

HP Integrity NonStop X NS7 X1

Redefining continuous availability and scalability for x86



Deliver operational efficiency for greater business value

HP Integrity NonStop X NS7 X1 delivers:

- Two times the NonStop CPU density⁴ in a single enclosure
- Up to double the memory capacity⁵ for improved application performance
- Industry-standard InfiniBand as the system interconnect for increased system capacity and lower latencies
- Fully integrated solution stack and proven NonStop fundamentals for industry-leading fault tolerance
- Factory-integrated, fully tested and verified hardware and software solution for out-of-the-box efficiency

¹“Worldwide and U.S. High-Availability Server 2014–2018 Forecast and Analysis”, Doc #250565, IDC, September 2014

² Comparison of HP Integrity NonStop i ServerNet bandwidth with HP Integrity NonStop X FDR InfiniBand bandwidth, HP Internal testing, December 2014

³ 6-core licensed NS7 X1 system compared to HP Integrity NonStop BladeSystem NB56000c licensed at 4 cores, HP Internal testing, July 2015

⁴ Compared to NonStop BladeSystem NB56000c with greater than eight NonStop CPUs, HP NonStop Product Management, 2015

⁵ Compared to NonStop BladeSystem NB56000c maximum RAM per CPU, HP NonStop Product Management, 2015

Engineered for the highest availability level

For businesses that never stop

HP Integrity NonStop is designed specifically for the very highest availability level. The industry analyst firm, IDC defines the highest availability as Availability Level 4¹ (AL4), where business processes continue as before. That means no interruption of work and no degradation in performance. For almost four decades, the HP Integrity NonStop architecture remains the ideal choice when there’s a need for high level availability and reliability—in compute environments that require continuous business.

The HP Integrity NonStop X NS7 X1 system extends the 100 percent fault-tolerant HP Integrity NonStop platform to include the x86 architecture. So, you can now leverage a proven solution for uninterrupted business that delivers timeless value regardless of the underlying architecture.

Architectural choice without compromise

HP Integrity NonStop provides a deployment choice on either the x86 architecture (Intel® Xeon® processors) for the HP Integrity NonStop X systems or the Intel® Itanium® architecture for the HP Integrity NonStop i systems. Mission-critical customers, like you, can continue to rely upon HP Integrity NonStop, deployed on either architecture, to deliver a resilient business foundation without compromise.

Scale up to match growing business demands

Rapid business growth means that mission-critical workloads require an infrastructure that can scale up to match growing business demands, with the capacity to handle processing-intensive workloads.

HP Integrity NonStop X NS7 X1 with InfiniBand delivers more than a 25 times increase in system interconnect capacity² for responding to business growth, and more than double the performance capacity³ to handle intensive transaction volumes. In addition, the NS7 X1 can add capacity online, with near-linear scalability and no application outage.

HP Integrity NonStop systems are architected with built-in clustering, workload balancing, and online management to deliver continuous application availability and meet the most stringent uptime SLAs. HP Integrity NonStop systems scale up to 16 NonStop CPUs within a single system (node), each running its own copy of the NonStop OS, and scale out to 4,080 NonStop CPUs on 255 networked NonStop nodes.



Existing NonStop applications running on NonStop X

- Most existing non-native TNS (Tandem NonStop CISC) applications will run on the NonStop X architecture without change.
- Non-native applications can be accelerated to take advantage of the new system's performance using the new NonStop X accelerator.
- Native Intel Itanium applications can take advantage of the new NonStop X compilers and with a simple recompilation, run on the new platform.
- Native applications require few, if any source code changes in order to run on the NonStop X architecture.
- In summary, NonStop X is a high performance environment that fits comfortably into your existing data center, is ready for your mission-critical applications, and is 100% NonStop.

A new family for HP Integrity NonStop

Opening up a world of possibilities

Representing the high-end of the HP Integrity NonStop X family, the NS7 X1 offers 2, 4, or 6-core software licensing options with more than double the performance capacity licensed at 6-cores when compared to the HP Integrity NonStop BladeSystem NB56000c licensed at 4 cores. The NS7 X1 combines the economies of newly enhanced, standards-based, modular computing with the trusted 24x7 fault-tolerant availability and data integrity of the HP Integrity NonStop architecture. The enhanced availability, manageability, and development features of HP Integrity NonStop result in a low total cost of ownership (TCO) for hosting mission-critical applications.

25 times increase in system interconnect capacity

At the heart of the NS7 X1 is a system interconnect based upon industry standard InfiniBand. The NS7 X1 leverages the modular efficiencies of the industry-leading HP BladeSystem c7000 Platinum Enclosure with 4X FDR (Fourteen Data Rate) InfiniBand double-wide switches to create the foundation for the NS7 X1 system interconnect. These switches, based on a dual fault-tolerant switched fabric, provide up to 56 Gbps bi-directional bandwidth to each NonStop CPU and throughout the system for extreme scalability, fabric flexibility, high throughput, and low latency.

Powered by Intel Xeon processors

HP Integrity NonStop X NS7 X1, built on proven HP ProLiant BL460c server blades, is powered by Intel Xeon E5-2600 v2 series processors and supports up to 192 GB of memory per NonStop CPU, with single system (node) maximum memory capacity greater than 3 TB. The use of half-height server blades connected by InfiniBand enables the NS7 X1 to double the NonStop CPU density within a single c7000 enclosure.

The advantage of the NonStop software stack

HP Integrity NonStop systems have been designed from day one with an integrated software stack that supports fault tolerance. These systems offer you fully tested and verified hardware and software solutions for out-of-the-box efficiency. The NonStop software stack includes the NonStop OS and the OSS file system, security, system management, middleware, Java and Java-frameworks, a modern development environment, and one of the most scalable fault-tolerant databases in the world.

