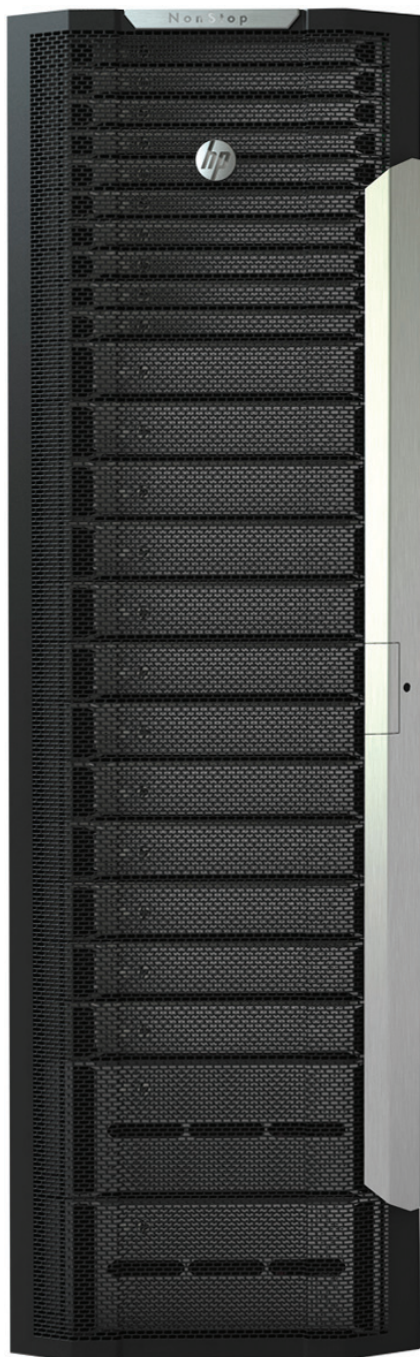


Brochure

HP NonStop platform



For industries that never stop.

In a world that never stops, many enterprises absolutely can't afford to be unavailable. Downtime, whether planned or unplanned, can cause irreparable harm, such as loss of customer loyalty, loss of reputation, or even financial disaster. Being in the news is not good news when downtime is the topic.

Engineered for the highest availability level

HP NonStop is designed specifically for the very highest availability level. According to the IDC¹ Level 4 definition, that means business processes continue as before.

"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 allow a near-instantaneous failover to alternate resources so that business processing continues as before without interruption."²

That means NO interruption of work, NO transactions lost, and NO degradation in performance. For over 35 years, the HP NonStop architecture remains the ideal choice when there's a need for the highest level of availability and reliability—in environments that require continuous business.

"In solving the difficult problem of fault tolerance to the degree it has today with modern, open NonStop servers, HP's engineers provided us with a server that not only is highly available, but can scale well past any other architecture... the loosely-coupled, shared-nothing, MPP capabilities of the HP NonStop server remain unique to this day. When a product benefits from good design fundamentals, as has always been the case with NonStop, then its relevance for users transcends time—it's never old. It's timeless.. "

— Richard Buckle, CEO, Pyalla Technologies

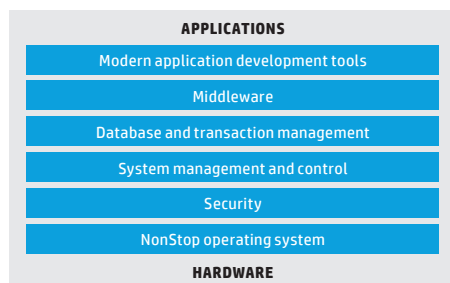
The HP NonStop technology delivers true business resiliency with a highly-integrated stack of hardware, software, database, and application services.

