



HP Integrity systems  
Family guide



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## Build an IT environment that delivers better business results

Shift your IT from technology that merely supports the business to a model where technology powers the business and is measured in terms of delivering better business outcomes. The HP Adaptive Infrastructure portfolio creates the foundation for delivering better business outcomes by enabling you to reduce operational costs, accelerate speed of IT change, and deliver higher quality of service to the business.

Fundamental to establishing an adaptive infrastructure are your underlying platform choices. What kind of server best suits your needs? What levels of high availability and performance do you require? How many users will be supported? What operating system will you be using? Whether it's a departmental server, an enterprise data center, or anything in between, HP is committed to meeting your exact needs. This commitment has led more customers to choose HP servers than any other vendor's servers.\*

If you are an IT manager, you must juggle many challenges. Business units are demanding higher service levels. Mergers and restructurings may require rapid systems integration as well as database and server consolidation. And security is a growing concern.

You are probably trying to meet these challenges with a complex infrastructure that already supports tens, hundreds, or even thousands of applications. You may be running a wide variety of servers, including both outdated and underutilized machines. And you may be under pressure to meet ambitious new goals while cutting costs and conserving valuable floor space.

From consolidating multiple servers to hosting data warehouses, ERP applications, and other mission-critical environments, HP Integrity systems are the answer for you. The HP Integrity line delivers dynamically scalable solutions, from entry-class to Superdome to NonStop servers—and even mission-critical blades. This family of servers provides intelligent virtualization with HP Virtual Server Environment and supports a multi-OS ecosystem for the most available UNIX® (HP-UX 11i), Windows® (Microsoft® Windows Server 2008), and Linux environments—plus OpenVMS and NonStop for 24x7 solutions. Integrity systems offer a unique combination of scalability, virtualization, and availability, can help you to optimize your business outcomes while you decrease cost and reduce risk.

At HP, Integrity is more than technology—it's a mission-critical infrastructure as well as a core value in the solutions we develop and deliver. In fact, it's helped make us the most trusted, generally.

The Integrity systems family includes:

- **HP Integrity NonStop servers**—real-time, 24x7 business solutions for mission-critical environments
- **HP Integrity servers**—mission-critical infrastructure, from entry-class to Superdome, with unique multi-OS capabilities and leading virtualization
- **HP Integrity server blades**—mission-critical capabilities of Integrity systems in a modular and efficient HP BladeSystem infrastructure

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\* Source: IDC Worldwide Quarterly Server Tracker, May 2009

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In addition to the Integrity systems family, HP also offers the HP ProLiant server family. ProLiant servers offer a superior platform for your mainstream x86 applications and are the world's top-selling x86 industry-standard servers since 3Q 1996\*.

In fact, you may be looking for additional ways to simplify a growing, multi-server environment. How can you integrate all the moving parts and deliver business solutions on time and under budget? HP BladeSystem is a simple, modular infrastructure that is consolidated upfront to save you more time, energy, and money—regardless of what you put inside. In one consolidated box, a BladeSystem supports Integrity and ProLiant server blades, StorageWorks, storage blades, and a variety of virtual machine, client, and workstation solutions. With the essential IT elements built in—compute, network, storage, management, power, and cooling—the BladeSystem delivers reliable, cost-effective services to your business.

To gain the full value from your investments, you also need expert services across the IT lifecycle, intelligent software, advanced storage devices, and system enhancing options.

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\* Source: IDC Worldwide Quarterly Server Tracker, May 2009

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- **Services**—How important is it that your service partner provide a single point of ownership and accountability? Do they meet your service needs across your enterprise? Have you reached the mission-critical reliability you require to meet your business needs? From training and basic product support to selective outsourcing, our services help you realize the full potential of your technology to meet your business requirements.
- **Software**—Do you need a single interface to monitor, automate, and control your complex IT environment? Is pooling and sharing of resources important for increasing your IT utilization? Do you need to reduce business risk from unplanned downtime? Our software allows you to manage, virtualize, and protect IT resources to simplify and can help you optimize your infrastructure.
- **Storage**—Do you need help optimizing your storage resources, managing multi-vendor environments, and evolving to open architectures? Our network and direct-attached storage devices help you keep large amounts of information protected and readily accessible to people when needed.
- **Options**—Do you have everything you need to meet your infrastructure needs? Our server options—including memory, drives, processors, racks, operating system software, power, and cooling—help you optimize your solution by enhancing system performance and functionality.

# HP Integrity server blades

Bringing business-critical capabilities of Integrity systems to the modular and efficient BladeSystem infrastructure

## Server blades



### HP Integrity BL860c Server Blade

Robust value and virtualization of Integrity systems coupled with the economics of BladeSystem

### HP Integrity BL870c Server Blade

Ideal for application consolidation and larger mission-critical workloads in a Blade

