

# HP Integrity Superdome

Data sheet



HP Integrity servers: delivering a better return on your IT investment through flexible capacity, secured availability, and simplified management



The HP Integrity Superdome delivers leading virtualization for consolidation and scalability. It's the top-of-the-line enterprise computing solution that delivers balanced high performance along with expansive capacity, flexibility, availability, security, and manageability. With support for multiple operating environments, the Integrity Superdome can be configured to deliver exceptional performance for all workloads, whether they are transaction-based, query-driven, or batch processing. The Integrity Superdome is an ideal system to handle workloads such as online transaction processing (OLTP), data mining, customer relationship management, enterprise resource planning, database hosting, telecom billing, human resources, financial applications, data warehousing, and high-performance computing. Providing large memory capacity and extended I/O, the Integrity Superdome can handle resource-intensive applications for the largest IT organizations.

The Integrity Superdome can scale to 64 processors and 128 cores with 2 TB of memory and 192 I/O slots in a single server. You can also grow your solution with your business by building a cost-effective clustered environment to thousands of processors. The Integrity Superdome offers leading virtualization technologies for consolidation purposes, attractive investment protection, and a better return on IT.

## Key features and benefits

- **Extended scalability with balanced performance**— Powered by new dual-core Intel® Itanium® 2 processors at 1.6 GHz, the HP Integrity Superdome is designed to handle your enterprise's most demanding workloads and grow with your business. The Integrity Superdome's performance and capacity are further enhanced by the HP Super-Scalable Processor Chipset sx2000, which provides high levels of scalability, reliability, and manageability.
- **High availability, disaster tolerance, business continuity**—The continuous operation of your enterprise is enhanced by the Integrity Superdome's broad and deep high-availability features that mitigate hardware outages so you can keep your revenue streams flowing. The Integrity Superdome is built with redundant cell board components, error checking and correcting (ECC) on CPU and memory paths, flexible clustering solutions, online addition and replacement of PCI-X I/O cards, and dynamic processor (HP-UX 11i and Windows® only) and memory (HP-UX 11i) de-allocation. State-of-the-art technologies include Double Chip Sparing (which immediately restores chip-spare protection after a DRAM has failed, shielding against the vast majority of memory failures), and link retries (which recovers from any link failure without loss of performance). The Integrity Superdome can be divided into hard partitions providing electrical isolation between environments so that a fault in one environment does not impact another. This feature enables servicing on one partition without having to take the entire server down.
- **Flexibility in application deployment**—The Integrity Superdome supports HP-UX 11i, Microsoft® Windows Server 2003, Linux, and OpenVMS, so you can easily deploy and redeploy a broad range of applications that are best suited for your business on the operating environment of your choice. You can even reach unparalleled levels of consolidation by running multiple operating systems simultaneously.
- **Simplified management with easy integration**— HP's unified infrastructure management tools make the Integrity Superdome easier to deploy, maintain, and manage—all from a single pane of glass. This reduces the burden of system administrators so you can redeploy resources to projects that will increase your business and competitive advantage. These management tools—including HP Systems Insight Manager (HP SIM), HP Integrity Essentials,

## HP Services

HP Services' end-to-end solutions, built on the Solution Lifecycle (SLC) process, offer consistent quality and service levels for the Integrity Superdome. The SLC process helps achieve rapid productivity and the highest levels of availability by examining specific needs at each of five distinct phases (Plan, Design, Integrate, Install, and Manage) and then designing solutions around those needs.

Service solutions include:

- **HP Critical Service Solution**

- Startup and Deployment services—build the solution to your exact specifications, complete the installation, and make the solution application-ready.
  - Assessment and Design services—define requirements and translate your business and technical needs into a solution that melds the necessary hardware and software
  - Deployment Management—upfront project coordination from HP
  - Education Services—standard curricula or customized courses based upon your existing expertise and current needs
- HP Critical Service—comprehensive ongoing support designed to help minimize the business impact of downtime for mission-critical applications

- **HP Proactive service solution**

- Startup and Deployment services
- HP Proactive 24 service—integrated hardware and software support including proactive and reactive services to improve stability and availability across your IT environment

- **HP Foundation Service Solution**

- Startup and Deployment services
- HP Support Plus 24 service—integrated hardware and software support services designed specifically for your technology.