- Continuous availability—delivering instant, continuous access to secure, accurate data
- Lowest TCO in class³—reducing complexity and operating costs
- Real-time database—handling high-volume transaction processing and data warehouse environments
- Data integrity—ensuring transaction integrity and reliable handling of data
- Massive scalability—enabling linear scaling without degradation
- Standard and modern—leveraging the economies of standards-based, modular computing and modern software development environments
- End-to-end security—providing sophisticated protection of resources and data

¹ IDC, Worldwide and U.S. High-Availability Server 2012-2016 Forecast and Analysis, Doc #236946, September 2012

² IDC, Doc #236946, September 2012 (see footnote 1)

³ Richard Buckle, Pyalla Technologies, HP Offers the Lowest TCO in its Class for Mission-Critical Applications, Research Note, May 2012

The HP NonStop integrated stack

Fully-virtualized integrated stack

The availability of a fully-virtualized integrated stack— hardware, operating system, database, software, and applications—provides the foundation that HP NonStop mission-critical customers continue to rely on.

HP 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 HP NonStop environment virtualizes the underlying hardware—up to 16 physical servers or blades—into one single server able to deliver continuous application availability and meet SLAs of up to 100% uptime.

NonStop is able to virtualize an application across thousands of blades in essentially a grid model. These virtualization capabilities enable an environment that pools and optimizes all resources at the application level. Processing capacity, storage, and network resources are shared transparently to the end user.

The proven reliability, and virtually unlimited scalability of HP 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 key industry standard application programming interfaces (APIs) and services.

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

“When you put all this together as one stack, you have tremendous advantages in terms of operability, total cost of ownership, ease of use, manageability, redundancy, data recovery, and more.”

— Jalil Falsafi, Director of IT Computing Services and Operations, Future Electronics

HP NonStop architecture

In this architecture, workloads are divided among many independent processors to minimize the fault domain should a hardware, system software, or application software failure occur. All critical hardware and software components are designed so that if one component fails, another can immediately take over.

This advanced parallel architecture combines with the high-bandwidth and low-latency advantages of ServerNet interconnect technology to provide systems with exceptional performance, continuous availability, ironclad data integrity, and extensive business flexibility.

The HP NonStop Operating System uses a message-based architecture assisted by ServerNet hardware features to connect from two to 16 independent processors within each high-performance node. An instance of the NonStop Operating System resides in every processor. The NonStop OS implements software fault tolerance, monitors and synchronizes all processors, coordinates resource sharing, and provides access control for all ServerNet-connected devices. Each processor has its own memory and uses ServerNet technology to access I/O devices, other processors, and other HP NonStop servers.

HP Mission-Critical Converged Infrastructure

HP Mission-Critical Converged Infrastructure delivers the datacenter of the future. It helps overcome IT sprawl with innovations that deliver new levels of simplicity, integration, and automation to enable you to focus on your core business. HP offers a full portfolio of standards-based, integrated solutions and services specifically developed to meet growing business demands.

HP Integrity NonStop servers

Ultra-robust servers that deliver 24x7 continuous availability, unrivaled data integrity, and virtually unlimited scalability—ideal for demanding, transaction-intensive applications.

**HP Integrity NonStop NS2100 server**

Entry-class, high levels of availability and data integrity in a cost-effective commercial server

HP Integrity NonStop NS2200 servers

Excellent price-performance, software fault-tolerant solution for small to mid-size enterprises

HP Integrity NonStop BladeSystem NB54000c servers

Industry-leading 24x7 availability, scalability, and data integrity with a high level of performance

