ThinkSystem SR630 V4 Sets World Record with New SAP Power Benchmark Benchmark Result

Performance Benchmark Result

The Lenovo ThinkSystem SR630 V4, using two Intel Xeon 6780E processors, has set a leadership world record on SAP's new Quote-to-Cash (Q2C) Server Power Standard Application Benchmark. The server has achieved best performance in the industry with the SAP Q2C Server Power benchmark using 40M initial documents.

A Q2C Server Power landscape consists of three components:

- SAP HANA database (scaleup or scaleout landscape) including a shipped HANA backup with Q2C content
- SAP ABAP application server(s) based on S/4HANA 2021 (ABAP Kernel: 789 PL201)
- Q2C driver (OS environment with tools for simulating the SAP GUI frontend)

The ThinkSystem SR630 V4 server achieved the following certified Q2C Server Power performance result (1):

- **13,70 watts/kaSAPS** with 40 million initial documents (2-tier)
- Initial documents: **40,000,000**
- Average throughput over all load levels (aSAPS): **43722**
- Minimum ambient temperature (degrees Celsius): **25**

The ThinkSystem SR630 V4 server that achieved this record level of SAP efficiency was configured in a 2-tier configuration as follows:

- 2x Intel Xeon Platinum 6780E 144-core 2.2GHz processors
  - 2 processors, 144 cores, 288 threads in total
  - 96 KB L1 cache and 1024 KB L2 cache per core, 54 MB L3 cache per processor
- 2,048 GB of Lenovo TruDDR5 memory - 16 x 128GB DDR RDIMM, 6400MT/s
- SUSE Linux Enterprise Server 15 SP5
- SAP HANA 2.0 Revision 84
- SAP S/4HANA Server 2021

E-cores and P-cores find their applications across a broad spectrum of computing tasks, each serving distinct purposes to maximize efficiency and performance. E-cores are well-suited for tasks that require less processing power but benefit from energy efficiency, while P-cores handle more demanding applications that necessitate high performance.

Results referenced are current as of September 3, 2025. For the latest SAP Q2C Server Power benchmark results, visit: https://www.sap.com/dmc/exp/2018-benchmark-directory/#/q2c-power.

(1) This benchmark fully complies with the SAP Benchmark Council regulations and has been audited and certified by SAP SE. Details are available at https://www.sap.com/dmc/benchmark/2025/Cert25002.pdf. The benchmark was performed in Bucharest, Romania by Lenovo engineers.

About the ThinkSystem SR630 V4

The Lenovo ThinkSystem SR630 V4 is an ideal 2-socket 1U rack server for customers that need industry-leading reliability, management, and security, as well as maximizing performance and flexibility for future growth. The SR630 V4 is based on two Intel Xeon 6700-series or Xeon 6500-series processors, with Performance-cores (P-cores), formerly codenamed "Granite Rapids-SP", or with Efficient-cores (E-cores), formerly codenamed "Sierra Forest-SP".

The SR630 V4 server supports a variety of cooling options including the new Lenovo Compute Complex Neptune Core module which uses open-loop liquid cooling to remove the heat from processors, memory, and voltage regulators. This Neptune Core module can remove more than 80% of heat from the server using liquid cooling, resulting in up to 33.6% power savings at the data center level.

Combining performance and flexibility, the SR630 V4 server is a great choice for enterprises of all sizes. The server offers a broad selection of drive and slot configurations and offers numerous high performance features. Outstanding reliability, availability, and serviceability (RAS) and high-efficiency design can improve your business environment and can help save operational costs. See more information at https://lenovopress.lenovo.com/lp1971-thinksystem-sr630-v4-server.

About SAP Q2C Server Power Benchmark

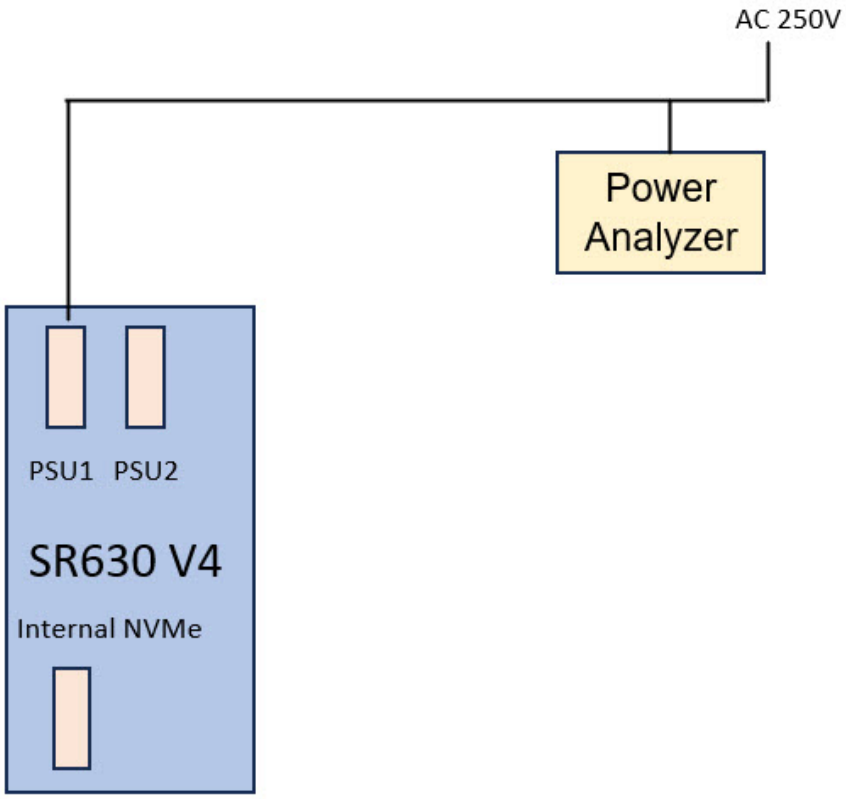
The SAP server power benchmark provides information about the power consumed by the server(s) in an SAP system environment running a standardized, well-defined workload. This encompasses CPU, memory and, in the case of a three-tier setup, the power consumed by the network connections between the servers, excluding the storage.