For more information: [www.hp.com/services/superdome](http://www.hp.com/services/superdome)

HP Storage Essentials, and HP OpenView software—enhance resource utilization and reduce complexity. Additionally, Integrity Superdome's tight integration with HP StorageWorks' industry-leading portfolio of network storage solutions makes it easier for your business to increase information availability.

- **Improved utilization and continuous service levels**— The HP Virtual Server Environment (VSE) provides flexible capacity that helps you optimize server utilization in real time. The VSE uses industry-leading integration of intelligent control with partitioning, high availability (such as HP Serviceguard), and utility pricing, letting you create a pool of virtual servers that can grow or shrink based on your business priorities. To enhance your consolidation initiatives, the Integrity Superdome supports the full HP Partitioning Continuum, including hard and soft partitions, HP Integrity Virtual Machines, and HP Secure Resource Partitions.

## Technical specifications

Configuration options	16 processors	32 processors	64 processors
<b>Intel Itanium 2 processors</b>			
No. of dual-core Intel Itanium 2 1.6 GHz processors/cores with 24 MB or 18 MB of L3 cache	2p/4c–16p/32c	2p/4c–32p/64c	6p/12c–64p/128c
No. of Intel Itanium 2 1.6 GHz processors with 9 MB of L3 cache	2–16	2–32	6–64
No. of 4-processor cell boards <sup>1</sup>	1–4	1–8	3–16
<b>Maximum no. of processors/cores per partition</b>			
HP-UX 11i v2	16p/32c	32p/64c	64p/128c
Windows	16p/32c	32p/64c	32p/64c
Linux	16p/32c	32p/64c	32p/64c
OpenVMS	16p/32c	32p/64c	32p/64c
Minimum/Maximum memory	8 GB/256 GB	8 GB/512 GB	24 GB/1 TB
No. of hard partitions	4	8	16
Total hot-swap PCI-X I/O slots	48 slots (8 slots @ 2,133 MB/s, 24 slots @ 1,066 MB/s, 16 slots @ 533 MB/s)	48/96 slots <sup>2</sup> (16 slots @ 2,133 MB/s, 48 slots @ 1,066 MB/s, 32 slots @ 533 MB/s)	96/192 slots <sup>2</sup> (32 slots @ 2,133 MB/s, 96 slots @ 1,066 MB/s, 64 slots @ 533 MB/s)
Hot-swap, redundant power supplies (N+1 included)	4	6	12
<b>Bandwidth</b>			
<b>Main memory</b>			
Peak	68.3 GB/s	136.5 GB/s	273.1 GB/s
Sustained	64 GB/s	128 GB/s	256 GB/s
<b>L2 to L3 cache per core</b>			
Peak	76.8 GB/s	76.8 GB/s	76.8 GB/s
Sustained	43 GB/s	43 GB/s	43 GB/s
<b>L2 to L3 cache per system</b>			
Peak	1229 GB/s	2458 GB/s	4915 GB/s
Sustained	688 GB/s	1376 GB/s	2752 GB/s
Crossbar throughput per cell	27.3 GB/s	27.3 GB/s	27.3 GB/s
Cell controller to I/O subsystem (peak) per I/O chassis	7.7 GB/s	7.7 GB/s	7.7 GB/s
<b>Fans</b>			
I/O fans	5	5	10
Hot-swap, redundant blowers or fans (N+1 included)	4	4	8
Operating systems supported	HP-UX 11i v2 (choice of Mission Critical, Enterprise, or Foundation Operating Environment) Microsoft Windows Server 2003, Enterprise and Datacenter Editions Red Hat Enterprise Linux <sup>3,4</sup> AS 4 and Novell SUSE Linux Enterprise Server <sup>3,4</sup> 10 OpenVMS v8.3 <sup>3</sup> (choice of Mission Critical, Enterprise, or Foundation Operating Environment)		<a href="http://www.hp.com/go/hpux11i">www.hp.com/go/hpux11i</a> <a href="http://www.hp.com/go/integrity/windows">www.hp.com/go/integrity/windows</a> <a href="http://www.hp.com/go/integritylinux">www.hp.com/go/integritylinux</a> <a href="http://www.hp.com/go/openvms">www.hp.com/go/openvms</a>
<b>High availability</b>			
<b>Standard server features</b>			
Dynamic CPU and memory allocation/de-allocation Double memory chip spare technology Hot-plug cell boards Hot-plug fans Error checking and correcting (ECC) on all CPU, cache, memory, and I/O paths Online addition and replacement of PCI-X I/O cards Redundant power inputs for dual-grid connections N+1 hot-swappable fans and power supplies Hot-spare Instant Capacity CPU functionality (for HP-UX 11i and OpenVMS partitions only; requires Instant Capacity CPUs) Hardware partitions (nPars)			
HP Instant Capacity (HP-UX 11i and OpenVMS only)	CPUs and memory (cell level)	CPUs and memory (cell level)	CPUs and memory (cell level)
HP Virtual Server Environment (VSE)	Workload management, partitions, availability software, and utility pricing (optional)		<a href="http://www.hp.com/go/vse">www.hp.com/go/vse</a>

