Intel® SPKA4 & SRKA4 Server Platforms

Supporting up to Four Intel® Pentium® III Xeon™ Processors

- High Performance using up to four Intel® Pentium® III Xeon™ Processors

- High Availability and Reliability for Maximum Uptime

- Maximum Scalability for Investment Protection

intel®

Intel's Highly Available and Scalable Intel® Pentium® III Xeon™ Processor-based Server Platforms for Enterprise and e-Business Applications

High Performance using up to Four Intel® Pentium® III Xeon™ Processors

Take advantage of up to four Intel® Pentium® III Xeon™ processors with the SPKA4 and SRKA4 server platforms. These premium 32-bit processors, specifically designed for today's server environment, provide scalability, availability, and investment protection for your critical e-Business needs. The SPKA4 and SRKA4 utilize these processors to meet a wide range of e-Business needs such as database, e-Commerce, and Enterprise Resource Planning.

High Availability and Reliability for Maximum Uptime

Like all Intel® server building blocks, the SPKA4 and SRKA4 server platforms are built for maximum uptime. From component selection to the latest in system architecture, these dependable platforms are designed to provide you with uninterrupted service. High availability and reliability features include an integrated Ethernet controller, redundant hot-swap power supplies, hot-swap SCSI drive bays, PCI Hot-Plug support, and redundant hot-swap fans. You can further enhance your server's availability through the use of Intel® RAID Controllers.

Maximum Scalability for Investment Protection

The SPKA4 and SRKA4 server platforms are smart investments, because each is designed to respond to changing business environments. Both platforms support from one to four processors, can scale to five (SRKA4) or ten (SPKA4) Ultra160 SCSI hard drives, have eight PCI slots, and support PCI Hot-Plug peripherals for uninterrupted growth. Each of these features will let your server grow to support your company's e-Business needs of tomorrow.

Advanced Server Management

Intel® Server Control (ISC) is a key to server availability. It monitors the health of key server components and can send an instant alert via pager[1] to your service personnel if problems arise. ISC includes remote management and diagnostic tools that speed problem resolution, even if the server is down or the operating system has crashed. If necessary, Intel Server Control can even proactively shut down the server to protect vital data. Problems can be diagnosed quickly, and many can be resolved remotely, reducing service costs. More importantly, server uptime is improved so vital business resources are more available.

