Comparing Redis and Memcached

> Select the in-memory data store that meets your needs.

Choosing between Redis and Memcached

Redis and Memcached are popular, open-source, in-memory data stores. Although they are both easy to use and offer high performance, there are important differences to consider when choosing an engine. Memcached is designed for simplicity while Redis offers a rich set of features that make it effective for a wide range of use cases. Understand your requirements and what each engine offers to decide which solution better meets your needs.

Learn about Amazon ElastiCache for Redis

Learn about Amazon ElastiCache for Memcached

	Memcached	Redis
Sub-millisecond latency	Yes	Yes
Developer ease of use	Yes	Yes
Data partitioning	Yes	Yes
Support for a broad set of programming languages	Yes	Yes
Advanced data structures	-	Yes

Multithreaded architecture	Yes	-
Snapshots	-	Yes
Replication	-	Yes
Transactions	-	Yes
Pub/Sub	-	Yes
Lua scripting	-	Yes
Geospatial support	-	Yes

Sub-millisecond latency

Both Redis and Memcached support sub-millisecond response times. By storing data in-memory they can read data more quickly than disk based databases.

Developer ease of use

Both Redis and Memcached are syntactically easy to use and require a minimal amount of code to integrate into your application.

Data partitioning

Both Redis and Memcached allow you to distribute your data among multiple nodes. This allows you to scale out to better handle more data when demand grows.

Support for a broad set of programming languages

Both Redis and Memcached have many open-source clients available for developers. Supported languages include Java, Python, PHP, C, C++, C#, JavaScript, Node.js, Ruby, Go and many others.

Advanced data structures

In addition to strings, Redis supports lists, sets, sorted sets, hashes, bit arrays, and hyperloglogs. Applications can use these more advanced data structures to support a variety of use cases. For example, you can use Redis Sorted Sets to easily implement a game leaderboard that keeps a list of players sorted by their rank.

Multithreaded architecture

Since Memcached is multithreaded, it can make use of multiple processing cores. This means that you can handle more operations by scaling up compute capacity.

Snapshots

With Redis you can keep your data on disk with a point in time snapshot which can be used for archiving or recovery.

Replication

Redis lets you create multiple replicas of a Redis primary. This allows you to scale database reads and to have highly available clusters.

Transactions

Redis supports transactions which let you execute a group of commands as an isolated and atomic operation.

Pub/Sub

Redis supports Pub/Sub messaging with pattern matching which you can use for high performance chat rooms, real-time comment streams, social media feeds, and server intercommunication.

Lua scripting

Redis allows you to execute transactional Lua scripts. Scripts can help you boost performance and simplify your application.

Geospatial support

Redis has purpose-built commands for working with real-time geospatial data at scale. You can perform operations like finding the distance between two elements (for example people or places) and finding all elements within a given distance of a point.

Amazon ElastiCache

Amazon ElastiCache offers fully managed Redis and Memcached. With both ElastiCache for Redis and ElastiCache for Memcached you:

- No longer need to perform management tasks such as hardware provisioning, software patching, setup, configuration, and failure recovery. This allows you to focus on high

value application development.

- Have access to monitoring metrics associated with your nodes, enabling you to diagnose and react to issues quickly.
- Can take advantage of cost-efficient and resizable hardware capacity.

Additonally, ElastiCache for Redis features an enhanced engine which improves on the reliability and efficiency of open source Redis while remaining Redis-compatible so your existing Redis applications work seamlessly without changes. ElastiCache for Redis also features Online Cluster Resizing, supports encryption, and is HIPAA eligible and PCI DSS compliant.

ElastiCache for Memcached features Auto Discovery which helps developers save time and effort by simplifying the way an application connects to a cluster.

Read the more detailed comparison between ElastiCache for Redis and Elasticache for Memcached for further information about differences between the two products.

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Redis and Memcached resources

About Redis

About Memcached

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