<b>Processors supported</b>	Intel® Itanium® processor 9100 series 1.66 GHz (dual-core) with 18 MB cache (667 MHz FSB) 1.42 GHz (dual-core) with 12 MB cache 1.6 GHz (single-core) with 12 MB cache	Intel Itanium processor 9100 series 1.6 GHz (dual-core) with 24 MB cache 1.6 GHz (dual-core) with 18 MB cache 1.42 GHz (dual-core) with 12 MB cache
<b>Number of processors</b>	1–2	1–4
<b>Maximum number of cores</b>	4	8
<b>Scalable processor chipset</b>	zx2	zx2
<b>Operating systems supported</b>	HP-UX 11i v3 <sup>1</sup> and HP-UX 11i v2 <sup>2</sup> Microsoft Windows Server 2008 for Itanium-based systems Red Hat Enterprise Linux 5 and 4; SUSE Linux Enterprise Server 11 and 10 OpenVMS v8.3–1H1 <sup>2</sup>	HP-UX 11i v3 <sup>1</sup> and HP-UX 11i v2 <sup>2</sup> Microsoft Windows Server 2008 for Itanium-based systems Red Hat Enterprise Linux 5 and 4; SUSE Linux Enterprise Server 11 and 10 OpenVMS v8.3–1H1 <sup>2</sup>
<b>Maximum memory</b>	48 GB	192 GB
<b>I/O slots</b>	3 HP BladeSystem c-Class mezzanine form factor I/O slots Core I/O includes 2 dual-port Gigabit Ethernet (total 4) Additional GbE available through mezzanine expansion cards	3 HP BladeSystem c-Class mezzanine form factor I/O slots Core I/O includes 2 dual-port Gigabit Ethernet (total 4) Additional GbE available through mezzanine expansion cards
<b>Internal hard disk drives</b>	2	4
<b>Management</b>	HP Systems Insight Manager HP Integrity iLO 2 (Advanced Pack included)	HP Systems Insight Manager HP Integrity iLO 2 (Advanced Pack included)
<b>Form factor</b>	Full-height blade 8 blades in 10U; 4 blades in 6U	Double-wide, full-height blade 4 blades in 10U; 2 blades in 6U
<b>HP related offerings</b>		
<b>Storage</b>		
	Enterprise Virtual Array 4400 Modular Smart Array 2000fc G2	Enterprise Virtual Array 4400 Modular Smart Array 2000fc G2
<b>Software</b>		
	HP Virtual Server Environment HP Serviceguard Solutions	HP Virtual Server Environment HP Serviceguard Solutions
<b>Services</b>		
	HP Proactive 24 Service <sup>3</sup> HP Critical Service <sup>3</sup>	HP Proactive 24 Service <sup>3</sup> HP Critical Service <sup>3</sup>
<b>Hardware options</b>		
	8 and 4 Gb Fibre Channel adapters 4X InfiniBand adapters	8 and 4 Gb Fibre Channel adapters 4X InfiniBand adapters

<sup>1</sup> Choice of Data Center, High Availability, Virtual Server, or Base Operating Environment

<sup>2</sup> Choice of Mission Critical, Enterprise, or Foundation Operating Environment

<sup>3</sup> All blades within a single HP BladeSystem enclosure must be at the same service level

# HP Integrity servers: entry-class

Providing the flexibility you need for diverse workloads, multiple operating environments, and future business growth, all at the price/performance your business demands

## Entry-class



**HP Integrity rx2660 Server**  
Entry-class value with incredible flexibility and high performance/watt

**HP Integrity rx3600 Server**  
Powerful, scalable entry system for demanding database and application performance

**HP Integrity rx6600 Server**  
Highly expandable platform for workload consolidation and virtualization

<b>Processors supported</b>	Intel Itanium processor 9100 series 1.66 GHz (dual-core) with 18 MB cache (667 MHz FSB) 1.42 GHz (dual-core) with 12 MB cache 1.6 GHz (single-core) with 12 MB cache	Intel Itanium processor 9100 series 1.66 GHz (dual-core) with 18 MB cache (667 MHz FSB) 1.42 GHz (dual-core) with 12 MB cache	Intel Itanium processor 9100 series 1.6 GHz (dual-core) with 24 MB cache 1.6 GHz (dual-core) with 18 MB cache 1.42 GHz (dual-core) with 12 MB cache
<b>Number of processors</b>	1–2	1–2	1–4
<b>Maximum number of cores</b>	4	4	8
<b>Scalable processor chipset</b>	zx2	zx2	zx2
<b>Operating systems supported</b>	HP-UX 11i v3 <sup>1</sup> and HP-UX 11i v2 <sup>2</sup> Microsoft Windows Server 2008 for Itanium-based systems Red Hat Enterprise Linux 5 and 4; SUSE Linux Enterprise Server 11 and 10 OpenVMS v8.3–1H1 <sup>2</sup>	HP-UX 11i v3 <sup>1</sup> and HP-UX 11i v2 <sup>2</sup> Microsoft Windows Server 2008 for Itanium-based systems Red Hat Enterprise Linux 5 and 4; SUSE Linux Enterprise Server 11 and 10 OpenVMS v8.3–1H1 <sup>2</sup>	HP-UX 11i v3 <sup>1</sup> and HP-UX 11i v2 <sup>2</sup> Microsoft Windows Server 2008 for Itanium-based systems Red Hat Enterprise Linux 5 and 4; SUSE Linux Enterprise Server 11 and 10 OpenVMS v8.3–1H1 <sup>2</sup>
<b>Maximum memory</b>	32 GB	192 GB	384 GB
<b>I/O slots</b>	3	8	8
<b>Internal hard disk drives</b>	8	8	16
<b>Management</b>	HP Systems Insight Manager HP Integrity iLO 2 (optional Advanced Pack)	HP Systems Insight Manager HP Integrity iLO 2 (optional Advanced Pack)	HP Systems Insight Manager HP Integrity iLO 2 (optional Advanced Pack)
<b>Rack height (EIA unit)</b>	2	4	7
<b>HP related offerings</b>			
<b>Storage</b>			
	Modular Smart Array 2000fc G2 Enterprise Virtual Array 4400	Modular Smart Array 2000fc G2 Enterprise Virtual Array 4400	Enterprise Virtual Array 6400 Enterprise Virtual Array 4400
<b>Software</b>			
	HP Virtual Server Environment HP Serviceguard Solutions	HP Virtual Server Environment HP Serviceguard Solutions	HP Virtual Server Environment HP Serviceguard Solutions
<b>Services</b>			
	HP Proactive 24 Service HP Critical Service	HP Proactive 24 Service HP Critical Service	HP Proactive 24 Service HP Critical Service
<b>Hardware options</b>			
	10000 G2 Series rack 8 and 4 Gb Fibre Channel adapters	10000 G2 Series rack 8 and 4 Gb Fibre Channel adapters	10000 G2 Series rack 8 and 4 Gb Fibre Channel adapters

