Availability matters

HP Integrity NonStop for industries that never stop
Because customers never wait

In a world that never stops, can you afford to be unavailable? Not when your customer wants to do business. You must be there continuously. Because customers never wait. HP Integrity NonStop fault-tolerant computing is uniquely designed for enterprises that never stop—with an integrated solution stack for continuous availability and massive scalability. Plus the agility to quickly respond to ever-changing demands.

Why NonStop for continuous business? Because your customers will never have to wait. Ever.

Think compute

With ever-increasing customer demands in a globally-connected, always-on world, enterprises everywhere are under enormous pressure to make sure their business processes and customer-facing applications are continuously available. Complex, interconnected workflows must be nonstop. Downtime for any reason can cause irreparable harm—loss of customer loyalty, loss of reputation, or even financial disaster. Being in the news is not good news when downtime is the topic.

In this mission-critical environment, business processing, online transaction processing (OLTP), and enterprise databases are the most-critical workloads to ongoing success—and what’s driving the need for workload-optimized, proven technology that can deliver continuous business and lower risk.

When availability matters, it’s time for a new compute approach.

“The need for the most reliable and stable infrastructure for mission-critical enterprise workloads will continue, especially as the business risk attributable to unplanned downtime and security issues grows.”

– Matt Eastwood, Group VP & GM, Enterprise Platforms, IDC

Solutions for industries that never stop

Financial services, telecommunications, manufacturing, and healthcare are leading the way in delivering a continuous business environment. HP Integrity NonStop is at the heart of their business, running the world’s most-critical, complex workloads. NonStop delivers continuous availability for networks, mobile connections, financial and banking transactions, online retail, e-commerce, patient data, emergency responses, production control systems, distribution systems, reservation systems, and business support systems. For all these enterprises, HP Integrity NonStop reduces business risk—while driving competitive advantage, boosting business performance, and enabling customer satisfaction.
Keeping payments processing
After several years of emphasis on cost containment, financial services institutions are looking for solutions that enable them to anticipate and respond instantly to changing customer demands, current and emerging competitive threats, heightened risk requirements, and more-stringent regulatory obligations. In addition, payments are taking multiple forms, and financial services managers are increasingly challenged to accommodate a steady stream of new transactions, channels, and technologies.

Consumers now view financial transactions in the same way they view utilities such as electricity, water, and mobile phone services. Any quality issue with the service must be eliminated if a payments provider wants to retain a loyal client base. With converging market trends extending the complexity of the payments business, payments providers require an IT infrastructure that ensures every connection in the processing workflow is nonstop.

For 40 years, NonStop has been helping financial institutions manage, transform, and improve complex retail and wholesale environments—enabling innovation such as new payment channels or emerging Internet and mobile technologies. As the de facto platform for card processing and electronic funds transfers (EFT) in the financial services industry, NonStop processes over 1.6 billion credit and debit cards each year, with a charge volume over $3.6 trillion USD.1

And, global financial services leaders have improved bottom-line results with the comprehensive HP portfolio of technology-based and services-led solutions, including applications from HP partners such as ACI, AJB, BPC, ECS, FIS, Lusis, Opsol, and ReD.

“All it takes is one failed transaction and word gets around the industry. It’s very bad for business. But NonStop eliminates all that concern. It ensures that transactions can occur anytime, anywhere in the world.”

– Sailesh Sewpaul, Group Chief Executive, Payment Exchange (PEX)

Driving the new conversation
In the telecommunications industry, as Communications Service Providers (CSPs) continue expanding their LTE networks, being able to simultaneously manage a wide range of legacy networks accessed by subscribers is critical during the transition. CSPs must be able to easily authenticate subscriber identity and service rights across these heterogeneous networks, without interrupting service to subscribers.

The HP Integrated Home Subscriber Servers (HPI-HSS), running on the HP Integrity NonStop platform, bridges 2G, 3G, 4G, Wi-Fi, and IP IMS networks—enabling CSPs to centrally manage subscribers’ profiles, regardless of the network to which they are connected. By having a single application and real-time synchronized user data repository, CSPs can achieve higher reliability for this mission-critical solution, while creating a secured evolution path. Uniquely combining the functionality of HP HLR, HP HSS, and HP Authentication Authorization Access (AAA), while simplifying the separation of the database into a highly-reliable User Data Repository (UDR), the HPI-HSS provides standards-based and network-agnostic User Data Convergence (UDC) architecture.

HP Integrity NonStop has grown with the mobile industry, delivering advanced mobility management solutions like HLR and HSS and servicing over 450 million mobile subscribers in advanced telco network applications and connected devices in markets around the globe.2 At the same time, new capabilities have been developed to support the explosion of mobile data, such as helping mobile networks survive signaling storms and traffic surges, and supporting the rapid growth of machine-to-machine (M2M) over mobile networks.