Processors supported	Intel® Itanium® processor 9300 series	Intel Itanium processor 9300 series	Intel Itanium processor 9300 series
Clustering	Expand-over-IP (does not support ServerNet clustering)	Expand-over-IP (does not support ServerNet clustering)	NonStop BladeCluster solution ServerNet clustering
Number of processors	2 – 4	2 – 4	2 – 16 per node
Licensable cores per processor	1 (fixed)	2 (fixed)	2 or 4 (user's choice)
Maximum number of logical processors per cluster	1020 (Expand-over-IP)	1020 (Expand-over-IP)	4080
Operating systems supported	HP NonStop OS (J-Series)	HP NonStop OS (J-Series)	HP NonStop OS (J-Series)
Maximum memory (cluster)	32 TB	32 TB	256 TB
ServerNet processor connectivity	Versatile I/O (VIO)	Versatile I/O	BladeSystem ServerNet switches
I/O infrastructure	IP CLuster I/o Module (CLIM), Storage CLIM, Telco CLIM	IP CLIM, Storage CLIM, Telco CLIM	IP CLIM, Storage CLIM, Telco CLIM, I/O Adapter Modular Enclosure (IOAME)
Maximum CLustered I/o Modules (CLIMs)	6	6	48
Maximum I/O Adapter Module Enclosure (IOAME) adapters	0	0	60
Maximum disk drives	200	200	3248 FC disks with all IOAME-based storage and IP connectivity (no CLIMs) 2300 SAS disks with all CLIM-based storage and IP connectivity (no IOAMEs)
Management	OSM, HP SIM, HP Insight Control for NonStop, HP NonStop Essentials, Web ViewPoint, ASAP, HP IT Performance Suite	OSM, HP SIM, HP Insight Control for NonStop, HP NonStop Essentials, Web ViewPoint, ASAP, HP IT Performance Suite	OSM, HP SIM, HP Insight Control for NonStop, HP NonStop Essentials, Web ViewPoint, ASAP, HP IT Performance Suite
Rack height (EUA unit)	36U and 42U	36U and 42U	42U
Telco options	None	NS2200T: -48V DC (commercial rack) NS2200ST: -48V DC (seismic rack)	NB54000c-cg: -48V DC Carrier Grade (seismic rack) NEBS Level 3 Certified

Photos above and on cover page are a graphic representation of next-generation commercial HP Integrity NonStop racks.

The HP NonStop platform is a key part of the HP Mission- Critical Converged Infrastructure portfolio, designed to provide uncompromising resiliency and flexibility, increase infrastructure return on investment and availability, and reduce total cost of ownership (TCO) and cost of downtime. This approach is delivered through a common architectural framework, based on a standard set of modular components and management tools. It enables datacenters to respond quickly in an agile business environment.

HP Integrity NonStop BladeSystem NB54000c

If you are an organization that requires 24x7 application availability, real-time high-volume transaction processing, and exceptional security, consider the HP Integrity NonStop BladeSystem NB54000c—the top-of-the-line offering of the HP Integrity NonStop systems family. Built on more than 30 years experience of continuous-availability systems in high-volume transaction processing environments, the NB54000c delivers world-class fault tolerance and performance to companies that demand 24x7 operations.

Designed to manage mission-critical, transaction-related workloads requiring zero application downtime and extreme scalability, the NB54000c redefines the performance capacity of the HP NonStop systems family. Now you can double the scalability in the same datacenter footprint with the NB54000c delivered on the industry's #1 blade platform³.

The NB54000c is built on the proven HP Integrity Blade BL860c i2 using the standard HP c7000 c-Class Chassis to host HP NonStop server blades, and is powered by Intel® Itanium® 9300 series processors. The HP NonStop Operating System leverages this powerful multi-core processing to achieve a significant boost in performance.

“HP is coming out with a number of interesting innovations, including solid state disks, faster processors, and CPUs with more cores. We keep up to date on the NonStop system roadmap, constantly looking at what our next move should be.”

– Steve Gannon, Pay & Go Product Manager, Telefónica UK

The new multi-core platforms offer unique advantages over earlier HP NonStop generations. This architecture meets or exceeds the capabilities of HP NonStop single-core processor architectures across a wide range of measures including, but not limited to, reliability, availability, scalability, data integrity, footprint, power, cooling, investment protection, and TCO. A key advantage is the ability to deliver significantly more processing capacity per logical processor when compared to corresponding single-core HP Integrity NonStop systems.

The NB54000c provides significant I/O configuration flexibility in an I/O infrastructure for storage and network connectivity called the CLuster I/o Modules (CLIMs). Additionally, it supports the existing modular I/O subsystems (IOAME, FCDM, FCSA, and G4SA) thereby protecting existing customer investments. What's more, the NB54000c supports both fibre channel and SAS storage.

