Implementing Application Caching Patterns

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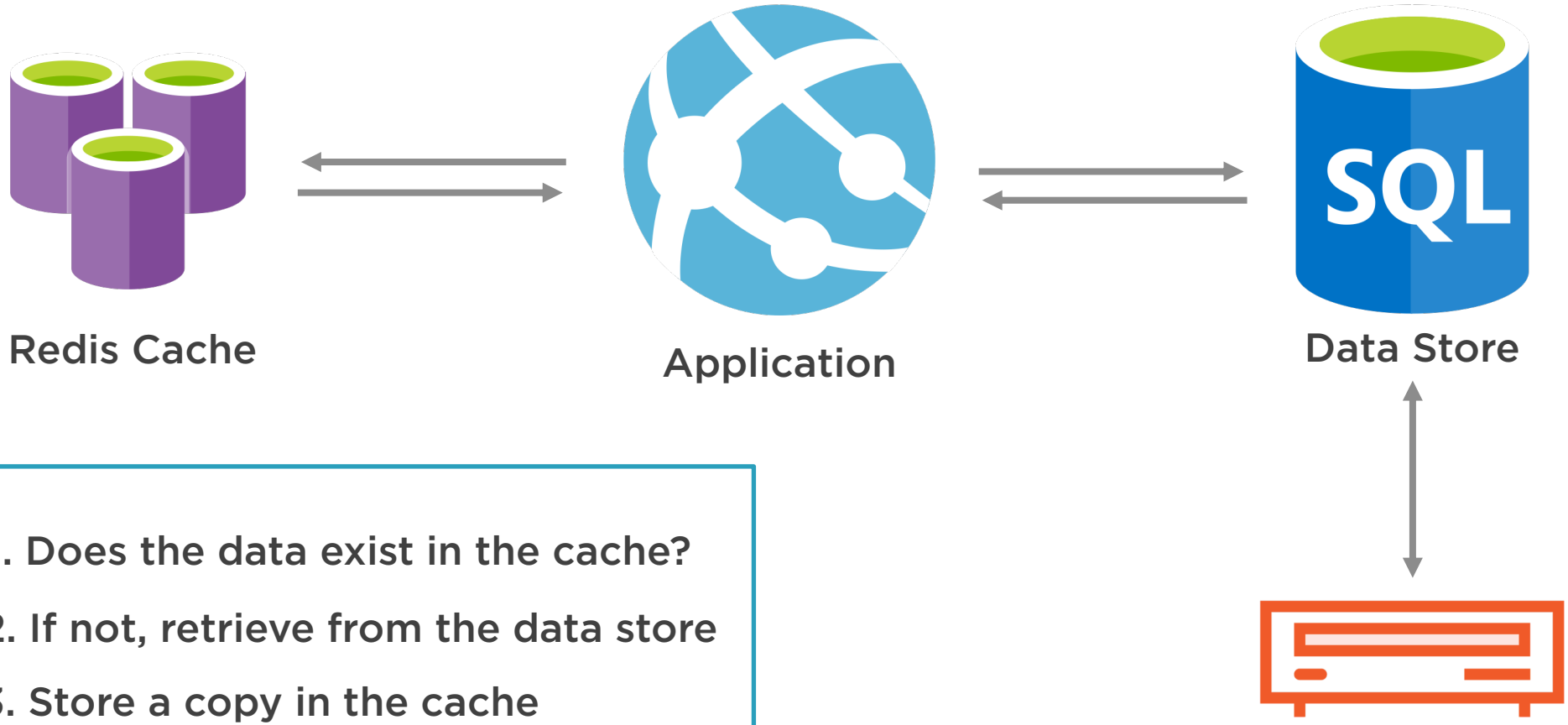
The Benefits of Caching