HP Integrity NonStop X is offered with the L-series version of the NonStop Operating System. The NonStop X software stack has been optimized to take advantage of the x86 architecture and uses InfiniBand technology to improve software performance throughout the system. Security and time synchronization software are included with the NonStop OS.

HP NonStop SQL/MX and SQL/MP database products are both available on NonStop X with all the latest features for massive scalability. Middleware products are also available, as are Java and Java-related frameworks. HP NonStop Development Environment for Eclipse (NSDEE) and compilers are enhanced with x86 architecture in mind. If you are new to NonStop you may find the NonStop Eclipse development environment friendly and familiar to your application development efforts on other platforms.

HP Integrity NonStop X NS7 X1

Technical specifications

Processors	2 to 16 NonStop CPUs per system (node) Intel Xeon E5-2600 v2 series processors
Core licensing	2, 4, or 6-core software licensing option
RAM	Per CPU—Minimum: 64 GB, Maximum: 192 GB Per system—Minimum: 128 GB, Maximum: 3072 GB
NonStop OS	L-series, (L15.02 or later)
System interconnect	4X FDR InfiniBand, up to 56 Gbps bi-directional bandwidth to each NonStop CPU and throughout the system
Communication I/O adapters IP CLIM Telco CLIM	5 Ethernet ports, supports up to four 10GbE (10GBASE-T) and one 1GbE (1GBASE-T) ports or four 10GbE (10GBASE-SR) and one 1GbE (1GBASE-T) ports
Storage I/O adapters Storage CLIM	SAS, Fibre Channel
SAS storage enclosure Storage drives	25 SAS SFF (2.5") drives per enclosure <ul style="list-style-type: none"> • SAS SFF Solid State Drive (SSD) • SAS SFF Hard Disk Drive (HDD)
Number of cluster I/O modules (CLIMs)	Maximum of 56 CLIMs (IP, Telco, and Storage) Minimum CLIMs for fault tolerance: <ul style="list-style-type: none"> • Two communication CLIMs—IP or Telco • Two Storage CLIMs
Enterprise SAN	Fibre Channel connectivity for SAN attached (e.g., HP XP7 Storage and HP XP P9500 Storage) and tape storage
Racks (H x D x W)	42U rack: 79.00 x 51.19 x 23.54 in. (200.66 x 130.02 x 59.79 cm) 36U rack: 68.84 x 51.19 x 23.54 in. (174.86 x 130.01 x 59.79 cm)
Standard features	Redundant power inputs Redundant cooling
Environmental specifications	
Altitude	Operating: 3,000 m (10,000 ft) maximum Nonoperating: 12,192 m (40,000 ft) maximum
Temperature	Operating: 10°C to 35°C (50°F to 95°F) Nonoperating: <ul style="list-style-type: none"> • -40°C to 66°C (-40°F to 150°F) up to 72-hour storage • -29°C to 55°C (-20°F to 131°F) up to 6-month storage
Humidity	Operating: 20% to 80% relative noncondensing maximum Nonoperating: 10% to 80%, noncondensing
PDU input voltage (AC input power)	North America/Japan: 200–208V, 24A, single phase North America/Japan: 200–208V, 24A, 3 phase Delta International: 200–240V, 32A, single phase International: 380–415V, 16A, 3 phase Wye

System configurations

Minimum configuration single system (node)	Maximum configuration single system (node)	Maximum configuration (with Expand-over-IP networking)
2 processors	16 processors	255 systems (nodes)
128 GB memory	3072 GB memory	783 TB memory

Customize your IT lifecycle management, from acquisition of new IT, management of existing assets, and removal of unneeded equipment.

hp.com/go/hpfinancialservices

Training and education

Gain the skills you need with ExpertOne training and certification from HP. With HP NonStop training, you will accelerate your technology transition, improve operational performance, and get the best return on your HP investment.

Our training is available when and where you need it, through flexible delivery options and a global training capability. hp.com/learn/nonstop



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HP NonStop X—the platform for your continuous business

With the HP Integrity NonStop X NS7 X1 system, HP continues to deliver world-class systems using a collaborative approach to design and build an agile infrastructure. When you add up the scorecard, you realize that the NS7 X1 is a platform you can trust to meet your complete solution requirements. HP partners with many of the best independent software vendors (ISVs) for mission-critical solutions in many vertical industries—and delivers a complete portfolio of enterprise solutions from leading HP partners, extending our joint capability and ultimately enhancing your value.

In a world that never stops, you must be there, continuously—because your customers won't wait. HP Integrity NonStop is your product family for continuous business.

Support when and how you need it

HP Technology Services help build an infrastructure that is reliable, highly available, and rooted in best practices. We offer a support experience that is proactive, personalized, and simplified—delivering support when and how you need it.

HP recommends the following services for HP NonStop servers:

- **HP Critical Service**—high-performance reactive and proactive support designed to help minimize downtime. It offers an assigned support team, which includes an Account Support Manager (ASM). This service offers access to the HP Global Mission Critical Solution Center, 24x7 hardware and software support, six-hour call-to-repair commitment, enhanced parts inventory, and accelerated escalation management.
- **HP Proactive 24**—provides proactive and reactive support delivered under the direction of an ASM. It offers 24x7 hardware support with four-hour onsite response, 24x7 software support with two-hour response, and flexible call submittal.
- **HP Installation and Start-up Services**—provides efficient and effective deployment of HP hardware components.

Learn more at
hp.com/go/nonstop

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