Data sheet

For businesses that never stop

HP Integrity NonStop BladeSystem NB54000c

Designed for enterprise workloads that require continuous application availability and extreme scalability, the HP Integrity NonStop BladeSystem NB54000c is a highly flexible and scalable high-end mission-critical server in the HP Integrity NonStop systems family. The Integrity NonStop NB54000c server 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 depth of scalability and availability

Representing the top of the line offering of the HP Integrity NonStop systems family, the HP Integrity NonStop BladeSystem NB54000c and is 4-core capable with 1.8X the performance capacity as compared to the Integrity NonStop BladeSystem NB50000c. The Integrity NonStop NB54000c server can also be licensed as a 2-core server at a lower software price point. A 2-core licensed Integrity NonStop NB54000c server can be upgraded to a 4-core licensed Integrity NonStop NB54000c server to increase system performance capacity anytime during the life of the platform. You can perform core upgrades online in a few minutes without taking the system out of service. The Integrity NonStop NB54000c server combines the economies of newly enhanced standards-based, modular computing with the trusted 24x7 fault-tolerant availability and data integrity of the HP 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.

The Integrity NonStop NB54000c server is built on the proven HP Integrity BL860c i2 Server using the standard HP BladeSystem c7000 Enclosure to host NonStop server blades, and is powered by Intel® Itanium® 9300 series processors, as the processing engine. The HP NonStop Multicore Architecture (NSMA) and NonStop OS leverage powerful multicore processing to achieve a significant boost in performance.

The Integrity NonStop NB54000c server with the Cluster I/O Modules (CLIMs) provides significant I/O configuration flexibility. Additionally, it supports the existing modular I/O subsystems (IOAME, FCDM, FCSA, and G4SA)— thereby protecting your existing investments. What's more, the Integrity NonStop NB54000c server supports both Fibre Channel and serial-attached SCSI (SAS) storage. Support for previous generations of CLIMs and SAS storage subsystems is an additional step toward safeguarding your investments.

Multicore processing allows for both scale up and scale out. Compared to the Integrity NonStop NB50000c server, the NB54000c server provides nearly twice as much performance capacity per logical processor at a lower per-transaction cost. As is typical with other NonStop systems, the NB54000c server scales out through built-in clustering of up to 4,080 logical processors (16,320 cores).

What's new?

- Delivers almost twice the performance in the same data center footprint as compared to a similarly configured NB50000c server
- Doubles the scalability[1] to 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-box hardware upgrade when migrating from an NB50000c 2-core CPU to an NB54000c 4-core CPU Integrity NonStop BladeSystem
- Saves your money as the NB54000c server licensed for two cores per CPU comes at a lower software price point; activate remaining cores at anytime during the life of the platform; increase performance capacity in the same footprint, without any hardware changes or 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 with improved I/O controllers configured with redundant CLIM system disks in a RAID 1 configuration

[1] The maximum number of cores on the Integrity NonStop NB50000c server is up to 8,160; the maximum number of cores on the Integrity NonStop NB54000c server is 16,320.

Key features and benefits

- **Improve your virtualization work load efficiency**
  - Automatically balance workloads with a fully virtualized system that optimizes resources at the application level
  - Extend availability protection: provide continuous availability with the intelligent, fault-tolerant capabilities of ServerNet for HP NonStop
  - Deliver the lowest TCO[2] in its class with a fully integrated stack of hardware, OS, database, and software
- **Achieve outstanding performance and reliability**
  - Enable fault tolerance and 24x7 availability using continuously available software
    - Patented NonStop process-pair technology provides instant software takeover in the event of a software or hardware fault.
    - Online self-manageability 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.
  - Double the scalability in the same data center footprint with an HP Integrity NonStop NB54000c delivered on the industry-leading blade platform
    - Near-linear 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
    - Built on the proven HP Integrity BL860c i2 Server
    - A SAS 2.0 disk storage subsystem that is aligned with the latest industry advancements in disk storage technology
    - Improved CLIMs with RAID 1 configured CLIM system disks
- **Provide complete investment protection and reduced risk**
  - Enable easy in-box upgrade and comprehensive application portability
  - Facilitate a simple hardware upgrade with a quick blade swap, when migrating from an NB50000c 2-core CPU to an NB54000c 4-core-capable Integrity NonStop BladeSystem
  - Migrate from up to three previous generations of HP NonStop systems without any recompilation
  - Support the existing modular I/O subsystems (IOAME, FCDM, FCSA, and G4SA)[3]
  - Enable support for previous generations of CLIMs and SAS storage subsystems
- **Enable simplified integration into the data center through significant software ecosystem improvement**
  - Advanced HP NonStop OS unlocks the power of 4-core technology for business services.
    - Improved logical processor performance capacity for larger workloads through enhanced NonStop OS lock design and finer granularity
    - Higher application throughput with NonStop OS Scheduler improvements
  - NonStop modern, open software ecosystem improves productivity, enhances security, and reduces development and support costs.
    - NonStop Development Environment for Eclipse helps develop NonStop applications on workstations, thereby improving productivity of developers.
    - Modern programming models based on widely adopted open source Java frameworks such as Spring, Apache Axis2, Apache MyFaces, and Hibernate reduce development costs.
    - Standard interfaces based on SOA, SOAP, and Web Services technology modernize application assets.
  - Improved security offerings protect your applications, systems, and data.
    - Modern ready-to-use data-in-motion security capabilities (such as SSH and SSL functions)
    - Proven security audit reporting and alerts allow easy integration of NonStop events with HP ArcSight Security Information and Event Manager
    - Built-in data sanitization capability to clear disk data prior to retirement or transfer to another system
    - Add-on security products integrate NonStop into 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 HP 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 are automatically analyzed and reported in OSM Service Connection
    - Immediately ready support for managing the NonStop system in a data center environment, using HP Systems Insight Manager (SIM)
    - Power and thermal monitoring through HP Insight Control Power Management
    - Immediately ready support for remote management through HP Insight Remote Support Advanced