The Storage CLIM serves as a controller to attach hard disk drives (HDDs), solid state drives (SSDs), HP enterprise storage disk arrays, and tapes. With the Storage CLIM, SAS technology offers a significant performance boost over parallel SCSI and fibre channel storage technologies. In addition, the Storage CLIM offers integrated volume-level encryption functionality that provides data-at-rest security for both disks and tapes.

Network connectivity is delivered through the IP CLIM, which provides support for IPv6, IPSec, and SCTP. In addition, the IP CLIM offloads some of the TCP processing previously performed on the HP NonStop CPUs. The IP CLIM handles the connection to the outside world to allow IP-based communication with other HP NonStop systems. In addition, IP CLIMs can attach to ServerNet Wide Area Network (SWAN) controllers that handle a myriad of wide-area protocols.

HP Integrity NonStop carrier-grade BladeSystem NB54000c-cg

The NB54000c-cg for telecommunications is Network Equipment-Building System (NEBS) Level 3 certified and is specifically designed to deliver increased performance capacity, improved CLIM availability with RAID1 CLIM OS disks, and all the capabilities you need to compete in the dynamic telecommunications market.

The Telco CLIM is similar to the IP CLIM, and handles telecommunications protocols that enable applications to connect to the switching networks of telephones, mobile phones, and other communications devices.

HP Integrity NonStop NS2100 and NS2200

The HP Integrity NonStop NS2100 server joins the NS2200 in the next generation of entry-class HP Integrity NonStop servers. Designed to deliver high levels of availability and data integrity in a cost-effective manner, both the NS2100 and NS2200 can be configured with two or four physical processors in a pre-assembled and integrated rack-mount configuration.

³IDC, Worldwide Quarterly Server Tracker, February 2012

The HP Integrity NonStop NS2200 server is ideal for small- to mid-size enterprises in the financial services, healthcare, manufacturing, public sector, and telecommunications industries. The newest HP Integrity NonStop Server—the NS2100—provides the most affordable price point and is designed to meet the needs of standalone applications and emerging markets. This entry-class commercial server delivers the highest built-in reliability, availability, and serviceability in the most cost-effective manner by making use of industry-standard components, including the Intel® Itanium® processor 9300 series.

The HP Integrity NonStop NS2100 processing capabilities combined with the HP NonStop J-Series Operating System provide industry-leading, end-to-end transaction integrity for the most reliable data, leveraging the improvements of Intel® in chip-level data integrity and the capability to prevent data corruption end-to-end.

HP NonStop software

Modern application development environment

Integrated Development Environments (IDEs) make it easier for most developers to create and maintain application programs. With that in mind, HP NonStop has invested in bringing these modern environments to the NonStop application community.

Modern frameworks

There are well over one hundred frameworks available to software developers, most of which are based on a specific language such as Java, C++, or JavaScript.

Several of the most widely-used open source and free Java frameworks make up the SASH stack, an acronym to describe a set of open source middleware that encourages application objects to be Plain Old Java Objects (POJO)—domain objects that only implement application-specific logic.

- Apache MyFaceS (presentation services)
- Axis2 (Web services)
- Spring (business services)
- Hibernate (persistence services)

As a result, these open source frameworks have been widely adopted by Java developers, and in many cases have become the de facto technology for developing enterprise Java applications, largely replacing EJB technology. HP has tested and certified these frameworks for deployment on HP NonStop. Sample programs, recommended configuration parameter values, and detailed user guides have been published. The Eclipse IDE has optional plug-ins to aid in Java development.

Framework-based applications are container agnostic. Applications can run on a lightweight Web container like Tomcat or on a full-fledged Java EE application server like JBoss Application Server⁴. This allows the choice of deployment server that is best suited for the server platform.

Modern application development tools

The NonStop build tools and compilers have been integrated into both the Microsoft® Visual Studio with the Enterprise Toolkit (ETK) NonStop Edition and into Eclipse with NonStop Development Environment for Eclipse (NSDEE). These tools, including Certified Java SE Platform (JDK and JVM) and Apache Tomcat, help improve the productivity of new HP NonStop developers. Many optional components and additional tools are available as plug-ins for each IDE.

