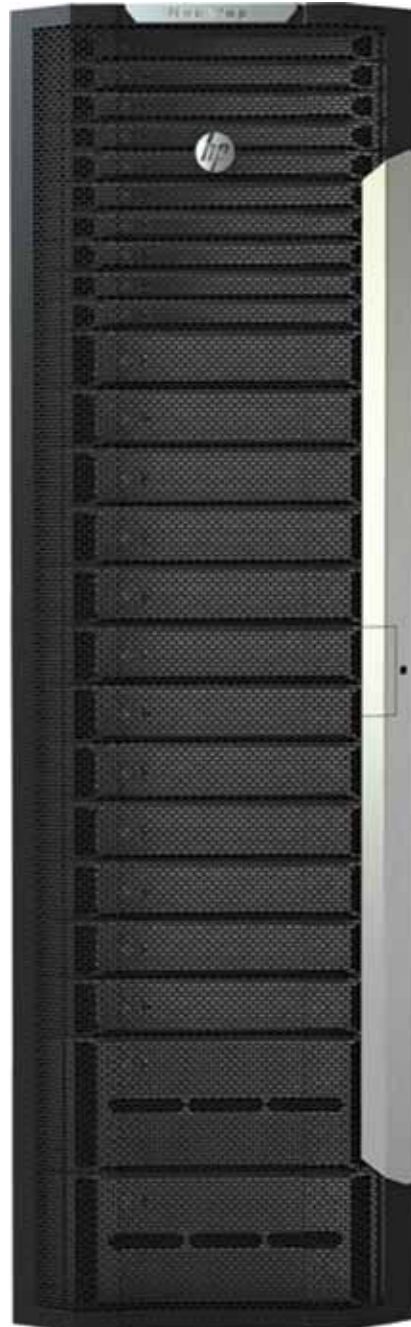


Data sheet

HP Integrity NonStop BladeSystem NB54000c-cg carrier-grade



For Telecommunication businesses that never stop.



Prevent service interruptions that impede business continuity—operate core network services with high levels of reliability, scalability, and data integrity.

There is no better way to reduce customer churn in the face of strong competition than to sustain innovation and service quality. But to be able to do this, business-critical data centers must meet extreme requirements such as:

- Deliver rock solid services and 24/7 fault-tolerant availability
- Deploy hardware platforms, software, custom applications, and capabilities—quickly and efficiently
- Access solutions at competitive prices and enable continuous improvement of total cost of ownership (TCO) over time
- Avoid project delays due to the need to build additional data center space
- Provide services that are prompt, dependable, and able to adapt to environments that are highly flexible and expandable

This is a tall order. Nonetheless, the next generation of the HP Integrity NonStop carrier-grade BladeSystem is responsive to these challenges. The new carrier-grade NonStop NB54000c-cg system is NEBS Level 3 certified and is specifically designed to deliver increased performance capacity, improved CLIM availability with RAID 1 CLIM OS disks and all the capabilities you need to compete in the dynamic telecommunications space.

Support for Telco protocols

For Intelligent Network (IN) applications, the optional HP OpenCall Intelligent Network Server software provides several interfaces between the Integrity NonStop NB54000c-cg platform and Telco networks.

- Signaling System 7 (SS7) over Channelized T1/E1 low-speed links
- SS7 over Unchannelized T1/E1 HSLs (also called Clear Channel)
- SS7 over ATM (SAAL) on T1/E1 high-speed links (HSLs)
- M3UA/SS7 over IP (SIGTRAN)

Compliance for MTP, SCCP, TCAP, and ISUP protocol layers is per ITU-T White Book and the ANSI Issue 3 standards. Support for China and Japan TTC SS7 standards is also provided.

Integrity NonStop carrier-grade platform scales out up to 4080 logical processors

Integrity NonStop NB54000c-cg leverages the modular efficiencies of industry-leading HP BladeSystem technology in a trusted, highly available environment of the Integrity NonStop platform—with the ability to expand these systems to as many as 4080 logical processors. It also allows you to manage these CPUs as a single system with a very small operations staff.

Powered by the Itanium® technology from Intel®, the Integrity NonStop NB54000c-cg provides 1.8x the performance capacity as the Integrity NonStop NB50000c-cg, with all the NonStop capabilities. This means, you still get the fault-tolerant hardware and software with proven availability, scalability, and data integrity. Then again, the new standards-based, carrier-grade NonStop I/O infrastructure also improves response time and throughput.

With improvements in TCO, the Integrity NonStop NB54000c-cg is an ideal choice even when you are considering migration of your existing business-critical applications. Applications running on previous generations of the NonStop platforms can migrate from existing rackmount servers to the Integrity NonStop NB54000c-cg with minimal effort. Moving from an Integrity NonStop NB50000c-cg system to an Integrity NonStop NB54000c-cg system is an easy in-box hardware upgrade.