1 Nilson Report and HP customer list, 2014.
2 Infonetics, Service Providers Financial Reports, and TRAI Reports, 2014.
HP Integrity NonStop fundamentals

The HP Integrity NonStop fault-tolerant architecture delivers a complete, efficient integration of hardware, operating system, database, and application services. This integrated stack provides the NonStop fundamentals that support the most-demanding, high-value business workloads and customer-facing applications.

**Highest availability**—NonStop is designed specifically for the very highest availability level. According to the IDC Level 4 definition, that means business processes continue as before. Designed from the ground up to enable continuous business, HP NonStop provides higher application availability than general-purpose servers and software. These capabilities are delivered out-of-the-box without complex or costly configuring. For over 40 years, the NonStop architecture remains the industry-leading choice when there’s a need for the highest level of availability and reliability—in environments that require continuous business.

**Massive scalability**—Rapid business growth means mission-critical workloads require an infrastructure that can scale to match growing business demand, with the capacity to handle process-intensive workloads. By adding logical processors without additional wiring or configuration, NonStop systems scale linearly to support thousands of users, concurrent sessions, and petabytes of data.

**Lowest TCO**—Today’s data centers are continually driving for more efficiency, greater productivity, and lower total cost of ownership (TCO). NonStop offers the lowest TCO in its class for mission-critical application environments, based on initial capital expense and ongoing operational costs, including the cost of downtime.

“AL4 defines true fault tolerance, enabling continuous data processing, even in the event of the failure of one hardware or software component. The end user experiences no perceived interruption based on the use of fault-tolerant servers. In this level, the combination of multiple hardware and software components allows a near-instantaneous failover to alternate resources so that business processing continues as before without interruption.”

― IDC Worldwide and U.S. High-Availability Server 2014–2018 Forecast and Analysis

**Real-time database**—HP NonStop SQL database manages real-time, high-volume transaction processing and data warehouse environments. Designed for the NonStop shared-nothing MPP architecture, NonStop SQL handles mixed workloads simultaneously without degrading response time.

**Data integrity**—In the event of hardware or software failure, NonStop ensures instant takeover for all processing resources. Files remain open and in-process I/Os and queries are completed without interruption.

**Standard and modern**—Built on common modular building blocks, the NonStop infrastructure supports all relevant open standards for ease of application development and portability on industry-leading HP blades, standard memory, I/O, disks, and power and cooling technologies.


End-to-end security—HP Integrity NonStop delivers end-to-end communications security, authentication and auditing for system administration, file transfer, and applications connectivity for on-platform system security, in-motion or at-rest data security, and compliance.

True resiliency—NonStop guards against multiple points of failure and provides protection from single, massive outages. NonStop also has the flexibility to scale, perform parallel processing, and be failover aware. With NonStop Remote Database Facility (RDF) and the HP Shadowbase product suite, fault tolerance can be extended to disaster tolerance, protecting critical applications from total site failure.

Low latency—NonStop gathers and processes information continuously, in real time and without delay, ensuring immediate availability of information to all business processes and applications.

Cloud computing—NonStop delivers scalable and elastic IT-enabled capabilities delivered either as a service on-premise or across private and hybrid cloud environments.

Take advantage of a fully-virtualized integrated stack
The HP Integrity NonStop integrated stack—hardware, operating system, database, software, and applications—provides the mission-critical foundation that NonStop customers rely on. NonStop systems are architected as virtualized systems. In a typical approach, multiple virtual servers are running on a single physical server to improve utilization. The NonStop environment virtualizes the underlying hardware—up to 16 NonStop CPUs in a single enclosure—to deliver continuous application availability for SLAs with up to 100 percent uptime.

The proven reliability and near-linear scalability of NonStop is enabled by the NonStop operating system, which combines the scalability of shared-nothing, massively-parallel processing with industry-leading application availability, uncompromising data integrity, and support for industry-standard application programming interfaces (APIs) and services.

NonStop is designed around this tightly-integrated hardware and software architecture that combines hardware fault tolerance with software process-pair fault tolerance to deliver the very highest availability level.

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5 HP internal testing: Large transaction processing and database benchmark tests demonstrated that each additional processor can execute at least 98.2 percent of the throughput of the first processor, 2014.
Choice and flexibility for a new compute approach

HP is offering the flexibility and choice of an unparalleled portfolio of HP Integrity NonStop fault-tolerant servers that deliver the highest application availability, the most scalability, and operational efficiencies for high-value business workloads and customer-facing applications.

