Product Brief

Intel® Server Platform SR4850HW4
Intel® Server Platform SR6850HW4

- Support for Four 64-bit Intel® Xeon™ Processors MP
- PCI Express* and PCI-X I/O Interconnect Technologies
- Versatile Form Factors for Available, Expandable Systems

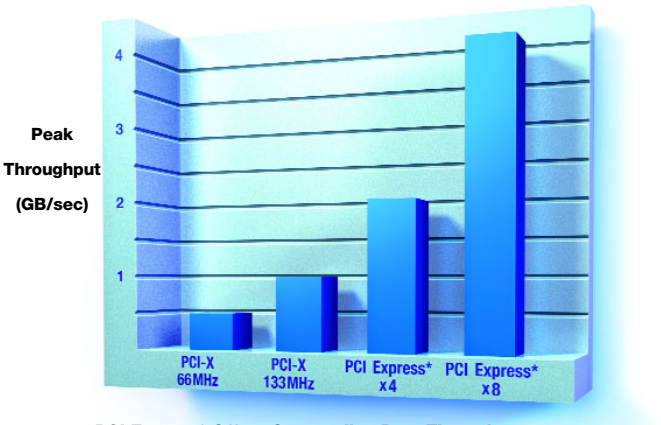
Intel® Server Platforms SR4850HW4 and SR6850HW4

Enterprise performance and availability and the 64-bit Intel® Xeon™ processor MP for scalable business solutions

The 64-bit Intel® Xeon™ processor MP with up to 8MB L3 Cache offers innovations such as Hyper-Threading Technology and Intel® Extended Memory 64 Technology (Intel® EM64T)[1], delivering outstanding performance, headroom, and versatility for enterprise-level server solutions.

Intel® Server Platforms SR4850HW4 and SR6850HW4

To maintain a competitive advantage, businesses of all sizes need an ongoing commitment to boosting productivity, managing a rapidly growing volume of data, and enhancing system flexibility. They need server platforms supporting expanded uptime, faster data access, and more storage, and they need a platform provider offering a breadth of complementary products and support. Intel delivers all this and more with its eighth-generation multiprocessor server platforms: the Intel® Server Platforms SR4850HW4 and SR6850HW4, either of which makes an ideal foundation for a reliable, high-performance data center.



PCI Express* Offers Outstanding Data Throughput

In the Intel® Server Platforms SR4850HW4 and SR6850HW4, the PCI Express* x8 slot provides up to eight times the throughput of PCI-X 66MHz. *Calculations are based on maximum theoretical throughput. Individual results may vary.*

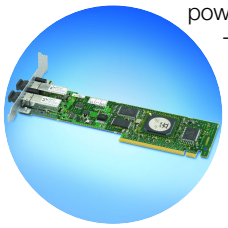
Quad-Processing Performance

The Intel Server Platforms SR4850HW4 and SR6850HW4 support up to four 64-bit Intel® Xeon™ processors MP in a single rack-mount or (in the Server Platform SR6850HW4) a pedestal chassis. Through innovations such as Hyper-Threading Technology and Intel® Extended Memory 64 Technology (Intel® EM64T)[1], these 64-bit versions of the renowned Intel Xeon processor provide a next-generation 667MHz system bus and exceptional support for both 32-bit and 64-bit mid-tier applications.

By supporting up to four powerful processors, the Server Platforms SR4850HW4 and SR6850HW4 also deliver bottom-line benefits. This is because they enable the replacement of 1-way and 2-way servers with a smaller number of 4-way servers, helping businesses to reduce their total system costs and boost their return on investment.

Robust Data Protection, Easier Management

For maintaining the integrity of essential data, the Server Platforms SR4850HW4 and SR6850HW4 feature redundant hot-swap power supplies and fans, hot-swap SCSI drives, hot-plug PCI slots, and extensive memory RAS capabilities. The platforms also are highly manageable thanks to a number of tool-less service features and the Intel® Server Management suite of hardware, software, and utilities.



