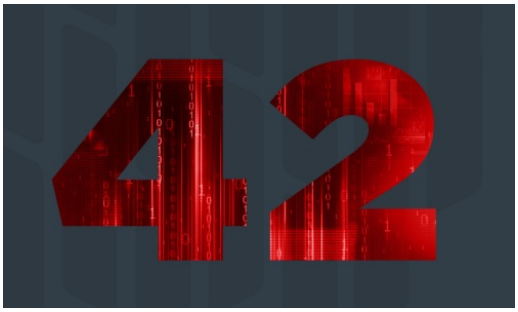
# ThinkSystem Servers: 42 World Record Benchmark Results

**Article**




Lenovo unveiled an end-to-end data center server portfolio that enables customers to harness the power of the "intelligence revolution" and create a strong technology foundation that supports transformative capabilities such as data analytics, high-performance computing, hybrid cloud, artificial intelligence and machine learning.

Building on Lenovo's number one position in customer satisfaction and server reliability for x86 servers, Lenovo has delivered 42 #1 world-wide benchmarks on ThinkSystem server platforms.

## TPC-E – 2 Socket World Record

The Lenovo ThinkSystem SR650 using the Intel Xeon Scalable processors delivered 2P TPC-E benchmark performance records.

**About this benchmark**: The TPC-E benchmark is designed to enable clients to more objectively measure and compare the performance and price of various OLTP systems. The TPC-E benchmark uses a database to model a brokerage firm with customers who generate transactions related to trades, account inquiries, and market research. Although the underlying business model of TPC-E is a brokerage firm, the database schema, data population, transactions, and implementation rules have been designed to be broadly representative of modern OLTP systems.

**Why it matters**: If you are running On-Line Transaction Processing workloads and databases, a leadership benchmark score means this server is the highest performing server for your data-intensive OLTP transactions.

Read the TPC-E performance benchmark report.

## TPC-H – 4 socket -10,000GB Performance World Record

The Lenovo ThinkSystem SR950 using the Intel Xeon Scalable processors delivered a non-clustered TPC-H benchmark @10,000GB scale benchmark performance record.

**About this benchmark**: The TPC-H benchmark is an ad-hoc, decision support benchmark. It consists of a suite of business oriented ad-hoc queries and concurrent data modifications. The queries and the data populating the database have been chosen to have broad industry-wide relevance. This benchmark illustrates decision support systems that examine large volumes of data, execute queries with a high degree of complexity, and give answers to critical business questions.

**Why it matters**: For those running decision support queries against large databases, a leadership benchmark score means this server is the highest performing server for your decision support applications.

Read the TPC-H performance benchmark report.

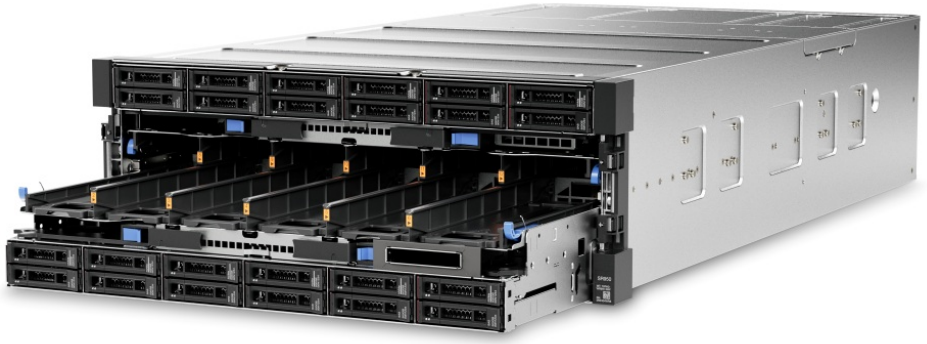


Figure 1. Lenovo ThinkSystem SR950

## SPECmpiM – 2 Socket World Record

The Lenovo ThinkSystem SR650 using the Intel Xeon Scalable processors delivered 2P SPECmpiM benchmark performance record.

**About this benchmark**: The SPEC MPI® 2007 benchmark suite is for evaluating MPI-parallel, floating point, compute intensive performance across a wide range of cluster and SMP hardware. This suite continues the SPEC tradition of giving users the most objective and representative benchmark suite for measuring and comparing high-performance computer systems.

**Why it matters**: If you are running HPC workloads up to 2048 cores, this leadership benchmark score means this server is the highest performing server for your parallel computing systems and clusters running actual end-user Message-Passing Interface applications.

Read the SPECmpiM performance benchmark report.

## SPECvirt – 2 Socket World Record

The Lenovo ThinkSystem SR650 using the Intel Xeon Scalable processors delivered 2P SPECvirt benchmark performance record.

**About this benchmark**: The SPECvirt_sc2013 benchmark measures the end-to-end performance of all system components including the hardware, virtualization platform, and the virtualized guest operating system and application software. SPECvirt_sc2013 is the second-generation SPEC benchmark for evaluating the virtualization performance of datacenter server consolidation, including enterprise class workloads. Link to news brief

**Why it matters**: If you are virtualizing multiple workloads, a leadership benchmark score means this server is the highest performing server for memory intensive virtualized environments.