Performance

Scalability

Resilience

Cache-aside Pattern



1. Does the data exist in the cache?
2. If not, retrieve from the data store
3. Store a copy in the cache

Content Cache Pattern

Cache static content

- Images
- Templates
- Style sheets

Reduces server load

Redis Output Cache Provider for ASP.NET

User Session Caching Pattern

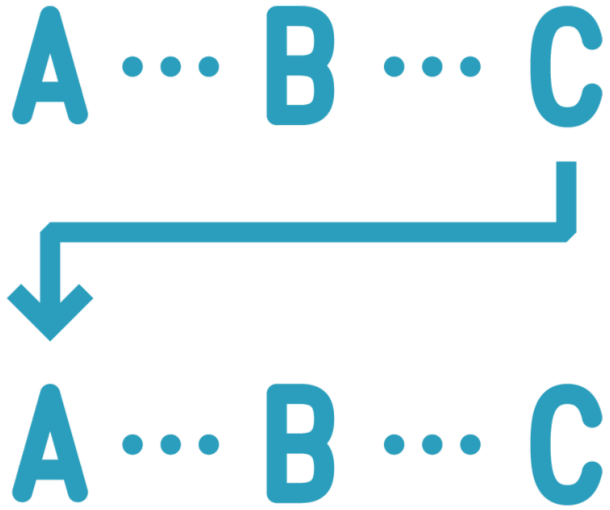
Maintain application state

- Shopping cart

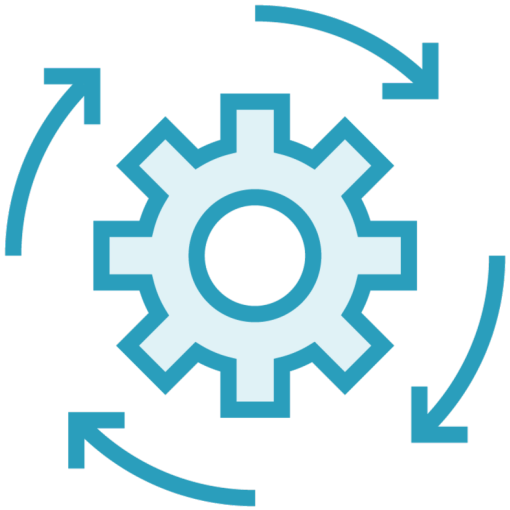
Session cookies or local storage

- Limited data storage
- Slow performance

Advanced Patterns



Job and Message Queuing

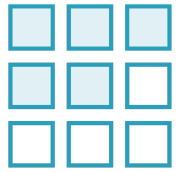


Distributed Transactions

Configuring Redis Cache

Estimating Cache Size

Number of concurrent cached objects



Size of cached objects

Number of cache requests

Cache expiration policy

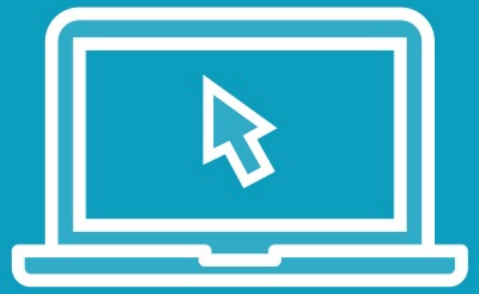
```
Redis-benchmark –q –n 100000
```

Benchmarking Redis Cache

Cannot run from the Azure portal

Create a virtual machine that contains the Redis CLI

Demo



Creating resilient connections

Defining custom retry policies

Securing Redis Cache

Encryption in Transit

Use TLS 1.2

TLS 1.1 supported for compatibility

HTTP connections disabled by default

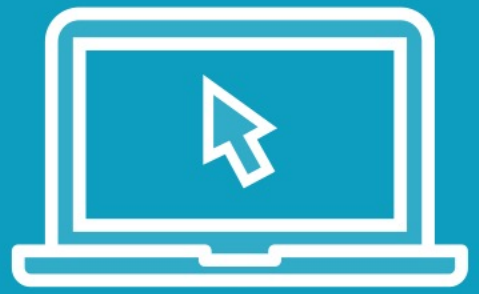
Encryption at Rest

In memory data is not encrypted

Premium tiers

- Data persistence is encrypted

Demo



Configuring secure connections