

Keep Customers Coming Back with Better Response Times

Deliver Optimal Online Transaction Processing (OLTP) Database Performance with M7i Instances Featuring 4th Gen Intel® Xeon® Scalable Processors

A positive user experience is critical to keeping customers returning to your site and services. In fact, according to some experts, “88% of customers are less likely to return to a site after a poor user experience.”¹ Online transaction processing (OLTP) databases are part of this user experience, whether customers are adding a product to their cart or going through the checkout process. Even use cases like customer support ticketing and medical records rely on OLTP databases. When the cloud instance backing your OLTP database can deliver higher performance, customers and employees can get a smoother, more responsive experience. And with the ability to process more simultaneous database work, you can also support more users, potentially increasing revenue.

To test OLTP performance, we ran the HammerDB TPROC-C benchmark on cloud instances running PostgreSQL databases. PostgreSQL offers an open-source “object-relational database system with over 35 years of active development that has earned it a strong reputation for reliability, feature robustness, and performance.”² Our tests centered on Amazon Web Services (AWS) EC2 instances: M7i instances with 4th Gen Intel® Xeon® Scalable processors, current-gen M7g instances with Amazon Graviton processors, and older M6g instances with Graviton processors. The M7i instances presented impressive performance gains, making them a solid choice for PostgreSQL workloads.

Support More Database Work

First, we looked at performance across all three instances we tested. At multiple sizes, we saw that M7g instances and M7i instances handled more new orders per minute (NOPM) than M6g instances with Graviton processors. M7i instances, however, beat out both M6g and M7g instances. Figure 1 shows that M7i instances delivered up to 1.51 times the performance of M6g instances.

PostgreSQL

Smoother User Experiences, Even During High Traffic

Increased Responsiveness on Key Apps

Normalized PostgreSQL New Orders per Minute: M6g and M7g Comparison

Normalized NOPM | Higher is better

■ M7i ■ M7g ■ M6g

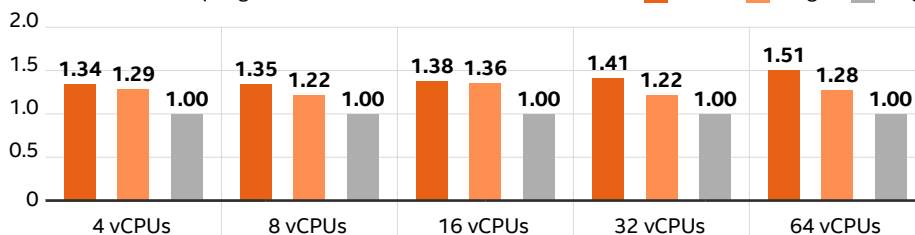


Figure 1. Relative new orders per minute that M7i and M7g instances achieved compared to M6g instances. Higher is better.

Deliver Better OLTP Performance

Next, we focused on performance differences between M7i instances and M7g instances with Graviton processors. In this current-gen comparison, the M7i instances performed on-par with or better than M7g instances (Figure 2). Especially at larger instance sizes, M7i instances could give your organization the edge it needs to support more user activity on ecommerce sites, finance apps, and more.

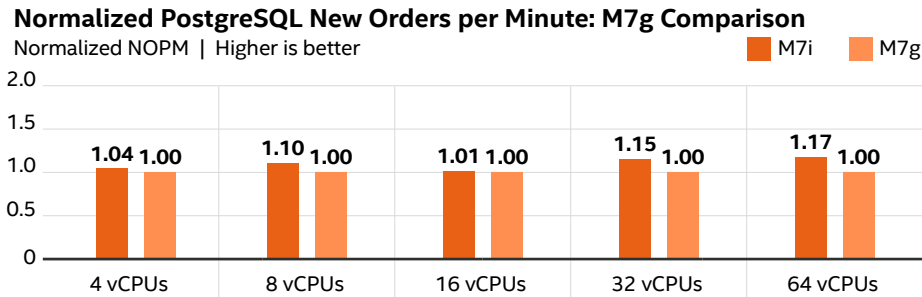


Figure 2. Relative new orders per minute that M7i instances achieved compared to M7g instances. Higher is better.

Conclusion

To keep customers returning to your site, your organization must ensure it delivers a positive user experience. Rather than keeping users waiting on delayed inventory updates or slow checkout times, near-instantaneous response times can bring them back for more. And better OLTP performance is not just for ecommerce or finance industries. Customer support workers could also pull up information more quickly, warehouse managers could check inventories more smoothly, and medical professionals could update patient records in less time. With positive repercussions across industries, higher performing OLTP databases are worth the investment. As our results show, backing those databases with M7i instances featuring 4th Gen Intel Xeon Scalable processors can yield higher performance than with Graviton-based M7g or M6g instances. Where database performance is a top priority, make the wise choice: AWS EC2 M7i instances.

Learn More

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

- 1 "What You Need to Know About Ecommerce Website Redesign in 2022," <https://blog.hubspot.com/website/ecommerce-website-redesign/>.
- 2 "PostgreSQL: The World's Most Advanced Open Source Relational Database," <https://www.postgresql.org/>.

All tests by Intel in Aug. 2023 on AWS. Software: HammerDB 4.4, PostgreSQL 14.6-1, K8s 1.24.4, Containerd 1.6.15-1, Ubuntu 22.04.2 LTS w/ Kernel 5.19.0-1025-aws or 5.19.0-1029-aws on m7i, WSF 22.53. All m7i VMs: Intel Xeon Platinum 8488C, 500GB SSD or 800GB on 64vCPU, all m6g VMs: Arm Neoverse-N1, 500GB SSD, All m7g VMs: Arm Neoverse-V1. All VMs: 4GB RAM/vCPU. Network Gbps: m7i.xlarge – m7i.4xlarge: up to 12.4, m7i.8xlarge: 12.5, m7i.16xlarge: 25; m6g.xlarge – m6g.4xlarge: up to 10, m6g.8xlarge: 12, m6g.16xlarge: 25; m7g.xlarge: up to 12.5, m7g.2xlarge and m7g.4xlarge: up to 15; m7g.8xlarge: 15, m7g.16xlarge: 30.



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