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Get Answers from Microsoft SQL Server Data up to 1.37x as Fast with AWS EC2 M6i Instances vs. AWS EC2 M5 Instances

Speed up data analysis with AWS M6i Instances Featuring 3rd Gen Intel® Xeon® Scalable Processors

The amount of data organizations collect continues to grow, but that data is only useful if they can analyze it to make recommendations to customers or glean other business trends and insights. For various database sizes, AWS M6i Instances enabled by 3rd Gen Intel® Xeon® Scalable processors provide better analytics performance Microsoft SQL Server databases than M5 instances with older processors.

Using a TPROC-H workload from the HammerDB benchmark to assess SQL Server database analysis speeds, testing shows that for small, medium, and large-sized databases AWS M6i instances featuring 3rd Gen Intel Xeon Scalable processors analyzed data up to 1.37x as fast as M5 instances.

Plus, this significant boost in performance comes at no additional cost, which makes M6i instances a cost-effective solution plus higher performance. By choosing AWS M6i instances that can make sense of data faster, your organization can more quickly gain important insights that further your business's success.

Small Instances: Analyzing 10GB Databases with 8 vCPUs

As Figure 1 shows, 8-vCPU M6i instances enabled by 3rd Gen Intel Xeon Scalable processors outperformed 8-vCPU M5 instances, analyzing data up to 1.33x as fast.

Relative speed to complete SQL Server query streams (8 vCPU instance/10GB database)
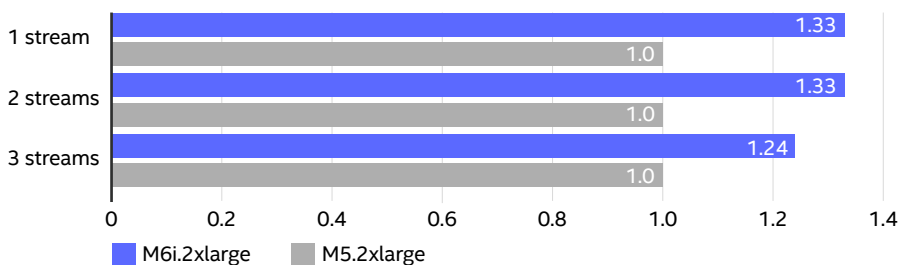
Completion speed (normalized) | Higher is better

Figure 1. Relative speed to complete Microsoft SQL Server database query streams for small instances (8 vCPU), normalized to the speed of the m5.2xlarge instance.

SQL Server

Analyze data up to 1.33x as fast on small M6i instances with 3rd Gen Intel Xeon Scalable processors

vs. M5 instances

Analyze data up to 1.37x as fast on medium M6i instances with 3rd Gen Intel Xeon Scalable processors

vs. M5 instances

Analyze data up to 1.13x as fast on large M6i instances with 3rd Gen Intel Xeon Scalable processors
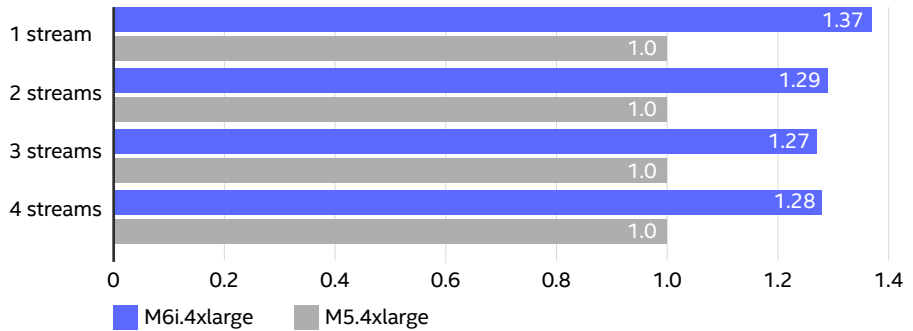
vs. M5 instances

Medium Instances: Analyzing 30GB Databases with 16 vCPUs

AWS medium-sized instances with 3rd Gen Intel® Xeon® Scalable processors once again improved data analysis speeds. As Figure 2 shows, M6i instances with 3rd Gen Intel Xeon Scalable processors analyzed SQL Server data up to 1.37x as fast as M5 instances.

Figure 2. Relative speed to complete Microsoft SQL Server database query streams for medium instances (16 vCPU), normalized to the speed of the m5.4xlarge instance.

Relative speed to complete SQL Server query streams (16 vCPU instance/30GB database)

Completion speed (normalized) | Higher is better

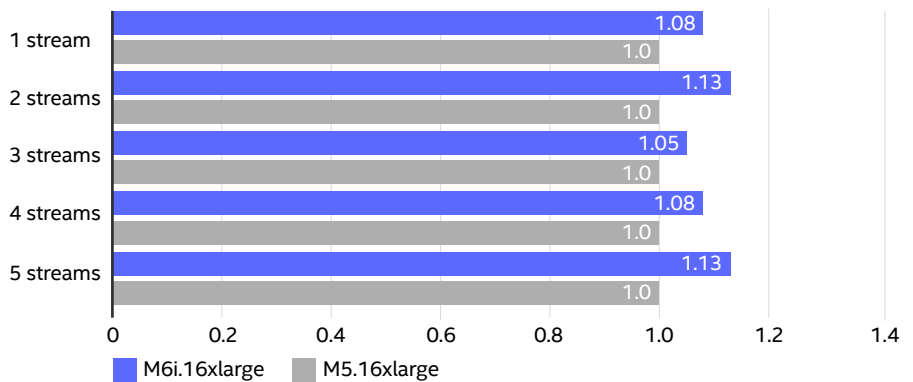| Stream	M6i.4xlarge	M5.4xlarge
1 stream	1.37	1.0
2 streams	1.29	1.0
3 streams	1.27	1.0
4 streams	1.28	1.0

■ M6i.4xlarge ■ M5.4xlarge

Large Instances: Analyzing 100GB Databases with 64 vCPUs

Large instances with 100GB databases and 64 vCPUs also saw similar performance improvements moving to new 3rd Gen Intel Xeon Scalable processors from older CPUs. As Figure 3 shows, M6i instances enabled by 3rd Gen Intel Xeon Scalable processors analyzed SQL Server data up to 1.13x as fast as M5 instances.

Figure 3. Relative speed to complete Microsoft SQL Server database query streams for large instances (64 vCPU), normalized to the speed of the m5.16xlarge instance.

Relative speed to complete SQL Server query streams (64 vCPU instance/100GB database)

Completion speed (normalized) | Higher is better

Stream	M6i.16xlarge	M5.16xlarge
1 stream	1.08	1.0
2 streams	1.13	1.0
3 streams	1.05	1.0
4 streams	1.08	1.0
5 streams	1.13	1.0

■ M6i.16xlarge ■ M5.16xlarge

Learn More

To begin running your Microsoft SQL Server analytics workloads on AWS M6i Instances with 3rd Gen Intel Xeon Scalable processors, visit http://intel.com/aws.

To learn more about the results and test configurations, visit http://facts.pt/RWuDLHo.

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