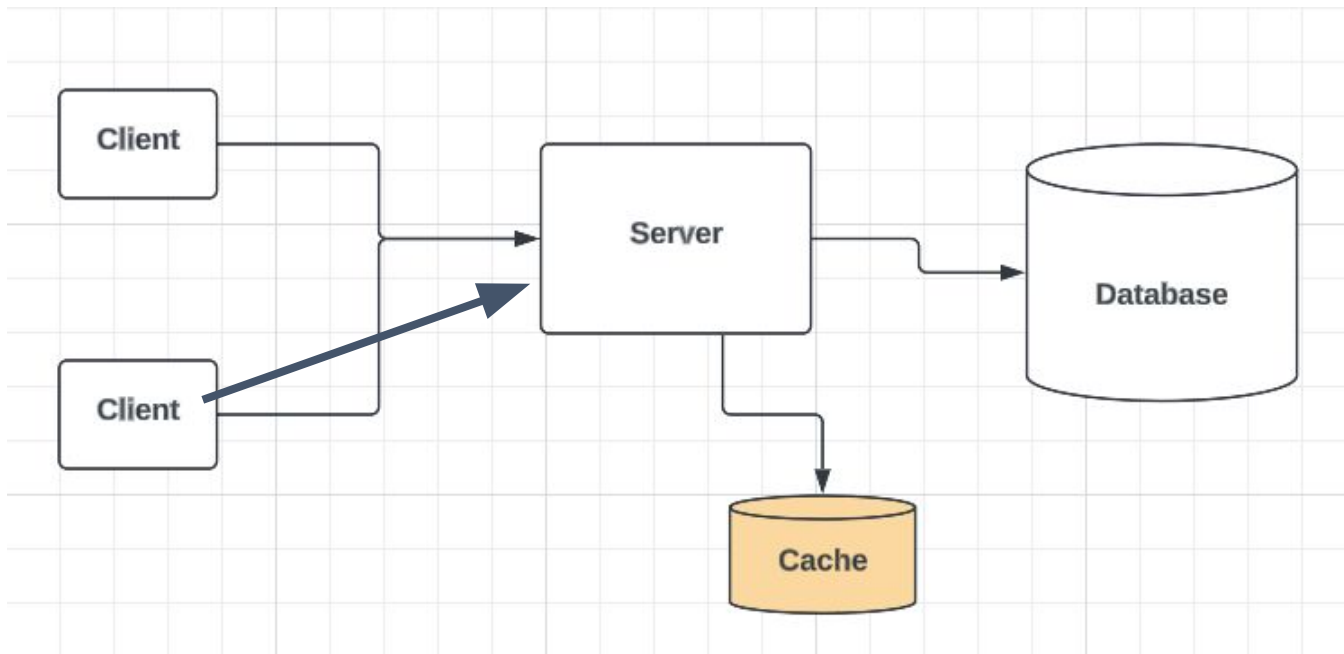
Acesso à dados: Utilizando um Cache





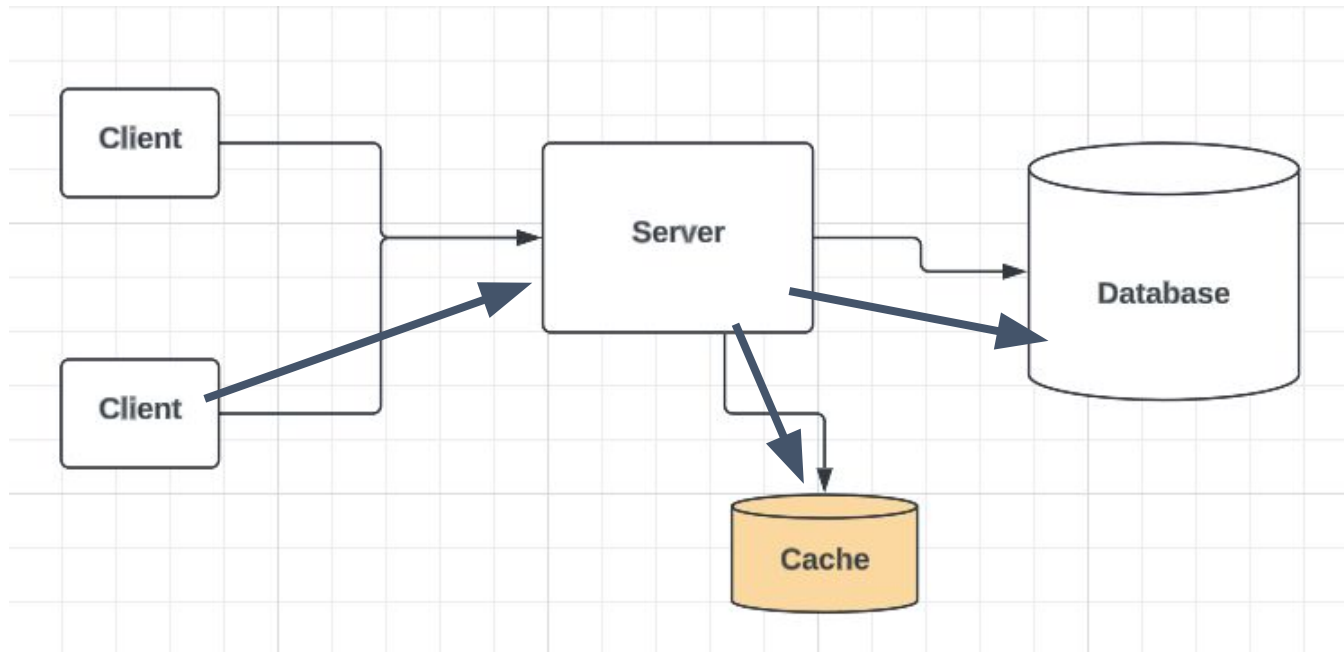
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Acesso à dados: Utilizando um Cache