Middleware

From a business perspective, the service-oriented architecture (SOA) model can help IT be more responsive to changing business needs, thereby improving business agility. HP Integrity NonStop can play an important role in an SOA architecture as a first-class platform for the provision of SOA services.

Using the HP Integrity NonStop server in this role brings the values of application and scalability, availability, data integrity, and ease of manageability to SOA services—without special programming.

⁴ JNoss Application Server available in 2013

“The Integrity NonStop BladeSystem connects very well and with high performance. It’s good that the system is open, so it can easily handle SOAP, Java, HTTPS, and other types of traffic.”

– Pieter Bezema, KPN Consultant

The HP NonStop server SOA product technologies provide the necessary capabilities for service access, invocation, and implementation.

HP iTP WebServer

HP iTP WebServer software provides the HTTP and HTTPS protocol service for all the other SOA components. Built on the HP NonStop Transaction Services/MP (NonStop TS/MP) infrastructure, iTP WebServer software provides a fault-tolerant and scalable container for Web service execution, hosting both NonStop SOAP and NonStop Servlets for JSP components.

HP NonStop SOAP

HP NonStop SOAP software supports the standard SOAP 1.2 protocol. The combination of iTP WebServer and NonStop SOAP software provides the standard SOAP over HTTP protocol for invoking SOA services on the HP Integrity NonStop server. NonStop SOAP is built on HP NonStop TS/MP infrastructure and is fault tolerant and scalable.

HP NonStop Servlets for JavaServer Pages (JSP)

HP NonStop Servlets for JSP software is a fortified version of the Apache Tomcat Web container that exhibits NonStop availability and scalability while supporting the standard Java Platform Enterprise Edition (JEE) Servlets and JSP programming models. NonStop Servlets for JSP software runs as scalable server classes using the iTP WebServer and NonStop TS/MP infrastructure. This integrated environment transparently inherits the scalability, reliability, and fault tolerance of the HP Integrity NonStop system.

Open source Apache AXIS2/Java software can be used in conjunction with the scalable NonStop Servlets for JSP container to implement either Java service adapters or Java SOA business processes. In addition, the JToolkit for NonStop Servers software enables easy access to Pathway servers and Enscribe flat file data from Java-based SOA services.

HP Pathway with NonStop TS/MP

HP Pathway with NonStop TS/MP software provides application server functionality that allows businesses to develop and deploy business-critical OLTP applications on HP Integrity NonStop and HP Integrity NonStop BladeSystem servers.

Using Pathway enables developers to concentrate on implementing their business logic without having to be concerned about common application services, such as load balancing, communications I/O, memory management, fault tolerance, and threading and scheduling. All these common services are provided by the Pathway application server software.

Database and transaction management

HP NonStop SQL is the mainstream database product for the HP Integrity NonStop servers. NonStop SQL has been fundamentally architected as a clustered database system. It is designed to leverage the HP NonStop tightly integrated, shared-nothing, massively parallel (MPP) platform architecture and deploys the fault-tolerant model for immediate and transparent takeover for unparalleled reliability, availability, and scalability. It supports management of massive, multi-terabyte databases as a single database image and delivers high performance in a cluster environment. HP NonStop SQL provides:

- Outstanding scalability—as the size of data volume, number of concurrent users or sessions, and query workloads and complexity for your database grow, you can add more computing power to the NonStop cluster and increase throughput linearly at greater than 98%.⁵
- Continuous availability—the NonStop platform and NonStop SQL provide out-of-the-box database and application availability. There is no complex configuration required to achieve true 24x7 availability. Routine database administration (DBA) tasks can be done online without requiring the database and application to be brought down.

⁵Internal lab tests conducted by HP NonStop Advanced Technology Center, March 2011

- Application portability—NonStop SQL supports industry standards (ANSI SQL, JDBC, ODBC) as well as numerous extensions to support porting of database applications from other platforms.
- Automatic load balancing—NonStop SQL offers query and data virtualization capabilities, enabling an environment that pools and optimizes all resources at the application level. With built-in clustering, automatic workload balancing, and online management, organizations using NonStop SQL can seamlessly accommodate rapid growth without adding labor costs, compromising on service levels, or causing user disruption.
- Lower database administration costs—NonStop SQL database is distributed among multiple nodes of a cluster and is presented to the DBA and users as a single, clustered database image. The DBA's tasks are not daunting or time consuming and don't require highly-specialized skills, thus managing a clustered database is no different from managing a non-clustered environment.