Key differentiators

Our OpenCall solutions enable you to offer your subscribers an exceptionally rich and personalized user experience. The optional HP OpenCall Home Location Register (OC HLR) software delivers mobile network mobility management on a general-purpose computing-based platform. This centralized repository provides transient and static subscriber information for ANSI, GSM, and GPRS subscribers within a single network while supporting interworking between technologies. Deployed in over 30 of the world's most successful wireless networks, this business-critical technology currently supports over 200 million licensed subscribers in more than 35 countries spanning five continents.

The optional HP OpenCall Intelligent Network Server (OC INS) provides a proven, robust IN services platform that supports legacy wireline, legacy wireless, and next-generation IP Multimedia Subsystem-based (IMS) networks. Also, it allows you to build your services on top of this INS base.

New Storage, IP, and Telco Cluster I/O Modules

With the Integrity NonStop BladeSystem NB54000c-cg, HP introduces a novel carrier-grade I/O infrastructure offering enhanced capabilities that complement new blade and multi-core processor technologies. As the NB54000c-cg system is NEBS Level 3 certified, it goes without say that this includes the entire I/O infrastructure. These new carrier-grade storage and communications I/O controllers and adapters are built on standards-based components and are tightly integrated with the rest of the system through ServerNet, called Cluster I/O Modules (CLIMs). There are three functional types of CLIMs available:

- Carrier-grade Storage CLIM: Enables attachment of Serial Attached SCSI (SAS) hard disk drives (HDDs), solid state drives (SSDs), and SAS connected DAT 160 tape devices
- Carrier-grade IP CLIM: Supports up to five 1GbE copper ports or three copper and two fiber ports—plus TCP/IP v6 and v4, IP Security (IPSec), and the Stream Control Transmission Protocol (SCTP) for the telecommunications industry
- Carrier-grade Telco CLIM: Supports up to five 1GbE copper ports and the following three protocols:
 - M3UA: for connection to the Signaling System 7 (SS7 over IP) communication standard used by telecommunication switching systems to control call setup and management
 - Diameter: an authentication, authorization, and accounting protocol
 - Session Initiated Protocol (SIP): an IETF defined signaling protocol

Please see the individual CLIM data sheets at hp.com/go/nonstop for additional details.

Key features and benefits

Enable fault tolerance and 24/7 availability using continuously available software

- Patented NonStop process-pair technology to provide instant software take-over in the event of a fault
- Improved middleware and NonStop operating system to enhance multiple failure fault tolerance, enhance online manageability, and enable upgrades with ease

Provide industry-leading data integrity

- Leverages Intel's improvements in chip-level data integrity and also prevents data corruption end to end
- Build an ideal platform for service-oriented architecture (SOA)
- J-series NonStop OS supports multi-core processors greatly improving the computing capacity of the platform and extending the acknowledged linear scalability of NonStop systems to a new level

Delivers almost twice the performance in the same data center footprint

- As compared to a similarly configured Integrity NonStop NB50000c-cg
- Performance boost by leveraging multi-core processor architecture from Intel and advancements in NonStop software and hardware
- Advanced disk caching technology (Write-Cache Enabled) to improve response time, while maintaining transactional integrity

Reduce IT and per-transaction costs in a trusted NonStop fault-tolerant environment

- A simplified infrastructure and lower TCO for complex business-critical applications
- Improved response time and throughput with new standards-based IP communications and NonStop I/O infrastructure with latest storage technology
- Only one extra server (N+1) requirement for redundancy, which improves TCO
- Integrated with HP Smart Cooling technology to reduce data center cooling costs
- Investment protection for previous generations of NonStop applications
- Offers easy in-box hardware upgrade when migrating from dual-core to quad-core Integrity NonStop BladeSystem

Allow carriers to support ever-increasing usage from growing number of subscribers with continuous availability and minimal expansion effort

- Scalable applications that span multi-standard, multi-generation networks, and overcome many of the complexities by providing subsystems and capabilities that offload much of the application development work
- Fast and extremely scalable memory-based database environment (MBE) option offers optimum performance and fault tolerance

Increase manageability and save administrator time and resources

- Seamless integration of NonStop Cluster Essentials with HP Systems Insight Manager Blade Plug-in to improve management of systems within heterogeneous clusters
- Built-in Integrated Lights-Out technology remotely manages all servers and Onboard Administrator simplifies common maintenance in real time
- Infrastructure independence and uniform service offerings featuring interoperability with mixed-switch-vendor networks

