

ThinkSystem SR650 breaks two world records with new TPC-E result

Performance Benchmark Result (withdrawn product)

July 11, 2017 ... Lenovo has published a new TPC-E benchmark result that has set two world records. Achieved on the powerful Lenovo ThinkSystem SR650 2U rack server, the benchmark result is the world's best result for two-processor (2P) performance. The benchmark result is also the overall best price/performance result for *any* server configuration.

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

The ThinkSystem SR650 server achieved the following score:



- **6,598.36 tpsE (transactions per second E) @ \$93.48 USD/tpsE (1)**

This result sets two new records:

- The best two-processor performance in the industry: 39% faster and with 16% better price/performance than the Fujitsu PRIMERGY RX2540 M2. (2)
- The best price/performance of all TPC-E benchmark results, the first result ever to be under \$100/tpsE.

The SR650 achieved this record level of OLTP performance using Microsoft SQL Server 2017 Enterprise Edition and Microsoft Windows Server 2016 Standard Edition. The SR650 was configured with two Intel Xeon Platinum 8180 processors at 2.50 GHz (2 processors, 56 cores, 112 threads) and 1536 GB of Lenovo TruDDR4 memory.

This result also relied on the new Lenovo Storage D1224 DAS enclosures. Four D1224 storage enclosures and over 60 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 July 11, 2017. To view all TPC results, visit <http://www.tpc.org>.

(1) The total solution availability for this TPC-E benchmark result is October 19, 2017. See the details for this result at <http://www.tpc.org/4080>.

(2) Fujitsu PRIMERGY RX2540 M2 result details are from <http://www.tpc.org/4077>.

About the ThinkSystem SR650

For medium to large enterprises, and managed and cloud service providers, Lenovo ThinkSystem SR650 is the optimum 2U, two-socket server—the most widely used server type worldwide. It's engineered to deliver high performance with 205W CPUs, low-latency NVMe drives, and high-power GPUs.

With Lenovo's history of reliability, the highly flexible and configurable SR650 is the ideal platform for hyper-converged infrastructure (HCI) or software-defined storage (SDS). It provides a solid foundation for:

- Transforming physical resources into services, using validated designs for hybrid cloud
- Performing analytics on streaming data, using validated designs for Big Data
- Increasing productivity of virtualized transactional systems, using validated designs for OLTP databases.

Lenovo XClarity Controller is an all-new hardware embedded management engine common in every ThinkSystem server. XClarity Controller features an uncluttered graphical user interface, industry standard Redfish-compliant REST APIs, and enables booting in half the time of prior generation servers, with up to 6x faster firmware updates.

Lenovo XClarity Administrator is a virtualized application that centrally manages ThinkSystem servers, storage, and networking. Via reusable patterns and policies, it ramps up and scales infrastructure provisioning and maintenance. It serves as a central integration point to extend your data center management processes to physical IT. Running XClarity Integrators in external IT applications, or integrating through REST APIs, helps you further speed services provisioning, streamline IT management, and contain costs.

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.

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 server, visit the SR650 product web page: <https://www.lenovo.com/us/en/data-center/servers/racks/ThinkSystem-SR650/p/77XX7SR65>

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 Server](#)

Notices

Lenovo may not offer the products, services, or features discussed in this document in all countries. Consult your local Lenovo representative for information on the products and services currently available in your area. Any reference to a Lenovo product, program, or service is not intended to state or imply that only that Lenovo product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any Lenovo intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any other product, program, or service. Lenovo may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

Lenovo (United States), Inc.
8001 Development Drive
Morrisville, NC 27560
U.S.A.
Attention: Lenovo Director of Licensing

LENOVO PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. Lenovo may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

The products described in this document are not intended for use in implantation or other life support applications where malfunction may result in injury or death to persons. The information contained in this document does not affect or change Lenovo product specifications or warranties. Nothing in this document shall operate as an express or implied license or indemnity under the intellectual property rights of Lenovo or third parties. All information contained in this document was obtained in specific environments and is presented as an illustration. The result obtained in other operating environments may vary. Lenovo may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Any references in this publication to non-Lenovo Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this Lenovo product, and use of those Web sites is at your own risk. Any performance data contained herein was determined in a controlled environment. Therefore, the result obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

© Copyright Lenovo 2025. All rights reserved.

This document, LP0708, was created or updated on July 11, 2017.

Send us your comments in one of the following ways:

- Use the online Contact us review form found at:
<https://lenovopress.lenovo.com/LP0708>
- Send your comments in an e-mail to:
comments@lenovopress.com

This document is available online at <https://lenovopress.lenovo.com/LP0708>.

Trademarks

Lenovo and the Lenovo logo are trademarks or registered trademarks of Lenovo in the United States, other countries, or both. A current list of Lenovo trademarks is available on the Web at <https://www.lenovo.com/us/en/legal/copytrade/>.

The following terms are trademarks of Lenovo in the United States, other countries, or both:

Lenovo®

ThinkSystem®

XClarity®

The following terms are trademarks of other companies:

Intel® and Xeon® are trademarks of Intel Corporation or its subsidiaries.

Microsoft®, SQL Server®, Windows Server®, and Windows® are trademarks of Microsoft Corporation in the United States, other countries, or both.

TPC® is a trademark of Transaction Processing Performance Council.

Other company, product, or service names may be trademarks or service marks of others.