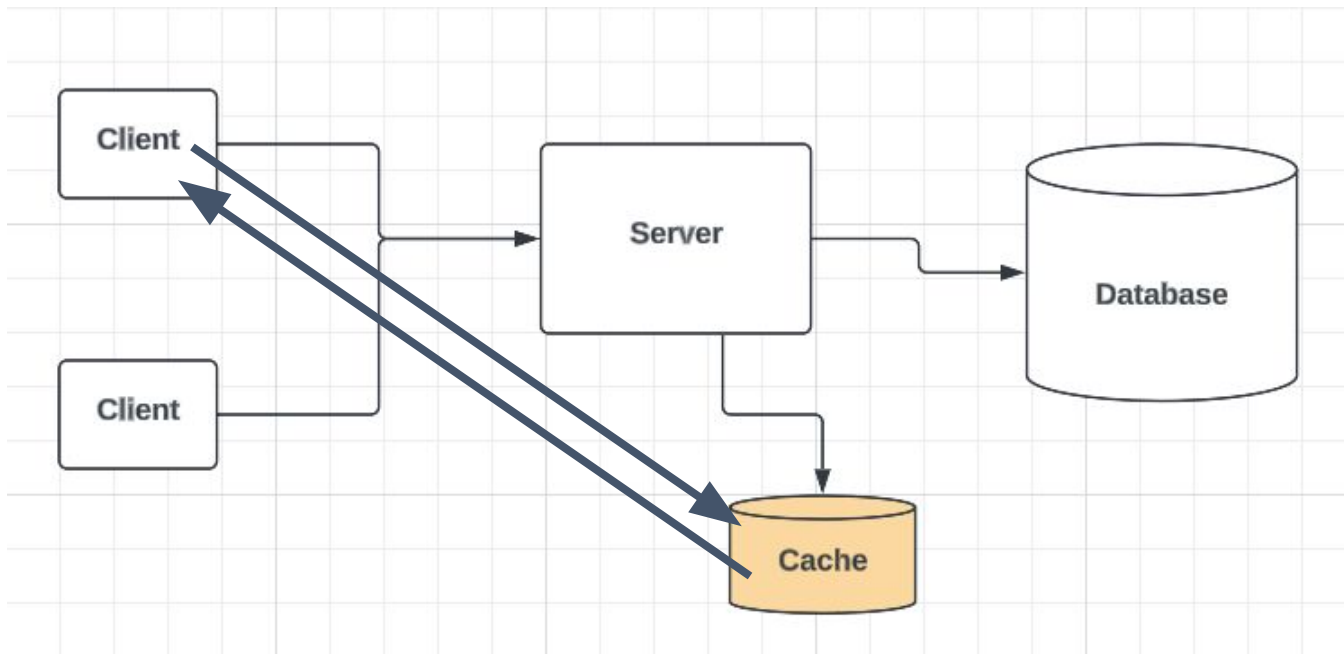
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Acesso à dados: Utilizando um Cache



