

Deliver Real-Time Insights to More Customers with AWS EC2 M7i Instances



Redis



Open Online Auctions to More Bidders



Process More GIS Data Simultaneously

Handle More Redis Database Throughput with M7i Instances Featuring 4th Gen Intel® Xeon® Scalable Processors

If your business delivers instantaneous market insights to customers, relies on Internet of Things (IoT) streaming, or processes geographic information systems (GIS) data, you likely know the importance of in-memory databases. They allow users to interact with data in real time, making them essential for online bidding, interactive gaming, and more. When these databases offer faster performance, the apps they support can handle more customers at a given time. And those customers could see quicker response times, leading to more positive experiences and greater overall satisfaction.

Redis is an open-source “in-memory data store used by millions of developers as a database, cache, streaming engine, and message broker.”¹ If your company uses Redis, as companies like GitHub and Snapchat do, selecting the right infrastructure is key to higher performance. To see which cloud instances can offer the performance your business requires, we tested three types of Amazon Web Services (AWS) EC2 instances at various sizes. We ran the memtier benchmark tool on an M7i instance featuring 4th Gen Intel® Xeon® Scalable processors, an M6i instance with 3rd Gen Intel Xeon Scalable processors, and an M5 instance with 2nd Gen Intel Xeon Scalable processors. Handling more Redis throughput than older counterparts, the M7i instance proved it could enable you to process more data at once, support more simultaneous customers, and increase satisfaction.

A Gen-to-Gen Performance Boost

First, we compared the M7i instance to the M6i and M5 instances based on previous-gen processors. While each instance had the same number of vCPUs, the M6i and M7i instances processed more Redis operations per second. And the M7i instances handled the highest Redis throughput rate—1.57 times that of the M5 instance (Figure 1).

Normalized Redis Throughput: Comparison to M5

Normalized ops/sec | Higher is better

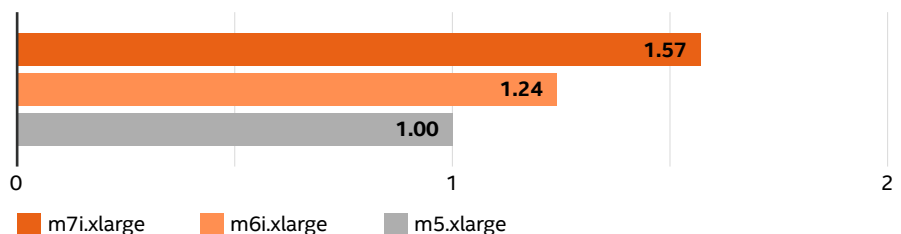


Figure 1. Relative performance, in operations per second, that the M7i and M6i instances achieved compared to the M5 instance. M7i instances feature 4th Gen Intel Xeon Scalable processors, M6i instances feature 3rd Gen Intel Xeon Scalable processors, and M5 instances feature 2nd Gen Intel Xeon Scalable processors. Higher is better.

Discover the Performance Edge of Newer Instances

To see how the M7i instance compared to the previous-gen instance, we reexamined the data with M6i instance performance as the baseline. As Figure 2 shows, the M7i instance handled 1.26 times the Redis operations per second. This performance indicates that apps running on a previous-gen instance could see performance improvements—making upgrading a worthwhile consideration. By handling more throughput, these instances could process more data and support more users at a given time, potentially helping your bottom line.

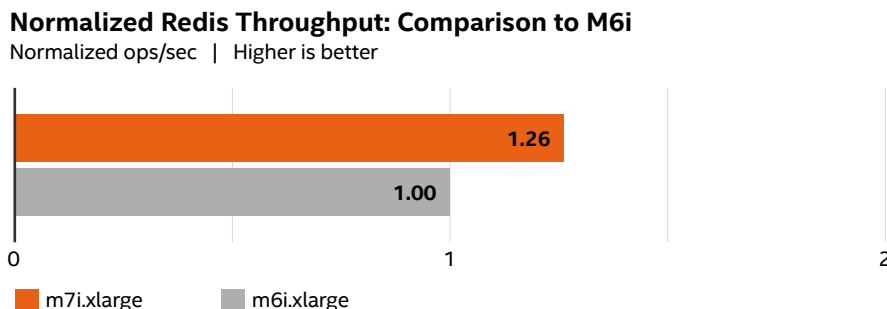


Figure 2. Relative performance, in operations per second, that the M7i instance achieved compared to the M6i instance. M7i instances feature 4th Gen Intel® Xeon® Scalable processors, and M6i instances feature 3rd Gen Intel Xeon Scalable processors. Higher is better.

Conclusion

Better Redis performance has a direct effect on your customers' experience. Higher throughput can lead to faster response times for customers and the ability to support more users simultaneously. The key to unlocking those benefits? Migrating to high-performing M7i instances enabled by 4th Gen Intel Xeon Scalable processors. In tests on three AWS EC2 instances, M7i instances handled a higher rate of Redis throughput. While the process of selecting a cloud instance may not be as instantaneous as an in-memory database, comparing performance testing results can help you make the right choice. Even if you've already moved from M5 to M6i instances, unlock even greater performance with M7i instances.

Learn More

To begin running your Redis workloads on AWS EC2 M7i instances, visit <https://aws.amazon.com/ec2/instance-types/m7i/>.

¹ "Redis," <https://redis.io/>.

All tests by Intel in Aug. 2023 on AWS. Software: Redis-Memtier 1.4.0, Ubuntu 22.04.2 LTS 5.19.0-1029-aws, Redis 6.2.4, WSF v23.17.3. WL details: Memtier: 128-byte data size, 65,000,000 key value pairs, 80R/20W, 180s test time, synchronous, 1 client with 8 Memtier clients and 8 threads. Redis: Single instance pinned to 1 vCPU. All VMs: 4 vCPUs, 16GB RAM, 200GB SSD gp2. M7i: Intel Xeon Platinum 8488C, up to 12.5 Gbps NW BW; M6i: Intel Xeon Platinum 8357C, up to 12.5 Gbps NW BW; M5: Intel Xeon Platinum 8259CL, up to 10 Gbps NW BW.



Performance varies by use, configuration and other factors. Learn more at www.intel.com/PerformanceIndex.

Performance results are based on testing as of dates shown in configurations and may not reflect all publicly available updates. See above for configuration details. No product or component can be absolutely secure. Your costs and results may vary.

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Printed in USA 1123/HM/PT/PDF US001

