New World Records Set with the STAC-M3 Benchmark Result on the ThinkSystem SR650

Performance Benchmark Result (withdrawn product)

The Lenovo ThinkSystem SR650 has set 15 new performance world records with the Antuco suite of the STAC-M3 benchmark. The STAC-M3 Benchmark suite is the industry standard for testing solutions that enable high-speed analytics on time series data, such as tick-by-tick market data, also known as tick database stacks.

These new benchmark results are published on July 11, 2017 in a new STAC Report, SUT ID KDB170703. The results demonstrate that the SR650 continues Lenovo's leadership with world record breaking performance for the financial services industry.

Compared to previous publicly reported results for single-node 2-socket servers running the kdb+ database, the SR650 set records in 15 of 17 mean response-time benchmark categories.

Mean response-time benchmark category world records are as follows:

- STAC-M3.β1.1T.NBBO.TIME
- STAC-M3.β1.1T.WKHIBID.TIME
- STAC-M3.β1.1T.MOHIBID.TIME
- STAC-M3.β1.1T.QTRHIBID.TIME
- STAC-M3.β1.1T.YRHIBID.TIME
- STAC-M3.β1.1T.YRHIBID-2.TIME
- STAC-M3.β1.10T.MKTSNAP.TIME
- STAC-M3.β1.10T.STATS-AGG.TIME
- STAC-M3.β1.10T.THEOPL.TIME
- STAC-M3.β1.10T.VOLCURV.TIME
- STAC-M3.β1.10T.STATS-UI.TIME
- STAC-M3.β1.50T.STATS-UI.TIME
- STAC-M3.β1.100T.STATS-UI.TIME
- STAC-M3.β1.100T.VWAB-12D-NO.TIME
- STAC-M3.β1.1T.WRITE.TIME

The SR650 was configured as follows for the benchmark audit:

- Lenovo ThinkSystem SR650
- 2x Intel Xeon Platinum 8180 processors (28 cores, 2.5 GHz, 38.5 MB last level cache)
- 1.5TB memory (24x 64 GB LRDIMMs @ 2666 MHz)
- 4x Intel P4600 1.6TB NVMe drives
- 2x Intel P4500 4TB NVMe adapters
- Red Hat Enterprise Linux 7.3 Maipo kernel 3.10.0-514.el7.x86_64
- Kx Systems kdb+ 3.5

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 is 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 STAC

The Securities Analysis Technology Center (STAC) is a company that coordinates a community called the STAC Benchmark Council.

The STAC Benchmark Council consists of over 300 financial institutions and more than 50 vendor organizations whose purpose is to explore technical challenges and solutions in financial services and to develop technology benchmark standards that are useful to financial organizations.

User firms include the largest global banks, brokerage houses, exchanges, hedge funds, proprietary trading shops, and other market participants. Vendor firms include innovative manufacturers of processor, server, storage, and network hardware, as well as horizontal-market software providers and vertical specialists.

STAC-M3 benchmarks are governed by user firms in the STAC Benchmark Council. The STAC-M3 benchmark report for the SR650 is publicly available.

Learn more

To learn more about solutions for the financial services industry, please contact your Lenovo Sales Representative.

To find out more about STAC, visit the STAC Research web site.

To learn more about the Lenovo ThinkSystem SR650 server, visit the SR650 product web page.

Related product families

Product families related to this document are the following:

- 2-Socket Rack Servers
- STAC-M3 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 2026. All rights reserved.

This document, LP0717, 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/LP0717
- Send your comments in an e-mail to:
  comments@lenovopress.com

This document is available online at https://lenovopress.lenovo.com/LP0717.

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

Linux® is the trademark of Linus Torvalds in the U.S. and other countries.

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