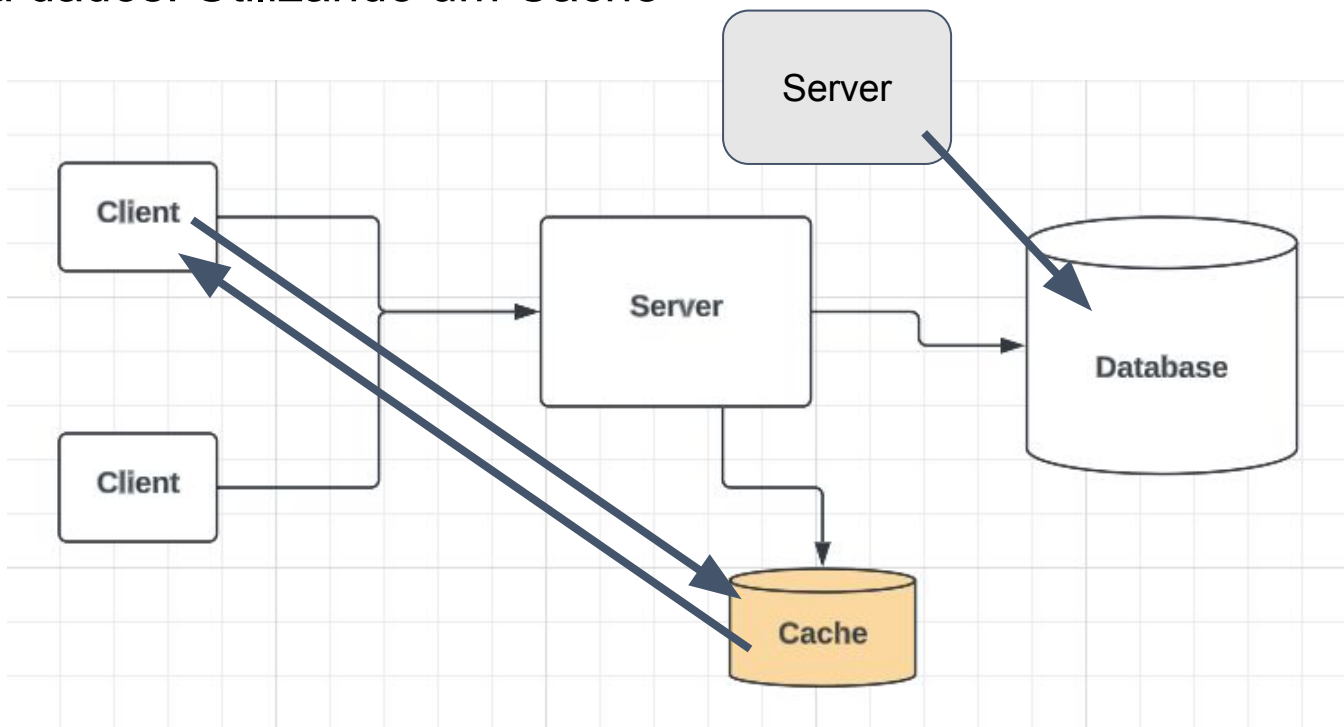
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Acesso à dados: Utilizando um Cache