Service, Support, and Three-Year Limited Warranty

Through its authorized dealers, Intel offers several features to enhance customer satisfaction. These include a three-year limited warranty, next-business-day replacement of in-warranty Intel server building blocks, and optional spares kits to enable same-day service. In addition, Intel provides access to support personnel for assistance with technical questions, and dedicated Web sites such as http://support.intel.com and http://channel.intel.com/go/serverbuilder
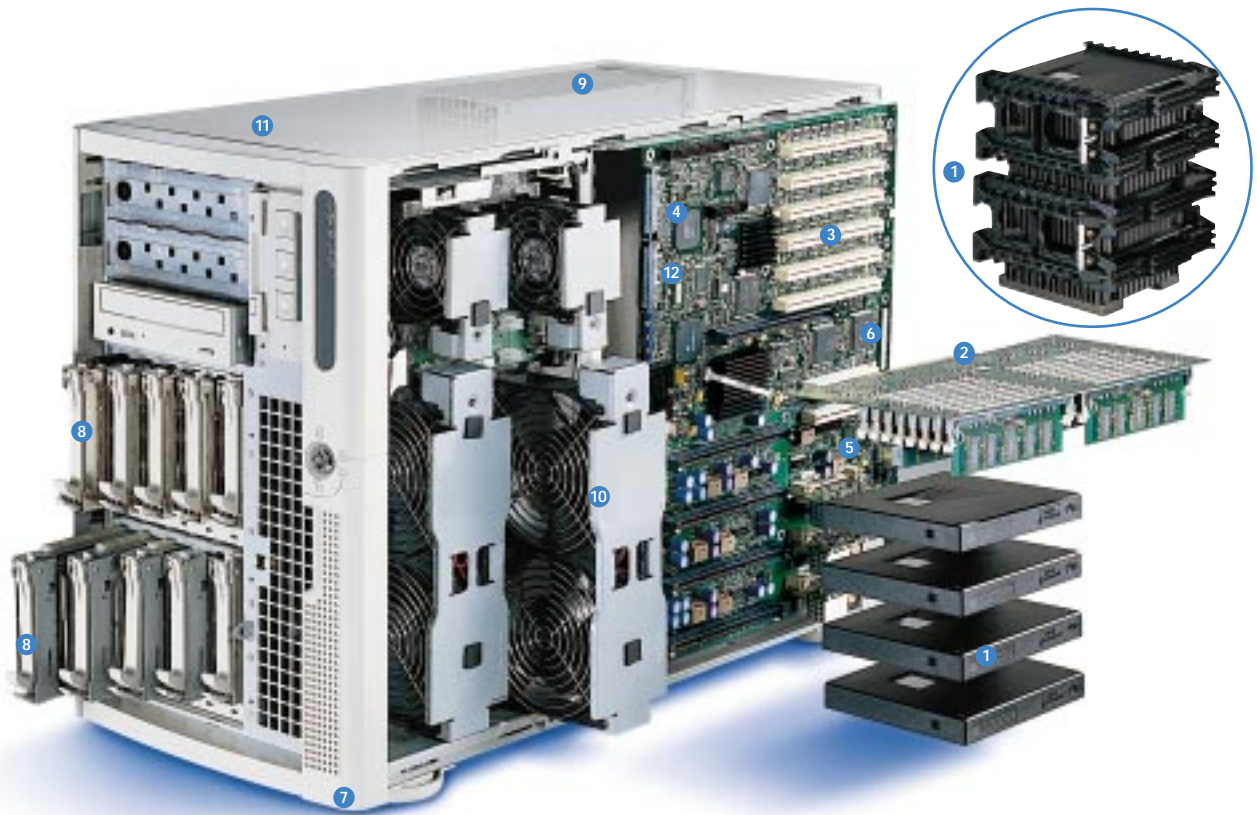
Features	Benefits
Support from one to four Intel® Pentium® III Xeon™ processors with L2 cache sizes from 512K to 2M and 100 MHz system bus[2]	Provides peak performance and scalability for the most demanding server applications
Up to 16 GB of PC100 SDRAM memory over 16 DIMM sites	Increased memory capacity and flexibility for the most demanding server applications
Triple Peer PCI buses providing over 900 MB/s of I/O bandwidth; (one 64-bit/66 MHz, one 64-bit/33 MHz, and one 32-bit/33 MHz)	Separate PCI buses eliminate data bottlenecks and increase bandwidth for intensive I/O needs
Eight PCI slots (two 64-bit/66MHz hot-plug, four 64-bit/33MHz hot-plug, and two 32-bit/33MHz)	Maximum scalability and investment protection
PCI Hot-Plug access and support	High availability, with no server down time to add or remove many peripherals[3]
Three integrated SCSI channels (two Ultra160 SCSI, one Ultra Wide/Ultra Narrow SCSI)	Maximum data throughput due to three independent SCSI channels
Integrated Intel® PRO/100+ Fast Ethernet Controller (Intel® 82559)	Enhanced manageability and availability with access to web enabled server management; leaves PCI slots available for expansion.
Integrated ATI* Rage* IIC graphics controller with 2M of memory	All PCI slots are available for expansion
Intel® Server Management solution includes: • Server Management controller • Intel® Server Control (ISC) software	Data protection, security features, remote access, and quick problem resolution capabilities that used to be available only on high-end servers
Three-year limited warranty	Peace of mind with Intel's service, support, and warranty
Designed by Intel	Performance, value, and choice you expect from Intel

[1] Where available.
[2] For the latest processor support go to: http://support.intel.com/support/motherboards/server
[3] Depending on operating system support.