Read the SPECvirt_sc2013 performance benchmark report.

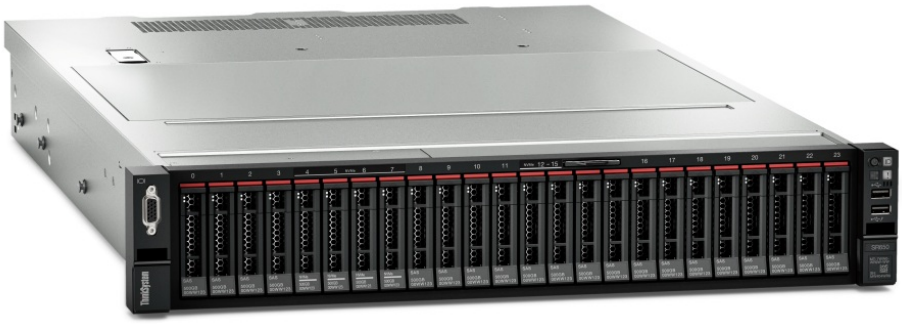


Figure 2. Lenovo ThinkSystem SR650

## SPECjbb2015 – 1 Socket, 2 Socket, 4 Socket and 8 Socket World Records

The Lenovo ThinkSystem SR650 and SR950 using the Intel Scalable Xeon processors delivered 1P, 2P, 4P and 8P SPECjbb2015 benchmark performance records.

**About this benchmark**: The SPECjbb2015 benchmark has been developed from the ground up to measure performance based on the latest Java application features. It is relevant to all audiences who are interested in Java server performance, including JVM vendors, hardware developers, Java application developers, researchers and members of the academic community.

**Why it matters**: If you are interested Java server performance, a leadership benchmark score means this server is the highest performing server for the latest Java application response time and throughput.

Read the performance benchmark reports:

- SR650 with 1 processor
- SR650 with 2 processors
- SR950 with 4 processors
- SR950 with 8 processors

## SPECcpu2006 – 8 Socket World Record

The Lenovo ThinkSystem SR950 using the Intel Xeon Scalable processors delivered 8P SPECcpu2006 benchmark performance record.

**About this benchmark**: The SPEC CPU 2006 benchmark is an industry-standardized, CPU-intensive benchmark suite, stressing a system's processor, memory subsystem and compiler. It provide a comparative measure of compute-intensive performance across the widest practical range of hardware using workloads developed from real user applications. SPECfp is the floating point measurement of SPECcpu focusing on highly scientific workloads. SPECint is the integer component of SPECcpu focusing on integer-math based workloads.

**Why it matters**: If you are running compute-intensive workloads, a leadership benchmark score means this server is the highest performing server for how fast a server completes a task (speed) and/or how much a server can accomplish in a certain time (throughput or rate measurement).

Read the SPEC CPU 2006 performance benchmark report.

## STAC-M3 – 4 Socket World Records (11 of 17 measurements)

The Lenovo ThinkSystem SR950 using the Intel Xeon Scalable processors delivered 11 4P STAC-M3 benchmark performance records.

**About this benchmark**: The STAC-M3 benchmarks measures challenging areas such as time-series analytics, risk simulations, and processing of very high-speed data (17 total measurements). The key metric is query response time. In particular STAC benchmarks test high-speed analytics on time-series data -- tick-by-tick market data. The benchmark is used by large global banks, brokerage houses, exchanges, hedge funds, proprietary trading shops, and other market participants.

**Why it matters**: If you are processing high speed financial services or securities, a leadership benchmark score means this server is the highest performing server to process your high speed analytics and financial transactions.

Read the STAC-M3 performance benchmark report.

## STAC-M3 – 2 Socket World Records (15 of 17 measurements)

The Lenovo ThinkSystem SR650 using the Intel Xeon Scalable processors delivered 15 2P STAC-M3 benchmark performance records.

**About this benchmark**: The STAC-M3 benchmarks measures challenging areas such as time-series analytics, risk simulations, and processing of very high-speed data (17 total measurements). The key metric is query response time. In particular STAC benchmarks test high-speed analytics on time-series data -- tick-by-tick market data. The benchmark is used by large global banks, brokerage houses, exchanges, hedge funds, proprietary trading shops, and other market participants.

**Why it matters**: If you are processing high speed financial services or securities, a leadership benchmark score means this server is the highest performing server to process your high speed analytics and financial transactions.

Read the STAC-M3 performance benchmark report.

## Related product families

Product families related to this document are the following:

- Mission-Critical Rack Servers
- 2-Socket Rack Servers
- 4-Socket Rack Servers
- SPECcpu Benchmark Results
- 8-Socket Rack Servers
- SPECjbb Benchmark Results
- SPECmpi Benchmark Results
- SPECvirt Benchmark Results
- STAC-M3 Benchmark Results
- TPC-E Benchmark Results
- TPC-H Benchmark Results

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