ThinkSystem SR665 Sets 4 World Records with New SPECcpu Benchmark Results

Performance Benchmark Result

The Lenovo ThinkSystem SR665 server delivers world-record two-socket performance for compute-intensive applications with new results of the SPEC CPU2017 benchmark.

The ThinkSystem SR665 with two processors achieved the following SPEC CPU2017 scores:

- **SPECspeed2017_fp_energy_base: 421**
- **SPECspeed2017_fp_energy_peak: 421**
- **SPECrate2017_fp_peak: 589**
- **SPECrate2017_fp_energy_peak: 1030**

SPECspeed2017_fp_energy score is ideal for measuring single-threaded compute-intensive applications, such as High Frequency Trading (HFT) and other financial industry workloads.

SPECrate2017_fp and SPECrate2017_fp_energy scores are ideal for measuring multi-threaded compute-intensive applications, such as High Performance Computing (HPC) workloads.

The ThinkSystem SR665 was configured as follows:

- Processors:
  - 2x AMD EPYC 7H12 processor - 64 cores, 2.60 GHz, 256 MB L3 cache per processor
  - 2x AMD EPYC 7702 processor - 64 cores, 2.00 GHz, 256 MB L3 cache per processor
- Up to 512 GB or 1 TB system memory
- Operating systems, either of the following:
  - SUSE Linux Enterprise Server 12 SP5
  - Red Hat Enterprise Linux Server 8.1

The results are current as of May 5, 2020.

To view the details of these results, go to:

- SPECspeed2017_fp_energy_base (7702 processors, 512 GB memory, SUSE 12 SP5)
  http://spec.org/cpu2017/results/res2020q2/cpu2017-20200413-21921.html
- SPECspeed2017_fp_energy_peak (7702 processors, 512 GB memory, SUSE 12 SP5)
  http://spec.org/cpu2017/results/res2020q2/cpu2017-20200413-21921.html
- SPECrate2017_fp_peak (7H12 processors, 1 TB memory, RHEL 8.1)
  http://spec.org/cpu2017/results/res2020q2/cpu2017-20200413-22032.html
- SPECrate2017_fp_energy_peak (7702 processors, 512 GB memory, RHEL 8.1)
  http://spec.org/cpu2017/results/res2020q2/cpu2017-20200413-21920.html

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

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

Related product families

Product families related to this document are the following:

- 2-Socket Rack Servers
- SPECcpu Benchmark Results
- ThinkSystem SR665 Server

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