HPE Integrity NonStop BladeSystem NB56000c

For businesses that never stop

Designed for enterprise workloads that require continuous application availability and extreme scalability, the HPE Integrity NonStop BladeSystem NB56000c is a highly flexible and scalable high-end mission-critical server in the **HPE Integrity NonStop systems** family. HPE NonStop NB56000c allows you to perform and scale up without incurring downtime or bottlenecks.

Businesses that run the world's most demanding computing environments—from retail, banks, point-of-sale networks, mobile operators, manufacturing execution systems to critical public sector processes—can't afford to be unavailable. They must keep pace with changing business priorities while seeking methods to improve their data center efficiency. Such mission-critical applications are transaction intensive; they experience unpredictable growth and demand the highest levels of availability, scalability, and security.

Consequently, forward-thinking organizations like yours seek a flexible, high-performance server platform that offers the scalability to grow with the business. Also, they require the flexibility to develop and deploy new services rapidly while keeping businesses running uninterrupted 24x7—with industry-leading data integrity and zero downtime.

Leverage a new height in scalability and capacity

The HPE NonStop NB56000c is a 4-core system with a higher performance capacity as compared to HPE NonStop NB54000c. HPE NonStop NB56000c can also be licensed as a 2-core system at a lower software price point. A 2-core licensed HPE NonStop NB56000c can be upgraded to a 4-core licensed HPE NonStop NB56000c to increase system performance capacity at any time during the life of the platform. You can perform core upgrades online without taking the system or applications out of service. HPE NonStop NB56000c 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. Its enhanced availability, manageability, and development features create a total solutions approach, offering a low total cost of ownership (TCO) for complex mission-critical applications.

HPE Integrity NonStop BladeSystem NB56000c is built on the proven HPE Integrity BL860c i4 server blade and leverages the modular efficiencies of HPE BladeSystem c7000 Platinum enclosure (R3) with fault-tolerant HPE BladeSystem ServerNet doublewide switches. HPE NonStop NB56000c is powered by Intel® Itanium® processor 9500 series as the processing engine. HPE NonStop OS leverages powerful multicore processing to achieve a significant boost in performance. HPE NonStop OS J-series multicore processor support greatly improves the computing capacity of the platform and extends the acknowledged linear scalability of HPE NonStop systems to a new level.

HPE NonStop NB56000c with the Cluster I/O Modules (CLIMs) provides significant I/O configuration flexibility with IP and Telco CLIMs for communications support. For additional choices, HPE NonStop G16SE is available for communications connectivity. What's more, the HPE NonStop NB56000c with the Storage CLIMs supports both serial-attached SCSI (SAS) internal storage and Fibre Channel (FC) for tape and SAN storage. Support for previous generations of CLIMs and SAS storage subsystems is an additional step toward safeguarding your investments. Additionally, it supports the existing modular I/O subsystems (Input Output Adapter Modular Enclosure [IOAME] and Gigabit Ethernet 4-port ServerNet Adapter [G4SA]) and legacy FC storage subsystems (FC disk modules [FCDM], FC ServerNet Adapter [FCSA])—thereby protecting your existing investments.

Multicore processing allows both scale up and scale out. Compared to HPE NonStop NB54000c, the HPE NonStop NB56000c provides up to a 50% increase in performance capacity per logical processor at a lower cost per transaction. As is typical with other HPE NonStop systems, the HPE NonStop NB56000c scales out through built-in clustering of up to 4080 logical processors (16,320 cores).

What's new?