The tight integration between the HP NonStop SQL database management system and the HP NonStop Operating System enables absolute control over a concurrent mixed-workload environment, making the NonStop SQL database unique in effectively handling all types of workloads executing concurrently across a potentially very large cluster. HP NonStop OS plays a critical role in allocating processor, disk, and I/O resources in an environment where competing priorities have to be dynamically monitored and processes deemed to be of the highest priority need to be given precedence. Additionally, many key NonStop SQL database operations take place at the operating system level, which in turn leads to increased efficiencies that have a positive impact on very large database (VLDB) and real-time database performance.

“We can develop our NonStop application using standard programming techniques, and the databases are fully compatible with other systems in our heterogeneous infrastructure. This creates a seamless environment for our company’s payments and POS transaction processing needs.”

— James Lance, Senior VP and CIO, The Bon-Ton Stores, Inc.

The ANSI SQL-compliant HP NonStop SQL database can be accessed using Open Database Connectivity (ODBC) 3.0 and Java Database Connectivity (JDBC) Type 4 interfaces from Microsoft® Windows® and Linux platforms, and an on-platform JDBC Type 2 driver and Open System Services (OSS) ODBC/MX driver. The drivers and ODBC server provide a highly-reliable, 24x7 available and scalable connectivity solution that is standards-compliant and engineered for high performance and throughput, and well integrated with HP NonStop database servers.

Transaction management

To ensure database integrity, the HP NonStop Operating System integrates closely with HP NonStop Transaction Management Facility (NonStop TMF) software, which provides distributed two-phase commit protection for global database changes across all affected HP NonStop servers.

HP NonStop TMF software is designed to help protect a database from intentional or accidental damage. With NonStop TMF software, a failure in an application, system, or network component does not result in a corrupted database because of a partially-completed database update. Before an update changes the database, an image of every affected record or row is captured in memory and written to an audit log. If any part of an update fails or is programmatically aborted, NonStop TMF software automatically backs out the change in its entirety, returning the database to its state just prior to the start of that change.

Disaster tolerance

HP NonStop Remote Database Facility (NonStop RDF) software extends the HP Integrity NonStop server’s legendary fault tolerance to disaster tolerance. By geographically dispersing HP NonStop systems, NonStop RDF software allows critical applications to survive a total site failure without specialized programming.

Using the transaction log generated by HP NonStop TMF software, database changes are instantaneously replicated to one or more target systems, no matter how many transactions per second your application generates. If a primary database becomes inaccessible for any reason, processing can continue using the backup database with minimal service disruption or data loss.

Simplified management and control

With an eye toward improving TCO, HP offers a comprehensive selection of manageability products and solutions that provide self-management capabilities that can be adapted to customer-specific environments. HP NonStop is managed by HP Systems Insight Manager (SIM), NonStop Essentials, HP IT Performance Suite and other enterprise (e.g., Tivoli, Netcool, Unicenter, Patrol, etc.) and open source management solutions (Nagios, etc.) in heterogeneous enterprise environments. NonStop manageability products can be categorized as follows.

- HP SIM-related products—HP Insight Control for NonStop includes HP SIM, HP Insight Control Power Management, and NonStop Software Essentials. These products work together to provide an HP SIM-based single pane-of-glass management environment for customers. Additional SIM-related products include NonStop Cluster Essentials, NonStop Performance Essentials, NonStop I/O Essentials, and HP Insight Remote Support Advanced.
- HP IT Performance Suite—products for IT strategy, planning, and governance, application lifecycle management, IT operations, security intelligence, information management, and business analytics
- Serviceability products—Onboard Administrator (OA), Integrated Lights Out (iLO), Open System Management (OSM)
- HP Web ViewPoint-based products—Web ViewPoint, Pocket ViewPoint, Pathway plug-in, ASAP plug-in, Storage Analyzer plugin, Event Analyzer plug-in
- Performance Management Bundle—Measure, Guardian Performance Analyzer (GPA), ViewSys, NonStop Performance Data Collector (TPDC), Open Database, Data Browser, NonStop Performance Reporter (NPR), Disk Prospector (DiskPro), System Performance Analyzer (SPA), Pathway View
- Other manageability products—ASAP, RPM, TimeSync, Reload Analyzer (TRA), Enform Optimizer, TCM, Nagios