<sup>1</sup> Choice of Data Center, High Availability, Virtual Server, or Base Operating Environment

<sup>2</sup> Choice of Mission Critical, Enterprise, or Foundation Operating Environment

# HP Integrity servers: midrange

Flexible, available servers for your business computing needs, incorporating high-end functionality in the midrange market—perfect for multi-OS consolidation, scale-up, and performance applications

## Midrange



### HP Integrity rx7640 Server

Excellent performance and compute density for data center applications



### HP Integrity rx8640 Server

Ideal platform for scale-up, performance, and server consolidation workloads with low total cost of ownership

<b>Processors supported</b>	Intel Itanium processor 9100 series 1.6 GHz (dual-core) with 24 MB cache 1.6 GHz (dual-core) with 18 MB cache 1.4 GHz (dual-core) with 12 MB cache	Intel Itanium processor 9100 series 1.6 GHz (dual-core) with 24 MB cache 1.6 GHz (dual-core) with 18 MB cache 1.4 GHz (dual-core) with 12 MB cache
<b>Number of processors</b>	1–8	1–16
<b>Maximum number of cores</b>	16	32
<b>Scalable processor chipset</b>	sx2000	sx2000
<b>Operating systems supported</b>	HP-UX 11i v3 <sup>1</sup> and HP-UX 11i v2 <sup>2</sup> Microsoft Windows Server 2008 for Itanium-based systems Red Hat Enterprise Linux 5 and 4; SUSE Linux Enterprise Server 11 and 10 OpenVMS v8.3–1H1 <sup>2</sup>	HP-UX 11i v3 <sup>1</sup> and HP-UX 11i v2 <sup>2</sup> Microsoft Windows Server 2008 for Itanium-based systems Red Hat Enterprise Linux 5 and 4; SUSE Linux Enterprise Server 11 and 10 OpenVMS v8.3–1H1 <sup>2</sup>
<b>Maximum memory</b>	256 GB	512 GB
<b>I/O slots</b>	15 with one nPar partition, 14 with two nPar partitions	16 (32 with SEU-2 <sup>3</sup> )
<b>Internal hard disk drives</b>	4	4 (8 with SEU-2 <sup>3</sup> )
<b>Hard partitions (nPars)</b>	1–2	1–2 (1–4 with SEU-2 <sup>3</sup> )
<b>Management</b>	HP Systems Insight Manager HP Integrity iLO 2	HP Systems Insight Manager HP Integrity iLO 2
<b>Rack height (EIA unit)</b>	10	17 (26 with SEU-2 <sup>3</sup> )
<b>HP related offerings</b>		
<b>Storage</b>		
	XP20000 Disk Array Enterprise Virtual Array 6400	XP20000 Disk Array Enterprise Virtual Array 8400
<b>Software</b>		
	HP Virtual Server Environment HP Serviceguard Solutions	HP Virtual Server Environment HP Serviceguard Solutions
<b>Services</b>		
	HP Critical Service HP Proactive 24 Service	HP Critical Service HP Proactive 24 Service
<b>Hardware options</b>		
	Instant Capacity (iCAP) and Temporary Instant Capacity (TiCAP) processors HP Lights Out Advanced KVM Card	Instant Capacity (iCAP) and Temporary Instant Capacity (TiCAP) processors HP Lights Out Advanced KVM Card

<sup>1</sup> Choice of Data Center, High Availability, Virtual Server, or Base Operating Environment

<sup>2</sup> Choice of Mission Critical, Enterprise, or Foundation Operating Environment

<sup>3</sup> SEU-2 = Server Expansion Unit 2

# HP Integrity servers: high-end

For enterprise-class customers requiring superior single-system high availability, leading price/performance, strong virtualization, and long-term investment protection for consolidating their demanding multi-OS applications

High-end



### HP Integrity Superdome

Scalability and virtualization ideal for enterprise consolidation

### HP Integrity Superdome

Top scalability and virtualization for larger enterprise consolidation requirements

