ThinkSystem SR860 V2 Sets 6 World Records with New SPECcpu Benchmark Result

Performance Benchmark Result

The Lenovo ThinkSystem SR860 V2 server delivers world-record four-socket performance for compute-intensive applications with new results of the SPEC CPU2017 benchmark.

These new benchmark results, published in new SPEC reports on November 10, 2020, demonstrate that the ThinkSystem SR860 V2 continues Lenovo's leadership with outstanding performance for the server industry.

The ThinkSystem SR860 V2 has achieved the following scores:

- **SPECspeed2017_int_base: 12.5**
- **SPECspeed2017_int_energy_base: 43.6**
- **SPECspeed2017_fp_base: 255**
- **SPECspeed2017_fp_energy_base: 318**
- **SPECrate2017_int_energy_base: 786**
- **SPECrate2017_fp_energy_base: 676**

SPECspeed2017 scores are ideal for measuring single-threaded compute-intensive applications, such as High Frequency Trading (HFT) and other financial industry workloads.

SPECrate2017 scores are ideal for measuring multi-threaded compute-intensive applications, such as High Performance Computing (HPC) workloads.

The Lenovo ThinkSystem SR860 V2 server was configured as follows:

- Processors:
  - 4 x Intel Xeon Platinum 8356H – 8 cores, 3.90 GHz, 35.75 MB L3 cache per processor
  - 4 x Intel Xeon Platinum 8376HL – 28 cores, 2.60 GHz, 38.5 MB L3 cache per processor
  - 4 x Intel Xeon Platinum 8380HL – 28 cores, 2.90 GHz, 38.5 MB L3 cache per processor
- 384 GB or 1536 GB system memory
- Operating systems, either of the following:
  - SUSE Linux Enterprise Server 12 SP5
  - Red Hat Enterprise Linux Server 8.2

The results are current as of November 10, 2020.

To view the details of these results, go to:

- SPECspeed2017_int_base (8356H, 1536 GB, RHEL 8.2)
  https://spec.org/cpu2017/results/res2020q4/cpu2017-20201026-24274.html
- SPECspeed2017_int_energy_base (8376HL, 384 GB, RHEL 8.2)
  https://spec.org/cpu2017/results/res2020q4/cpu2017-20201026-24300.html
- SPECspeed2017_fp_base (8380HL, 1536 GB, SUSE 12SP5)
  https://spec.org/cpu2017/results/res2020q4/cpu2017-20201026-24276.html
- SPECspeed2017_fp_energy_base (8376HL, 384 GB, RHEL 8.2)
  https://spec.org/cpu2017/results/res2020q4/cpu2017-20201026-24299.html
- SPECrate2017_int_energy_base (8376HL, 384 GB, RHEL 8.2)
  https://spec.org/cpu2017/results/res2020q4/cpu2017-20201026-24302.html
- SPECrate2017_fp_energy_base (8376HL, 384 GB, RHEL 8.2)
  https://spec.org/cpu2017/results/res2020q4/cpu2017-20201026-24303.html

To view all SPEC CPU2017 results, go to
http://www.spec.org/cpu2017/results/

About the ThinkSystem SR860 V2

The Lenovo ThinkSystem SR860 V2 server provides the speed and reliability you require today, with the scalability and workload versatility to you'll need to manage the explosive growth of data; its design offers considerable adaptability in order to match system configurations to projected workloads.

The ThinkSystem SR860 V2 is purpose-built to deliver affordable scalability in an industry-standard x86 platform, ideal for mission critical workloads such as SAP HANA in-memory computing, transactional databases, analytics, big data, and enterprise resource planning tasks.

Up to four 250W third-generation Intel® Xeon® Scalable CPUs configured with a mesh topology pair with up to four enterprise-class GPUs position the SR860 V2 to tackle compute-intensive applications, leveraging thousands of GPU processor cores and parallel architecture in combination with additional storage and networking that's both high-performing and flexible.

Key features:

- Up to four 250W 3rd Generation Intel Xeon Scalable CPUs configured with a mesh topology combines with up to 48 2.5" HDD or SSDs, of which 24 can be NVMe SSDs to speed database response times, reducing latency and eliminating storage as the throughput bottleneck in I/O-intensive applications such as transactional processing, HPC, and Big data applications.
- Supports two or four processors, allowing you to start with two processors and then upgrade to four when you need it.
- Capability to handle four double-width GPUs or eight single-width GPUs to accelerate AI inference and deep learning proficiencies.
- Support for up to 12TB of DDR4 memory with DIMMs operating at up to 3200 MHz at 2DPC, and Intel Optane™ Persistent Memory 200 Series accelerates performance for in-memory databases and applications, reducing downtime and increasing application availability.
- High I/O bandwidth coupled with a generous number of PCIe expansion slots provides the additional connectivity scalability as your business and workload demands increase.
- Full Lenovo XClarity and ThinkShield system support for seamless infrastructure management and improved data security.

About SPEC CPU2017

SPEC CPU 2017 is SPEC's next-generation, industry-standardized, CPU intensive suite of benchmarks for measuring and comparing compute intensive performance, stressing a system's processor, memory subsystem and compiler. This benchmarks provides a comparative measure of compute-intensive performance using workloads developed from real user applications.

The SPEC CPU 2017 benchmark suite measures server performance in the following ways:

- SPECspeed 2017 is to compare time for a computer to complete single tasks
- SPECrate 2017 is to measure the throughput or work per unit of time.

This benchmark is targeted for use by hardware vendors, IT industry, computer manufacturers, and government.

Learn more

To learn more about solutions for compute-intensive applications, please contact your Lenovo Sales Representative.

To find out more about SPEC, visit https://www.spec.org

To learn more about the Lenovo ThinkSystem SR860 V2 server, visit the SR860 V2 product web page: https://www.lenovo.com/us/en/data-center/servers/mission-critical/ThinkSystem-SR860-V2-Server/p/77XX7HS86V2

Related product families

Product families related to this document are the following:

- 2-Socket Rack Servers
- SPECcpu Benchmark Results
- ThinkSystem SR860 V2 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 2024. All rights reserved.

This document, LP1412, was created or updated on December 3, 2020.

Send us your comments in one of the following ways:

- Use the online Contact us review form found at:
  https://lenovopress.lenovo.com/LP1412
- Send your comments in an e-mail to:
  comments@lenovopress.com

This document is available online at https://lenovopress.lenovo.com/LP1412.

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®
ThinkShield®
ThinkSystem®
XClarity®

The following terms are trademarks of other companies:

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

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

SPEC®, SPEC CPU®, SPECrate®, and SPECspeed® are trademarks of the Standard Performance Evaluation Corporation (SPEC).

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