Onboard support for Intel® Fibre Channel and RAID modules enables expansion of enterprise I/O capability while leaving PCI Express* and PCI-X slots available for other uses.

Intel® Server Platforms SR4850HW4 and SR6850HW4 Features and Benefits

Features	Benefits
Support for up to four 64-bit Intel® Xeon™ processors MP with up to 8MB L3 Cache and Hyper-Threading Technology	Performance and scalability for the most demanding server applications
Sixteen DIMM sockets compatible with ECC DDR2 400 SDRAM	Memory capacity and flexibility to support a wide range of server solutions
Advanced data protection with RAID and memory sparing and mirroring	Increased server uptime
Seven PCI slots: four PCI Express* (hot-plug), one PCI-X 133MHz (hot-plug), two PCI-X 100MHz	Minimized data bottlenecks, high bandwidth, excellent scalability
Support for hot-plug PCI and memory	No server downtime required for adding or removing many components
Two independent Ultra320 SCSI channels	High-volume data throughput and configuration flexibility
Dual Gigabit Ethernet network connections with support for failover and teaming	High bandwidth and minimal downtime
Intel® Server Management 8	Comprehensive system management

Intel® Server Platform SR4850HW4: 4-Way Power in a 4U Form Factor

The Intel® Server Platform SR4850HW4 is a space-efficient rack-mount server that packs enormous processing power in only 4U. As a result, the Server Platform SR4850HW4 is ideal for consolidating servers and applications into a cost-effective, easily managed solution.

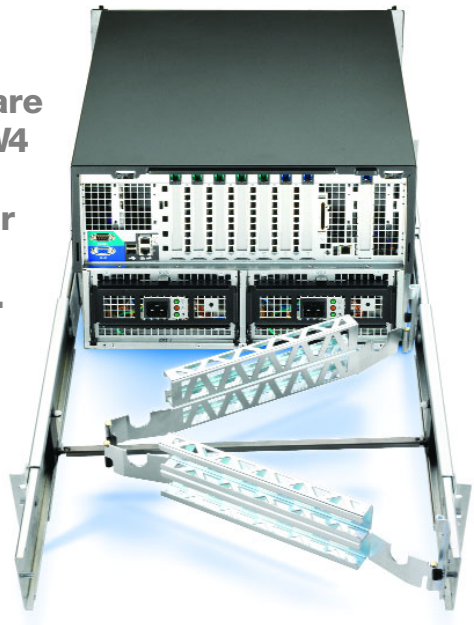
Features	Benefits
4U rack-mount form factor	High-density format for maximum power in minimum space
Up to five one-inch hot-swap Ultra320 SCSI hard drives with support for 15K RPM drives	High-performing and reliable storage for demanding data needs
Redundant hot-swap 1470W 1+1 power supplies	High availability, with no downtime required for replacement

Intel® Server Platform SR6850HW4: Performance, Reliability, Expandability

The Intel® Server Platform SR6850HW4 provides the same remarkable performance and reliability as the Intel Server Platform SR4850HW4 but in a 6U rack or pedestal configuration with support for 10 hard-disk drives for greater expandability. This makes the Server Platform SR6850HW4 an excellent solution for growing businesses as well as any business using applications that demand a high volume of local data storage.

Features	Benefits
6U rack-mount form factor or optional pedestal-conversion kit	Configuration flexibility and an easily converted pedestal orientation
Up to 10 one-inch hot-swap Ultra320 SCSI hard drives with support for 15K RPM drives	High-performing, reliable, and highly expandable storage for demanding data needs
Redundant hot-swap 1570W 1+1 power supplies[2]	High availability, with no downtime required for replacement

Rack slide rails and a cable-management arm are among many Intel® Server Platform SR4850HW4 and SR6850HW4 components that can be assembled and installed without the need for tools. The cable-management arm extends and retracts to organize the server's cables.