HP Systems Insight Manager (HP SIM)

HP SIM unifies the management of servers, storage, and networking devices. It gives customers a single tool for managing virtual and physical infrastructures. HP Systems Insight Manager builds on field-proven technology that supports Microsoft® Windows®, Linux, and UNIX® operating systems and provides virtualization and automation capabilities, with plug-ins that complement and extend management solutions for HP NonStop servers.

HP NonStop Essentials

HP NonStop Essentials plug-ins provide integration between HP Systems Insight Manager and HP NonStop. HP NonStop Cluster Essentials provides the management solution for both homogeneous clusters of HP NonStop systems and heterogeneous clusters of NonStop and Linux systems. It provides integrated solutions for health monitoring, alert monitoring, event monitoring, integrated provisioning, virtualized configuration and control, unified account management, and software consistency checks.

HP NonStop Performance Essentials seamlessly integrates with HP NonStop Cluster Essentials to provide real-time, as well as trend-monitoring, solutions for both homogeneous clusters of HP NonStop systems and heterogeneous clusters of NonStop and Linux systems.

NonStop I/O Essentials provides the management solution for managing the I/O subsystem of HP NonStop systems—reducing training costs and operator-induced errors.

NonStop Software Essentials is a software installation and management tool for all NonStop systems. It modernizes NonStop software management and is an HP SIM plug-in that assists in planning, configuring, and installing HP, third-party, and customer-developed NonStop software packages.

HP IT Performance Suite

HP IT Performance Suite is an open, modular platform designed to enable integrated continuous lifecycle management that automates and optimizes planning, delivery, deployment, performance, availability, and security. It simplifies operation with a complete self-service environment that provisions and configures IaaS from public or private clouds and your middleware and applications stack.

HP IT Performance Suite provides information lifecycle management solutions to help manage all information—structured and unstructured—and unified security layers that integrate with operations monitoring, executive views and automated response to threats for complete security.

HP NonStop is supported in key HP IT Performance Suite products such as Application Lifecycle Management 11, ArcSight ESM, ArcSight Logger, Business Process Insight (BPI), Discovery and Dependency Mapping Advanced Addition (DDMA), Fortify Source Code Analyzer (SCA), Fortify Real-Time Analyzer (RTA), LoadRunner, Network Node Manager I (NNM), Operations Manager, Operations Manager i, Operations Orchestration (OO), Performance Center, Quality Center, Service Manager, SiteScope, Sprinter, Storage Essentials, TransactionVision (TV), and Universal CMDB (UCMDB).

Security

In today's interconnected world, companies across all industries need to demonstrate that they maintain confidentiality, integrity, and availability—for both their customers' data and their own. Additionally, overlapping standards and regulations continue to emerge all over the world.

This change in the business environment has made HP NonStop customers even more aware of security needs for their individual businesses, and more demanding of sophisticated protection for their resources and data. HP is meeting this demand by investing in new products and product enhancements that provide the security capabilities customers need.

On-platform

On-platform security is focused on reducing insider data theft and misuse by identifying users, controlling their access to sensitive data and system resources, and tracking their activities on the system.

HP Safeguard security software provides flexible authentication, authorization, and audit services based on a subject/object access control model that allows enterprises to appropriately restrict authenticated users' access to NonStop Guardian system resources. Optional XYGATE Access Control and XYGATE User Authentication products have been added to the HP NonStop portfolio to extend Safeguard's capabilities and enhance on-platform security.

