

Lenovo Cloud Configuration for Microsoft Hyper-V on x3850 X6

Advanced virtualization performance and reliability

Remove Complexity and Uncertainty

The valuable data your business owns can give you a competitive advantage. But you will only realize that data's full power if your users can analyze and access that information where, when and how they need it.

Providing users with access to business intelligence on virtualized compute platforms can help your business realize the power within its data. But that virtualization can increase demands on IT systems, infrastructure planning and IT staff. Since performance is defined by how well administrators master technical priorities to deliver tangible business benefits, they must find ways to simultaneously reduce this pressure while capitalizing on the insights hidden in the business data.

Breakthrough technology from Lenovo can provide that virtualized power—even with capital and operational resource constraints. The Lenovo Cloud Configuration for Microsoft Hyper-V on x3850 X6 provides outstanding server virtualization performance and security.

Combining standardized hardware, software and server memory advancements, and tested to work with the built-in capabilities of Microsoft Hyper-V, this virtualization solution is housed on the latest generation of Lenovo X6 server architecture and is built to be fast, agile and resilient. The result is an ability to meet your cloud infrastructure needs without negatively impacting your IT organization.

Fast server virtualization

Successfully competing in today's market requires anywhere, anytime access to business intelligence. To derive insight from large data volumes, you need a powerful system capable of providing robust virtualized capabilities to desktops, laptops, smartphones, tablets and thin clients.

The Lenovo Cloud Configuration for Microsoft Hyper-V on x3850 X6 provides virtualized power for all these devices. Built on Intel Xeon E7-4800/8800 v4 processors, Lenovo enterprise System x3850 X6 and x3950 X6 servers with X6 technology provide faster virtualized performance through better bandwidth and lower latencies. Integrating an innovative easy-to-use datacenter design that offers up to 192 cores, 12 TB of memory and over 100 TB of Flash in-box, System x3850/x3950 X6 enterprise servers provide up to:

- 100 percent faster performance than previous-generation systems.¹
- Three times the memory capacity of previous-generation systems.²

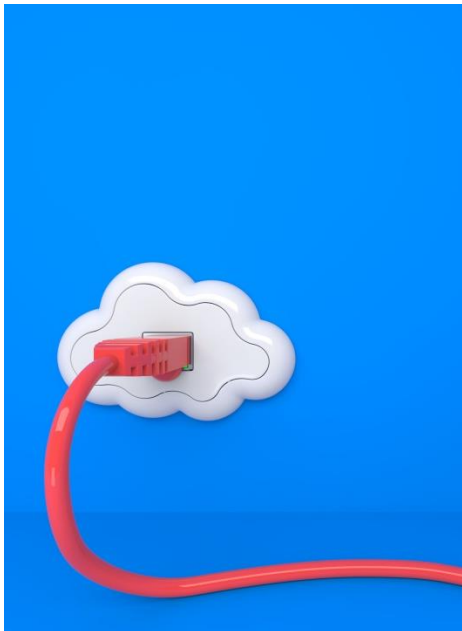
HIGHLIGHTS

- Cloud ready reference configuration on an industry proven platform
- Designed for Advanced performance and scale
- Fully isolated multitenant environment
- Reduced time to value



CONFIGURATION BRIEF

Lenovo Cloud Configuration for Microsoft Hyper-V on x3850 X6



Of course, high performance hardware is only part of the equation. Running Microsoft Hyper-V on the System x3850 X6 enterprise server gives you greatly expanded support for host processors and memory—which results in support for up to 8,000 virtual machines (VMs). Microsoft Hyper-V quality of service (QoS) provides you the ability to specify the minimum bandwidth available to a VM or port. Finally, because of integration with Windows Server, users experience a rich, “local-like” experience that speeds their ability to log on and begin productively using their virtual desktop.

Agile system design

Faster virtualized performance is certainly crucial to maintaining your competitive edge. But it is a business reality that you will undoubtedly require more performance capabilities next year than you do now. The Lenovo Cloud Configuration for Microsoft Hyper-V on x3850 X6 meets your current and future demands.

Both pieces of the solution—System x3850 X6 enterprise servers and Microsoft Hyper-V—provide the performance you need now along with built-in scalability to handle your future needs. For example, the System x3850 X6 enterprise server couples a unique rack design that incorporates modular component books along with FastSetup™. This approach allows you to:

- Reduce acquisition costs without compromising capacity or performance.
- Speed server deployment from days to minutes.
- Support three generations of processor technology within the same chassis.
- Scale from 2 sockets and 48 DIMMs up to 8 sockets and 192 DIMMs with the System x3950 X6 server.
- Swap components quickly, including compute, storage and full-length and half-length I/O books as well as fans and power supplies.

