Maximize IT Infrastructure – not budgets – with proven Micron® DDR4 Server DRAM

Data analytics workload test results tell the story

Even as companies brace for economic headwinds, experts forecast that the amount of data created globally will more than double by 2025 — up to 180 zettabytes[1]. This means that more performance will be demanded from a smaller budget. The answer to the challenge is Micron® DDR4 Server DRAM. Data analytics workloads experience performance gains of up to 60% by simply doubling DDR4 Server DRAM capacity[2].

Adding memory capacity accelerates database analytics

Adding more capacity (while keeping the memory channels the same) or adding more capacity with more channels results in increased workload performance for data analytics applications such as Microsoft® SQL/TPC-H, Apache Spark™ TPC-DS and Spark Scalable Vector Machines (SVM).

Apache Spark™ TPC-DS
DDR4 capacity expansion benchmark (lower is better)

33% Improvement

- Average query time
- % Improvement
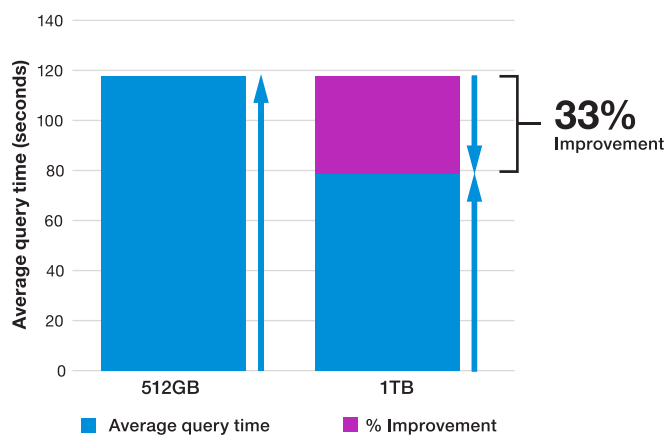
The right tools for the trade

Micron's improved DRAM and SSD selector takes the guesswork out of memory and SSD upgrades, making it easier and quicker to find compatible server upgrades.
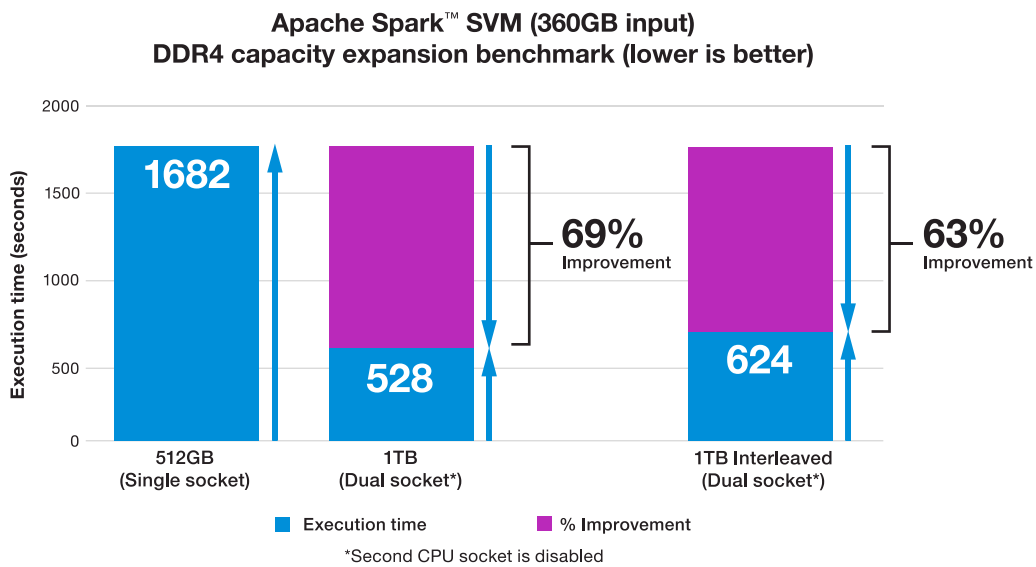
microncpg.com/selector

MS SQL TPC-H Capacity expansion

Adding more capacity (while keeping the memory channels the same) or adding more capacity with more channels results in increased workload performance for data analytics applications such as MS SQL/TPC-H, Spark TPC-DS and Spark Scalable Vector Machines (SVM).

The popular TPC-H data analytics workload, using the MS SQL database, witnessed a 2.2x performance increase for a 3,000-scale factor problem size, when the available memory was doubled from 512GB to 1TB (spread over two sockets) on a 3rd generation Intel® Xeon® 32-core dual-socket system.

In another test, TPC-DS with Spark SQL achieved a 33% performance improvement when memory capacity was increased from 512GB to 1TB. The test was performed on an AMD EPYC™ 7713 64 core dual-socket system for a TPC-DS problem size of 3,000 scale factor.

Apache Spark™ SVM (360GB input)
DDR4 capacity expansion benchmark (lower is better)

Execution time (seconds)

- 512GB (Single socket): 1682
- 1TB (Dual socket*): 528 — **69%** Improvement
- 1TB Interleaved (Dual socket*): 624 — **63%** Improvement

■ Execution time   ■ % Improvement

*Second CPU socket is disabled

Learn more at microncpg.com/serverDDR4

The Micron difference

Customer support
Web support and 1:1 assistance from an experienced sales network

40+ Years of excellence
Micron's world-class leadership in innovative memory and storage solutions

Consistent inventory
Consistent supply from a trusted, experienced manufacturer

Quality assurance
Committed to both quality and innovation

1. According to analyst firm IDC's Worldwide Global DataSphere Forecast, 2021–2025, business and consumer data has been amassing at a compound annual growth rate (CAGR) of about 23% since last year, with a 28% CAGR attributed to enterprises, and is expected to reach 180 zettabytes by 2025.
2. Based on Micron internal benchmarks using TPC-H on a dual-socket, 32-core server equipped with Intel's third-generation Xeon Scalable Processor (SP) running MSSQL Server. DDR4 Server DRAM capacity was doubled for a 3,000-scale factor problem size. Actual results may vary.

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