Data in motion

Customers also need options for insuring that sensitive data is protected when it is being moved. The HP NonStop server includes HP NonStop SSH and HP NonStop SSL bundled with the HP NonStop Operating System to deliver end-to-end communications security, strong authentication, and auditing for system administration, file transfer, and applications connectivity.

Data at rest

Optionally, HP offers HP NonStop Volume Level Encryption, a fully integrated encryption solution for data at rest on disk and tape media for HP NonStop multi-core systems. In addition, integration with HP Enterprise Secure Key Manager provides high-availability encryption key generation and retrieval, and storage of millions of encryption keys, while helping to meet PCI/DSS requirements for key management.

Compliance

HP is committed to helping customers achieve and demonstrate security compliance on their HP Integrity NonStop servers. To achieve this, HP offers two products specifically targeted to help customers with security auditing and compliance.

XYGATE Compliance PRO allows enterprises to analyze and establish appropriate security settings on their system in order to close security vulnerabilities and deploy best security practices on the system.

XYGATE Merged Audit allows enterprises to consolidate event logs and enables real-time reporting and alerting about security events that have occurred. These NonStop security events can be integrated with HP ArcSight SIEM using XYGATE Merged Audit. Use of HP ArcSight SIEM allows businesses to view all security events across their entire enterprise from a single interface.

Vertical applications

Many industries, such as financial services, telecommunications, manufacturing, and healthcare are leading the way in delivering a continuous business environment—and HP NonStop is there at the heart of their business.

- Processing over 68 million credit card accounts and 10 billion transactions annually⁶
- Servicing over 375M subscribers in advanced Telco network applications such as Home Location Register (HLR), Home Subscriber Server (HSS), and other network applications⁷
- Powering mission-critical applications at 100% of the top 10 global manufacturers⁸
- Supporting several of the world's leading medical institutions⁹

As the de facto platform for card processing and electronic funds transfers (EFT) in the financial services industry, HP NonStop can quickly scale resources for real-time, high-volume transactions. Global financial services leaders have improved bottom-line results from the comprehensive HP portfolio of technology-based and services-led solutions, including applications from HP partners such as ACI, AJB, BPC, ECS, eProtea, FIS, Lusion, Opsol, and ReD.

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 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)

Provides proactive and reactive support delivered under the direction of an ASM. It offers 24x7 HW support with 4-hour onsite response, 24x7 SW support with 2 hour response, and flexible call submittal.

- **HP Support Plus 24** (Basic Care)

Provides reactive HW and SW support with remote problem diagnosis, 4-hour onsite response, replacement parts. The SW support includes installation advisory support, software updates for HP and selected third party software products.

- **HP Installation and Start-up Services**

This service provides efficient and effective deployment of HP hardware components.

For more information, visit hp.com/go/services

⁶HP internal sales data, cross-referenced with Nielsen and D&B data, May 2012

⁷Infonetics Service Providers Report, 2011 and TRAI Report, 2012

⁸HP internal sales data, May 2012 (see footnote 6)

⁹HP internal sales data, May 2012 (see footnote 6)

The platform for continuous business

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

- The confidence that your business will be continuously on
- The agility to quickly respond to ever-changing market and IT demands
- The ability to implement new business processes and keep pace with new initiatives
- The elimination of complexity and cost
- The protection of data and resources

The HP NonStop platform offers so much that is new, and continues to provide the highest levels of availability and near-linear scalability of any server in today's marketplace—with hardware, operating system, database, software, and applications packaged as part of a well-integrated stack.

For real-time processing of ATM or payment transactions, telecommunications service, follow-the-sun access to operational data, or on-demand health information... you can trust it will be available.

“Since deploying the HP Integrity NonStop BladeSystem a few years ago, we have had 100% availability to keep our applications running. The HP system consistently delivers the performance, scalability, and end-to-end transaction integrity that are essential in our industry.”

—Gregor Pirc, IT Manager, Bankart, d.o.o.

To understand how HP NonStop enables you to conduct business that never stops, visit hp.com/go/nonstop.

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hp.com/go/getupdated



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