

For up to 1.31x the MongoDB Performance, Select AWS EC2 C6i Instances Featuring 3rd Gen Intel® Xeon® Scalable Processors



MongoDB



Small Instances:
Up to 1.29x the MongoDB Operations/Sec with C6i Instances Featuring 3rd Gen Intel Xeon Scalable Processors

vs. C6a Instances with AMD EPYC Processors



Large Instances:
Up to 1.31x the MongoDB Operations/Sec with C6i Instances Featuring 3rd Gen Intel Xeon Scalable Processors

vs. C6a Instances with AMD EPYC Processors

At Five Sizes, These Instances Delivered Better Transactional Database Performance Compared to AWS EC2 C6a Instances with AMD EPYC Processors

Transactional databases support a number of areas critical to business. From ecommerce transactions to order entry to customer relationship management, a high-performing database can deliver a better user experience for employees and customers interacting with your applications. The ability to handle more operations per second also means that you can support more transactions and therefore increase revenue.

If your company runs MongoDB online transaction processing (OLTP) workloads in the cloud, choosing the right instance matters. AWS Elastic Cloud Compute (EC2) offers compute-optimized instances in several configurations, with the ability to choose different processors and vCPU counts. We put C6i and C6a instances to the test at various sizes. Results show that C6i instances featuring 3rd Gen Intel Xeon Scalable processors offered up to 1.31 times the operations per second of C6a instances with AMD EPYC processors. This makes them a strong choice for organizations that need fast database performance to support more customers, increase user satisfaction, and grow their business.

More Operations per Second at Smaller Instance Sizes

Regardless of the instance size your business requires for MongoDB workloads, higher performance means you could better support increased demand on your transactional databases. In tests with smaller instance sizes, C6i instances with 3rd Gen Intel Xeon Scalable processors handled more operations per second than C6a instances with AMD EPYC processors. As Figure 1 shows, smaller C6i instances offered up to 1.29 times the performance of smaller C6a instances.

Normalized Small C6i vs. C6a MongoDB Performance

Higher is better

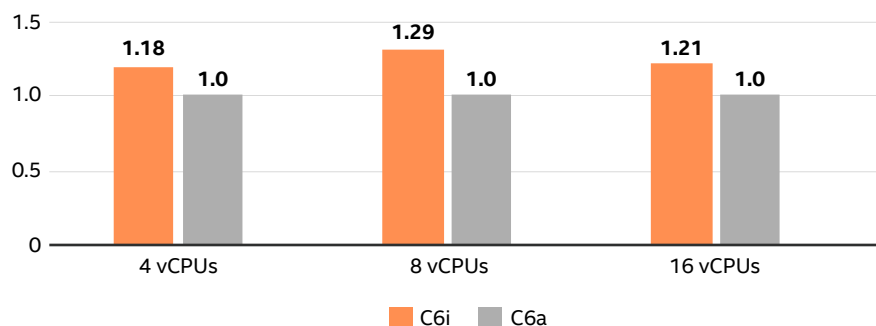


Figure 1. Relative performance, in operations per second, that smaller C6i instances handled compared to C6a instances. Higher numbers are better.

More Operations per Second at Larger Instance Sizes

Sometimes, businesses need larger instance sizes to support large MongoDB workloads. For compute-optimized instances with higher vCPU counts, C6i instances with 3rd Gen Intel® Xeon® Scalable processors again outperformed the C6a instances with AMD EPYC processors. They achieved up to 1.31 times the performance of the C6a instances, as Figure 2 shows.

Normalized Large C6i vs. C6a MongoDB Performance

Higher is better

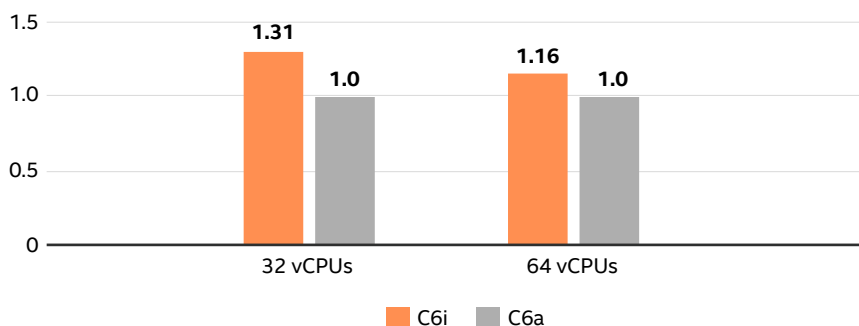


Figure 2. Relative performance, in operations per second, that larger C6i instances handled compared to C6a instances. Higher numbers are better.

Conclusion

With faster databases, your business can support more customers and handle more transactions. Our tests demonstrate that at multiple instance sizes, AWS EC2 C6i instances enabled by 3rd Gen Intel Xeon Scalable processors achieved more MongoDB operations per second than C6a instances with AMD EPYC processors. C6i instances delivered up to 1.31 times the performance of C6a instances, making them the smart choice for supporting transactional databases in the AWS EC2 cloud.

Learn More

To begin running your OLTP workloads on AWS EC2 C6i instances, visit <https://aws.amazon.com/ec2/instance-types/c6i/>.

Config details: All tests by Intel in April 2022 on AWS Cloud with Ubuntu 20.04.4 LTS. All c6a instances AMD EPYC 7R13 Processor and 5.13.0-1017-aws Kernel. All c6i instances Intel(R) Xeon(R) Platinum 8375C CPU @ 2.90GHz. Instance details: C6a.xlarge: 4 vCPUs, 7GB RAM, us-west-2d; C6a.2xlarge: 8 vCPUs, 16GB RAM, us-west-2b; C6a.4xlarge: 16 vCPUs, 32GB RAM, us-west-2d; C6a.8xlarge: 32 vCPUs, 64GB RAM, us-west-2c; C6a.16xlarge: 64 vCPUs, 129GB RAM, us-west-2d; c6i.xlarge: 4 vCPUs, 7GB RAM, 5.13.0-1019-aws, us-west-2b; c6i.2xlarge: 8 vCPUs, 16GB RAM, 5.13.0-1017-aws, us-west-2b; c6i.4xlarge: 16 vCPUs, 32GB RAM, 5.13.0-1017-aws, us-west-2b; c6i.8xlarge: 32 vCPUs, 64GB RAM, 5.13.0-1017-aws, us-west-2a; c6i.16xlarge: 64 vCPUs, 129GB RAM, 5.13.0-1017-aws, us-west-2d;



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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