<b>Processors supported</b>	Intel Itanium processor 9100 series 1.6 GHz (dual-core) with 24 MB cache 1.6 GHz (dual-core) with 18 MB cache	Intel Itanium processor 9100 series 1.6 GHz (dual-core) with 24 MB cache 1.6 GHz (dual-core) with 18 MB cache
<b>Number of processors</b>	1–32	2–64
<b>Maximum number of cores</b>	64	128
<b>Scalable processor chipset</b>	sx2000	sx2000
<b>Operating systems supported</b>	HP-UX 11i v3 <sup>1</sup> and HP-UX 11i v2 <sup>2</sup> Microsoft Windows Server 2008 for Itanium-based systems Red Hat Enterprise Linux 5 and 4; SUSE Linux Enterprise Server 11 and 10 OpenVMS v8.3–1H1 <sup>2</sup>	HP-UX 11i v3 <sup>1</sup> and HP-UX 11i v2 <sup>2</sup> Microsoft Windows Server 2008 for Itanium-based systems Red Hat Enterprise Linux 5 and 4; SUSE Linux Enterprise Server 11 and 10 OpenVMS v8.3–1H1 <sup>2</sup>
<b>Maximum memory</b>	1 TB	2 TB
<b>I/O slots</b>	96 (with I/O expansion)	192 (with I/O expansion)
<b>Internal hard disk drives</b>	N/A	N/A
<b>Hard partitions (nPars)</b>	1–8	1–16
<b>Management</b>	HP Systems Insight Manager HP Integrity iLO 2	HP Systems Insight Manager HP Integrity iLO 2
<b>Rack height (EIA unit)</b>	Delivered in Superdome cabinet	Delivered in Superdome cabinets
<b>HP related offerings</b>		
<b>Storage</b>		
	XP24000 Disk Array Enterprise Virtual Array 8400	XP24000 Disk Array Enterprise Virtual Array 8400
<b>Software</b>		
	HP Virtual Server Environment HP Serviceguard Solutions	HP Virtual Server Environment HP Serviceguard Solutions
<b>Services</b>		
	Three predefined support service levels: <ul style="list-style-type: none"> <li>• Critical Service Solution</li> <li>• Proactive Service Solution</li> <li>• Foundation Service Solution</li> </ul>	Three predefined support service levels: <ul style="list-style-type: none"> <li>• Critical Service Solution</li> <li>• Proactive Service Solution</li> <li>• Foundation Service Solution</li> </ul>
<b>Hardware options</b>		
	Instant Capacity (iCAP) and Temporary Instant Capacity (TiCAP) processors HP Lights Out Advanced KVM Card	Instant Capacity (iCAP) and Temporary Instant Capacity (TiCAP) processors HP Lights Out Advanced KVM Card

<sup>1</sup> Choice of Data Center, High Availability, Virtual Server, or Base Operating Environment

<sup>2</sup> Choice of Mission Critical, Enterprise, or Foundation Operating Environment

# 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

NonStop



**HP Integrity NonStop NS1200 Server**  
Entry-class, software fault-tolerant solution for emerging markets



**HP Integrity NonStop NS14200 Server**  
Midrange solution offering highest application availability with absolute data integrity and linear scalability



**HP Integrity NonStop NS16200 Server**  
Highest application availability with absolute data integrity and linear scalability

<b>Processors supported</b>	Intel Itanium processor 9100 series	Intel Itanium processor 9100 series	Intel Itanium processor 9100 series
<b>Clustering</b>	Supports Expand over IP (does not support ServerNet clustering)	Supports ServerNet clustering	Supports ServerNet clustering
<b>Number of processors</b>	2–8 per system	2–8 per node	2–16 per node
<b>Maximum number of logical processors per cluster</b>	8	2040	4080
<b>Operating systems supported</b>	NonStop OS (H-Series)	NonStop OS (H-Series)	NonStop OS (H-Series)
<b>Maximum memory</b>	64 GB	16 TB	127 TB <sup>1</sup>
<b>ServerNet processor connectivity</b>	Versatile I/O (VIO)	Versatile I/O (VIO)	P-Switch Also supports S-series I/O connectivity
<b>Maximum I/O adapters</b>	6	6	60
<b>Internal hard disk drives</b>	336	448	3248
<b>Management</b>	NonStop System Console (NSC) HP Systems Insight Manager	NonStop System Console (NSC) HP Systems Insight Manager	NonStop System Console (NSC) HP Systems Insight Manager
<b>Rack height (EIA unit)</b>	42 (36 in some configurations)	Delivered in modular cabinet(s)	Delivered in modular cabinet(s)
<b>HP related offerings</b>			
<b>Storage</b>			
	FC internal hard disk drives (146 GB and 300 GB @ 15k rpm) XP Disk Array family (For example, XP24000)	FC internal hard disk drives (146 GB and 300 GB @ 15k rpm) XP Disk Array family (For example, XP24000)	FC internal hard disk drives (146 GB and 300 GB @ 15k rpm) XP Disk Array family (For example, XP24000)
<b>Software</b>			
	HP NonStop SQL Database software HP NonStop RDF/ZLT Replication software	HP NonStop SQL Database software HP NonStop RDF/ZLT Replication software	HP NonStop SQL Database software HP NonStop RDF/ZLT Replication software
<b>Services</b>			
	Three predefined support service levels: <ul style="list-style-type: none"> <li>• Critical Service Solution</li> <li>• Proactive Service Solution</li> <li>• Foundation Service Solution</li> </ul>	Three predefined support service levels: <ul style="list-style-type: none"> <li>• Critical Service Solution</li> <li>• Proactive Service Solution</li> <li>• Foundation Service Solution</li> </ul>	Three predefined support service levels: <ul style="list-style-type: none"> <li>• Critical Service Solution</li> <li>• Proactive Service Solution</li> <li>• Foundation Service Solution</li> </ul>
<b>Hardware options</b>			
	HP Virtual TapeServer Expansion board for Fibre Channel or Ethernet	HP Virtual TapeServer Expansion board for Fibre Channel or Ethernet	Fibre Channel ServerNet Adapter (FCSA) Ethernet ServerNet Adapter (G4SA)

