ThinkSystem SD530 V3 & SD550 V3 Deliver Impressive Multi-Node SPECpower Benchmark Results

Performance Benchmark Result

Lenovo has published two new SPECpower_ssj 2008 benchmark results on the Lenovo ThinkSystem SD530 V3 and SD550 V3 multi-node servers. These results showcase the excellent performance and efficiency of these solutions. These servers are both half-width nodes that reside in a 2U ThinkSystem D3 chassis, which can contain up to four 1U nodes, up to two 2U nodes, or a combination of 1U and 2U nodes. This provides high performance density with the efficiency of shared power resources.

The SPECpower_ssj 2008 benchmark is an industry-standard benchmark that evaluates the power and performance characteristics of single servers and multi-node servers.

The ThinkSystem SD530 V3 Result

Four half-width, 1U ThinkSystem SD530 V3 nodes were installed into one 2U ThinkSystem D3 chassis. These nodes together achieved the following score:

- **SPECpower_ssj2008 = 16,635 overall ssj_ops/watt (1)**

This is the highest 4-node SPECpower result run on Intel-branded processors, better than 43 other results in this category, demonstrating the excellent performance efficiency of these four dense nodes in only 2U of rack space. This four-node ThinkSystem SD530 V3 configuration is also 30% more energy efficient than the aggregate of two 1U 2P HPE ProLiant DL360 Gen11 rack servers that in total have the same number of processors in the same 2U of total rack space. (2)

Figure 1. Four SD530 V3 servers installed in a D3 Chassis

Each half-width, 1U SD530 V3 node was configured as follows:

- 1x Intel Xeon Platinum 8592+ processor (64 cores, 1.9 GHz, 320 MB L3 cache)
- 256GB of DDR5 memory
- 1x 960GB M.2 SSD
- Microsoft Windows Server 2022 Datacenter Edition
- Oracle Java HotSpot 64-Bit Server VM (build 17.0.1+12-LTS-39, mixed mode)

The ThinkSystem SD550 V3 Result

Two half-width, 2U ThinkSystem SD550 V3 nodes were installed into one 2U ThinkSystem D3 chassis. These nodes together achieved the following score:

- **SPECpower_ssj2008 = 17,045 overall ssj_ops/watt (3)**

This is the highest 2-node SPECpower result run on Intel-branded processors, better than 21 other results in this category. It's also the best score of all result configurations that have a total of four Intel-branded processors (including single- and multi-node configurations), better than 81 other results in this category, as well as the best result of all configurations using the same Intel Xeon Platinum 8592+ processor (including single- and multi-node configurations). Finally, this result is 12.7% better than the score of one 2U 2P ThinkSystem SR650 V3 rack server, which has half the total number of processors in the same 2U of rack space as this two-node SD550 V3 configuration. (4)

Figure 2. Two SD550 V3 servers installed in a D3 Chassis

Each half-width, 2U SD550 V3 node was configured as follows:

- 2x Intel Xeon Platinum 8592+ processors (64 cores, 1.9 GHz, 320 MB L3 cache each)
- 512GB of DDR5 memory
- 1x 960GB M.2 SSD
- Microsoft Windows Server 2022 Datacenter Edition
- Oracle Java HotSpot 64-Bit Server VM (build 17.0.1+12-LTS-39, mixed mode)

Results referenced are current as of March 11, 2024.

(1) 4-node SD530 V3 SPECpower_ssj2008. Result details are from:
https://www.spec.org/power_ssj2008/results/res2024q1/power_ssj2008-20240116-01357.html

(2) One HPE ProLiant DL360 Gen11 2P 1U rack server with two Intel Xeon Platinum 8480+ 2.0 GHz processors (112 cores / 224 threads) has a SPECpower_ssj2008 score of 12,756 overall ssj_ops/watt. Two of those identical systems would have the same score given that the power and performance both would double, resulting the same performance/power ratio. Result details are from:
https://www.spec.org/power_ssj2008/results/res2023q1/power_ssj2008-20221204-01202.html

(3) 2-node SD550 V3 SPECpower_ssj2008. Result details are from:
https://www.spec.org/power_ssj2008/results/res2024q1/power_ssj2008-20240116-01358.html

(4) One Lenovo ThinkSystem SR650 V3 2P 2U rack server with two Intel Xeon Platinum 8490H 1.9GHz processors (120 cores / 240 threads) has a SPECpower_ssj2008 score of 15,112 overall ssj_ops/watt. Result details are from:
https://www.spec.org/power_ssj2008/results/res2023q3/power_ssj2008-20230619-01282.html

To view all SPECpower_ssj 2008 results, see the following page:
https://www.spec.org/power_ssj2008/results/

About the ThinkSystem SD530 V3 and SD550 V3

The **ThinkSystem SD530 V3** is designed to provide space and energy savings within the data center for workloads requiring only minimal storage. The SD530 V3 has 1U optimized thermals with up to four nodes sharing 3 power supplies (up to 2700W each), reducing power consumption and OPEX per 1U versus a standard rack server. With double the CPU density of a standard rack server, the SD530 V3 maximizes the processing power within a standard rack. Additionally, users save on unnecessary storage and PCIe costs for workloads where they are not needed.

Compute intensive workloads do not necessarily require large amounts of storage. The **ThinkSystem SD550 V3** multi-node server is optimized for these workloads by maximizing density, providing up to 2x the CPUs than a standard 2U rack server, and doesn't add costs with unnecessary storage.
The 2U half-width format with up to 2 CPUs maximizes core density, saves rack space, and lowers OPEX.

About SPECpower

The SPEC Power benchmark suite measures the power and performance characteristics of server-class computer equipment. It is used to compare power and performance among different servers and serves as a toolset for use in improving server efficiency. This benchmark is targeted for use by hardware vendors, IT industry, computer manufacturers, and governments.

Learn more

To learn more about power-efficient 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 SD530 V3 and SD550 V3 multi-node servers, visit the SD530 V3 and SD550 V3 product web pages:
https://www.lenovo.com/us/en/p/servers-storage/servers/multi-node/thinksystem-sd530-v3-multi-node-server/len21ts0026
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Related product families

Product families related to this document are the following:

- Multi-Node Servers
- SPECpower Benchmark Results
- ThinkSystem SD530 V3 Server
- ThinkSystem SD550 V3 Server

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