Intel® Server Platform SR4850HW4

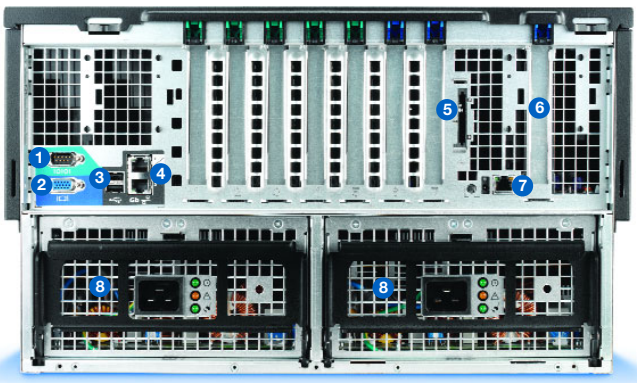
1. Up to four 64-bit Intel® Xeon™ processors MP
2. Support for up to 16 DIMMs of Registered ECC DDR2 400 SDRAM[3]
   - Support for hot-plug memory, memory RAID, and memory sparing and mirroring
3. Seven PCI slots: one PCI Express* x8 (hot-plug), three PCI Express x4 (hot-plug), one PCI-X 133MHz (hot-plug), and two PCI-X 100MHz (non-hot-plug)
4. DVD-ROM/CD-ROM
5. Two hot-swap variable-speed electronic fan modules with 2+2 redundant fans
6. Five hot-swap hard-drive bays that support up to five one-inch Ultra320 hard drives
7. Video connector
8. Three USB connectors
9. Support for two control-panel options: Intel® Local Control Panel and button control panel

Intel® Server Platform SR4850HW4 – Rear View

1. DB9 serial port connector
2. Video connector
3. Two USB connectors
4. Two Ethernet connectors
5. External SCSI connector
6. Optional Intel® Fibre Channel Module (shown)
7. Intel® Server Management Module Ethernet connector
8. Redundant hot-swap 1470W 1+1 power supplies

Intel® Server Platform SR6850HW4

1. Up to four 64-bit Intel® Xeon™ processors MP
2. Support for up to 16 DIMMs of Registered ECC DDR2 400 SDRAM[3]
   - Support for hot-plug memory, memory RAID, and memory sparing and mirroring
3. Seven PCI slots: one PCI Express* x8 (hot-plug), three PCI Express x4 (hot-plug), one PCI-X 133MHz (hot-plug), and two PCI-X 100MHz (non-hot-plug)
4. DVD-ROM/CD-ROM
5. Six hot-swap variable-speed electronic fans with 5+1 redundant fans
6. Ten hot-swap hard-drive bays that support up to 10 one-inch Ultra320 hard drives
7. Video connector
8. Three USB connectors
9. Support for two control-panel options: button control panel and Intel® Local Control Panel



Intel® Server Platform SR6850HW4 – Rear View

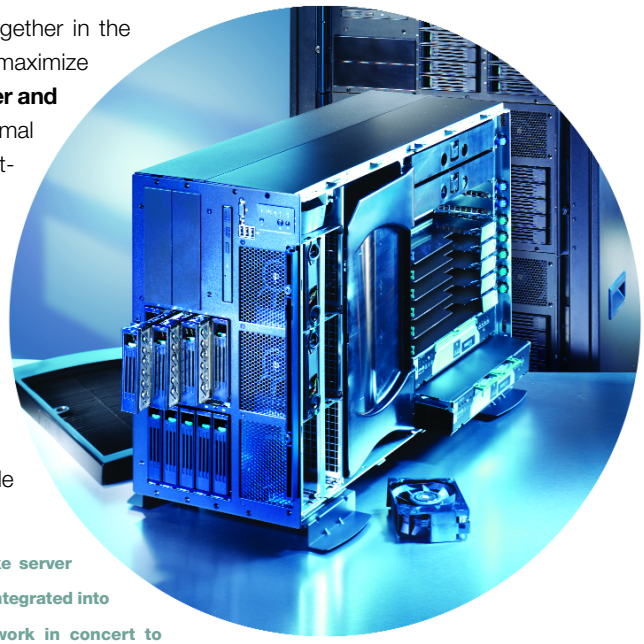
1. DB9 serial port connector
2. Video connector
3. Two USB connectors
4. Two Ethernet connectors
5. External SCSI connector
6. Optional Intel® Fibre Channel Module
7. Intel® Server Management Module Ethernet connector
8. Redundant hot-swap 1570W 1+1 power supplies[4]

Compatible Products for Comprehensive Solutions

The following table provides a list of key compatible products for the Intel® Server Platforms SR4850HW4 and SR6850HW4. Please see http://support.intel.com/support/motherboards/server for the most recent and comprehensive product compatibility list.