<sup>1</sup> 127 TB capable, based upon 32 GB of memory per processor

# 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

NonStop

New



**HP Integrity NonStop NS2000 Server**  
Entry-class, software-fault-tolerant solution for emerging markets

**HP Integrity NonStop NB5000c BladeSystem**  
Industry-leading 24x7 availability, scalability, and data integrity with the highest level of performance

<b>Processors supported</b>	Intel Itanium processor 9100 series (dual-core)	Intel Itanium processor 9100 series (dual-core)
<b>Clustering</b>	Supports Expand-over IP (does not support ServerNet clustering)	Supports ServerNet clustering
<b>Number of logical processors</b>	2–4	2–16 per node
<b>Maximum number of logical processors per cluster</b>	4	4080
<b>Operating system supported</b>	NonStop OS (J-Series)	NonStop OS (J-Series)
<b>Maximum memory</b>	64 GB	191 TB
<b>ServerNet processor connectivity</b>	Versatile I/O (VIO)	InterConnect ServerNet Switches, BladeCluster Switch
<b>I/O infrastructure</b>	IP CLIM, Storage CLIM (clustered I/O module), Telco CLIM	IP CLIM, Storage CLIM (clustered I/O module), IOAME
<b>Maximum I/O adapters</b>	4	60 (IOAME)
<b>Maximum clustered I/O modules (CLIMs)</b>	6	48
<b>Internal hard disk drives</b>	200	3248 FC disks with all I/O adapter module enclosure (IOAME)-based storage and IP connectivity; no CLIMs 2300 SAS disks with all CLIM-based storage and IP connectivity; no IOAME
<b>Management</b>	NonStop System Console (NSC) HP Systems Insight Manager	NonStop System Console (NSC) HP Systems Insight Manager
<b>Rack height (EIA unit)</b>	42 and 36	Delivered in modular cabinet(s)
<b>HP related offerings</b>		
<b>Storage</b>		
	SAS internal hard disk drives (72 GB, 146 GB @ 15K rpm, and 300 GB @ 10k rpm) XP Disk Array family (For example, XP24000)	FC internal hard disk drives (146 GB and 300 GB @ 15k rpm) SAS internal hard disk drives (72 GB, 146 GB @ 15k rpm, and 300 GB @ 10k rpm) XP Disk Array family (For example, XP24000)
<b>Software</b>		
	HP NonStop SQL Database software HP NonStop RDF/ZLT Replication software	HP NonStop SQL Database software HP NonStop RDF/ZLT Replication software
<b>Services</b>		
	Three predefined support service levels: <ul style="list-style-type: none"> <li>• Critical Service Solution</li> <li>• Proactive Service Solution</li> <li>• Foundation Service Solution</li> </ul>	Three predefined support service levels: <ul style="list-style-type: none"> <li>• Critical Service Solution</li> <li>• Proactive Service Solution</li> <li>• Foundation Service Solution</li> </ul>
<b>Hardware options</b>		
	HP Virtual TapeServer Expansion board for Ethernet	IOAME: FCSA, G4SA Storage CLIM: SAS HBA, FC HBA