Intel® SPKA4 Server Platform

1. Up to four Intel® Pentium® III Xeon™ processors

2. Memory module supports up to 16 GB of PC100 SDRAM memory

3. Eight total available PCI slots (two 64-bit/66 MHz hot-swap, four 64-bit/33 MHz hot-swap, and two 32-bit/33 MHz)

4. Integrated SCSI—Two Ultra160 SCSI channels, one Ultra Narrow channel/Ultra Wide channel

5. Integrated Intel® PRO/100+ Fast Ethernet Controller

6. Integrated graphics with 2 MB of memory

7. Pedestal configuration shown, an optional rack-mount conversion kit is available

8. Two hot-swap hard drive bays that support up to ten 1"(or six 1.6") hard drives

9. Three (2+1 redundant) hot-swap 375W power supplies

10. Six (3+3 redundant) electronics bay fans

11. Modular chassis design for serviceability

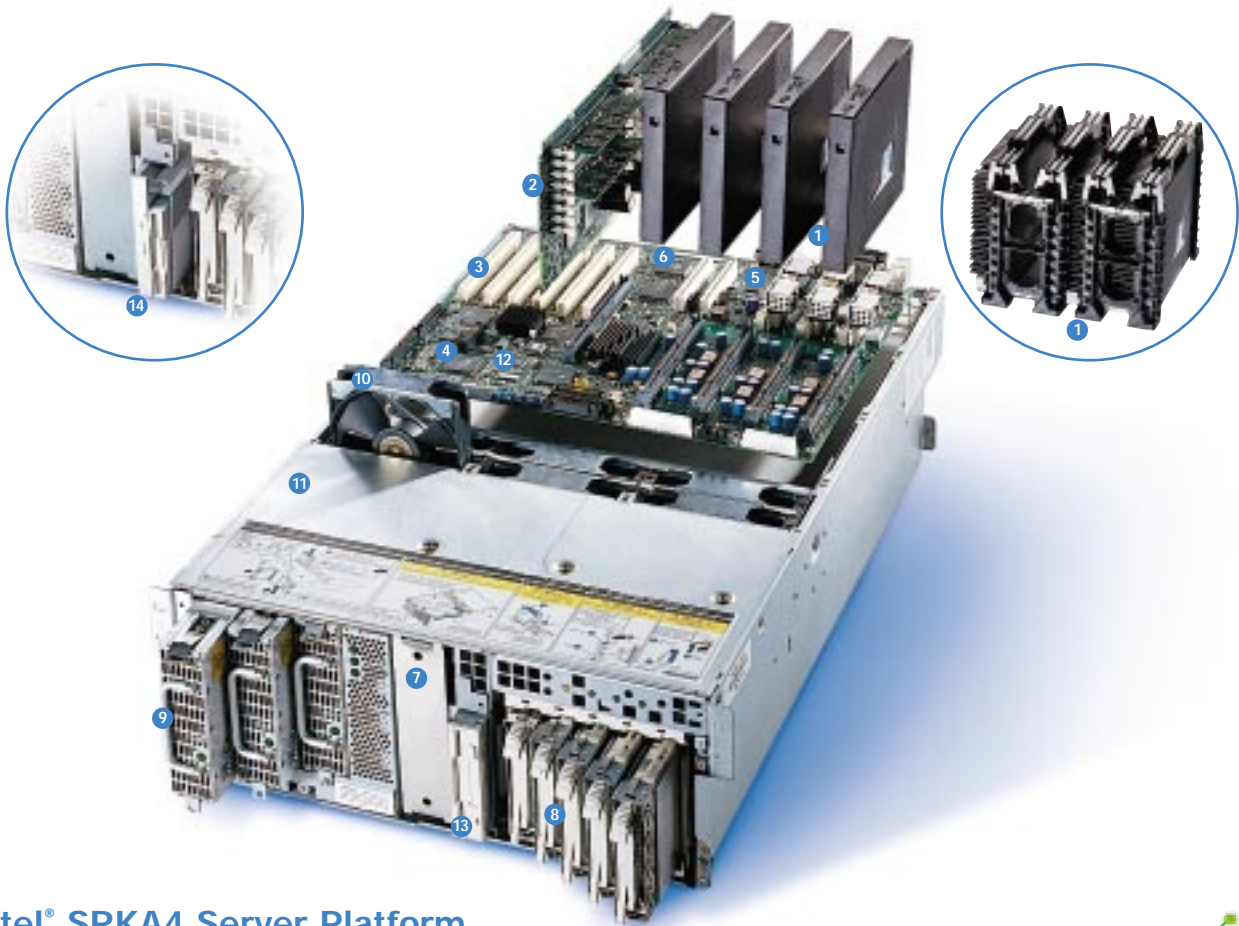12. Intel® Server Control software and server management hardware

Make Your Server Platform Complete with Intel Server Building Blocks

Server Solutions from Intel. To add even more availability, performance, and data protection to your Intel® SPKA4 and SRKA4 server platforms, incorporate Intel® Server RAID Controllers and Intel® Server Adapters.