Intel Building Block	Product Name(s)	Product Order Code(s)
Intel® Server Platform	**Intel® Server Platform SR4850HW4** **Intel® Server Platform SR6850HW4**	**SHW4UR** **SHW6UR**
Intel® Server Accessories (required)	**Intel® Management Modules** (choose one) **Intel® Management Module Professional Edition** **Intel® Management Module Advanced Edition** **Front Control Panel** (choose one) **Button Control Panel** **Intel® Local Control Panel** **Power Supply Bay (SR6850HW4 only, choose one)** **1570 Power Supply Module** (required for full power redundancy) **Active Power Fan Unit** **Processor Support** **Processor Core VRM 10.2** (one required when populating three processors, two required when populating four processors) **Processor Cache VRM 9.1** (required when populating three or four processors) **Processor Thermal Blank** (for unpopulated processor sockets)	 **AXXIMMPRO** **AXXIMMADV2** **AXXBCPMOD2** **AXXLCPMOD2** **AHW6UPWR** **AHW6UPWRFAN** **AHWVRMP** **AHWVRMC** **AHWPROCBLANK**
Intel® Server Accessories (optional)	**Memory Board** (platform ships with one and supports the installation of three additional boards) **Intel® RAID Activation Key** **Intel® RAID Smart Battery** **Intel® Fibre Channel Module** (using onboard connector without consuming PCI slot) **Rack-Mounting Accessories** **Tool-less Rail Kit** **Cable-Management Arm** **Front Bezel** **SR4850HW4** (4U) **SR6850HW4** (6U Rack) **SR6850HW4** (6U Pedestal) **Pedestal Conversion Kit**	**BHW4DIMM** **AXXRAKU42E** **AXXRSBBU2** **AHWFCMOD** **AXXRAIL3U7U** **AXXCMA3U7U** **AHW4URBEZEL** **AHW6URBEZEL** **AHW6UPBEZEL** **AHW6UPEDKIT**

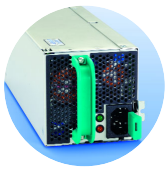
Intel® Server Platforms SR4850HW4 and SR6850HW4 Support Technologies That Define Innovation



A number of sophisticated Intel server technologies work together in the Intel® Server Platforms SR4850HW4 and SR6850HW4 to maximize performance and uptime and simplify management. **Intel® Power and Thermal Headroom** provides sufficient power supply and thermal protection to maintain performance levels in current and next-generation servers. **Intel® Active Airflow Control** works in concert with Intel Power and Thermal Headroom to monitor temperatures and adjust fans accordingly.

Intel® Drive Stabilization Technology reduces hard drive vibration, which improves drive reliability, longevity, and performance. The optional **Intel® Local Control Panel** enables easy monitoring and control of the server through an innovative optional control panel located in the front panel. Lastly, **Intel® Light-Guided Diagnostics** simplifies troubleshooting to enable easier servicing and faster recovery.

Intel server technologies provide powerful capabilities designed to make server systems more reliable, more available, and easier to service. Seamlessly integrated into the latest generation of Intel® Server Products, these technologies work in concert to complement the capabilities of the most current Intel processor and chipset technologies.