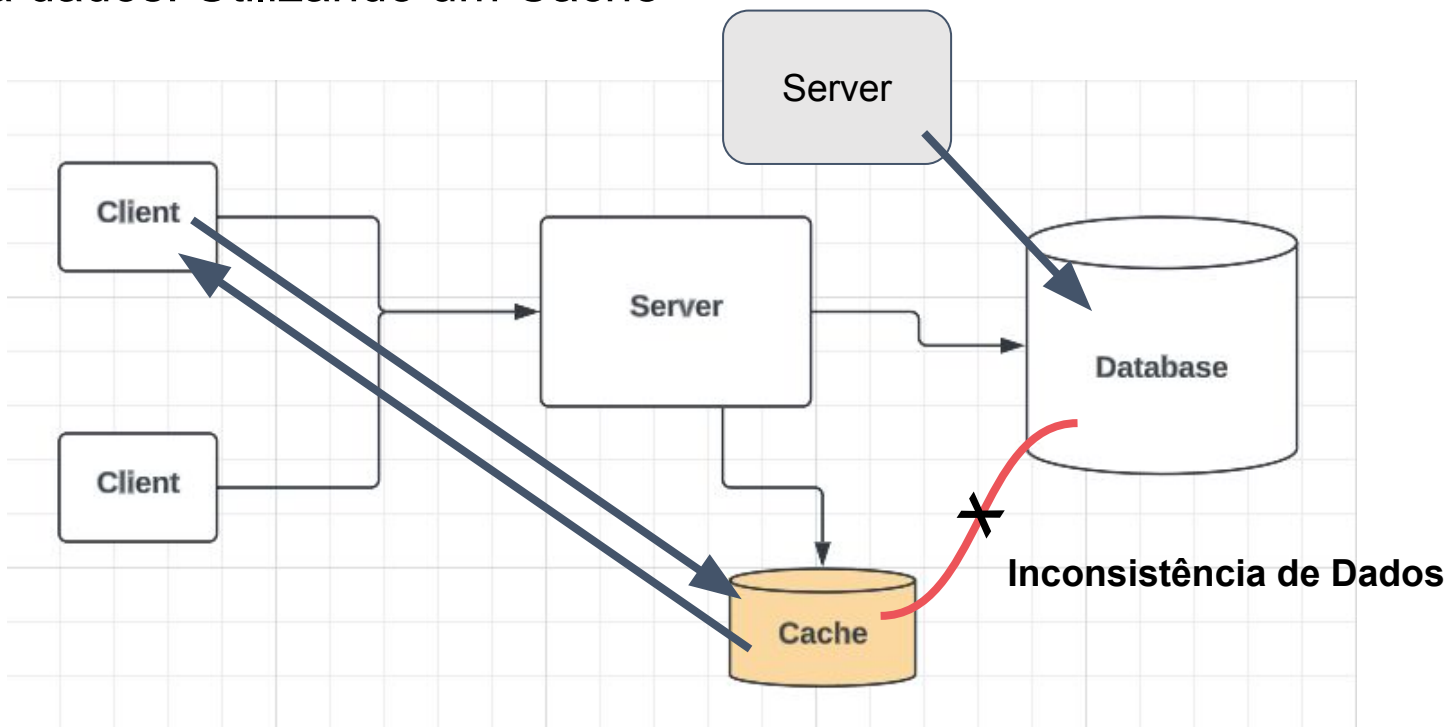
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Acesso à dados: Utilizando um Cache



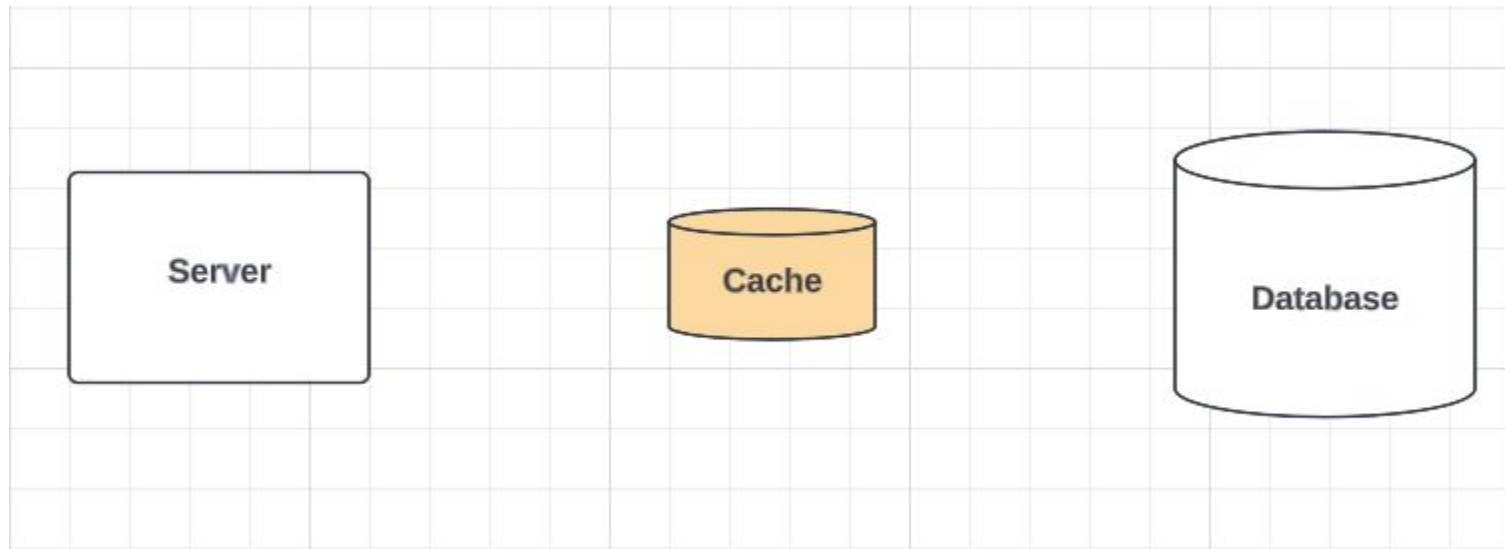
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Acesso à dados: Utilizando um Cache