<sup>1</sup> Online addition and replacement capability will be offered with a future HP-UX release.

<sup>2</sup> To expand a 32-processor Integrity Superdome to 96 slots and a 64-processor Superdome to 192 slots, an I/O expansion unit (IOX) is required.

<sup>3</sup> Linux and OpenVMS supported only on Integrity Superdome Servers with dual-core Intel Itanium 2 processors

<sup>4</sup> Support of dual-core processors planned by end of 2006

## Environmental specifications

<b>Altitude</b>	Operating: 10,000 ft. (3000 m) maximum Non-operating: 15,000 ft. (4500 m) maximum		
<b>Temperature</b>	Operating: 68°F to 86°F (20°C to 30°C) Non-operating: -40°F to +158°F (-40°C to +70°C) Maximum rate of temperature change: 36°F (20°C) per hour		
<b>Humidity</b>	Operating: 15% to 80% relative non-condensing maximum Non-operating: 90% maximum at 149°F (65°C)		
<b>Dimensions</b>	<b>16 processors</b> Height: 77.2 in. (1960 mm) Width: 30 in. (762 mm) Depth: 48 in. (1220 mm)	<b>32 processors</b> Height: 77.2 in. (1960 mm) Width: 30 in. (762 mm) Depth: 48 in. (1220 mm)	<b>64 processors</b> Height: 77.2 in. (1960 mm) Width: 60 in. (1524 mm) Depth: 48 in. (1220 mm)
<b>Weight</b>	1102 lb. (500 kg)	1318 lb. (598 kg)	2636 lb. (1196 kg)
<b>Power supply</b>	Typical power dissipation: 3800 VA (maximum configuration) Input current: 10.2 A @ 200 VAC AC input power: 200–240 V, 50–60 Hz		
<b>Regulatory</b>	UL listed, CUL certified, TÜV GS Mark, compliant with EN 60950		
<b>Safety</b>	Complies with FCC rules and regulations, Part 15, as a Class A Digital Device; manufacturer's declaration to EN 55022 Level A, VCCI registered, Class I, Korea RLL		
<b>Electromagnetic interference</b>	EN 61000-3-2 (Europe); EN 61000-3-3 (Europe)		
<b>Power line LF emissions</b>			

- **Investment protection**—The Intel Itanium 2 9M and the dual-core Itanium 2 processors can be mixed in the same HP Integrity Superdome in different hard partitions. The next generation of Intel processors will also be supported—further extending the life of the Integrity Superdome and easing the process of taking advantage of new technologies. Not only can you easily scale up by adding more processors, but the Integrity Superdome can be upgraded within the chassis—which means avoiding costly box swaps.

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In addition to having the industry's strongest portfolio of products, services, people, tools, methodologies, and world-class partnerships, we also provide world-class financial services. No matter which combination of reliably innovative HP solutions you need, HP Financial Services can help reduce your costs even further with our full range of services, helping you to transition from legacy equipment, acquire new HP Adaptive Enterprise solutions, manage your solution cost-effectively, and dispose of equipment safely at the end of its lifecycle.

For more information on how HP Financial Services can help you to reduce your costs, please visit:

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

## For more information

For more information about the HP Integrity Superdome, contact any of our worldwide sales offices or visit our Web sites at: [www.hp.com/go/integrity](http://www.hp.com/go/integrity) or [www.hp.com/go/superdome](http://www.hp.com/go/superdome)

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