Intel® Server RAID Controllers. With its line of RAID controllers, Intel is providing additional critical pieces of your e-Business solution. Intel® Server RAID Controllers help protect data, applications, and the server operating system from disk failures. Equipped with RAID Levels 0, 1, 5, and 10, the Intel RAID Controllers are well suited for applications that require high availability.

Intel® Server Adapters. Maximize server availability and serviceability through adapter fault tolerance, PCI Hot Plug[4], and Active PCI[4] using any combination of Intel PRO/100 Server Adapters, PRO/1000 Gigabit Server Adapters, and Intel Network Connections. Aggregate bandwidth up to 16 Gbps using Intel Adaptive Load Balancing, Link Aggregation[4], Fast Ether Channel[4], or Gigabit Ether Channel[4].

[4] Requires capable server or switch.

Intel® SRKA4 Server Platform

1. Up to four Intel® Pentium® III Xeon™ processors

2. Memory module supports up to 16 GB of PC100 SDRAM memory

3. Eight total available PCI slots (two 64-bit/66 MHz hot-swap, four 64-bit/33 MHz hot-swap, and two 32-bit/33 MHz)

4. Integrated SCSI—Two Ultra160 SCSI channels, one Ultra Narrow channel/Ultra Wide channel

5. Integrated Intel® PRO/100+ Fast Ethernet Controller

6. Integrated graphics with 2 MB of memory

7. 4U rack configuration shown

8. Hot-swap hard drive bay that supports up to five 1" (or three 1.6") hard drives

9. Three (2 +1 redundant) hot-swap 350W power supplies

10. Six (5 + 1 redundant) electronics bay fans

11. Modular chassis design for serviceability

12. Intel® Server Control software and server management hardware

13. 3.5" floppy drive

14. Slimline floppy + CD-ROM pair, available soon

Intel® SPKA4 Server Platform

Choice of Form Factor— Pedestal or Rack

For flexible configuration, the SPKA4's base hardware supports both rack and pedestal configurations. For maximum flexibility, conversion between pedestal and rack is as simple as integrating the base hardware with the optional rack-mount kit.

High Capacity Storage for your Most Demanding Data Needs

With support for up to ten 1" (or six 1.6") Ultra160 SCSI drives, the server platform SPKA4 supports enough storage to meet the ever-growing needs of today's e-Business.

High Availability and Reliability for Power and Cooling

With fully redundant 375W power supplies and fans, the SPKA4 vastly reduces the possibility of any interruption to your server's service.

Ease of Service

The SPKA4 is specially designed for ease of service. It offers redundant, hot-swap power supplies, hot-swap hard drives, and redundant hot-swap fans to minimize the amount of downtime required to service your server. It also supports PCI Hot-Plug, allowing you to add new peripherals with minimal downtime. These features, combined with a modular, highly accessible chassis, will minimize your total cost of ownership.

Features	Benefits
Pedestal or 7U rack with single chassis	Choice of form factor
Up to ten 1" (or six 1.6") hot-swap Ultra160 SCSI hard drives	High capacity storage for your most demanding data needs
Redundant hot-swap power supplies and fans	High availability for power and cooling, with no server downtime to add or remove peripherals
Modular, highly accessible chassis	Ease of service

Intel® SRKA4 Server Platform

4U Rack for High-Density Environments

The SRKA4 is the perfect choice for your high-density (4U) rack needs. It is specifically designed to offer outstanding performance in a high-density form factor.