Intel® Power and Thermal Headroom

Intel® Active Airflow Control

Intel® Drive Stabilization Technology

Intel® Local Control Panel

Intel® Light-Guided Diagnostics

For more information on these technologies, please visit: http://developer.intel.com/design/servers/technologies/

Intel® Server Platforms SR4850HW4 and SR6850HW4 Specifications

Processor Supported

For the latest information on processor support, visit http://support.intel.com/support/motherboards/server

Up to four 64-bit Intel® Xeon™ processors MP with up to 8MB L3 Cache, a 667MHz system bus, Hyper-Threading Technology, and Intel® Extended Memory 64 Technology (Intel® EM64T)[1]

System Memory

For the latest information on memory support, visit http://support.intel.com/support/motherboards/server

Capacity	Support for up to 64 GB in up to 16 DIMM sockets
Type	Registered ECC DDR2 400 SDRAM 72-bit, 240-pin gold-plated DIMMs
DIMM Sizes	256MB, 512MB, 1GB, 2GB, 4GB
Memory Voltage	1.8V only
Reliability Features	ECC memory support to correct single-bit errors and detect multiple-bit errors; supports memory RAID, hot-plug memory, memory sparing and mirroring

Integrated Onboard

Chipset	Intel® E8500 Chipset
Intel® Server Network	Dual Gigabit Ethernet connections, one Intel® Server Management Ethernet port
Super I/O Controller Connections	National Semiconductor* Super I/O PC87364 controller chip providing all PC-compatible I/O
Ultra320 SCSI Controller	LSI Logic* LSI53C1030 Dual-Channel Ultra320 SCSI Controller
Graphics	ATI* RADEON* 7000 VGA PCI graphics controller with 1600x1200 maximum resolution, 16 MB of video memory (SDRAM)

Input/Output

PCI	Seven total PCI expansion slots: one PCI Express* x8 (hot-plug), three PCI Express x4 (hot-plug), one PCI-X 133MHz (hot-plug), two PCI-X 100MHz (non-hot plug)
USB	Five USB 2.0–compatible connectors (two rear, three front access)
Serial Ports	One rear DB9 9-pin connector
Video Port	One rear and one front standard VGA-compatible 15-pin connector
LAN Port	Two 10/100/1000Mb RJ-45
Other	One 10/100Mb RJ-45 server management port, external SCSI connector (optional)

Dimensions

	SR4850HW4	SR6850HW4
Form Factor	Rack	Rack or Pedestal (via optional configuration kit)
Height	4U, 6.8" (173 mm)	6U, 10.3" (262 mm)
Width	17.6" (447 mm)	17.6" (447 mm)
Depth	27.8" (706 mm)	27.8" (706 mm)
Weight (maximum configuration)	90 lbs. (41 kg.)	130 lbs. (59 kg.)

Storage and Cooling

	SR4850HW4	SR6850HW4
SCSI Channels	Two	Two
Supported Hard Drives	Five hot-swap drives up to 15K RPM, Ultra320 SCSI SCA-type hard-disk drives	Ten hot-swap drives up to 15K RPM, Ultra320 SCSI SCA-type hard-disk drives
SCSI Backplane	80-pin SCA-2 connectors, thermal sensors, dual-color LEDs	80-pin SCA-2 connectors, thermal sensors, dual-color LEDs
Additional Drive Bays	Two total (one half-height 5.25" empty, one DVD-ROM/CD-ROM filled)	Two total (one full- or half-height 5.25" empty, one DVD-ROM/CD-ROM filled)
System Cooling	Four fans using a 2+2 (redundant) configuration for cooling all system components	Six fans using a 5+1 (redundant) configuration for cooling all system components

Front-Panel Buttons

Reset	Resets system
NMI	Initiates a non-maskable interrupt
Power	Toggles system power
Chassis ID	Activates the blue chassis ID LED on both the front control panel and on the baseboard at the rear panel of the chassis

LEDs

Chassis (blue)	Can be turned on via the front control panel or Intel® Server Management; chassis ID LED is visible from the front and rear of the chassis to ease identification when servicing the system in a rack
Power (green)	When lit continuously, indicates the presence of power in the server; LED goes out when power is turned off or the power source is disrupted; a flashing power LED indicates the system is in ACPI sleep mode
HDD (green)	Indicates system hard-drive activity
LAN 1 (green)	Indicates 10/100/1000Mb Ethernet port activity
LAN 2 (green)	Indicates 10/100/1000Mb Ethernet port activity
System Fault (yellow)	Indicates a system-fault condition