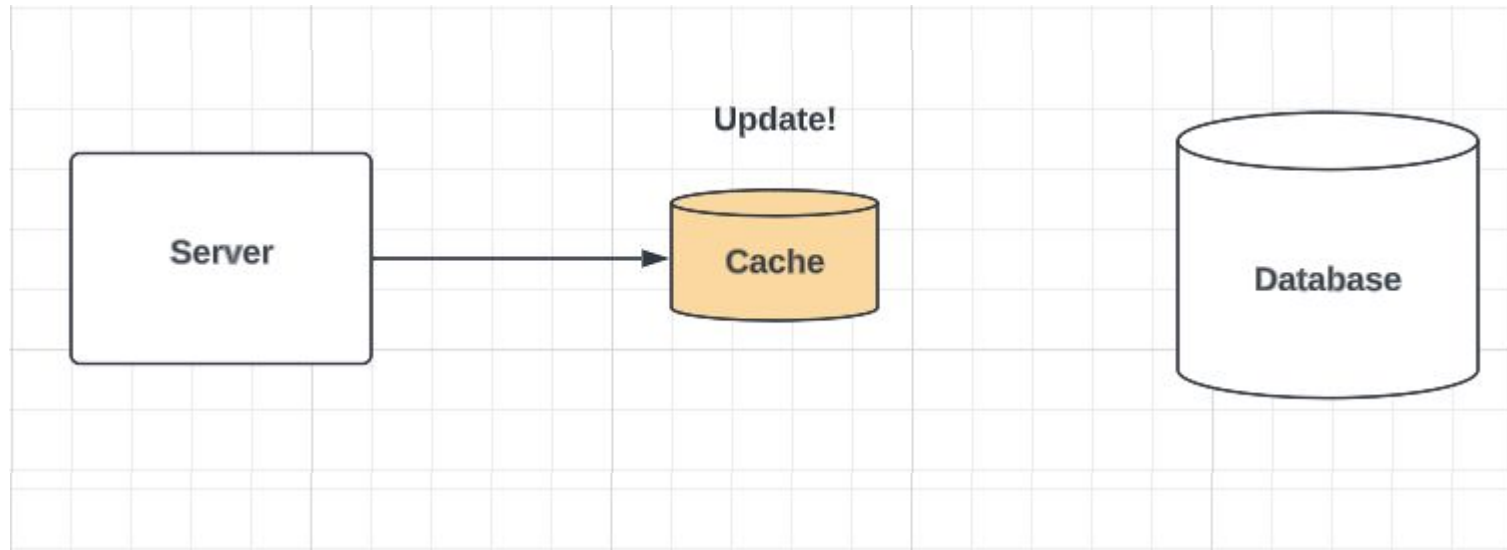
# Coerência de Dados

## Write-Through



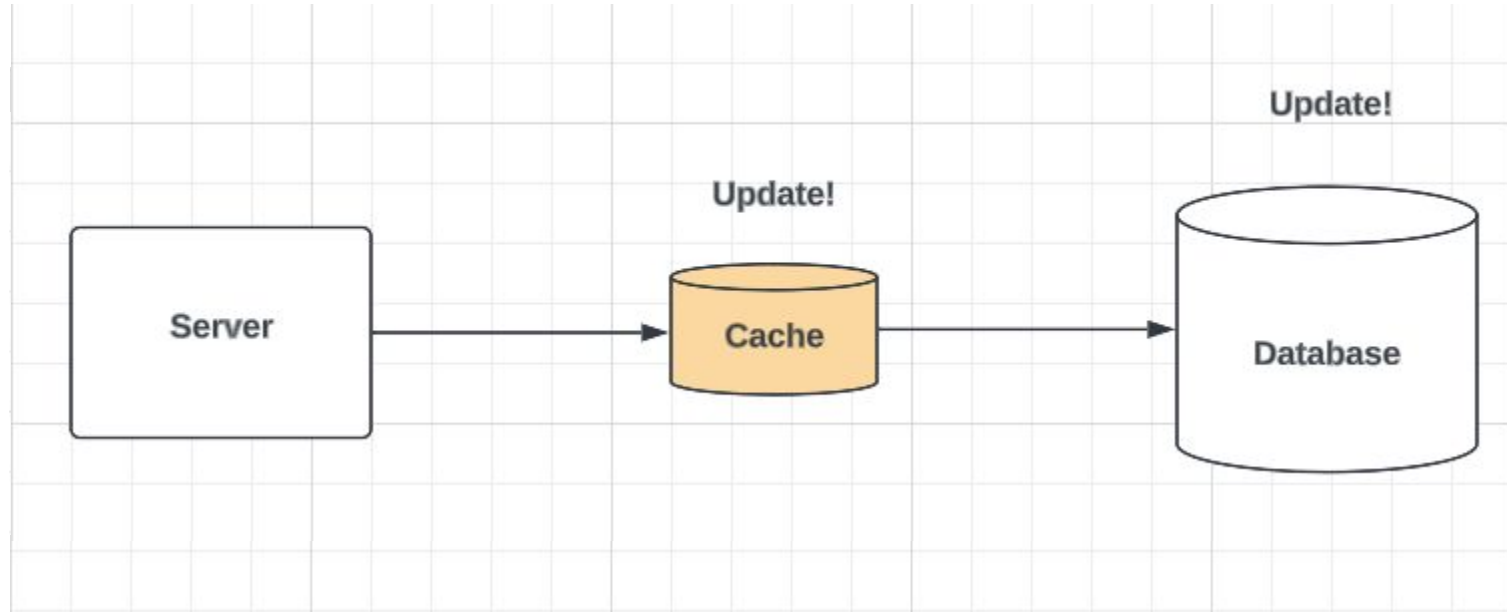
