Scale Your Microsoft SQL Server Analytics Workloads with AWS M6i Instances Enabled by 3rd Gen Intel® Xeon® Scalable Processors

Get Better Data Analytics Workload Scaling with AWS Instances Featuring 3rd Gen Intel Xeon Scalable Processors

As companies continue to gather data from their apps, databases, and other sources, analyzing that data becomes increasingly important. If you want to run your data analytics workloads in the cloud, you must assess how your instance will handle data analysis for increasing amounts of data. The faster your database queries finish, the faster you can act on the insights you glean. Faster runtimes mean shorter instance uptimes in the cloud, which saves on operating expenses, especially when the VM are priced the same.[1]

In addition to saving time and money on Microsoft SQL Server data analytics workloads, the new AWS M6i instances provide the latest Intel features such as Intel Software Guard Extensions (Intel SGX) and Intel Total Memory Encryption. Leverage the strong performance and new security features of the new 3rd Gen Intel Xeon Scalable processors for your database workloads.

Better Performance as Workload Scales

In our tests, we used a TPROC-H workload from the HammerDB benchmark suite to test the ability of the new m6i.16xlarge instance enabled by 3rd Gen Intel Xeon Scalable processors. We created a 100GB data analytics database and ran an increasing number of simultaneous query threads against it. While the HammerDB workload stipulates the maximum number of simultaneous threads for a 100GB database is five, we pushed the workload beyond that to see how the instance scaled. We also ran the tests against an older m5.16xlarge instance backed by older Intel Xeon processors. As Figure 1 shows, the AWS M6i instance with 3rd Gen Intel Xeon Scalable processors completed data analytics up to 1.22x as fast as the M5 instances with older processors.

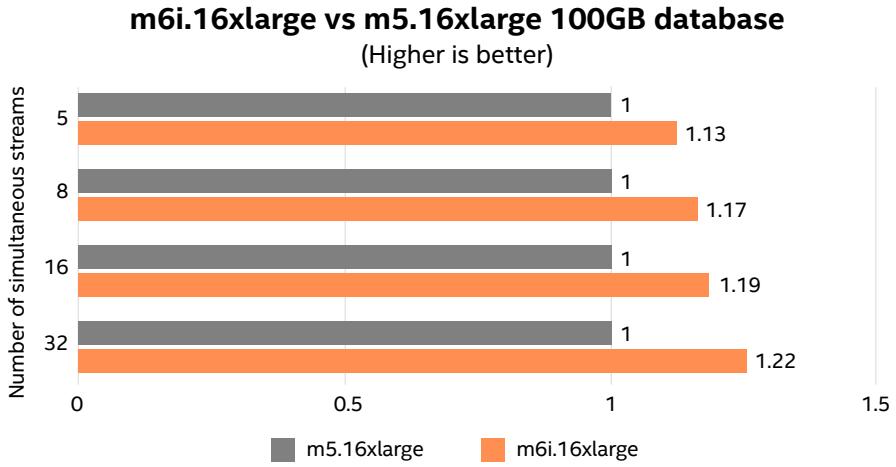


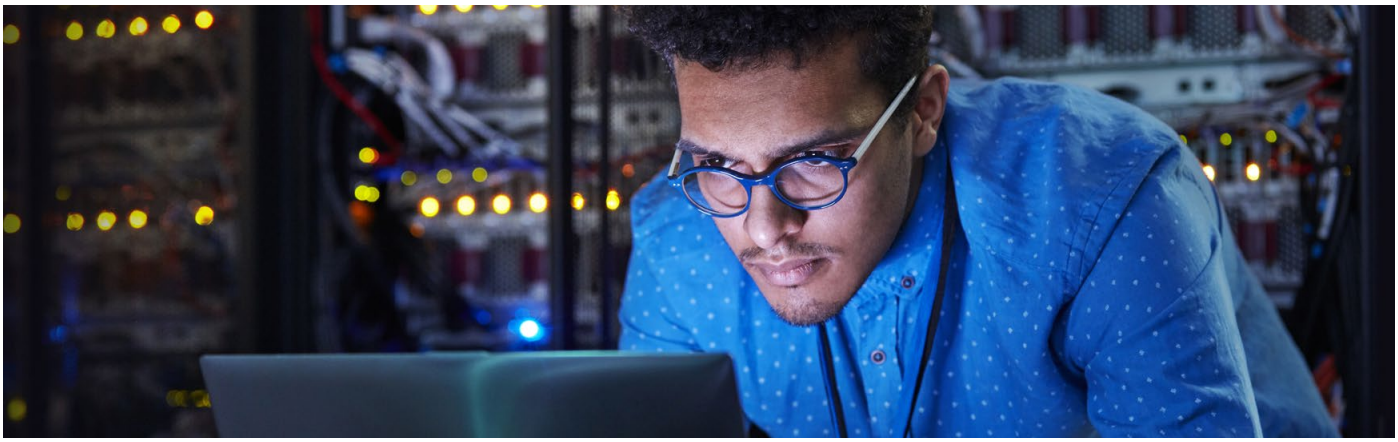
Figure 1. Relative speed to complete Microsoft SQL Server database query streams on 64 vCPU AWSM6i and M5 instances.

Microsoft SQL Server

Complete SQL Server Database Queries up to 1.22x as fast

vs. an older m5.16xlarge instance

Take advantage of the latest performance and security features in 3rd Gen Intel Xeon Scalable processors, including Intel AVX-512 and Intel SGX



Latest Intel CPU features

When choosing cloud instances to run Microsoft SQL Server database workloads, high-performance hardware is paramount. But choosing the latest technology also offers other benefits. New 3rd Gen Intel® Xeon® Scalable processors offer several new features that enhance performance and security. Intel Deep Learning (DL) Boost accelerates INT8 performance with Vector Neural Network Instructions (VNNI). Data analytics workloads can leverage Intel Advanced Vector Extensions 512 (Intel AVX-512) to optimize performance. Additionally, Intel Speed Select Technology (Intel SST) capabilities offer added control over CPU performance.

New security features in 3rd Gen Intel Xeon Scalable processors include Intel Software Guard Extensions (Intel SGX) and Intel Total Memory Encryption. Intel SGX isolates data via memory encryption and Intel Total memory Encryption allows for full encryption of the physical memory in the system. For more details about new features in 3rd Gen Intel Xeon Scalable processors, visit https://www.intel.com/content/www/us/en/products/docs/processors/xeon/3rd-gen-xeon-scalable-processors-brief.html.

Conclusion

For Microsoft SQL Server database analytics workloads, choosing AWS M6i instances can provide faster time to insight, increased value, and additional performance and security features from the latest 3rd Gen Intel Xeon Scalable processors.

Learn More

To begin running your Microsoft SQL Server analytics workloads on AWS Instances with 3rd Gen Intel Xeon Scalable processors, visit www.intel.com/AWS.

To read more about the results and test details in this paper, visit www.facts.pt/RWuDLHo.

1. https://aws.amazon.com/ec2/pricing/on-demand/

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