High Capacity Storage for your Most Demanding Data Needs

Capable of supporting five 1" (or three 1.6") Ultra160 SCSI drives in a thin 4U chassis, the SRKA4 gives you exceptional storage in a system specifically designed for rack environments.

High Availability and Reliability for Power and Cooling

With fully redundant 350W power supplies and fans, the SRKA4 vastly reduces the possibility of any interruption to your server's service.

Ease of Service

The SRKA4 is specially designed for ease of service. It offers redundant, hot-swap power supplies, hot-swap hard drives, and redundant hot-swap fans to minimize the amount of downtime required to service your server. It also supports PCI Hot-Plug, allowing you to add new peripherals with minimal downtime. These features, combined with a modular, highly accessible chassis, will minimize your total cost of ownership.

Features	Benefits
4U rack form factor	High-density rack for maximum power in minimum space
Up to five 1" (or three 1.6") Hot-swap Ultra160 SCSI hard drives	High capacity storage for your most demanding data needs
Redundant hot-swap power supplies and fans	High availability for power and cooling, with no server downtime to add or remove peripherals
Modular, highly accessible chassis	Ease of service

Intel® SPKA4 & SRKA4 Server Platforms Specifications

Processor/Cache

Processors Supported — Up to four Pentium® III Xeon™ processors (2.8v) with 100 MHz system bus 512KB, 1M, or 2M full-speed L2 cache. For details see:
http://support.intel.com/support/motherboards/server

System Memory

Memory Capacity — Support for up to 16 GB PC100 SDRAM DIMM sizes —64 MB, 128 MB, 256 MB, 512 MB, and 1 GB

Error Detection — Corrects single-bit errors, detects double-bit errors (using ECC memory). Nibble error detection also provided.

Integrated Onboard

Chipset — ServerWorks* ServerSet II HE

SCSI — Adaptec* 7899 Dual-Channel Ultra160 SCSI Controller, Adaptec* 7880 Single-Channel Ultra2 SCSI Controller

Graphics — ATI* Rage* IIC* VGA Graphics Accelerator maximum resolution 1,600 x 1,200; 16.7M graphics memory 2 MB 10 ns SGRAM

IDE — Single channel for a total of two IDE devices

Super I/O Controller — National* 87309PC97317VUL Super I/O Controller

Serial Ports — Two asynchronous, RS-232C, 9-pin

Parallel Port — IEEE 1284, 25-pin bi-directional

Floppy Controller — CMOS765B and 82077AA-compatible

Keyboard/Mouse Port — PS/2, 8240A-compatible

PCI Expansion Slots

Number of Slots — Eight

Description — Two on P64-A (64-bit/66MHz), four on P64-B (64-bit/33MHz), Two on P32-C (32-bit/33MHz) (No ISA slots)

System

	SPKA4	SPKA4 (w/ rack)	SRKA4
Form Factor	Pedestal	Rack	Rack
Height	18.06" w/ feet	7U	4U
Width	12.25"	19"	17.5" (445 mm)
Depth	25.25"	25.25"	26.5" (673 mm)
Weight (minimum config.)	85 lbs.	85 lbs.	55 lbs.

Hot-Swap Drive Bays

	SPKA4	SRKA4
Drive Bays	Two	One
Drives	Supports five Ultra160 1" drives per bay, for a total of ten 1" or six 1.6" drives	Supports five Ultra160 1" drives or three Ultra160 1.6" drives
SCSI Backplane	SCA connectors, thermal sensors	SCA connectors, thermal sensors
Drive Cooling	Two fans attached to bay	Cooled by inter-chassis fans

Additional Drive Bays

	SPKA4	SRKA4
Drive Bays	Four	Two
Empty Bays	Three @ 5.25"	One @ 5.25"
Filled Bays	One @ 3.5" floppy drive	One @ 3.5" floppy drive; or one pair of 0.5" floppy drive and 0.5" CD-ROM drive

Redundant Cooling

SPKA4	SRKA4
Up to eight fans	Up to six fans
Three fans for the electronics bay plus three for redundancy	Redundancy using a 5+1 configuration for cooling all system components
Two fans for hard drive bay	

