

HPE NONSTOP X NS3

Redefining entry-class continuous availability for x86

Next-generation technology at affordable price points

HPE NonStop X NS3 delivers:

- Up to one-third more memory capacity³ 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

ENGINEERED FOR THE HIGHEST AVAILABILITY LEVEL

For businesses that never stop

HPE 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. With HPE NonStop X family, HPE has extended the 100 percent fault-tolerant HPE NonStop platform to include the x86 architecture, so that customers can leverage a proven solution for always-on business that delivers timeless value regardless of the underlying architecture.

ARCHITECTURAL CHOICE WITHOUT COMPROMISE

HPE NonStop systems provide a deployment choice on either the x86 architecture (Intel® Xeon® processors) for the HPE NonStop X systems or the Intel Itanium® architecture for the HPE Integrity NonStop i systems. Mission-critical customers like you can continue to rely upon HPE NonStop systems, deployed on either architecture, to deliver a resilient business foundation without compromise. HPE has extended the mission-critical NonStop solution to include a virtualized solution that can be deployed in a private cloud environment. This HPE Virtualized NonStop is managed through VMware® based solutions and can be deployed on many industry standard x86 based servers.

This software-based solution increases your choice of NonStop systems from the fully integrated and tested NonStop converged systems to VMware based virtualized IT platform-as-a-service depending on what best suits your specific needs. Whatever your NonStop deployment choices are, you will benefit from the HPE NonStop fundamentals of availability, scalability, security, and data integrity for your mission-critical workloads.

When downtime is not an option

The HPE NonStop X NS3 system, running on the HPE NonStop Operating System L-series, is an entry-class systems. It shares the same unique NonStop platform attributes, such as low total cost of ownership (TCO), real-time database, integrated stack, end-to-end security, and massive scalability, while delivering the same high level of availability and data integrity as the high-end HPE NonStop X NS7 system.

INNOVATION TO MATCH GROWING BUSINESS DEMAND

As your business needs evolve and user demands grow, the NS3 system will support your complex application requirements. The NS3 with InfiniBand delivers more than a 25 times increase in system interconnect capacity² for responding to business growth, and upgradable core software licensing for enhanced flexibility to handle intensive transaction volumes. The NS3 is well-suited for smaller-enterprise businesses and emerging markets as well as distributed computing and test/development environments.

¹ IDC Worldwide AL4 Server Market Shares, 2019: Fault-Tolerant Systems Become Digital Transformation Platforms; July 2020, IDC #US46640020

² Comparison of HPE Integrity NonStop i ServerNet bandwidth with HPE NonStop X 4X FDR InfiniBand bandwidth, HPE internal testing, February 2020

³ Compared to HPE Integrity NonStop i NS2400 with 48 GB memory per CPU, HPE NonStop Product Management, February 2020

Existing NonStop applications running on NonStop X

HPE NonStop X NS3 delivers:

- 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 percent NonStop.

A NEW ENTRY CLASS FOR HPE NONSTOP X

Opening up a world of possibilities

Representing the entry-class offering of the HPE NonStop X family, the NS3 is available with two or four NonStop CPUs. Offered for the first time in an entry-class NonStop system, the NS3 provides the flexibility to choose either 1 or 2-core software licensing per NonStop CPU. It combines the economies of newly-enhanced, standards-based, modular computing with the trusted 24x7 fault-tolerant availability and data integrity of the HPE NonStop architecture. The enhanced availability, manageability, and development features of HPE NonStop result in a low total cost of ownership (TCO) for hosting mission-critical applications. This applies equally to all generations of the NS3 including the NS3 X1, X2, and X3.

25 times increase in system interconnect capacity⁴

At the heart of the NS3 is a system interconnect based upon industry standard InfiniBand. The NS3 leverages the modular efficiencies of the industry-leading HPE BladeSystem c7000 Platinum Enclosure with 4X FDR (Fourteen Data Rate) InfiniBand double-wide switches to create the foundation for the NS3 system interconnect. These switches, based on a dual fault-tolerant switched fabric, provide up to 56 Gbps bidirectional bandwidth to each NonStop CPU and throughout the system for extreme scalability, fabric flexibility, high throughput, and low latency.

Powered by Intel Xeon processors

The HPE NonStop X NS3, built on proven HPE ProLiant BL460c server blades, is powered by Intel Xeon series processors and supports up to 64 GB of memory per NonStop CPU, with single system (node) maximum memory capacity of 256 GB.

Providing uninterrupted access to information and services

The NS3 system can be configured with two or four NonStop CPUs in a factory-integrated, fully-tested and verified configuration. Multiple systems can be

connected together via Ethernet with entry-class IP Cluster I/O Modules (CLIMs) or with entry-class Telco CLIMs to support M3UA, Diameter, and Session Initiation Protocol (SIP) protocols. Disk storage is managed by entry-class Storage CLIMs. Configured with up to eight powerful I/O adapters, these entry-class CLIMs provide evenly matched performance for the NS3 platform as they decrease the load on the host processor to balance overall performance, and shorten response times.

The advantage of the NonStop software stack

HPE NonStop systems (including the NS3) have been designed from day one with an integrated software stack that supports fault tolerance. 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.

The HPE 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 use InfiniBand technology to improve software performance throughout the system. Security and time synchronization software are included with the OS. HPE NonStop SQL/MX and SQL/MP database products are available on NonStop X with all the latest features for massive scalability. Middleware products are available, as are Java and Java-related frameworks. The NonStop Development Environment for Eclipse (NSDEE) and compilers are enhanced with x86 architecture in mind. Customers that are new to NonStop will find the NonStop Eclipse development environment friendly and familiar to their application developers. NonStop is also taking great strides in the area of application modernization with DevOps. Innovating on the platform is now as flexible and easy as any modern IT platform in your data center since modern DevOps tools such as Git, Ansible, and Jenkins can be used to develop applications on NonStop.