Intel® Server Management

Integrated Management Type	Onboard platform instrumentation
Software Support	Intel® Server Manager 8 family of software; upgradable to support HP Unicenter*, Tivoli*, and LANDesk* Management Suite 8
Intel® Management Module Support	Professional Edition, Advanced Edition
Remote Management	Remote access both in-band and out-of-band to system status, logs, configuration data, and utilities without the need for a remote-management card; event filtering and proactive alerting through LAN and mobile devices
System Monitoring and Autorecovery	System health indicators and corrective actions including automated power cycling, OS watchdog timer, and fault-resilient booting
Server Troubleshooting	Continuous health monitoring, text console redirection, and error logs
Server Maintenance	Integrated with Intel® SMaRT Tool Module for Server Platforms SR4850HW4 and SR6850HW4
Intelligent Platform Management Support	Intelligent Platform Management Interface (IPMI) 2.0

Fully Validated Operating Systems

Microsoft* Windows* Server 2003 Enterprise Edition for 64-bit Extended Systems, Microsoft Windows Server 2003 Enterprise Edition, Microsoft Windows 2000, Red Hat* Enterprise Linux* 3.0 (32-bit and EM64T), and SuSE Linux Enterprise Server 9 (32-bit and EM64T)

System BIOS

Type	2Mb Flash EEPROM with AMI* core, supports EFI Framework
Special Features	Plug and Play, ECC/parity support,
Configuration Utilities	System Configuration Wizard for system setup of BIOS and server management; Save and Restore System Configuration Utility and initial Intel® Server Management 8 configuration

Environmental

Ambient Temperature	Operating (system): 10°C to 35°C; non-operating/storage (system): –40°C to +70°C
Relative Humidity	Non-operating: 95%, non-condensing at 25°C to 30°C
Acoustics	Sound pressure: < 55dBA at ambient temperatures < 23°C measured at bystander positions in operating mode; sound power: < 7.0dBA at ambient temperatures < 23°C measured using Dome Method in operating mode
Electrostatic Discharge	Tested to levels up to 15kV air discharge and up to 8kV contact discharge without physical damage per Intel test specification

Safety & EMC Regulatory Compliance (Class A)

(EMC regulatory compliance is based on configuration as outlined in the Intel® Server Platform SR4850HW4 and Intel® Server Platform SR6850HW4 subassembly guides.)

Country	Certification *Safety and/or EMC*	Regulatory Mark *Safety and/or EMC*
Argentina	IRAM	IRAM
Australia/ New Zealand	ACA, MED	C-Tick
Belarus	Bellis	Not applicable
Canada	UL / Industry Canada	cULus / ICES
China	CNCA	CCC
Europe	European Directives	CE
Germany	GS	GS
International	CB Report / CISPR	Not applicable
Japan	VCCI	VCCI
Korea	RRL	MIC
Russia	GOST	GOST
Taiwan	BSMI RPC	BSMI
United States	UL / FCC	cULus / FCC

[1] Intel® Extended Memory 64 Technology (Intel® EM64T) requires a computer system with a processor, chipset, BIOS, OS, device drivers and applications enabled for Intel EM64T. **Processor will not operate (including 32-bit operation) without an Intel EM64T-enabled BIOS.** Performance will vary depending on your hardware and software configurations. **Intel EM64T-enabled OS, BIOS, device drivers and applications may not be available.** Check with your vendor for more information.

[2] Full redundancy requires the purchase of an optional second power supply (order code AHW6UPWR).

[3] Shown here with three optional memory boards; platform ships with one board and supports the installation of three additional boards (order code BHW4DIMM, each board).

[4] Shown here with optional second power supply (order code AHW6UPWR) required for full redundancy.

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ORDER NUMBER 300591-001US