

# LENOVO SYSTEM x3950 X6

Innovation for business advantage



## MISSION CRITICAL

As businesses continue to expand into mobile and cloud arenas, mission-critical applications—and data center infrastructure—must do more. Superior IT solutions must easily scale-up for better performance, manage large masses of data, and make that crucial actionable insight available in real-time. It's a given that the volume of data you manage continues to grow, yet you remain constrained by a finite set of capital and operational resources. The Lenovo® System x3950 X6, based on the sixth generation of Enterprise X-Architecture® technology, helps you efficiently deliver better, more timely business results.

X6 platforms, with Intel® Xeon® processors E7-8800 v3 series, can produce up to 56 percent faster compute performance than the last-generation of X6 systems with last-generation

processors.<sup>1</sup> The X6 portfolio delivers large application virtualization 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 x3950 X6 delivers exceptionally fast application performance thanks to a combination of new storage and memory technologies. The storage technologies include the following:

- NVMe PCIe SSDs provide a new high performance SSD form factor storage alternative that delivers lower latency and higher IOPS than traditional flash drives.
- Up to 12.0 TB of DDR3 or DDR4 system memory matches price and performance to your application requirements.
- eXFlash™ memory-channel storage can deliver up to 12.8 TB of integrated ultra-low latency flash storage—unmatched storage performance in an x86 server.

Equipped with Intel® Xeon® processors E7-8800 v3 series, the x3950 X6 can deliver up to 12.0 TB of memory and 144 cores of processing power. You can host essential mission-critical applications, implement large virtual machines or run sizeable in-memory databases without compromise.



Server-integrated flash storage solutions such as eXFlash memory-channel storage or NVMe PCIe SSDs address storage bottlenecks at the server to help reduce the need for investment in expensive SAN/NAS storage. Less dependency on SAN/NAS hardware and software 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 agility and adaptability of the X6 modular rack design enables you to design a fit-for-purpose solution that meets your needs. Also, you can realize infrastructure cost savings by hosting multiple generations of technology in a single platform—without compromising performance or capacity.<sup>2</sup> With X6 platforms:

- You can configure servers 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.
- Instead of creating IT sprawl, you can scale capacity and performance from 4-socket to 8-socket, to deliver twice the performance.
- You can realize significantly-faster time-to-value by using FastSetUp™ software for automated provisioning of a cluster of servers.

## RESILIENT PLATFORMS

The growth of new applications has ratcheted database processing and business analytics to the top of the list of prevalent x86 workloads. These workloads demand high velocity data delivery and continuous availability from the enterprise platforms on which they run. X6 servers feature advanced reliability, availability and serviceability (RAS) features. Differentiated X6 self-healing technology, proactively identifies potential failures and transparently takes necessary corrective actions:

- 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
- x3950 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.



## SPECIFICATIONS

<b>FORM FACTOR/HEIGHT</b>	Rack/8U
<b>PROCESSOR (MAX)</b>	Up to eight Intel® Xeon® processors E7-4800/8800 v3 series, up to 3.2 GHz, up to 1600 MHz memory access (DDR3) and up to 1866 MHz (DDR4) memory access, 18 cores per processor
<b>MEMORY (MAX)</b>	Up to 12 TB, 192 DIMM slots supporting 64 GB LRDIMMs
<b>ULTRA-LOW LATENCY FLASH STORAGE</b>	Up to 12.8 TB, 32 x 400 GB eXFlash™ DIMMs
<b>EXPANSION SLOTS</b>	Up to 22 PCIe; Gen3 (up to 22), Gen 2 (up to 4), up to ten x16 slots; up to 12 full-length, full-height
<b>DISK BAYS (TOTAL/HOT-SWAP)</b>	Up to sixteen 2.5-inch Serial Attached SCSI (SAS) hard disk drives (HDDs) or SAS solid state drives (SSDs); or up to thirty-two 1.8-inch eXFlash SSDs or up to eight NVMe PCIe SSDs
<b>MAXIMUM INTERNAL STORAGE</b>	Up to 16 x 2.5-inch SAS/SATA hard disk drives (HDDs) or up to 16 x 2.5-inch SSDs or up to 32 x 1.8-inch eXFlash SSDs or up to eight x 2.5-inch NVMe PCIe SSDs
<b>NETWORK INTERFACE</b>	Two ML2 sockets; ML2 card choices include: 4 x 1 GbE copper or 2 x 10 GbE SFP+ or 2 x 10 GbE 10BaseT; Two dedicated 1 GbE on-board management ports
<b>POWER SUPPLY (STD/MAX)</b>	Up to eight common 1400 W or 900 W AC or 8 x 750 W DC
<b>HOT-SWAP COMPONENTS</b>	Half-Length I/O Books, Full-Length I/O Books, power supplies, fans, hard disk drives, SSDs
<b>RAID SUPPORT</b>	RAID-0, -1, -10 standard; optional RAID-5, -6, -50, -60
<b>SYSTEMS MANAGEMENT</b>	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
<b>OPERATING SYSTEMS SUPPORTED</b>	Microsoft Windows Server, SUSE Linux Enterprise Server, Red Hat Enterprise Linux Server, VMware vSphere Hypervisor
<b>LIMITED WARRANTY</b>	3-year customer replaceable unit and onsite service, next business day 9x5, service upgrades available

<sup>1</sup> 56 percent improvement based on Intel preliminary projections in confidential documents.

<sup>2</sup> 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

<p><b>2.0 GB NVMe</b> <b>90Y3236</b></p> <p>NVMe flash drives deliver lower latency and higher throughput than SAS or SATA.</p>	<p><b>32 GB RDIMM</b> <b>95Y4808</b></p> <p>Mission critical memory increases reliability for critical workloads.</p>	<p><b>2x40GbE ML2 Mezz LOM Adapter</b> <b>00FP650</b></p> <p>Ideally suited for High Performance Computing (HPC), this adapter delivers high bandwidth, low latency, and excellent interconnect efficiencies.</p>
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## FAST. AGILE. RESILIENT.

Fast, agile and resilient, Lenovo System x X6 platforms not only help you reduce costs and complexity, but also 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.

## WHY LENOVO

Lenovo is the leading provider of x86 systems for the data center. The portfolio includes rack, tower, blade, dense and converged systems, and supports enterprise class performance, reliability and security. Lenovo also offers a full range of networking, storage, software and solutions, and comprehensive services supporting business needs throughout the IT lifecycle.

## FOR MORE INFORMATION

For more information about Lenovo, the Lenovo System x3950 X6, or to contact your Lenovo representative or Business Partner, visit [lenovo.com/servers](http://lenovo.com/servers)

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