ThinkSystem SR650 V3 Sets 2 World Records with New TPC-E Benchmark Result

Performance Benchmark Result

Lenovo has published a new TPC-E benchmark result that has set two new world records. The result has been achieved on the powerful Lenovo ThinkSystem SR650 V3 server with 5th Gen Intel Xeon Scalable processors. The benchmark results are:

- The world's #1 overall TPC-E result for performance
- The world's best TPC-E result for performance on 2-processor systems

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 SR650 V3 server achieved the following score (1):

- **14,799.27 tpsE (transactions per second E) @ $83.18 USD/tpsE**

This result has:

- The highest TPC-E performance ever published, 18.99% faster than the previous generation Intel 2-processor system (2)
- 12.86% better price/performance than the previous generation Intel 2-processor system (2)

Including this new result, Lenovo servers have the #1 1P (3,4), 2P (1,5), and overall (1,5) TPC-E performance and price/performance results.

The SR650 V3 achieved this record level of OLTP performance using the following configuration:

- 2x Intel Xeon Platinum 8592+ 64-core processors at 1.9GHz (2 processors, 128 total cores, 256 total threads)
- 2048 GB of Lenovo TruDDR5 memory
- Microsoft SQL Server 2022 Enterprise Edition
- Microsoft Windows Server 2022 Standard Edition

This result also relied on Lenovo Storage D1224 DAS enclosures. Six D1224 storage enclosures and 138 SAS SSDs were used in the benchmark configuration, attached directly to the server using six ThinkSystem RAID 940-8e controllers configured with RAID-5.

Results referenced are current as of February 15, 2024. To view all TPC results, visit www.tpc.org.

(1) The total solution availability for this TPC-E benchmark result is February 9, 2024. See the details for this result at https://tpc.org/4095.

(2) Lenovo ThinkSystem SR650 V3 with two Intel Xeon Platinum 8490H processors at 1.90 GHz (2/120/240). Result details are from https://tpc.org/4091.

(3) Lenovo ThinkSystem SR655 V3 with one AMD EPYC 9754 128-core processor at 2.25 GHz (1/128/256) is the #1 1P TPC-E performance result. Result details are from https://tpc.org/4094.

(4) Lenovo ThinkSystem SR655 V3 with one AMD EPYC 9654 96-core processor at 2.4 GHz (1/96/192) is the #1 1P TPC-E price/performance result. Result details are from https://tpc.org/4093.

(5) The Lenovo ThinkSystem SR665 with two AMD EPYC 72F3 8-core processors at 3.70 GHz (2/16/32) is the #1 overall TPC-E price/performance result and the #1 2P TPC-E price/performance result. Result details are from https://tpc.org/4090.

About the ThinkSystem SR650 V3

The Lenovo ThinkSystem SR650 V3 is an ideal 2-socket 2U rack server, based on the new 5th generation Intel Xeon Scalable processor family. The SR650 V3 is for small business up to large enterprises that need industry-leading reliability, management, and security, as well as maximizing performance and flexibility for future growth. The server offers a broad selection of drive and slot configurations and offers numerous high performance features. Outstanding reliability, availability, and serviceability (RAS) and high-efficiency design can improve business operation and help save operational costs.

SR650 V3 offers the low-latency, high capacity performance necessary to keep up with the workloads of today. It's designed to handle a wide range of workloads, such as databases, virtualization and cloud computing, virtual desktop infrastructure (VDI), infrastructure security, systems management, enterprise applications, collaboration/email, streaming media, web, and HPC.

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 SR650 V3 server, visit the SR650 V3 product web page: https://www.lenovo.com/us/en/p/servers-storage/servers/racks/thinksystem-sr650-v3/len21ts0013

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 SR650 V3 Server

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