⁴ Comparison of HPE Integrity NonStop i ServerNet bandwidth with HPE NonStop X 4X FDR InfiniBand bandwidth, HPE internal testing, February 2020



HPE NONSTOP X NS3

Technical specifications

Processors	2 or 4 NonStop CPUs per system (node) NS3 X1 Intel Xeon E5-2600 v2 series processors NS3 X2 Intel Xeon E5-2600 v4 series processors NS3 X3 Intel® Xeon® Silver 4100 series processors
Core licensing	1 or 2-core software license
RAM	Per CPU—Minimum: 32 GB, Maximum: 64 GB Per system—Minimum: 64 GB, Maximum: 256 GB
NonStop OS	L-Series minimum RVU L15.08 (NS3 X1) L-Series minimum RVU L16.05 (NS3 X2) L-Series minimum RVU L18.08 (NS3 X3)
System interconnect	4X FDR InfiniBand, up to 56 Gbps bidirectional bandwidth to each NonStop CPU and throughout the system
Communication I/O adapters Entry-class IP CLIM Entry-class Telco CLIM	5 Ethernet ports Supports five 1GbE (1000BASE-T) ports Supports five 1GbE (1000BASE-T) ports
Storage I/O adapters Entry-class Storage CLIM	SAS, Fibre Channel
SAS Internal Storage enclosure Storage drives	25 SAS SFF (2.5 in.) drives per enclosure SAS SFF Solid State Drive (SSD) SAS SFF Hard Disk Drive (HDD)
Number of Entry-class CLIMs	IP CLIMs—minimum of two, maximum of four ⁵ Storage CLIMs—minimum of two, maximum of four
Enterprise SAN	Fibre Channel connectivity for SAN attached (e.g., HPE XP8, XP7, and HPE XP P9500) 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 Non-operating: 12,192 m (40,000 ft) maximum
Temperature	Operating: 10°C to 35°C (50°F to 95°F) Non-operating: -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 non-condensing maximum Non-operating: 10% to 80%, non-condensing
PDU input voltage (AC input power)	North America/Japan: 200–208V, 24 A, single phase North America/Japan: 200–208V, 24 A, 3-phase Delta International: 200–240V, 32 A, single phase International: 380–415V, 16 A, 3-phase Wye

⁵ The first two communication I/O adapters must be Entry-class IP CLIMs. Additional I/O adapters can be Entry-class IP CLIMs and/or Entry-class Telco CLIMs



Optimize your IT investment strategy with new ways to acquire, pay for, and use technology, in lock-step with your business and transformation goals. hpe.com/solutions/hpefinancialservices

TRAINING AND EDUCATION

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

Our training is available when and where you need it, through flexible delivery options and a global training capability. More trainings and webinars can be found at: nonstop-academy.com

HPE NONSTOP X—THE PLATFORM FOR YOUR CONTINUOUS BUSINESS

With the HPE NonStop X NS3 system, HPE continues to deliver world-class systems using a collaborative approach to design and build an agile infrastructure. When you add up the scorecard, you will realize the NS3 is offered at a price point that is favorable to those who may be considering open source alternatives. HPE partners with the best-of-breed independent software vendors (ISVs) for mission-critical solutions in many vertical industries—and delivers a complete portfolio of enterprise solutions from leading HPE 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. HPE NonStop is your product family for continuous business.

HPE POINTNEXT SERVICES

HPE Pointnext Services leverages our strength in infrastructure, partner ecosystems, and the end-to-end lifecycle experience, to accelerate powerful, scalable IT solutions to provide you the assistance for faster time to value. HPE Pointnext Services provides a comprehensive portfolio including Advisory and Transformational, Professional, and Operational Services to help accelerate your digital transformation.

Operational Services

- **HPE Datacenter Care:** HPE's most comprehensive support solution tailored to meet your specific data center support requirements. It offers a wide choice of proactive and reactive service levels to cover requirements ranging from the most basic to the most business-critical environments. HPE Datacenter Care Service is designed to scale to any size and type of data center environment while providing a single point of contact for all your support needs for HPE as well as selected multivendor products.

- **HPE Critical Service:** High-performance reactive and proactive support designed to minimize downtime. It offers an assigned support team, which includes an account support manager (ASM). This service offers access to the HPE Global NonStop Solution Center, 24x7 hardware and software support, six-hour call-to-repair commitment, enhanced parts inventory, and accelerated escalation management.
- **HPE Proactive Care:** Provides proactive and reactive support delivered under the direction of an ASM. It offers 24x7 hardware support with four-hour on-site response, 24x7 software support with a two-hour response, and flexible call submittal.
- **HPE Foundation Care:** Support for HPE servers, storage, networking hardware, and software to meet your availability requirements with a variety of coverage levels and response times.

Advisory and Transformation

Services—HPE Pointnext Services designs the transformation and builds a road map tuned to your unique challenges including hybrid cloud, Workload and Application Migration, Big Data, and the edge. Hewlett Packard Enterprise leverages proven architectures and blueprints, as well as integrates with partner products and solutions. We also engage the Professional and Operational Services teams as needed.

Professional Services—HPE Pointnext Services creates and integrates configurations that get the most out of software and hardware, and works with your preferred technologies to deliver the optimal solution. Services provided by the HPE Pointnext Services team, certified channel partners, or specialist delivery partners include installation and deployment services, mission-critical and technical services, and education services.

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