- Delivers up to 50% more performance capacity in the same data center footprint as compared to a similarly configured HPE NonStop NB54000c
- Provides scalability of up to 16,320 cores, up to 192,000 program processes per node, and an incredible 48,960,000 program processes in an Expand network
- Offers easy in-rack hardware upgrade when migrating from any previous HPE Integrity NonStop BladeSystem to an HPE Integrity NonStop BladeSystem NB56000c
- Saves you money as HPE NonStop NB56000c licensed for two cores per CPU comes at a lower software price point; activates remaining cores at any time during the life of the platform; increases performance capacity in the same footprint, without any hardware changes or application downtime
- Provides ready-to-use modern data-in-motion security capabilities (such as secure shell [SSH] and secure sockets layer [SSL] functions) and proven security audit reporting and alerts
- Comes configured with redundant CLIM OS disks in a RAID 1 configuration

Key features and benefits

Improves your virtualization work load efficiency

- Automatically balance workloads with a fully virtualized system that optimizes resources at the application level
- Extend availability protection with the intelligent, fault-tolerant capabilities of ServerNet for HPE NonStop
- Delivers very low TCO in its class with a fully integrated stack of hardware, OS, database, and software

Achieves outstanding performance and reliability

- Enables fault tolerance and 24x7 availability using continuously available software
  - Patented HPE NonStop process-pair technology provides instant software takeover in the event of a software or hardware fault.
  - Online self-management features offer ease of management and reduced staffing costs.
    - Created for continuous availability
  - A highly integrated software stack of OS, database software, and application services provides simplified operations and outstanding reliability.
    - CLIMs with RAID 1 configured CLIM OS disks
- Provides near-linear scalability of up to 16,320 cores (4080 logical processors)
  - Up to 192,000 program processes per node and an incredible 48,960,000 program processes in an Expand network
  - Built on the proven HPE Integrity BL860c i4 server blade
  - 6G SAS storage subsystem that is aligned with the latest industry advancements in storage technology including solid-state drives (SSDs) and hard disk drives (HDDs)

Provides complete investment protection and reduced risk

- Enables easy in-rack hardware upgrade and comprehensive application portability
- Facilitates a simple hardware upgrade with a quick blade swap, when migrating from any previous HPE Integrity NonStop BladeSystem to an HPE Integrity NonStop BladeSystem NB56000c
- Migrates from up to three previous generations of HPE NonStop systems without any recompilation
- Provides support for IOAME ServerNet Adapter (G4SA) and the legacy FC storage subsystem (FCDM, FCSA)
- Enables support for previous generations of CLIMs and SAS storage subsystems

Enables simplified integration into the data center through significant software ecosystem improvement

- Advanced HPE NonStop OS unlocks the power of 4-core technology for business services.
  - Improved logical processor performance capacity for larger workloads through enhanced HPE NonStop OS lock design and finer granularity
  - Higher application throughput with HPE NonStop OS Scheduler improvements
- HPE NonStop modern, open software ecosystem improves productivity, enhances security, and reduces development and support costs.
  - HPE NonStop Development Environment for Eclipse helps develop HPE NonStop applications on Microsoft® Windows® workstations, thereby improving productivity of developers.
  - It provides modern programming models based on widely adopted open source application servers and application frameworks such as Spring, Apache Axis2, Apache MyFaces, Hibernate, Apache Tomcat, and JBoss reduce development costs. Standard interfaces based on SOA, SOAP, and Web Services technology modernize application assets.
  - It supports programming and scripting languages (for example, Java, C, C++, Perl, and more).
- Improved security offerings protect your applications, systems, and data.
  - Modern ready-to-use data-in-motion security capabilities (such as SSH and SSL functions)
  - Built-in data sanitization capability to clear disk data prior to retirement or transfer to another system
  - Security products integrate HPE NonStop into Lightweight Directory Access Protocol (LDAP) environments and extend safeguard capabilities for managing users and the actions they can perform on the system
  - Fully integrated Volume Level Encryption (VLE) capability to encrypt data on disk and tapes available as an option on the system with the addition of an Enterprise Secure Key Manager
  - Secure archiving enabled through Secure Virtual Tape Subsystem and LTO tape encryption
- Built-in fault diagnosis and reporting reduce TCO.
  - All hardware, firmware, and environmental faults in the system automatically analyzed and reported in HPE NonStop Open System Management (OSM) Service Connection
  - Support for managing HPE NonStop system in a data center environment, using HPE Systems Insight Manager (SIM) and its plug-ins
  - Power and thermal monitoring and regulation through HPE Insight Control power management
  - Support automation through HPE Insight Remote Support Advanced