Specifications

Hardware specifications

Processors	2–16 logical processors per node Intel® Itanium® 9300 series 1.6 GHz quad-core processor (1.73 GHz boost frequency)
Cache	20 MB L3 cache
RAM per logical processor	Minimum: 16 GB Maximum: 64 GB
CLIMs	4 to 48 CLIMs per node <ul style="list-style-type: none"> • Storage CLIM • IP CLIM • Telco CLIM
SAS disk enclosure	24 SFF (2.5") drives per enclosure
Storage drives	6G SAS SFF (2.5") HDD and SSD
Tape drives	SAS connected dual-unit DAT 160 (can read and write DAT 72 tapes)
S-series IO enclosure	Minimum: 0 Maximum: 4
S-series ServerNet adapter	Minimum: 0 CCSA-2 per node Maximum: 16 CCSA-2 per node
Cabinet	Dimension (HxDxW): 72 x 39.4 x 27 in (182.9 x 100 x 68.6 cm) Weight: 500 lbs (226.8 kg) Payload: 1200 lbs (907.2 kg) Supports concrete and raised floor anchors Supports top-down cabling and under-floor cabling systems
Power and cooling systems	Redundant power inputs Redundant cooling

Environmental and power specifications

Temperature	Operating range: 5°C to 40°C (41°F to 104°F) Operating (short-term): -5°C to 50°C (23°F to 122°F) Nonoperating (6 mo.): -40°C to 70°C (-40°F to 158°F)
Relative humidity	Operating: 5% to 85%, noncondensing Nonoperating: 5% to 93%, noncondensing
Altitude	0 to 4,000 m (0 to 13,123 ft) 1°C per 305 m above 1,800 m (1.8°F per 1,000 ft above 5,900 ft) derating factor
Input voltage range	Nominal value: -48/-60 VDC Operating range: -40 to -72 VDC
Input current rating	Breaker Panel: 300 A max Fuse Panel: 100 A max c7000 enclosure power supply: 80 A max
Power consumption for a minimum configuration ¹	Typical (at 22°C ambient): 2628 W Maximum (at 50°C ambient): 4578 W
Agency approval	NEBS Level 3 Certified

¹ Minimum configuration includes 2 NonStop BladeSystem processors (16 GB memory each), 2 IP CLIMs, 2 Storage CLIMs, 2 CG SAS disk enclosures, 8 HDDs, 1 Fuse Panel, 1 Breaker Panel, 1 Maintenance Switch, 1 Alarm Panel in one cabinet.

Protect subscriber data—the most valuable component of the platform

- In the event of hardware failure, leverage improvements in Intel chip-level data integrity that can prevent data corruption end to end

Provide next-generation services to your subscribers and avoid service interruptions

- An ideal platform for SOA
- Implementation of IMS-ready network, while maintaining the same level of service by colocating its optional HP OpenCall Home Subscriber Server (HSS) on the same platform as its HLR
- Distributed active-active mated pair to provide full operational availability—even during migrations

Access time-tested and reliable services

- Unmatched expertise through HP Services
- Trouble-free migrations by dedicated, experienced specialists with the capability to migrate entire subscriber databases

HP Financial Services

HP Financial Services provides innovative financing and financial asset management programs to help you cost-effectively acquire and manage your HP solutions. We offer flexible financing options and services customized for 100 percent availability. For more information about these services, visit hp.com/go/hpfinancialservices.

HP Services

HP Technology Services—consultants and support experts to solve your most complex infrastructure problems. We help keep your business running, no matter what. Boost availability and avoid downtime, trust our expertise to improve your HP solution.

Recommended Services

HP Critical Service Solution

Critical Service Solution provides comprehensive proactive and reactive support designed for businesses that run essential mission critical applications, where downtime is not an option.

HP Proactive Service Solution

To provide improved stability, availability, and operational effectiveness with an integrated hardware and software support service that combines industry-leading reactive technical assistance with proactive account services, giving your IT manage support from a team of service specialists.

HP Foundation Service Solution

Foundation Service Solution combines pre-installation preparation, assessment, integration, installation and startup, hands-on training, and HP Support Plus 24 service.

Related Services

HP NonStop Server and HP SAN Disk Array Integration Service: This service provides for fast integration of the NonStop host and enterprise disk array into production.

HP NonStop Applications and Database Migration Planning and Design Service

This service provides a detailed plan that identifies the tasks required for handling software configuration, application source code, development & testing tools and procedures, and effective deployment of the database.

Trust the Services professionals at HP; for more information, contact your HP sales representative or HP-authorized Channel Partner or, visit: hp.com/hps.

For more information

Compete effectively in the dynamic telecommunications space with HP Integrity NonStop carrier-grade BladeSystem servers, visit hp.com/go/nonstop.

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