# HP Integrity systems family



# HP related offerings

## Comprehensive solutions for the Integrity systems family

HP Software	Description
<b>Virtualization</b>	
<b>HP Virtual Server Environment (VSE)</b>	Creates virtual servers that can automatically grow and shrink based on service-level objectives set for each application they host. Through tight integration with partitioning, high availability, and utility pricing, the HP VSE allows you to improve your server utilization in real time.
HP Integrity Virtual Machines*	Improves utilization by allowing several virtual machines to share a single processor core and I/O resources. Each virtual machine runs its own guest operating system instance (HP-UX 11i, Windows, and Linux) and offers complete software isolation. Online Migration is also available, allowing a running VM, its guest OS and applications to be moved to a different VM Host without service interruption, OS reboot or application restart.
HP Virtual Partitions (vPars)*	Improves utilization by allowing multiple HP-UX instances to share one server or hard partition. Each vPar runs its own copy of HP-UX and offers complete software isolation. Granularity is down to 1 processor core. Processor cores and memory can be dynamically migrated.
HP Capacity Advisor*	Easy-to-use and energy-aware tool for capacity planning, continuous analysis and optimal workload placement. HP Smart Solver technology shows the excellent fits for your workloads. You can test various scenarios before you make any changes to your critical applications to align to your business needs.
HP Virtualization Manager*	Reduces complexity by providing unified visualization and management of physical and virtual servers. It enables you to graphically visualize and configure how your virtual resources are being used and how they map to your physical infrastructure.
HP Global Workload Manager*	Allocates server resources automatically so that the highest-priority applications get the resources they need. Designed for multi-system Integrity server environments, it is ideal for large, centralized IT environments that host applications for many departments.
<b>Availability</b>	
<b>HP Serviceguard Solutions for High Availability and Disaster Recovery</b>	HP Serviceguard Solutions for High Availability and Disaster Recovery provide transparent recovery to rapidly and automatically restore service availability after a failure in order to prevent the business impacts of downtime. Serviceguard Solutions are part of the HP Virtual Server Environment, and deliver quick, quantifiable return on IT investment with high availability and disaster recovery solutions integrated by design with virtualization, utility pricing and storage management.
HP Serviceguard*	Serviceguard uses virtualization to move IT services between servers in order to increase availability. These moves can be automatic, such as in response to a failure or threshold violation, or at your command, to avoid downtime when performing maintenance.
HP Serviceguard Manager*	Included with Serviceguard, Serviceguard Manager provides graphical user interface (GUI)-based management of Serviceguard products, including the creation, modification, administration, and monitoring of clusters and packages.
HP Event Monitoring Service and HA monitors*	EMS HA monitors facilitate real-time monitoring and error detection for HP products in the enterprise environment. This framework provides centralized management of hardware devices and system resources and provides immediate notification of hardware failures and system status.
Enterprise Cluster Master Toolkit*	Provides plug and play availability for key applications, including HP NFS, Apache, Tomcat, CIFS/9000, Oracle® Database, Sybase ASE, MySQL Server and IBM DB2.
Serviceguard Extension for SAP	An off-the-shelf solution that protects your SAP environment by automatically detecting failures or threshold violations and immediately restoring any affected application to the required availability levels. Provides automated recovery and simplified management for SAP. Includes HP Hot Standby, the first and only high availability solution capable of cutting recovery time of SAP liveCache from hours or days to under 2 minutes.
Serviceguard Extension for RAC	Robust protection for an Oracle RAC environment, SGeRAC delivers high availability, manageability, data integrity, and storage management for the entire RAC stack.
Serviceguard Disaster Recovery	HP Metrocluster and Continentalclusters provide the highest level of availability and business continuity for enterprise data centers for local and unlimited distances.
Serviceguard Storage Management Suite	HP Serviceguard Storage Management Suite delivers improved availability, performance, and manageability for Oracle Database and Oracle Real Application Clusters (RAC) environments on HP UX 11i. It achieves these enhancements by integrating HP Serviceguard with Veritas Storage Foundation technologies by Symantec. This suite of products also includes features that can speed data recovery from hours to minutes, improve manageability, and reduce storage cost.
<b>Management</b>	
<b>HP Systems Insight Manager</b>	HP Systems Insight Manager is the foundation of HP Unified Management Portfolio. It maximizes system uptime, reduces total cost of ownership, and provides powerful monitoring and control of multiple HP Integrity servers.
<b>HP Ignite-UX</b>	Enables fast deployment of HP-UX 11i for one or many servers. It provides the means for creating and reusing standard system configurations, enables replication of systems, permits post-installation customization, and is capable of operating in both interactive and unattended modes.
<b>HP GancePlus Pak Software</b>	Combines real-time diagnostic and monitoring capabilities with the ability to perform historical data collection and analysis. This provides an ideal solution to manage the availability and performance of a single system while retaining valuable historical information for use with enterprise management products.
<b>HP Operations Software for UNIX</b>	Discovers, monitors, controls, and reports on the availability and performance of heterogeneous, large-scale IT environments. It consolidates information for all IT components—network, systems, storage, databases, and applications.
<b>HP Integrity iLO 2</b>	Advanced remote management built into the system management processor.

\* HP recommends purchasing these software products as part of the fully integrated HP Virtual Server Environment (VSE); or for HP-UX 11i v3, as part of the Virtual Server OE, High-Availability OE, or Data Center OE.

# HP related offerings

## Comprehensive solutions for the Integrity systems family

### HP Software (Contd.) Description

#### HP NonStop Software for HP Integrity NonStop servers

<b>HP NonStop SQL Database Software</b>	NonStop SQL is a distributed relational database management system that uses the ANSI-standard Structured Query Language (SQL) to deliver a scalable, fault-tolerant database. NonStop SQL includes ODBC and JDBC software and a report writer.
<b>HP NonStop RDF/ZLT Replication Software</b>	NonStop RDF/Zero Lost Transactions software offers high-speed, low-latency transaction replication between NonStop servers and enables total data integrity for every transaction.
<b>HP Pathway with NonStop TS/MP Software</b>	Highly scalable and available application server for mission-critical OLTP applications.
<b>HP NonStop Servlets for JavaServer Pages</b>	Highly scalable Apache Tomcat-based Web container for hosting enterprise Java™ components.
<b>HP NonStop Tuxedo Software</b>	Highly scalable and available version of the popular BEA Tuxedo transaction processing monitor.
<b>HP NonStop CORBA Software</b>	Highly scalable and available OMG CORBA compliant Object Request Broker.

### HP Services Description

<b>HP Critical Service—24x7 comprehensive hardware and software services with enhanced escalation</b>	Highest level of 24x7 mission-critical support, enhanced escalation processes, standard 6-hour call-to-repair commitment (confirm region availability), and round-the-clock system monitoring. Ideal for reducing downtime risks in mission-critical environments.
<b>HP Proactive 24—24x7 proactive hardware and software account services</b>	Complements your internal IT resources with proactive advice and account services including integrated hardware (four-hour onsite response), software, and technical advice. 24x7 coverage of the entire IT infrastructure, improving stability and operational effectiveness.
<b>HP Service Solutions with three predefined service levels for Integrity Superdome and Integrity NonStop servers</b>	All three service levels provide pre-installation, deployment, and education. The Service Solutions are designed to speed and simplify Integrity Superdome and Integrity NonStop server implementations. <ul style="list-style-type: none"><li>• Critical Service Solution—highest level of 24x7 mission-critical support for environments where unplanned downtime carries serious business consequences; enhanced escalation processes, repair time commitments, and round-the-clock system monitoring.</li><li>• Proactive Service Solution—complements your internal IT resources with proactive advice and account services, including integrated hardware (four-hour onsite response), software, and technical advice—24x7 coverage.</li><li>• Foundation Service Solution—integrated hardware and software support for mature, stable environments or non-production systems (that is, test, development, and backup systems).</li></ul>

