

ThinkSystem SR665 V3 and ThinkSystem DE6000H Set Two World Records with New SPECvirt Datacenter 2021 Benchmark Result Performance Benchmark Result

Lenovo has published a new SPECvirt Datacenter 2021 benchmark result that has set two world records. The result has been achieved on four ThinkSystem SR665 V3 servers and the ThinkSystem DE6000H Hybrid Storage Array.

The new world records are:

- The world's #1 overall SPECvirt Datacenter result
- The world's best SPECvirt Datacenter result for performance on 2-processor systems

The SPECvirt Datacenter 2021 benchmark is a multi-host benchmark for measuring the performance of a scaled-out datacenter. The benchmark uses real-world and simulated workloads to measure the overall efficiency of virtualization solutions and their management environments.



The Lenovo solution achieved the following score (1):

- **SPECvirt Datacenter-2021 7.051 per host @ 4 Hosts**

Each of the four SR665 V3 servers used to achieve this record level of virtualized data center performance had the following configuration:

- 2x AMD EPYC 9654 96-core processors at 2.4 GHz (2 processors, 192 cores, 384 threads)
- 3 TB of Lenovo TruDDR5 memory
- 2x ThinkSystem Emulex LPe35002 PCIe 32Gb 2-Port SFP+ Fibre Channel Adapter v2
- 2x ThinkSystem Broadcom 57414 10/25GbE SFP28 2-port PCI Ethernet Adapters
- VMware vSphere ESXi 8.0 U1

The vSphere cluster was managed via VMware vCenter Server (VCSA) 8.0.1.

For SAN storage, the solution included the ThinkSystem DE6000H Hybrid Storage Array. The SAN was comprised of one DE6000H 4U60 controller enclosure with 60x 800GB 3DWD SSDs. The Emulex 32Gb FC adapters in the servers were connected to the DE6000H controller using a ThinkSystem DB620S FC switch.

All network traffic (vMotion, intra-host, and client-to-host) was routed through two Broadcom 25Gb Ethernet adapters in each server and managed through a ThinkSystem NE10032 RackSwitch.

Results referenced are current as of November 9, 2023. To view all SPECvirt Datacenter 2021 results, visit https://www.spec.org/virt_datacenter2021/results/.

(1) The total solution availability for this benchmark result is June 2023. See the details for this result at https://www.spec.org/virt_datacenter2021/results/res2023q4/virt_datacenter2021-20231006-00010-perf.html

About the ThinkSystem SR665 V3

The ThinkSystem SR665 V3 is a 2S 2U rack server built with the performance and flexibility to manage a complex set of workloads like data management, analytics, virtualization, cloud, and AI. The 256 cores of the dual 4th Gen AMD EPYC™ processors with up to 160 PCIe lanes and up to 6TB of the latest DDR5 memory, maximize the performance of this 2U server.

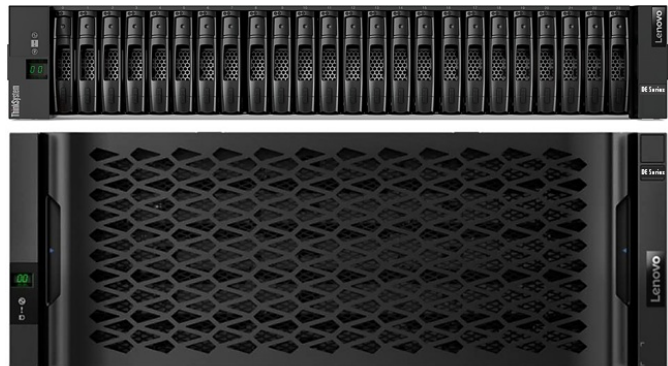
The SR665 V3 is designed to support today's infrastructure and easily scale to prepare for next gen workloads. Multiple drive options using SAS/SATA and NVMe with hot-swap capabilities and XClarity system management software enable changes to be made quickly with ease. The versatile design doesn't stop at storage, the SR665 V3 includes support for multiple options for GPU and PCIe to satisfy graphics, speed, and budget requirements.

About the ThinkSystem DE6000H Storage

Lenovo ThinkSystem DE6000H is a scalable, hybrid mid-range storage system that is designed to provide high performance, simplicity, capacity, security, and high availability for medium to large businesses. The ThinkSystem DE6000H delivers enterprise-class storage management capabilities in a performance-optimized system with a wide choice of host connectivity options, flexible drive configurations, and enhanced data management features.

Available as either a 2U or 4U enclosure, the DE6000H is a perfect fit for a wide range of enterprise workloads, including big data and analytics, video surveillance, technical computing, backup and recovery, and other storage I/O-intensive applications.

The DE6000H scales up to 480 drives with the attachment of expansion enclosures. It offers flexible drive configurations with the choice of 2.5-inch (SFF) or 3.5-inch (LFF) drive form factors using SAS HDDs and SSDs.



Key features:

- Faster application response times with support for NVMe over Fabrics.
- High levels of performance and data protection with Dynamic Disk Pools (DDP) technology, as well as support for traditional RAID 0, 1, 3, 5, 6, and 10.
- Flexible storage protocols to match diverse client needs with support for SAS, iSCSI, FC, NVMe/FC, and NVMe/RoCE.

About the SPECvirt Datacenter 2021 benchmark

The SPECvirt Datacenter 2021 benchmark is a new multi-host benchmark for measuring the performance of a scaled-out data center. The benchmark uses real-world and simulated workloads to measure the overall efficiency of virtualization solutions and their management environments.

The SPECvirt Datacenter 2021 benchmark provides a methodical way to measure a virtualization platform's performance in a dynamic virtualized data center environment. It models typical, modern-day usage of virtualized infrastructure, such as VM resource provisioning, cross-node load balancing (including management operations such as VM migrations), and VM power on/off. The benchmark exercises data center operations under load including dynamically provisioning new workload VMs and powers on pre-existing VMs.

SPECvirt Datacenter 2021 is used to compare the performance of different hardware platforms and configurations in multi-host virtualized data center environments. Customers implementing or evaluating virtualization platforms can use the benchmark to compare the performance and scalability of various server platforms and storage solutions, to make appropriate hardware choices, and to measure platform performance on an ongoing basis.

Learn more

To learn more about power-efficient solutions for virtualization 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 V3 server, visit the SR665 V3 product web page: <https://www.lenovo.com/us/en/p/servers-storage/servers/racks/thinksystem-sr665-v3/len21ts0009>

To learn more about the Lenovo ThinkSystem DE6000H Storage, visit the product web page: <https://www.lenovo.com/us/en/p/servers-storage/storage/storage-area-network/de-hybrid-flash-array/thinksystem-de6000h-hybrid-flash-array/wmd00000450>

Related product families

Product families related to this document are the following:

- [2-Socket Rack Servers](#)
- [DE Series Storage](#)
- [SPECvirt Benchmark Results](#)
- [ThinkSystem SR665 V3 Server](#)

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