ThinkSystem SR665 Sets World Record with New TPC-E Benchmark Result

Performance Benchmark Result

Lenovo has published a new TPC-E benchmark result that has set a new world record. The result has been achieved on the powerful Lenovo ThinkSystem SR665 server. The benchmark results are:

- The world's #1 2P TPC-E result for performance

The TPC-E benchmark is designed to enable customers to objectively measure and compare the performance and price of various Online Transaction Processing (OLTP) and database systems.

The ThinkSystem SR665 server achieved the following score (1):

- **12,028.02 tpsE (transactions per second E) @ $91.85 USD/tpsE**

This result set the following new record:

- The best 2P performance in the industry: 71.5% faster than the previous best 2P score. (2)

Including this new result, Lenovo servers have the #1 1P (3), 4P (4), and overall (4) TPC-E performance and price/performance results as well as the #1 2P (1) TPC-E performance result.

The SR665 achieved this record level of OLTP performance using the following configuration:

- 2x AMD EPYC 7763 64-core processors at 2.45 GHz (2 processors, 128 cores, 256 threads)
- 2048 GB of Lenovo TruDDR4 memory
- Microsoft SQL Server 2019 Enterprise Edition
- Microsoft Windows Server 2019 Standard Edition

This result also relied on the Lenovo Storage D1224 DAS enclosures. Six D1224 storage enclosures and 126 SAS SSDs were used in the benchmark configuration, attached directly to the server using ThinkSystem RAID 930-8e controllers configured with RAID-5.

Results referenced are current as of March 15, 2021. To view all TPC results, visit http://www.tpc.org.

(1) The total solution availability for this TPC-E benchmark result is March 18, 2021. See the details for this result at http://www.tpc.org/4088

(2) The Lenovo ThinkSystem SR650 previously held the #1 2P TPC-E performance result. Result details are from http://www.tpc.org/4084

(3) The Lenovo ThinkSystem SR655 holds the #1 1P TPC-E performance result and the #1 1P TPC-E price/performance result. Result details are from http://www.tpc.org/4085

(4) The 4P Lenovo ThinkSystem SR860 V2 holds the #1 overall TPC-E performance and price/performance results. Result details are from http://www.tpc.org/4087

About the ThinkSystem SR665

The Lenovo ThinkSystem SR665 server, now with AMD EPYC 7003 Series processors, delivers outstanding TCO for transactional database, ERP, virtualization, big data & analytics and software-defined deployments. The combination of two AMD EPYC 7003 CPUs with class-leading memory speed, storage, and GPU density, rapidly outpaces the power of prior generation two-socket servers. Lenovo's lauded system reliability, management capabilities, and security infrastructure layer on to the exceptional value that the ThinkSystem SR665 brings to the data center. With the enterprise-class AMD EPYC 7003 Series or 7002 Series processor, the world's first 7nm data center CPU, the ThinkSystem SR665 features two processors with up to an unprecedented 128 total cores with 128 PCIe Gen4 lanes to reduce bottlenecks and increase server utilization.

Compared to the previous processor generations, ThinkSystem SR665 delivers up to 2X performance and 4X floating point capability, providing faster data transfer and analytics without sacrificing memory capacity or I/O with PCIe Gen4 support and faster memory speeds up to 3200 MHz.

Key features:

- 128 cores across two processors to handle heavy-lift ERP, CRM, and virtualization workloads; provides cutting edge application efficiency in health care applications such as medical imaging, EMR, and PACS, or electronic trading platforms for financial services applications.
- Multi-GPU optimized rack server, providing support for up to 8 single-wide GPUs that offer 200% more workload acceleration in AI Inference, and virtualized desktop infrastructure (VDI).
- Support for up to 32 NVMe solid-state drives; when paired with high speed networking, make the system an excellent choice for workloads that need large amounts of low-latency high-bandwidth storage, including virtualized clustered SAN solutions, software-defined storage (SDS), and applications leveraging NVMe over Fabrics.

About the Lenovo Storage D1212 and D1224 Enclosures

The Lenovo Storage D1212 and D1224 Disk Expansion Enclosures offer 12 Gbps SAS direct-attached storage expansion capabilities that are designed to provide simplicity, speed, scalability, security, and high availability for small to large businesses.

The D1212 (with 3.5-inch drives) and D1224 (with 2.5-inch drives), deliver enterprise-class storage technology in a cost-effective solution with flexible drive configurations and RAID or JBOD (non-RAID) host connectivity.

About TPC-E

TPC Benchmark E (TPC-E) is an Online Transaction Processing (OLTP) workload designed to enable customers to objectively measure and compare the performance and price of various OLTP and database systems. TPC-E is a mixture of read-only and update intensive transactions that simulate the activities found in complex OLTP application environments.

Learn more

To learn more about solutions for database and OLTP applications, please contact your Lenovo Sales Representative.

To find out more about TPC, visit http://www.tpc.org.

To learn more about the Lenovo ThinkSystem SR665 server, visit the SR665 product web page: https://www.lenovo.com/us/en/data-center/servers/racks/ThinkSystem-SR665/p/77XX7SR552S

Related product families

Product families related to this document are the following:

- 2-Socket Rack Servers
- Direct-Attached Storage
- Microsoft SQL Server
- TPC-E Benchmark Results
- ThinkSystem SR665 Server

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