[2] Source: "NonStop TCO comparison," research note, Richard Buckle, Pyalla Technologies, May 2012.

[3] IOAME: I/O Adapter Modular Enclosure
FCDM: Fibre Channel Disk Module
FCSA: Fibre Channel ServerNet Adapter
G4SA: Gigabit Ethernet 4-Port ServerNet Adapter

HP Integrity NonStop BladeSystem NB54000c

Technical specifications

Processors	2–16 logical processors per node Intel Itanium 9300 series 1.6 GHz processor (1.73 GHz boost frequency)
Cache	20 MB L3
RAM per logical processor	Minimum: 16 GB Maximum: 64 GB
IOAME	Minimum: 0 Maximum: 6
Hot-swap ServerNet I/O Adapters based on IOAME	Minimum: 0 per node Maximum: 60 per node
IP CLIMs	Minimum: 1 (provides up to 5 1GbE ports) Maximum: 44 (Note: Minimum = 0 if only IOAME-based system)
Storage CLIMs	Minimum: 2 Maximum: 44 (Note: Minimum = 0 if only IOAME-based system)
I/O adapters	SAS, Fibre Channel, Gigabit Ethernet
Fibre Channel disk modules connected to IOAME via FCSA	14 disks per module
SAS disk enclosure	25 disks per module
Disk drives supported	6 Gb SAS SFF (2.5") HDD and SSD FC LFF (3.5") HDDs with the FCDM HP SAN Disk Arrays (for example: HP XP P9500 Storage)
Standard features	Redundant power supplies Redundant fans Dual power distribution units Dual power cords

Environmental specifications

Altitude	Operating: 3,000 m (10,000 ft) maximum Nonoperating: 9,144 m (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)
Weight	604 kg (1,331 lb)
Power supply	Typical power dissipation: 3633 VA (@ 26°C) Input current: 17.5 A @ 208 V AC input power: 200–240 V, 50–60 Hz
Electromagnetic interference	Complies with FCC rules and regulations, part 15, as a Class A digital device; manufacturer's declaration to EN 55022 Level A
Power line LF emissions	EN 61000-3-2 (Europe); EN 61000-3-3 (Europe)
Regulatory	Certifications are for individual modules
Safety	Compliant with UL 60950-1/CSA C22.2 No. 60950-1-03 and EN 60950

Note: This table represents a single 42U rack, four logical processors in a single c-Class chassis, without UPS. It includes two storage CLIMs, two SAS drive enclosures, 50 SAS drives, two IP CLIMs, one rack-mount NonStop System console and monitor, and one maintenance LAN switch.

System configurations

Minimum configuration	Maximum single-node system configuration	Maximum configuration
2 processors	16 processors	255 nodes
16 GB memory/processor	1024 GB main memory	255 TB main memory

Customer technical training

We offer a variety of training courses on storage software, networking, archiving, and disk storage systems. Our classes are available in many delivery modalities—from traditional instructor-led courses at one of our 80 training centers worldwide to online and onsite training. Visit **hp.com/learn/nonstop**.

HP Financial Services

HP Financial Services provides innovative financing and financial asset management programs to help you acquire, manage, and ultimately retire your HP solutions. Visit **hp.com/go/hpfinancialservices**.

Learn more

To understand how HP Integrity NonStop BladeSystem NB54000c enables you to scale capacity and performance linearly; while keeping your business running uninterrupted, with zero downtime and complete security, visit **hp.com/go/nonstop**.

HP Technology Services

HP Technology Services help build an infrastructure that is reliable, highly available, and rooted in best practices. HP recommends the following services:

HP Critical Service (Optimized Care): 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 provides access to HP Global Mission Critical Solution Center, 24x7 hardware and software support, 6-hour Call-to-Repair commitment, enhanced parts inventory, and accelerated escalation management.

HP Proactive 24 Service (Standard Care): provides proactive and reactive support delivered under the direction of an ASM. It offers 24x7 hardware support with 4-hour onsite response, 24x7 software support with 2-hour response and flexible call submittal.

HP Support Plus 24 (Basic Care): provides reactive hardware and software support with remote problem diagnosis, 4-hour onsite response, replacement parts. The software support includes installation advisory support, software updates for HP and selected third-party software products.

HP Installation and Startup Services: provide efficient and effective deployment of HP hardware components.

For more information, visit **hp.com/services/nonstop**.

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