# Coerência de Dados

## Write-Through



# Coerência de Dados

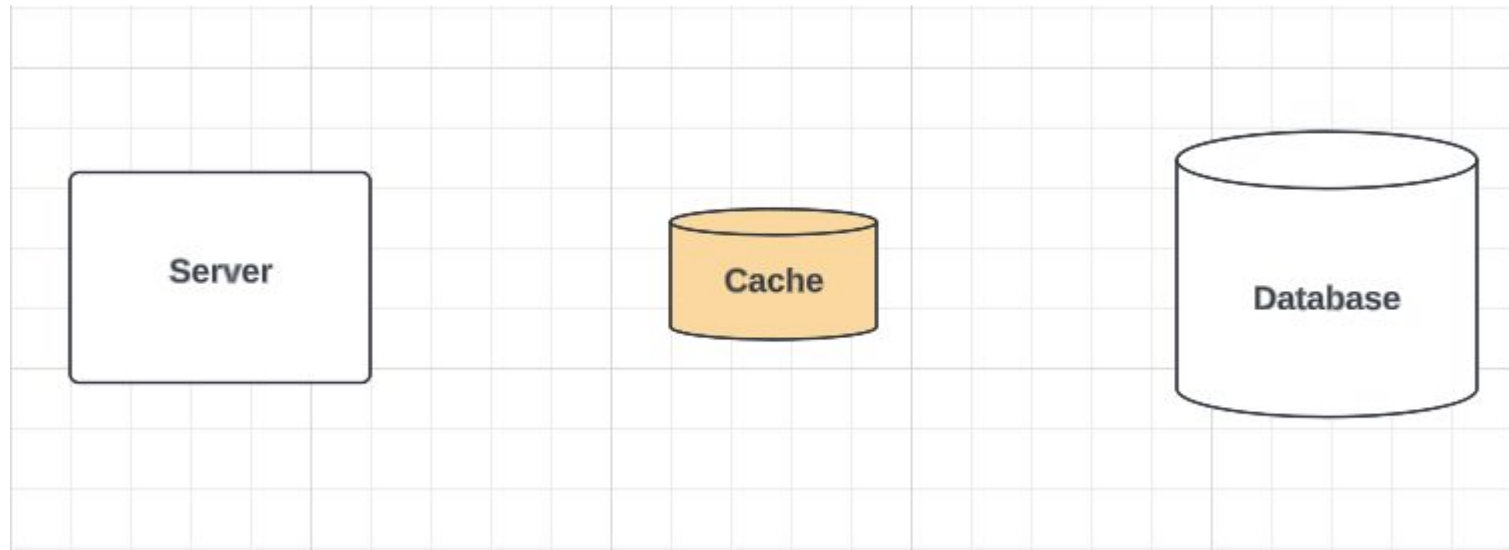
## Write-Through





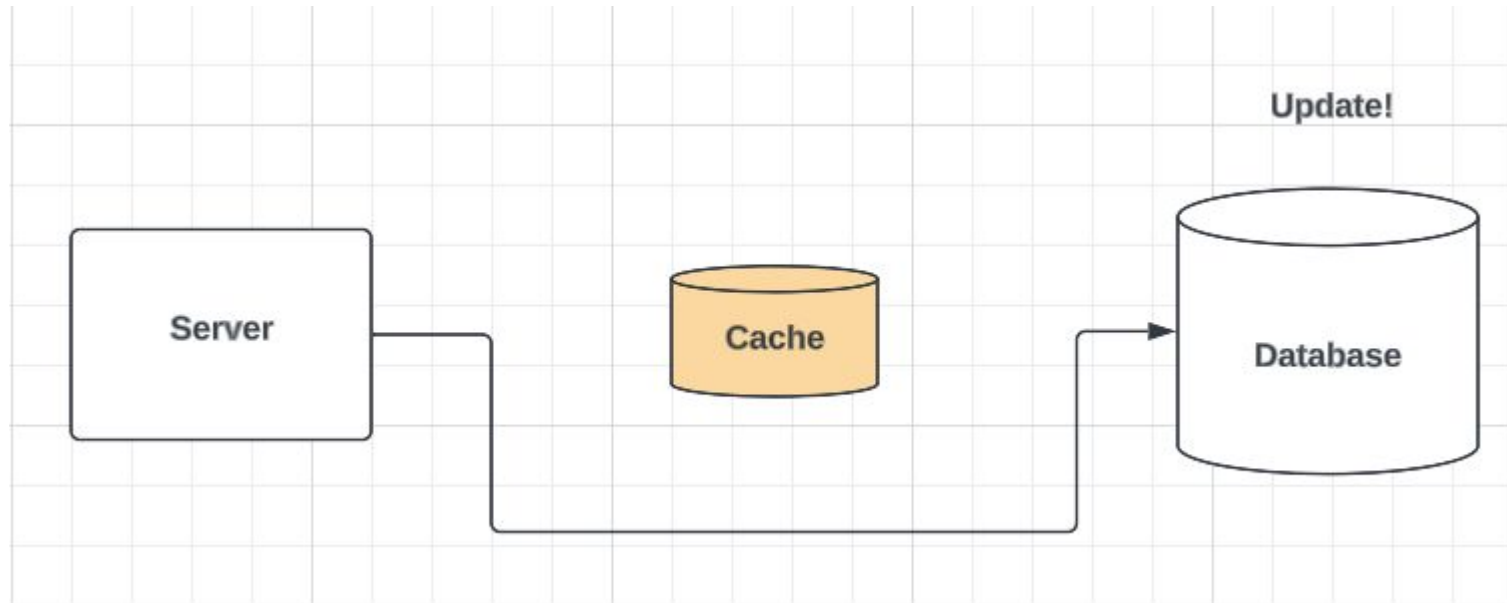