### HP Storage Description

<b>XP Disk Array family</b>	An enterprise-class storage system that delivers state-of-the-art reliability and around-the-clock availability for mission-critical applications where downtime is not an option. The family offers broad scalability to support mission-critical processes: <ul style="list-style-type: none"><li>• XP24000—scales up to 1.13 PB of internal and 247 PB of external capacity</li><li>• XP20000—scales up to 236 TB of internal and 96 PB of external capacity</li></ul>
<b>Enterprise Virtual Array family</b>	An enhanced virtual storage array family for enterprises requiring an easy-to-use, high-performing midrange disk array with outstanding TCO to support business-critical processes: <ul style="list-style-type: none"><li>• EVA8400—scales up to 324 TB of capacity</li><li>• EVA6400—scales up to 216 TB of capacity</li><li>• EVA4400—scales up to 96 TB of capacity</li></ul>
<b>Modular Smart Array 2000fc G2</b>	A low-cost, high-capacity SAN array for fibre channel networks. Ideal for smaller data centers and remote office locations, the MSA2000fc G2 provides up to 60 TB of capacity and offers the most affordable data protection and performance features in its class.
<b>Fibre Channel internal hard disks (146 GB and 300 GB @ 15k rpm)</b>	These latest-generation Fibre Channel attached drives give the excellent available performance for system and user disks.
<b>SAS internal hard disks (72 GB, 146 GB @ 15k rpm, and 300 GB @ 10k rpm)</b>	SAS disks are for CLIM based I/O. These 2.5-inch SAS disks support caching technology and give the excellent available performance for system and user disks.

# HP related offerings

## Comprehensive solutions for the Integrity systems family

HP Options	Description
<b>Instant Capacity (iCAP) cells, processors, and memory</b>	Instant Capacity eliminates over-provisioning and helps to link IT costs to revenue by deferring these costs until they are actually needed. iCAP hardware is purchased for a fraction of the price of active hardware, and does not require software or support. When the additional capacity is needed, the remaining portion is paid with no premium and the component is activated with a simple command, typically requiring no downtime.
<b>Temporary Instant Capacity for processors (TiCAP)</b>	Temporary Instant Capacity (TiCAP) is like a prepaid phone card that provides 30 days of activation for iCAP processor cores. TiCAP is consumed at your own pace, and includes OS and HP VSE licenses and support. TiCAP allows you to meet short-term peaks in application demands when they occur.
<b>Global Instant Capacity (GiCAP)</b>	Global Instant Capacity (GiCAP) allows you to move the usage rights for hardware and licenses for software within a group of servers, effectively deactivating components in one server in order to activate them in another. GiCAP, combined with HP VSE, is a unique differentiator that offers automatic load balancing for cost-effective high availability.
<b>10000 G2 Series rack</b>	Enterprise-class rack solution combines unparalleled structural integrity, cooling, and cable management and can be used for all HP rack-mounted server and storage products.
<b>4 and 2 Gb Fibre Channel and Gigabit Ethernet multifunction adapters</b>	The HP Fibre Channel and Gigabit Ethernet multifunction adapters deliver the performance, flexibility, and high availability you need to support the connectivity requirements for server consolidation in your Adaptive Enterprise. The HP PCI-X and PCIe multifunction technology offer 4 Gb and 2 Gb Fibre Channel combined on a single adapter. Both single and dual channels for both Fibre Channel and Gigabit Ethernet are available to maximize utility from a single I/O slot. The 4 Gb Fibre Channel adapters auto-sense and can automatically support 4 Gb, 2 Gb, or 1 Gb environments.
<b>8 and 4 Gb Fibre Channel adapters</b>	HP 8 and 4 Gb Fibre Channel adapters offer the highest level of availability and support when used in conjunction with HP StorageWorks storage arrays, tape storage systems, and Fibre Channel switches. The dual-channel and single-channel 8 and 4 Gb Fibre Channel adapters effectively double performance over previous-generation Fibre Channel adapters. In addition, the 8 and 4 Gb Fibre Channel adapters auto-negotiate 1 Gb, 2 Gb, 4 Gb, or 8 Gb transfer rates, allowing full legacy support for existing SAN infrastructures to protect your current SAN investment.
<b>4X InfiniBand adapters</b>	HP 4X Fabric solutions provide high-speed, low-latency switched fabric solutions enhanced for server clusters. HP 4X Fabric products provide a leading-edge interconnect for both High Performance Computing (HPC) customers who want to deploy clusters for scientific and engineering applications, and for commercial customers who want to deploy highly available and scalable database clusters.
<b>HP Lights Out Advanced KVM Card</b>	HP Integrity Integrated Lights Out (iLO) management processors make it simpler, faster, and less costly to remotely manage your Integrity servers. The Integrity Lights Out Advanced/KVM card is an optional accessory which combines a physical graphics/USB card with additional logic to enable the Lights Out Advanced features of Virtual Media and Integrated Remote Console.
<b>Fibre Channel ServerNet Adapter (FCSA)</b>	Two-port Fibre Channel adapter card that provides two Fibre Channel ports to connect to internal Fibre Channel Disk Modules (FCDMs), HP XP Disk Array family, and tape storage products.
<b>Ethernet ServerNet Adapter (G4SA)</b>	Four-port Ethernet adapter card that provides two 10/100 Mbps ports and two 10/100/1000 Mbps ports.
<b>SAS HBA</b>	Serial Attached SCSI Host Bus Adapter to connect to SAS disk modules.
<b>FC HBA</b>	Fibre Channel Host Bus Adapter to connect to HP Disk Array family and tape storage products.
<b>Expansion board for Fibre Channel or Ethernet</b>	An optional expansion board expands the VIO subsystem by providing either an additional four Fibre Channel ports beyond the four embedded Fibre Channel ports, all with FCSA-like functionality; or an additional four Ethernet ports beyond the four embedded Ethernet ports, with G4SA functionality.
<b>HP Virtual TapeServer</b>	A flexible, high-performance disk-based backup and restore system that automates operations, reduces backup windows, and dramatically improves restore operations <ul style="list-style-type: none"><li>• Multi-site backup data replication for disaster recovery (DR) redundancy</li><li>• Data encryption, data compression, and clustering for availability and security</li><li>• Open systems backup application integration for autonomous operations</li></ul>
<b>HP memory upgrades</b>	HP branded memory is the easiest way to quickly enhance and improve overall system performance for demanding database and application workloads. HP memory modules are qualified and tested to strict HP standards to help facilitate consistently high levels of performance and reliability in HP servers. Memory upgrade options differ by server. Most HP Integrity servers offer Double Chip-Spare technology.

