

# Intel® Itanium® 2 Server Modules for Hitachi BladeSymphony 10U

Hitachi BladeSymphony **Datasheet**

## Performance and efficiency on a whole new scale.

BladeSymphony is the first true enterprise-class blade server. It combines Hitachi's "Virtage" embedded virtualization technology, a choice of dual-core Intel® Xeon® and/or Itanium® 2 server modules, integrated management capabilities, and powerful, reliable, scalable system resources—so you can run mission-critical applications with confidence.

The new dual-core Intel Itanium 2 64-bit processor delivers superior processing power for enterprise-class workloads. It gives you access to continued advancements in mainframe-class reliability with Intel Cache Safe Technology and Enhanced Machine Check Architecture.

The BladeSymphony 10U system takes maximum advantage of the built-in performance and reliability characteristics of the dual-core Itanium 2 processor (Montecito). With a 19" rack-compatible chassis, BladeSymphony supports up to eight blades. The eight blade slots accommodate a total of up to 16 Itanium 2 CPU sockets, or 32 cores, with 16 cores per SMP, running Microsoft® Windows® or Linux®. You can interconnect Itanium 2 server modules via a high-speed backplane to form a high-performance SMP server of up to 16-way, so you get the performance you need for your most compute-intensive applications.

As you incrementally add server modules, you can harness Hitachi's Virtage embedded virtualization solution, leveraging Intel Virtualization Technology (VT), to create multiple virtual machines and securely run multiple operating systems on a single SMP configuration. This capability, combined with BladeSymphony's large I/O bandwidth, large addressable memory space, and mainframe-class memory management features, makes BladeSymphony with Itanium 2 server modules an excellent platform for consolidation, migration away from proprietary UNIX platforms, and workload optimization.

Each Itanium 2 blade supports up to 16 physical memory slots for a maximum of 32 GB per blade. At 16-ways, memory configurations total up to 128 GB. On each blade there are also two on-board Gigabit Ethernet NIC ports, which connect to internal Gigabit Ethernet switches in the chassis. Each blade also has access to a maximum of four physical PCI slots in the back of the chassis. Therefore in a 16-way environment the OS has access to eight on-board NICs and up to 16 physical PCI slots. There are other PCI configurations optionally available.

And the dual-core Itanium 2 processor provides premier performance at far lower cost than proprietary offerings, so Hitachi is able to offer Itanium 2-based server modules at extremely competitive prices. More than 8,000 applications are supported and industry-leading hardware vendors and solution providers worldwide offer Itanium-based solutions, ensuring the broadest range of options and ongoing support.

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### BladeSymphony Key Features

- Support for up to eight dual-socket Itanium 2 server modules (each socket can support a dual-core CPU)
- SMP blade interconnect for unsurpassed scalability (low-latency, point-to-point architecture)
- Virtage embedded virtualization for high-performance, reliable, flexible resource allocation
- Large I/O bandwidth for unrestricted communication
- Large memory space and memory management features, CC-Numa
- Can be configured for 2-way, 4-way, 8-way and 16-way operation
- Multi-OS support (Windows, RedHat Linux, SuSe Linux)

### Intel Dual-Core Itanium 2 Key Features

- Two complete 64-bit processing cores on one chip
- Up to 24MB on-die L3 cache
- Hyper-Threading Technology (HT Technology)
- Up to 30 percent lower power usage than previous generation single-core Itanium 2-based processors
- Intel Cache Safe Technology and Enhanced Machine Check Architecture for reliable operation
- Intel Virtualization Technology (VT)

**BladeSymphony**

## Intel Itanium 2 Server Module Specifications

CPU	CPU (Frequency/Cache)		Dual Core Intel Itanium 2 Montecito Processor (1.6GHz/L3 24MB, 1.6GHz/L3 18MB, 1.4GHz/L3 12MB)
	# of CPU		Min. 1/Max. 2 sockets Chipset
	Chipset		Hitachi Node Controller
Front Side Bus Frequency (FSB)			400MHz
SMP Configuration			Max. 16way (8 sockets SMP)
Memory	DIMM		512MB/1GB/2GB DDR2-400MHz
	Error Correction		ECC
	Availability		Online Spare / Chip kill / Scrubbing
	# of slots		16
	Capacity		Min. 2GB (512MB×4 slots) / Max. 32GB (2GB×16 slots)
Onboard LAN	LAN	Interface	1000Base-T/100Base-TX/10Base-T
		WOL	Port 1, 2 support
		Power Management	APM
	Mgmt LAN	Interface	100Base-TX/10Base-T
Interface	Connector		USB1.1x 2 Serial x 1
	LED		Condition, Power, Error, LAN1, LAN2
	Switch		Power, Reset, NMI
	Backplane		LAN(1000Base-T/100Base-TX/10Base-T)[SERDES]×2, PCI-Express×4×2 Hitachi proprietary SMP node link x 3, Management LAN (100Base-TX/10Base-T)×1 (*1)
Support OS	Windows Server 2003 Enterprise Edition for Itanium based Systems SP1		
	Red Hat Enterprise Linux AS 4.0		
	SuSE Linux Enterprise Server 10		
Additional Features	Local PXE boot		
	Console Redirection over LAN		
	WOL right after AC power on (Controlled by BMC)		
	IOA Type3 Hitachi FC & Ether Combo Board		

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