# Coerência de Dados

## Write-Back



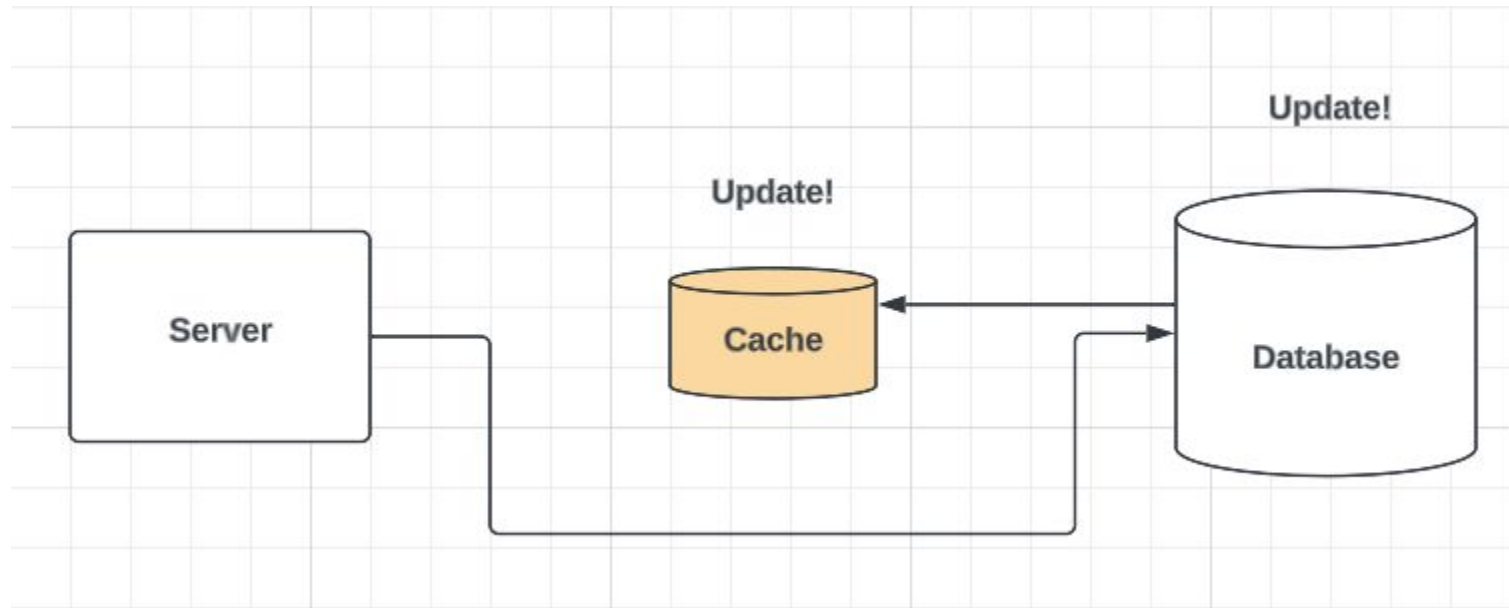
# Coerência de Dados

## Write-Back