In addition, HP is redefining availability and scalability for x86 applications with the HP Integrity NonStop X on x86 architecture. This new family of NonStop X servers is the only fully integrated, fault-tolerant compute for continuously-available x86 compute.

NonStop has always adopted the best technology available to meet customer needs—and has successfully transitioned the NonStop software stack several times to new processor technologies. The addition of NonStop X provides current NonStop customers with the flexibility to choose continued investments in the current Intel® Itanium®-based platform or to migrate to the NonStop X platform in the future.

For decades, enterprises have trusted NonStop systems to power mission-critical 24x7 solutions, recognizing the distinct advantages of unmatched continuous availability and scalability. And now, the HP Integrity NonStop family offers a world of possibilities for customers to deploy new applications or use new services—with all the NonStop fundamentals, whether you are running on the current Intel Itanium-based HP Integrity NonStop or the x86 architecture-based HP Integrity NonStop X.

NonStop powers mission-critical workloads

Communications
- Mobile virtual network operators
- 3G and 4G LTE networks
- HPI-HSS (HLR/HSS)
- Subscriber data services
- Mobile network management
- Machine-to-machine (M2M)
- Billing and business support system

Financial services
- Multi-channel retail, wholesale, and mobile payments processing
- Online transaction processing (OLTP)
- Fraud prevention

Healthcare
- Real-time patient data
- Laboratory data
- Provider info access and retrieval

Government
- First responders
- Homeland security

Manufacturing and distribution
- Continuous production control processes and multi-channel distribution

Retail
- Point-of-sale (POS)
- E-commerce
- Online transaction/order processing

Transportation
- Customer reservations and ticketing

Utilities
- Usage, billing, and call center service

*HP Integrity NonStop architecture is fully integrated across hardware and software, including the operating system (OS). Other fault-tolerant x86 systems rely on a commodity operating system, such as Linux®, Windows®, or VMware®, which are not designed for fault tolerance.

HP Integrity NonStop systems

These systems are based on Intel Itanium processors.

HP Integrity NonStop X systems

These systems are based on Intel® Xeon® processors.

HP Integrity NonStop BladeSystem NB56000c-cg—The carrier-grade system is NEBS Level 3 certified and specifically designed to deliver increased performance capacity and all the capabilities you need to compete in the dynamic telecommunications space.

HP Integrity NonStop NS2300 server and the NS2400 servers—These are entry-class NonStop servers designed to deliver high levels of availability and data integrity in a cost-effective manner. The NonStop NS2400T and the NS2400ST are built for the telecommunications industry.

The new HP Integrity NonStop X servers are just the beginning. Over time, the NonStop X family will include new software offerings, entry-class platforms, and carrier-grade servers—as well as CPU and I/O technology refreshes.
HP Technology Services

HP Technology Services for HP Integrity NonStop servers offer flexible choices that span the entire technology lifecycle, so that you can rely on the precise level of assistance you need every step of the way. We can help you build an infrastructure that is reliable, highly available, responsive and rooted in proven best practices with a support experience that is proactive, personalized and simplified—delivering support when you need and how you need. We simplify your support experience with straightforward service levels, a single point of contact, and the automation and online tools to optimize performance and address issues proactively.

• **HP Critical Service (Optimized Care)**—High-performance proactive and reactive support designed to minimize downtime. This includes an assigned support team that includes an Account Support Manager (ASM). This service also offers access to HP’s Global Mission-Critical Solution Center, 24x7 HW and SW support, 6-hour call-to-repair commitment, enhanced parts inventory, and accelerated escalation management.

• **HP Proactive 24 (Standard Care)**—Proactive and reactive support delivered under the direction of an ASM. This offers 24x7 HW support with 4-hour onsite response, 24x7 SW support with 2 hour response, and flexible call submittal—plus best-practice, proactive advice from the ASM.

• **HP Support Plus 24 (Basic Care)**—Reactive HW and SW support with remote problem diagnosis, 4-hour onsite response, and replacement parts. The SW support includes installation advisory support with software updates for HP and selected third-party software products.

• **HP Installation and Start-up Services**—Efficient and effective deployment of HP hardware components.
The platform for continuous business

If you require support for high volumes of online transactions and continuous access to information with rational infrastructure and operational costs, HP Integrity NonStop can help you address these critical enterprise business issues:

• Confidence that your business will be continuously on
• Agility to quickly respond to ever-changing market and IT demands
• Ability to implement new business processes and keep pace with new initiatives
• Elimination of complexity and cost
• Protection of data and resources

“Reliability, availability, ease of operations, and open development capabilities made HP Integrity NonStop the right choice for us.”

– Oliver Schnabl, Senior Architect, Hutchison Drei Austria GmbH

Learn more at
hp.com/go/nonstop