Hot-Swap Redundant Power

	SPKA4	SRKA4
DC Power Supplies (w/ 3rd power supply)	Three 375W redundant hot-swap	Three 350W redundant hot-swap
AC Voltage/Frequency	115v/60 Hz; 230v/50 Hz autosensing	115v/60 Hz; 230v/50 Hz autosensing
+5V	68.8A maximum	58A maximum
+5V Standby	4.0A maximum	2.0A maximum
+12V	36A maximum	22A maximum
+3.3V	68A maximum	50A maximum
-12V	2.0 A maximum	0.5 A maximum

Server Management Instrumentation

Failure Detection — Voltage, thermal, operating-system watchdog, fan failure, hard disk drive failure, power supply failure, processor status, ECC memory

Direct Platform Control — Remote reset, power up/down control, management port read system event log, view sensor data records, view field replaceable units—regardless of operating system state, up or down (external modem required)

Event Logging — Nonvolatile to prevent loss in event of a power disruption

Security — Chassis intrusion (not available with SRKA4), video blanking, password protection

Intel Server Control V2.3 Features

Managed Servers — Operating systems supported: Windows* 2000, Windows NT* Server 4.0, Novell* Netware* Server 4.11, SCO UnixWare*3 7.0, Red Hat* Linux* 6.1

Management Console — Gives the administrator the flexibility to monitor multiple servers one at a time from one location; enables remote file upload/download. Operating systems supported: Windows 2000, Windows NT 4.0, Windows NT Workstation 4.0, Windows 95, Red Hat Linux 6.1

System Health Monitor — Temperature, voltage, fans, chassis intrusion (not available with SRKA4), ECC memory, processor status, power-supply status, on-board NIC and SCSI; OS hang via watchdog timer

Alert Notification — Beep the speaker, paging, network broadcast, DMI indication, SNMP trap, writing into system event log (non volatile storage), and message box

Critical Event Actions — Graceful operating system shutdown, immediate power-off, reset, or NMI

System BIOS

BIOS Type — 8 Mb Flash EEPROM with Intel Phoenix BIOS, Multi-boot BBS (BIOS Boot Specification) 1.0-compliant

Special Features — Plug and Play, IDE drive auto-configure, DMI 2.0, ECC/Parity support and multilingual support, Wired for Management 2.0 (WfM)

Configuration Utilities — System Setup Utility (SSU) enables easy system setup of BIOS

Environment

		SPKA4	SRKA4
Ambient Temperature	Operating	+10°C to +35°C	+5°C to +35°C
	Non-operating	-40°C to +70°C ambient	-40°C to +70°C ambient
Relative Humidity	Non-operating	95% @ 30°C non-condensing	95%, non-condensing at temperatures of 25°C (°F) to 30°C (°F)
Acoustics		<47 dBA with one power supply @ 28±2°C (<55dBA with three power supplies)	<50 dBA sound pressure measured at bystander positions in operating mode, 6.2 BA measured sound power at ambient temperatures <28°C
Electrostatic Discharge		15KV per Intel environmental test specification	15KV per Intel environmental test specification

Regulations

Meets or exceeds the following requirements

Safety
- U.S./Canada — UL1950—CSA 950 (UL and cUL)
- Europe/CE Mark — EN 60 950/EU Low-Voltage Directive 73/23/EEC German GS Mark/CE Mark
- International — IEC60 950 (CB Report & Certificate)

Electromagnetic Compatibility (EMC)
- U.S. — FCC CFR 47 Part 15 (Class A)
- Canada — ICES-003 (Class A)
- Europe/CE Mark — EN55022 & EN55024/EU EMC Directive 89/336/EEC
- International — CISPR 22 (Class A)
- Australia/New Zealand — AS/NZS 3548 (Class A)
- Japan — VCCI (Class A)

Product Codes for the SPKA4/SRKA4 Server Platforms

SPKA4 Platform:	SKOC2HI
SPKA4 Spares:	FCAB2SPRS
SRKA4 Platform:	SKODVHI
SRKA4 Spares:	FDVSPRS
Optional rack mount kit for SPKA4:	SKCBRACKMT

For the most current product information on all of Intel's server building blocks, visit the web site at: **www.intel.com/go/serverbuilder**