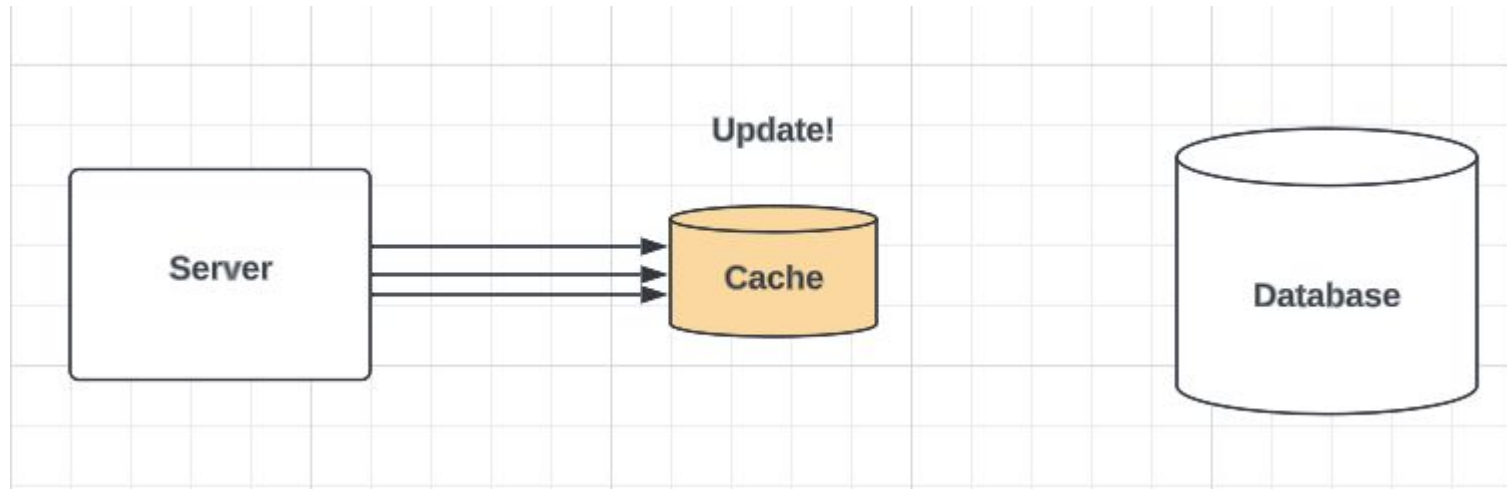
# Coerência de Dados

## Write-Back



# Coerência de Dados

## Write-Behind



# Coerência de Dados

## Write-Behind