HPE Integrity NonStop BladeSystem NB56000c

Technical specifications

Processors	2 to 16 logical processors per node Intel Itanium 9500 series 2.4GHz processor, 32MB L3 cache
Core licensing	2-core and 4-core
RAM per logical processor	Minimum: 16 GB Maximum: 96 GB
HPE NonStop OS	J06.16 or later
Number of CLIMs in an HPE NonStop BladeSystem with two HPE BladeSystem c7000 enclosures	Maximum of 48 CLIMs (Storage, IP, or Telco) Minimum CLIMs for fault tolerance • Two Networking CLIMs—IP, Telco (no IOAME or HPE NonStop G16SE) • Two Storage CLIMs (no IOAME) • Zero CLIMs (with IOAME)
Communication I/O adapters • IP CLIM • Telco CLIM	Ethernet Supports up to five 1GbE copper ports or three copper and two FC ports
Storage I/O adapters • Storage CLIM	6G SAS 8G FC
SAS storage enclosure	25 SAS SFF drives per enclosure
Storage drives	6G SAS SFF (2.5") SSD 6G SAS SFF (2.5") HDD
Enterprise SAN	HPE SAN disk arrays (for example, HPE XP P9000 Continuous Access)
Gigabit Ethernet 16-Port ServerNet Enclosure (G16SE)	Supports 16 Ethernet ports* with all copper ports or up to eight FC ports Supports eight 1GbE and eight 10/100 Ethernet ports Minimum: 0 Maximum: 6
Standard features	Redundant power inputs Redundant cooling
IOAME	Minimum: 0 Maximum: 6
Hot-swap ServerNet I/O Adapters based on IOAME	Minimum: 0 per node Maximum: 60 per node
IOAME ServerNet Adapters	G4SA
IOAME legacy FC storage subsystem support	FCSA FCDM 14 disks per module—FC LFF (3.5") HDDs

* Under most configurations, two Ethernet ports on the first HPE NonStop G16SE are required for system maintenance communications and are unavailable for customer use.

HPE Integrity NonStop BladeSystem NB56000c (continued)

Environmental specifications

Altitude	**Operating:** 3000m (10,000 ft) maximum **Nonoperating:** 9144m (30,000 ft) maximum
Temperature	**Operating:** 10˚C to 35°C (50˚F to 95°F) **Nonoperating:** –40˚C to 66°C (–40˚F to 150°F) **Maximum rate of temperature change:** 10°C (18°F) per hour
Humidity	**Operating:** 20% to 80% relative noncondensing maximum **Nonoperating:** 95% maximum at 66°C (150°F)
Dimensions (h x d x w)	200.66 x 130.02 x 59.78 cm (79.00 x 51.19 x 23.54 in.) (per 42U rack)
Input voltage	**AC input power:** 200V to 240V, 50 Hz to 60 Hz

System configurations

Minimum configuration (single system/node)	Maximum configuration (single system/node)	Maximum configuration (with Expand)
2 processors	16 processors	255 nodes
32 GB memory	1536 GB memory	384 TB memory

Customer technical training

Gain the skills you need with training from Hewlett Packard Enterprise. Accelerate your technology transition, improve operational performance, and get the best return on your HPE investment. Training is available when and where you need it, through flexible delivery options and a global training capability. **hpe.com/ww/learnnonstop**

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**

HPE Pointnext services

HPE Pointnext 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 provides a comprehensive portfolio including Advisory and Transformational, Professional, and Operational Services to help accelerate your digital transformation.

Operational Services

- **HPE Datacenter Care:** One of our 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 24:** 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 designs the transformation and builds a road map tuned to your unique challenges including Hybrid IT, workload and application migration, Big Data, and the Intelligent 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 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 team, certified channel partners, or specialist delivery partners include installation and deployment services, mission-critical and technical services, and education services.

Learn more at
hpe.com/info/nonstop

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