

LENOVO SYSTEM x3850 X6

Innovation for business advantage



Mission-critical applications now must do more as businesses expand access through new mobile and cloud deployments. Ready access to actionable information is crucial. For this to happen, IT solutions must easily scale performance, manage large masses of data and make information available in real-time.

As the volume of data continues to grow exponentially, businesses remain constrained by a finite set of capital and operational resources. The Lenovo® System x3850 X6 incorporates the sixth generation of enterprise X ARCHITECTURE® to help deliver better, more efficient business results.

X6 platforms can produce up to 125 percent faster compute performance than previous-generation systems.¹ The X6 portfolio increases virtualization density and decreases infrastructure costs and complexity. Now you can design faster analytics engines, rein in IT sprawl and deliver information with high reliability. X6 servers are fast, agile and resilient.

FAST PERFORMANCE

The Lenovo System x3850 X6 delivers fast application performance thanks to an innovative scalable design and new storage technology. The x3850 X6 is the

first server designed and optimized for new eXFlash™ memory-channel storage. eXFlash DIMMs can deliver up to 12.8 TB of ultra-low latency flash storage—unmatched storage performance in an x86 server. Equipped with Intel® Xeon® processors E7-8800 v2 and E7-4800 v2 series, the x3850 X6 can deliver up to 6.0 TB of memory and 60 cores of processing power. Armed with these capabilities, you can host essential business-critical applications, implement large virtual machines or run sizeable in-memory databases without compromises in performance, capacity or scalability.



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The x3850 X6 leverages unique eXFlash memory-channel storage to deliver exceptional performance and value to clients. eXFlash memory-channel storage offers significantly lower write latency than any other flash offering on the market. With eXFlash memory-channel storage, you gain consistent performance even if you are running mixed workloads:

- The on-memory-bus design alleviates potential I/O contention
- Databases from 200 GB to 12.8 TB have deterministic response times and consistent performance

eXFlash memory-channel storage is ideal for large databases and highly-virtualized environments, and it gives you the confidence to support several times more virtual machines per server without degradation of service. It is a highly scalable form factor

that provides greater performance and granular capacity growth. eXFlash DIMMs:

- Leverage universal DIMM slots and are interoperable with standard DDR3 RDIMMs
- Support 200 GB to 12.8 TB of memory-channel storage
- Deliver performance that scales with additional modules while keeping latency consistently low.

eXFlash memory-channel storage reduces or eliminates the need for SAN/NAS storage. Less SAN/NAS hardware means reduced storage costs, fewer software licenses, and lower licensing costs.

AGILE DESIGN

Change is inevitable and managing it is a must in order to achieve or maintain market leadership. Changes in IT infrastructure typically drive complexity and cost. Managing evolving technology, divergent customer needs and fluctuating costs requires an agile approach to platform design. The unique agile and adaptive modular rack

design of the x3850 X6 enables you to design a fit-for-purpose solution that meets your needs. At the same time, you can realize infrastructure cost savings by hosting multiple generations of technology in a single platform – without compromising performance or capacity.² With X6 platforms:

- You can configure the server to fit the unique requirements of your applications and workloads; you can add, modify or upgrade X6 platforms easily with selectable modular book components. There are three types of X6 books, one for each of the major subsystems—a Storage Book, Compute Books and I/O Books.
- You can scale capacity and performance from 4-socket to 8-socket, to deliver twice the performance for growing applications without creating IT sprawl.
- You can use FastSetUp™ software for automated provisioning of a cluster of servers and realize time-to-value in minutes rather than days.



RESILIENT PLATFORMS

The growth of new applications has ratcheted database processing and business analytics to the top of the list of crucial x86 workloads. Enterprise businesses demand continuous uptime in order for you to rapidly achieve the most valuable result—access to massive amounts of mission-critical data. The enterprise platforms that host these workloads must deliver data at a high velocity—with continuous availability.

Through differentiated X6 self-healing technology, the x3850 X6 maximizes uptime by proactively identifying potential failures and transparently taking necessary corrective actions. These unique System x® features include:

- Advanced Page Retire—proactively protects applications from corrupt pages in memory, crucial for scaling memory to terabytes

- Processor High Availability—allows the platform to maintain access to networking, storage and server management during a processor failure
- Rolling Firmware Update Upward Integration Module—enables concurrent updating of the system firmware with no impact on application performance or availability
- RAS Upward Integration Module—enables the creation and management of policies to maintain high availability of virtual machines
- x3850 X6 modular design—reduces service time by enabling quick easy replacement of upgradeable or failed components.

