



HP SUPERDOME 2: THE ULTIMATE MISSION-CRITICAL PLATFORM

Defining the next decade of mission-critical computing

Data sheet

HP mission-critical Converged Infrastructure

HP combines innovation, partnerships, and expertise to deliver an industry-proven, mission-critical Converged Infrastructure. This newest generation of HP Integrity systems leverages the industry's #1 blade platform, runs HP-UX 11i v3, and offers a common, bladed platform from x86 to Superdome 2.¹ Moreover, the architecture embodies FlexFabric, a virtual fabric that can address any workload through rapid scale-up, scale-out, and scale-within capabilities.

HP Superdome 2: Superdome resiliency meets BladeSystem efficiency

HP Superdome 2 pioneers a new category of modular, mission-critical systems that scale to consolidate all tiers of applications on a common platform. Its unique blend of reliability, efficiency, and virtualization features make it the ideal foundation

for mission-critical apps—whether they are in traditional IT or private cloud environments.

Superdome 2 includes:

- Trusted Superdome resiliency with 100+ new mission-critical innovations such as the Superdome 2 Crossbar Fabric and Power-on-once technologies
- Bladed design, common components, and standard racks
- A common server management framework, supported from x86 to Superdome 2
- Dynamic virtualization capabilities to instantly adjust resources

Superdome 2 sets the standard for the next decade of mission-critical computing.

¹ Source: "Worldwide Quarterly Server Tracker," IDC, February 2011.



Key features and value

Power-on-once technology keeps critical applications up and running

For enterprise customers, planned downtime can be as problematic as unplanned downtime. Power-on-once is a complete resiliency framework, which keeps the system running and provides up to 4.5x boost to infrastructure reliability. Key features include:

- The ability to hot-swap fans and power supplies without tools and without bringing the system down
- Electrically-isolated, passive backplane, which is designed to remove single points of failure and active components along signal paths
- Superdome 2 Analysis Engine, which delivers predictive error-handling to reduce time and cost of error management
- vPars v5 dynamic cores capabilities, which dynamically moves processor cores between vPars
- Dynamic processor resiliency, which automatically replaces processors in the event of failure and protects against downtime

Crossbar Fabric for extreme scalability and reliability

The innovative Superdome 2 Crossbar Fabric is both flexible and fault tolerant. It is the only UNIX® server in the industry that enables flexible scaling, allowing I/O to scale independent of processors. IT architectures can be built to the exact application needs—CPU intensive, I/O intensive, or anything in between. The Superdome 2 Crossbar Fabric is also fault tolerant. This means that the fabric can survive a complete crossbar failure, reroute

data, and recover immediately. This is done through an end-to-end transaction retry innovation that self-diagnoses and self-heals any errors in communication through the fabric. This unique combination of features makes Superdome 2 a highly reliable and flexible foundation for mission-critical applications.

Common, modular components for improved efficiency

HP Superdome 2 offers enhanced features to increase scalability, improve memory, and provide better compute power without compromising performance. Designed to scale from 8 to 256 cores and more, this newest generation of Superdome offers:

- Up to a 4x improvement in performance, in half the size²
- A modular, bladed design, based on 16 socket building blocks (each with up to 16 Intel® Itanium® 9300 series processors and 64 cores of compute power)
- Scale-as-you-grow configurations, including an 8-, 16-, and 32-socket server
- 256 DIMM slots with up to 2 TB of double data rate 3 (DDR3) memory, with double-chip spare, providing a large memory footprint for the most demanding applications
- 64 built-in 10GbE ports
- A full suite of capacity-on-demand capabilities: pay per use (PPU), Instant Capacity (iCAP), Global Instant Capacity (GiCAP), and Temporary Instant Capacity (TiCAP)
- Built-in shared DVD

² Source: HP Internal Analysis, 2010.

Technical specifications—HP Superdome 2

	Superdome 2-8s	Superdome 2-16s	Superdome 2-32s
Processors	Intel Itanium 9350 4c Intel Itanium 9340 4c	Intel Itanium 9350 4c Intel Itanium 9340 4c	Intel Itanium 9350 4c Intel Itanium 9340 4c
Processor/Cores per system	16/64	16/64	32/128 designed to scale from 8 to 256 cores and more
Processor/Cores per partition	8/32	16/64	32/128
Module type	Quad-core processor	Quad-core processor	Quad-core processor
9340 Clock speed with Turbo	1.60 GHz up to 1.73 GHz	1.60 GHz up to 1.73 GHz	1.60 GHz up to 1.73 GHz
9350 Clock speed with Turbo	1.73 GHz up to 1.86 GHz	1.73 GHz up to 1.86 GHz	1.73 GHz up to 1.86 GHz
QuickPath Interconnect	19.2 GB/s	19.2 GB/s	19.2 GB/s
L1 cache	32 KB per core	32 KB per core	32 KB per core
L2 cache (instruction)	512 KB per core	512 KB per core	512 KB per core

Technical specifications (continued)