Along with the server’s ability to scale up to 240 processor threads and 12 TB of RAM, Microsoft Hyper-V includes support for simultaneous live migrations with the ability to move multiple VMs at the same time. This enables a more agile, responsive infrastructure and a more optimal use of network bandwidth during migration.

In addition, Microsoft Hyper-V also comes with live storage migration. This allows a system administrator to move virtual disk drives that are attached to a running VM. The result is no-downtime virtual disk drive transfer for system maintenance, storage upgrading or load redistribution.

CONFIGURATION BRIEF

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Resilient enterprise platform

Virtualized speed and scalability are vital to maintaining a market edge. But because unanticipated or excessive system downtime can neutralize those performance and agility advantages, system dependability is equally important.

The Lenovo Cloud Configuration for Microsoft Hyper-V on x3850 X6 is built on the proven reliability of the Lenovo X6 server architecture. As an example, advanced memory recovery capabilities monitor and identify fail-prone memory pages and quarantine them to avoid outages.

Also, advanced core recovery capabilities protect the system against consumed errors that could reach critical applications. Modules for the System x3850 X6 platform integrate predictive failure analysis (PFA) and microcode management, as well as diagnostics, into standard hypervisors.

When coupled with Hyper-V Replica, Microsoft Hyper-V's built-in asynchronous, application-consistent VM replication and VM failover prioritization, the result is superior system availability and dependability. By integrating these RAS technologies into a comprehensive solution, the Lenovo Cloud Configuration for Microsoft Hyper-V on x3850 X6 helps you:

- Perform maintenance and serviceability faster due to the modular design.
- Eliminate restarts and ease serviceability by minimizing the number of system "touches."
- Reduce downtime due to self healing architectures for CPU failures.

Fast. Agile. Resilient.

It is no secret your success depends on reliable, available anywhere access to business intelligence. You must provide those capabilities without detrimentally impacting your system administrators or your bottom line. That makes your virtualization decision crucial.

The Lenovo Cloud Configuration for Microsoft Hyper-V on x3850 X6 provides the speed, scalability and reliability you need. Featuring Lenovo System enterprise servers powered by Intel Xeon processors the solution's hardware has the performance to meet your needs and the dependability you can count on to reliably support the most critical of workloads. Microsoft Hyper-V takes advantage of that hardware to provide built-in, easy-to-administer virtualized performance that helps users increase productivity right from login.

Lenovo System x3850 X6 server



Lenovo System x3950 X6 server



CONFIGURATION BRIEF

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Highly reliable and customizable virtualization environment with the Lenovo System x3850 X6 and Microsoft Hyper-V



Why Lenovo X6 Server Configuration for Microsoft Hyper-V Cloud

Lenovo offers a wide range of servers and options. The Lenovo Cloud Configuration for Microsoft Hyper-V on x3850 X6 brings together the right mix of technology and software. The x3850 X6 and x3950 X6 servers pack numerous fault-tolerant and high-availability features into high-density, rack-optimized lidless packages. Both of these server platforms help reduce the space that is needed to support massive network computing operations and simplify servicing. These Lenovo servers represent the sixth generation of the Enterprise X-Architecture. It delivers fast application performance, is based on an agile system design, and is a resilient platform that is needed for mission-critical databases, enterprise applications, and the unique virtualization needs of small to medium-sized businesses.

Why Lenovo

Lenovo is a leading provider of x86 servers for the data center. Featuring rack, tower, blade, dense and converged systems, the Lenovo server portfolio provides excellent performance, reliability and security. Lenovo also offers a full range of networking, storage, software, solutions, and comprehensive services supporting business needs throughout the IT lifecycle. With options for planning, deployment, and support, Lenovo offers expertise and services needed to deliver better service-level agreements and generate greater end-user satisfaction.

For More Information

To learn more about the Lenovo Cloud Configuration for Microsoft Hyper-V on x3850 X6, contact your Lenovo Business Partner or visit:

<http://shop.lenovo.com/us/en/systems/solutions/cloud/>

¹ 100 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 will be available at www.spec.org and www.tpc.org, respectively, after 2/18/14.

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 6TB maximum memory vs 2TB or less for previous-generation competitive 4-socket servers.



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