These built-in technologies drive the outstanding system availability and uninterrupted application performance needed to host mission-critical applications.

FAST. AGILE. RESILIENT.

A fast, agile and resilient technology infrastructure makes meeting the needs of your enterprise easier. Lenovo System x X6 platforms not only help you reduce costs and complexity, but deliver the breakthrough performance and capacity that today's applications demand. X6 systems are the result of more than 15 years of X ARCHITECTURE investment and innovation aimed at surpassing industry standards.



SPECIFICATIONS

FORM FACTOR/HEIGHT	Rack/4U
PROCESSOR (MAX)	Up to four Intel® Xeon® processors E7-4800/8800 v2 series up to 4 GHz, up to 1600 MHz memory access, 15 cores per processor
MEMORY (MAX)	Up to 6 TB, 96 DIMM slots supporting 64 GB LRDIMMs, up to 37.5 MB cache
FLASH STORAGE	Up to 12.8 TB, 32 x 400 GB eXFlash DIMMs (ultra-low latency)
EXPANSION SLOTS	Up to 11 PCIe; Gen3 (up to 11), Gen 2 (up to 2), up to five x16 slots; up to six full-length, full-height
DISK BAYS (TOTAL/HOT-SWAP)	Up to eight 2.5-inch Serial Attached SCSI (SAS) hard disk drives (HDDs) or SAS solid state drives (SSDs); or up to sixteen 1.8-inch eXFlash SSDs
MAXIMUM INTERNAL STORAGE	Up to 9.6 TB (8 x 2.5-inch SAS/SATA HDDs) or up to 12.8 TB (8 x 2.5-inch SSDs) or 6.4 TB (16 x 1.8-inch eXFlash SSDs)
NETWORK INTERFACE	One ML2 socket; ML2 card choices include: 4 x 1 GbE copper or 2 x 10 GbE SFP+ or 2 x 10 GbE 10BaseT; Dedicated 1 GbE on-board management port
POWER SUPPLY (STD/MAX)	Up to four common 1400 W or 900 W AC or 4 x 750 W DC
HOT-SWAP COMPONENTS	Half-length I/O Books, Full-length I/O Books, power supplies, fans, hard disk drives, SSDs
RAID SUPPORT	RAID-0, -1, optional RAID-5, -6, -50, -60
SYSTEMS MANAGEMENT	Alert on LAN 2, automatic server restart, IBM Systems Director, ServerGuide®, IMM2, light path diagnostics (independently powered), Wake on LAN, Dynamic System Analysis, Predictive Failure Analysis on storage, processors, adapter slots, VRMs, fans, power supplies and memory
OPERATING SYSTEMS SUPPORTED	Microsoft Windows Server, Red Hat Enterprise Linux Server, SUSE Linux Enterprise Server, VMware vSphere Hypervisor
LIMITED WARRANTY	3-year customer replaceable unit and onsite service, next business day 9x5, service upgrades available

¹ 125 percent performance improvement is based on preliminary results of SPECint*_rate_base2006, SPECfp*_rate_base2006, and TPC-E benchmarks, plus performance gains from eXFlash DIMM storage. SPEC and TPC benchmark results are available at www.spec.org and [www\(tpc.org](http://www(tpc.org)). Configurations: 4-socket x3850 X6 server using Intel Xeon processor E7-4890 v2 vs. 4-socket server using the previous top-of-the-line E7-4870 (v1)

² When a newer generation of processor and memory technology becomes available, Compute Books can be replaced with newer ones. (All Compute Books must use matching technology.)

OPTIONS

32 GB (1x32 GB, 4Rx4, 1.35V) PC3L-12800 CL11 ECC DDR3 1600 MHz LP LRDIMM 46W0676 Add more memory to help improve the performance of all your workloads	1.6 TB SAS 2.5" MLC G3HS Enterprise SSD 00AJ222 High-performance, dense flash to accelerate applications	eXFlash 400 GB DDR3 Storage DIMM 00FE005 Provides the lowest write latency while maintaining consistent high IOPS
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FOR MORE INFORMATION

About Lenovo or the System x3850 X6,
or to contact your Lenovo Business Partner, visit
ibm.com/systems/x/hardware/enterprise/x3850x6/index.html.



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