The SAP Q2C Server Power Benchmark consists of nine Q2C Benchmark runs, which are executed in one sequence.
All load levels are executed and measured in one benchmark run which consists of a total of nine load levels, incl. active idle, as a defined sequence.

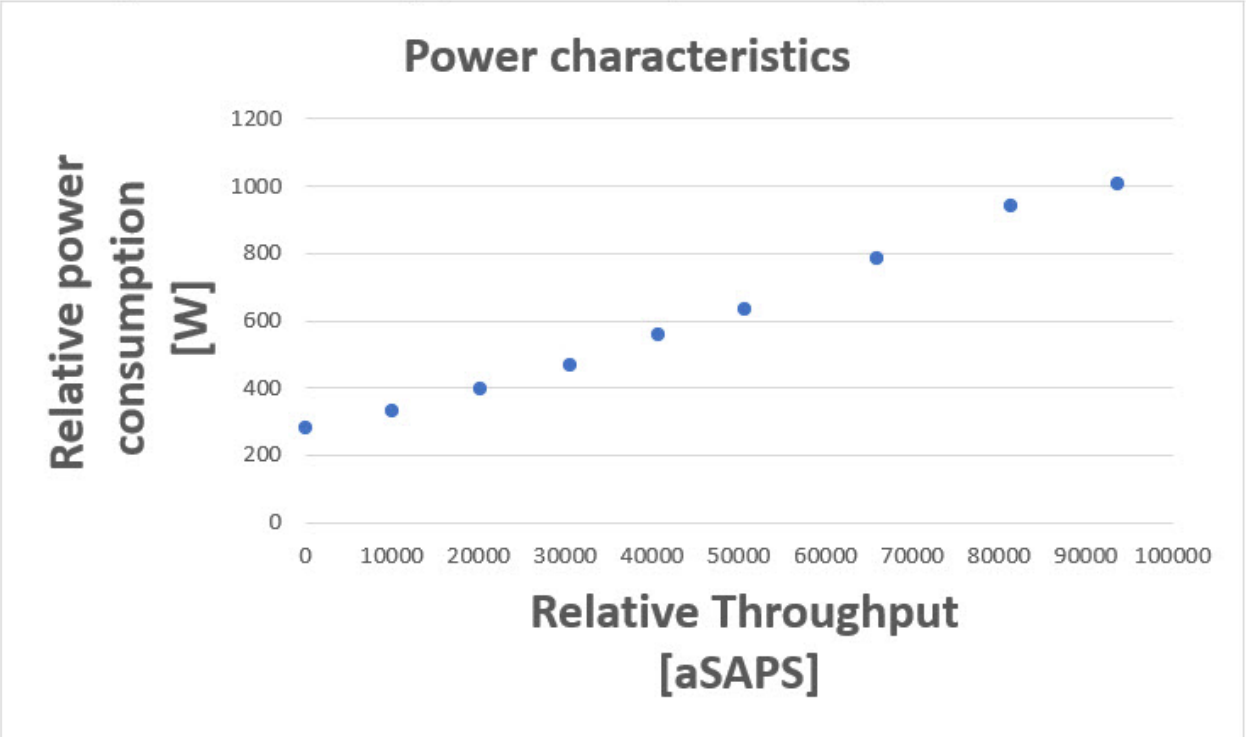
The power analyzer has been calibrated with Calibration Certificate N.1668_2025_RO_E in order to ensure compliant operation within approved limits.
To ensure that also short peaks in power consumption are captured, there must be at least one data point captured every second.

For the SAP Q2C server power benchmark the central power index value (“Power efficiency indicator”) in the certificate is watts/kaSAPS, i.e. the average power consumption over all load levels divided by the average throughput over all load levels.

Schematic map and power cabling:



The average watts over all throughput levels and the power efficiency indicator:



Linear power consumption is important for servers to enable accurate workload scheduling, optimize data center cooling and power infrastructure, and facilitate energy management and cost savings. While real-world server power consumption isn't always perfectly linear, a linear model provides a simple, accurate approximation essential for predicting energy usage, identifying inefficiencies, and making informed decisions about server and data center operations.

For more information about the benchmark, see https://www.sap.com/about/benchmark/appbm/power.html.

Learn more

To learn more about SAP solutions on Lenovo servers visit the following page:
https://www.lenovo.com/us/en/data-center/solutions/sap/

To learn more about the Lenovo ThinkSystem SR630 V4 server, visit the SR630 V4 product web page:
https://www.lenovo.com/us/en/p/servers-storage/servers/racks/lenovo-thinksystem-sr630-v4/len21ts0035

Related product families

Product families related to this document are the following:

- SAP Alliance
- ThinkSystem SR630 V4 Server

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