

New World Records Set with the STAC-M3 Benchmark Result on the ThinkSystem SR950 Performance Benchmark Result

The Lenovo ThinkSystem SR950 with Intel Optane drives has set five new performance world records with the Kanaga suite of the STAC-M3 benchmark. The STAC-M3 benchmark suite is the industry standard for testing solutions that enable high-speed analytics on time series data, such as tick-by-tick market data, also known as tick database stacks.

STAC-M3 benchmarks are grouped into suites. The base suite, code-named “Antuco”, contains a range of test cases with varying levels of CPU and storage-I/O intensity. The optional “Kanaga” suite consists of two test sequences that extend Antuco benchmarks across larger quantities of data in order to measure the volume-scalability of a database stack.



These new benchmark results were published on November 1, 2018 in a new STAC Report, SUT ID [KDB181009](#). The results demonstrate that the SR950 continues Lenovo’s leadership with world record breaking performance for the financial services industry.

The SR950 achieved leadership performance in five benchmark categories in the Kanaga suite. Compared to all other publicly released results for solutions using the kdb+ database, this first-ever solution to run the full-scale STAC-M3 Kanaga suite (48TB) in a single 4-processor server set world records in the following benchmarks:

- **Year 5 market snapshot** (STAC-M3.β1.10T.YR5-MKTSNAP.TIME)
58% faster than the next best result
- **Year 4 market snapshot** (STAC-M3.β1.10T.YR4-MKTSNAP.TIME)
46% faster than the next best result
- **Year 3 market snapshot** (STAC-M3.β1.10T.YR3-MKTSNAP.TIME)
20% faster than the next best result
- **Year 2 market snapshot** (STAC-M3.β1.10T.YR2-MKTSNAP.TIME)
13% faster than the next best result
- **50-user 12-day VWAB in Year 1** (STAC-M3.β1.50T.YR1VWAB-12D-HO.TIME)
40% faster than the next best result

The ThinkSystem SR950 server was configured as follows for the benchmark audit:

- Lenovo ThinkSystem SR950
- 4x Intel® Xeon® Platinum 8180 Processors (28 cores, 2.5 GHz, 38.5 MB last level cache)
- 3 TB memory (48x 64 GB LRDIMMs at 2666 MHz)
- 6x 8 TB Intel DC P4510 (3D NAND) SSDs

- 2x 4 TB Intel DC P4510 (3D NAND) SSDs
- 4x 1.5 TB Intel DC P4800X (Optane) SSDs
- Red Hat Enterprise Linux 7.5 (Maipo)
- Security patches for Spectre/Meltdown vulnerabilities (CVE-2017-5715, CVE-2017-5753, CVE-2017-5754)
- Kx Systems kdb+ 3.5

About the ThinkSystem SR950

Lenovo ThinkSystem SR950 is designed for your most demanding, mission-critical workloads, such as in-memory databases, large transactional databases, batch and real-time analytics, ERP, CRM, and virtualized server workloads.

The powerful 4U ThinkSystem SR950 can grow from two to eight Intel Xeon Scalable Family processors, and with 96 DIMM sockets, supports up to 12 TB of high-speed memory without having to replace the server enclosure or upgrade to a physically larger design. The modular design of SR950 speeds upgrades and servicing with easy front or rear access to all major subsystems to maximize server availability.

The SR950 packs numerous fault-tolerant and high-availability features into a high-density design. The SR950 offers enterprise scalability and advanced RAS features to support the most demanding mission-critical applications that require 24x7 operations. The new 4U rack optimized design reduces the space needed to support massive network computing operations and simplifies servicing.

Lenovo XClarity Controller is an all-new hardware embedded management engine common in every ThinkSystem server. XClarity Controller features an uncluttered graphical user interface, industry standard Redfish-compliant REST APIs, and enables booting in half the time of prior generation servers, with up to 6x faster firmware updates.

Lenovo XClarity Administrator is a virtualized application that centrally manages ThinkSystem servers, storage, and networking. Via reusable patterns and policies, it ramps up and scales infrastructure provisioning and maintenance. It serves as a central integration point to extend your data center management processes to physical IT. Running XClarity Integrators in external IT applications, or integrating through REST APIs, helps you further speed services provisioning, streamline IT management, and contain costs.

About STAC

The Securities Analysis Technology Center (STAC) is a company that coordinates a community called the STAC Benchmark Council.

The STAC Benchmark Council consists of over 300 financial institutions and more than 50 vendor organizations whose purpose is to explore technical challenges and solutions in financial services and to develop technology benchmark standards that are useful to financial organizations.

User firms include the largest global banks, brokerage houses, exchanges, hedge funds, proprietary trading shops, and other market participants. Vendor firms include innovative manufacturers of processor, server, storage, and network hardware, as well as horizontal-market software providers and vertical specialists.

STAC-M3 benchmarks are governed by user firms in the STAC Benchmark Council. The STAC-M3 benchmark report for the SR950 is publicly available.

Learn more

To learn more about solutions for the financial services industry, please contact your Lenovo Sales Representative.

To find out more about STAC, visit the [STAC Research web site](#).

To learn more about the Lenovo ThinkSystem SR950 server, visit the [SR950 product web page](#).

Related product families

Product families related to this document are the following:

- [Mission-Critical Rack Servers](#)
- [4-Socket Rack Servers](#)
- [STAC-M3 Benchmark Results](#)

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