What is Azure Cache for Redis?

Article09/29/202315 contributors **Feedback**

In this article

Azure Cache for Redis provides an in-memory data store based on the Redis software. Redis improves the performance and scalability of an application that uses backend data stores heavily. It's able to process large volumes of application requests by keeping frequently accessed data in the server memory, which can be written to and read from quickly. Redis brings a critical low-latency and high-throughput data storage solution to modern applications.

Azure Cache for Redis offers both the Redis open-source (OSS Redis) and a commercial product from Redis Inc. (Redis Enterprise) as a managed service. It provides secure and dedicated Redis server instances and full Redis API compatibility. The service is operated by Microsoft, hosted on Azure, and usable by any application within or outside of Azure.

Azure Cache for Redis can be used as a distributed data or content cache, a session store, a message broker, and more. It can be deployed standalone. Or, it can be deployed along with other Azure database services, such as Azure SQL or Azure Cosmos DB.

Key scenarios

Azure Cache for Redis improves application performance by supporting common application architecture patterns. Some of the most common include the following patterns:

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Pattern	Description
Data cache	Databases are often too large to load directly into a cache. It's common to use the cache-aside pattern to load data into the cache only as needed. When the system makes changes to the data, the system can also update the cache, which is then distributed to other clients. Additionally, the system can set an expiration on data, or use an eviction policy to trigger data updates into the cache.
Content cache	Many web pages are generated from templates that use static content such as headers, footers, banners. These static items shouldn't change often. Using an in-memory cache provides quick access to static content compared to backend datastores. This pattern reduces processing time and server load, allowing web servers to be more responsive. It can allow you to reduce the number of servers needed to

Pattern	Description
	handle loads. Azure Cache for Redis provides the Redis Output Cache Provider to support this pattern with ASP.NET.
Session store	This pattern is commonly used with shopping carts and other user history data that a web application might associate with user cookies. Storing too much in a cookie can have a negative effect on performance as the cookie size grows and is passed and validated with every request. A typical solution uses the cookie as a key to query the data in a database. When you use an in-memory cache, like Azure Cache for Redis, to associate information with a user is faster than interacting with a full relational database.
Job and message queuing	Applications often add tasks to a queue when the operations associated with the request take time to execute. Longer running operations are queued to be processed in sequence, often by another server. This method of deferring work is called task queuing. Azure Cache for Redis provides a distributed queue to enable this pattern in your application.
Distributed transactions	Applications sometimes require a series of commands against a backend data-store to execute as a single atomic operation. All commands must succeed, or all must be rolled back to the initial state. Azure Cache for Redis supports executing a batch of commands as a single transaction.