## Leverage integrated service solutions for better business outcomes

Competitive IT organizations need an environment that's both right for today and ready to evolve as your business needs change. HP Services meets this challenge with services designed to lower your IT costs, increase availability, reduce the complexity of multi-vendor services, and accelerate system implementation.

- A key to business success is an agile IT infrastructure that adapts to changing needs while keeping the business running smoothly. Maintaining predictable service levels is one of the benefits of HP comprehensive support services. To help you design, deploy, integrate, and manage an agile IT infrastructure, we cover the entire IT solution lifecycle—including convenient pre-packaged HP Care Pack service options and custom support solutions.
- Break down costly technology silos with our consulting and integration services, which allow you to access, share, and synchronize applications and data across your existing heterogeneous environment.
- Do you dream of being able to focus more on your core competencies—and less on day-to-day IT services? Our outsourcing services and global IT expertise can make this dream a reality.
- To speed product implementation, consider our factory-direct capabilities. Our plug-and-play solutions are integrated, tested and shipped in a fully configured rack. Included are pre-delivery site reviews, factory installation and configuration, onsite installation, and product orientation.

- In today's fast-paced business environment, your employees need to quickly assimilate new IT skills. HP can help you achieve this goal with a variety of training services, including instructor-led courses, customized onsite training, and innovative remotely assisted courses.

Capitalize on your IT environment capabilities with a service partner who thoroughly understands server, storage, and network technology in a multi-vendor environment. Working in partnership with HP Authorized Channel Partners, HP has this expertise. Whether your company is a medium-sized organization or a large global corporation, HP Services can help. To learn more, visit [www.hp.com/hps/support](http://www.hp.com/hps/support)

## Flexible financing for lower costs

HP eases the burden on your balance sheet by offering flexible financing options through HP Financial Services. One popular option is Pay per use, a metered utility pricing solution—available with selected HP Integrity server platforms—that lets you pay for capacity as you use it. Additionally, HP Financial Services can help you transition from your existing solution to a new one by helping you uncover the value in your unwanted equipment. With our Asset Recovery Services, HP Financial Services can pay you for equipment that has remaining market value and manage the disposition of truly obsolete equipment in accordance with environmental regulations. No matter which combination of HP solutions you need, HP Financial Services offers a full range of “acquire-to-retire” services to put those solutions within reach. For more information, please contact your HP sales representative or visit: [www.hp.com/go/hpfinancialservices](http://www.hp.com/go/hpfinancialservices)

## The right partner

We're here to help you build an infrastructure that's designed for your business needs. HP is investing to unify across the data center infrastructure so that customers can standardize on management tools, enclosures, power monitoring, and the like while leveraging their investments. Are spiraling power and cooling costs draining your budget? Our energy-saving tools and technologies can help you significantly cut costs by regulating and monitoring power usage across your infrastructure. Are you trying to get the greatest utilization from your data center floor space? We offer a complete portfolio of solutions, including small-footprint options. Do you need help scaling up or out, or designing a data center that can change along with your business need? Look to HP. Do you want the broadest range of choice from best-in-class IT providers? Our hardware, software, and service partners deliver thousands of solutions designed specifically for HP products. The bottom line? HP is the right partner to help you use technology for better business outcomes.

## For more information

To learn more about how HP Integrity servers are the best choice for today's dynamic IT environments, contact your local HP sales representative or authorized HP reseller, or visit:

[www.hp.com/go/integrity](http://www.hp.com/go/integrity)

## Technology for better business outcomes

To learn more, visit [www.hp.com/go/integrity](http://www.hp.com/go/integrity)

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