

ThinkSystem SR665 Sets World Record with New VMmark3.1 Benchmark Result

Performance Benchmark Result

Lenovo has published a new VMmark3 benchmark result that has set record for two-socket matched-pair performance for VMmark3. Notably, the Lenovo **2-socket** matched-pair result achieved a score that surpassed the highest Intel Cascade Lake based **4-processor** matched-pair result from Fujitsu's PRIMERGY RX4770 M5 by **5.8%** (1). Additionally, the Lenovo ThinkSystem SR665 result exceeds the AMD-based HPE ProLiant DL385 Gen10 matched-pair result by **42.6%** (2).

The VMmark3 benchmark is designed to measure the performance and scalability of virtualization platforms using workloads representative of the highly scalable and complex applications commonly found in the data center.



The ThinkSystem SR665 server achieved the following score (3):

- **18.23 @ 19 Tiles**

The SR665 achieved this record level of virtualized data center performance using the following configuration:

- 2x AMD EPYC 7H12 64-core processors at 2.6 GHz (2 processors, 64 cores, 128 threads)
- 2048 GB of Lenovo TruDDR4 memory
- 1x ThinkSystem Broadcom 57414 10/25GbE SFP28 2-port OCP Ethernet Adapter (for network traffic: vMotion, intra-host, and client-to-host)
- 1x ThinkSystem Emulex LPe35002 PCIe 32Gb 2-Port SFP+ Fibre Channel Adapter (for storage connectivity)
- VMware ESXi 6.7 U3
- VMware vCenter 7.0

A ThinkSystem NE2572 RackSwitch Ethernet switch was used for network traffic.

This result also relied on the Lenovo ThinkSystem DM7100F Storage and DB620S Fibre Channel switch for SAN storage, configured as follows:

- 2x ThinkSystem DM7100 Controllers
- 2x ThinkSystem DM240S 2U24 SFF Expansion Enclosures
- 24x 3.8TB SSDs
- 1x Lenovo ThinkSystem DB620S 32Gb FC SAN Switch

Results referenced are current as of November 17, 2020. The total solution availability for this VMmark3 benchmark result is August 8, 2020.

To view all VMmark 3.x results, visit <https://www.vmware.com/products/vmmark/results3x.html>.

(1) Fujitsu PRIMERGY RX4770 M5 result details are from

<https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/vmmark/2019-08-27-Fujitsu-RX4770M5.pdf>

(2) HPE ProLiant DL385 Gen10 details are available from:

<https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/vmmark/2019-08-07-HPE-ProLiant-DL385Gen10.pdf>

(3) The new Lenovo result is available from

<https://www.vmware.com/content/dam/digitalmarketing/vmware/en/pdf/vmmark/2020-11-17-Lenovo-ThinkSystem-SR665.pdf>

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.
- Support for ThinkSystem Emulex LPe35002 PCIe 32Gb 2-Port SFP+ Fibre Channel Adapters which offer low latency, enhanced security, and operational efficiency for 32GFC SANs.
- Support for ThinkSystem Broadcom 57414 10/25GbE SFP28 2-port OCP Ethernet Adapters, offering deterministic low latency and TruFlow intelligent flow processing for advanced networking technologies including RoCE, SDN, NFV and virtualization.

About the Lenovo ThinkSystem DM7100F Storage

The ThinkSystem DM7100F is a perfect fit for a wide range of enterprise workloads, including big data and analytics, artificial intelligence, engineering and design, hybrid clouds, and other storage I/O-intensive applications. The DM7100F is a scalable, unified, all flash storage system that is designed to provide high performance, simplicity, capacity, security, and high availability for large enterprises.



The DM Series is an enterprise class storage system with enhanced data management features, Hybrid cloud connectivity with all major cloud vendors in the market today and offers superior performance via support for NVMe drives and NVMe over Fabric connectivity.

The ThinkSystem DM7100F offers the following key features and benefits:

- All-flash array capabilities to meet the demand for higher speed storage and provide higher IOPs and bandwidth with lower power usage and total cost of ownership than hybrid or HDD-based solutions
- Flexible Hybrid Cloud connectivity
- Unified data management, with the ability to manage, block, file and object* data from one interface.
- Scalable, all flash storage with dual active/active controller configurations for high availability and performance.
- NVMe over Fabrics helps achieve up to two times higher performance at a half of the latency with ThinkSystem DB Series switches and Directors .

* Object data management in ONTAP 9.8, planned for January 2021.

About VMmark

The VMmark3 benchmark is designed to measure the performance and scalability of virtualization platforms using workloads representative of the highly scalable and complex applications commonly found in the data center. VMmark3 is used to compare the performance of different hardware platforms and configurations.

Customers implementing or evaluating virtualization platforms use VMmark3 for comparing performance and scalability of various server platforms and storage solutions, making appropriate hardware choices, and for measuring platform performance on an ongoing basis.

Learn more

To learn more about high-performance solutions for virtualization applications, please contact your Lenovo Sales Representative.

To find out more about VMmark, visit <https://www.vmware.com/products/vmmark.html>

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/p/77XX7SR552S>

Related product families

Product families related to this document are the following:

- [2-Socket Rack Servers](#)
- [DM Series Storage](#)
- [ThinkSystem SR665 Server](#)
- [VMmark Benchmark Results](#)

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