	Superdome 2-8s	Superdome 2-16s	Superdome 2-32s
L2 cache (data)	256 KB per core	256 KB per core	256 KB per core
L3 cache	24 MB per socket ³	24 MB per socket ³	24 MB per socket ³
L4 cache	64 MB per socket	64 MB per socket	64 MB per socket
Memory minimum/maximum	Minimum: 32 GB (8 x 4 GB) Maximum: 2 TB (256 x 8 GB)	Minimum: 32 GB (8 x 4 GB) Maximum: 2 TB (256 x 8 GB)	Minimum: 32 GB (8 x 4 GB) Maximum: 4 TB (512 x 8 GB)
Memory type	Registered PC3-10600 DDR3 1,333 MHz ECC DIMMs		
Memory protection	Error checking and correcting (ECC) on memory and caches; double-chip spare		
Supported operating system	HP-UX 11i v3 ⁴	HP-UX 11i v3 ⁴	HP-UX 11i v3 ⁴
External I/O slots	48 external PCIe x8 Gen2	96 external PCIe x8 Gen2	96 external PCIe x8 Gen2
Internal I/O slots	24 PCIe Mezzanine ⁵ 16 Type II and 8 Type I, PCIe x8 Gen2	24 PCIe Mezzanine 16 Type II and 8 Type I, PCIe x8 Gen2	48 PCIe Mezzanine 32 Type II and 16 Type I, PCIe x8 Gen2
Built-in networking	32 10GbE ports Pass-through or switch interconnect module	32 10GbE ports Pass-through or switch interconnect module	64 10GbE ports Pass-through or switch interconnect module
Partitioning	8 socket electrically isolated nPars, vPars, HP-VMs, Secure Resource Partitions	16 socket electrically isolated nPars, vPars, HP-VMs, Secure Resource Partitions	32 socket electrically isolated nPars, vPars, HP-VMs, Secure Resource Partitions
Capacity on demand	PPU: iCAP, TiCAP, GiCAP		
Form factor	18U Enclosure 4U I/O Expansion Enclosure HP 600 mm wide 10K G2 racks in 36U and 42U heights Standard rack door	18U Enclosure 4U I/O Expansion Enclosure HP 600 mm wide 10K G2 racks in 36U and 42U heights Superdome 2 door with active status display	2 18U Enclosures in single 19" rack 4U I/O Expansion Enclosure HP 600 mm wide 10K G2 racks in 36U and 42U heights Superdome 2 door with active status display
High availability—standard server features	2N (N+N) redundant power supplies N+1 fans (or greater depending on the load) Online replaceable and redundant Onboard Administrator (OA), utilities, clock, and service processor subsystems Fault-Tolerant Crossbar Fabric built on dynamic multipathing and end-to-end retry technology Enhanced Machine Check Architecture (MCA) recovery (automated processor recovery) with Intel® Cache Fail-Safe Technology ECC on caches, memory ECC, and double-chip spare ECC, re-tries, and Link Width Reduction on data paths Automatic de-configuration of memory and processors I/O Advanced Error Recovery, PCIe OL, ⁶ and I/O isolation off Crossbar Fabric Redundant network paths Redundant Fibre Channel paths		
HP Matrix Operating Environment with HP-UX	Provides industry-leading workload and resource-management solutions to accelerate complex IT projects and simplify daily operations. www.hp.com/go/insightdynamics/integrity		
Interfaces	VGA and 2 USB ports for local human interface; 1 RS-232 serial port and 10/100Base-T LAN for Integrity Integrated Lights-Out (iLO 3) management		
Removable media	Built-in DVD-ROM, accessible from all partitions		

³ L3 cache size for 9340 = 20 MB

⁴ Choice of data center, high availability, virtual server or base operating environment

⁵ Mezzanine I/O supported in future release

⁶ PCI Express OL in future release

(Note: All expected availability dates are subject to change without prior notice.)

Altitude	Operating: 3050 m (10,000 ft)	Nonoperating: 4500 m (15,000 ft)
Temperature	Operating: +15°C to +32°C	Nonoperating: -40°C to +70°C
Relative humidity	Operating: 20% to 80% at 30°C	
Dimensions	Superdome 2 BladeSystem Enclosure Height: 798 mm (31.4") (18U) Width: 447 mm (17.6") Depth: 828 mm (32.6")	IOX Enclosure Height: 173 mm (6.8") (4U) Width: 437 mm (17.2") Depth: 572 mm (22.5")
Weight	Maximum 274 kg (733 lb) (estimate, fully populated); IOX weight: 29.5 kg (65 lb) fully loaded	
Power	9000 VA, IOX: 535 VA at PF 0.98 or better	
Cooling airflow	800 CFM minimum; 1100 CFM at 32°C; 1900 CFM maximum	
Voltage tolerance range	200–240 V AC	
Frequency tolerance range	50–60 Hz	
Regulatory model number	FCLSB-1001 Enclosure, FCLSB-BB31 Blade	

HP Financial Services

HP Financial Services provides innovative financing and financial asset management programs to help customers cost-effectively acquire, manage, and ultimately retire their HP solutions. For more information on these services, visit www.hp.com/go/hpfinancialservices.

To learn how the HP Superdome 2 can help your business move to a Converged Infrastructure, visit www.hp.com/go/superdome2.

HP Services

HP Technology Services

Recommended services

3-Year HP Critical Service: Provides comprehensive proactive and reactive support for mission-critical applications.

HP Installation and Startup Service for HP Superdome 2: Onsite installation; can be complemented by Factory Express Services for additional design and factory integration.

HP Factory Express Package 5 Service: Provides consulting for solution configuration, complex configuration, racking and onsite installation; includes onsite installation and handover session.

HP Insight Remote Support: Available at no additional cost to warranty customers, this automated tool provides secure, reliable 24x7 remote monitoring, diagnosis and problem resolution.

Related services

3-Year HP Proactive 24: Provides improved availability, and operational effectiveness with integrated hardware and software support; combines industry-leading reactive technical assistance with proactive account services.

HP Installation and Startup Service for Matrix Operating Environment: Provides assistance in setting up Superdome 2 virtualization. Customers can choose assistance with select tools in the Matrix Operating Environment suite or with the complete suite of tools, as needed.

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



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