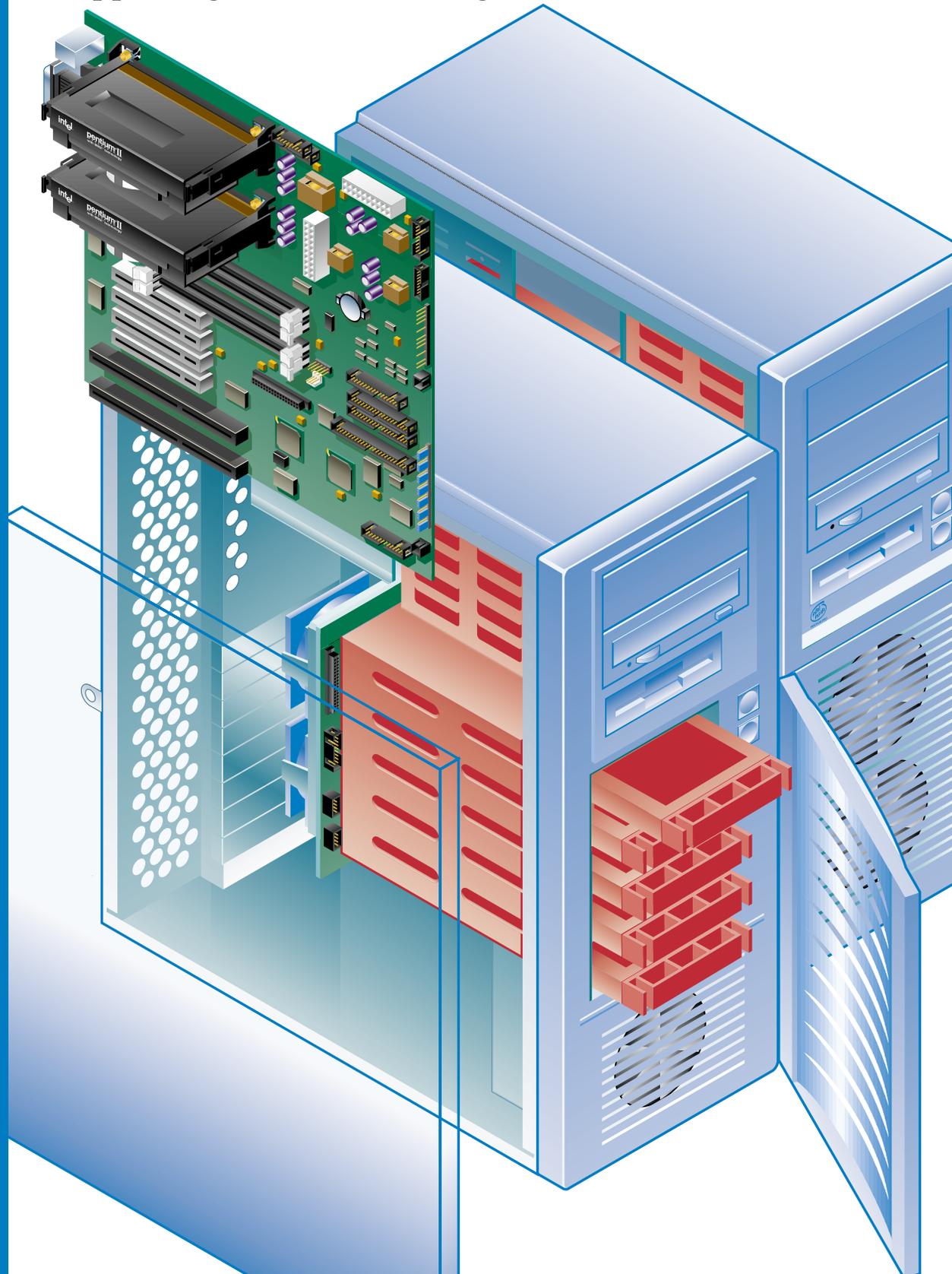


# NA440BX & NC440BX Server Platforms

*Pentium® II Processor-based Server Building Blocks  
Supporting Dual Processing*



intel®

# NA440BX & NC440BX Server Platforms

## Build a Real Server with Intel Server Building Blocks

When investing in a server-based solution, start with parts designed specifically for the server environment. Whether its server boards, chassis, platforms or management software, Intel's server building blocks provide maximum uptime to keep your server solution running.

## The Power of the Intel N440BX Server Board

The N440BX server board supports the dual-processing power of the 350 and 400 MHz Pentium®II processors with a 100 MHz system bus and up to 1 GB of SDRAM memory. For flexibility, it also supports 266, 300 and 333 MHz Pentium II processors. A complete set of on-board components, including dual-channel SCSI, LAN and graphics, increases system reliability and functionality.

## Lower Ownership Costs Through Server Management

The NA440BX and NC440BX server platforms have a wealth of management features that enable you to anticipate problems before they become catastrophic. For example, Intel's new Emergency Management Port (EMP) provides remote access through a modem. Service technicians can now remotely observe critical-event logs and reset or power cycle the system. The N440BX server board incorporates a powerful on-board management controller and supported management software. These two features allow monitoring and controlling of server temperatures and voltages, chassis security, fan operation, baseboard inventory and other hardware systems.

## Superior Cooling for Reliability and Future Expandability

High volume cooling systems have been incorporated into both the NA440BX and the NC440BX server platforms. Cooling features include optimized peripheral bay placement, multiple high-capacity fans in addition to coordinated air intake and exhaust channels. The NA440BX and the NC440BX server platforms will keep components cool and reliable as well as meet increasing cooling requirements as your business and server needs grow.



## NA440BX—Maximize Uptime with Hot-Swap SCSI Drive Bays

The NA440BX server platform brings features usually found in higher-end servers. With its hot-swap SCSI hard drive bays, no downtime is required to add or change hard drives, so critical business applications can stay online. Two fans in the drive bay deliver cooling for a full array of the latest 10,000 RPM hard drives. Five hot-swap drive bays support over 45 GB of hard disk capacity.

## NC440BX—Intel's Professional Value Server Platform

The NC440BX server platform features the high-performance N440BX server board and the proven reliability of Intel's Columbus II server chassis for solutions that do not require hot-swap drive bays.

## Intel Quality and Reliability

Solutions based on Intel's server building blocks are running business-critical applications, databases and 24 x 7 Web sites for businesses of all sizes. Downtime is not an option in most businesses. Intel's server building blocks provide maximum uptime to keep your server solution running.

### Features

- **Supports Dual Pentium®II processors 400-266 MHz with 512 Kbytes of L2 cache**
- **One Gbyte SDRAM memory on 100-MHz system bus**
- **Intel's Emergency Management Port (EMP)**
- **Intel Server Control software**
- **Integrated dual-channel SCSI, LAN and graphics**
- **300-watt power supply with Power Factor Correction (PFC)**
- **Five SCSI hot-swap drive bays with cooling to support five 10K RPM hard drives (NA440BX Server Platform)**

### Benefits

- Entry-level servers can be built with plenty of head room for growth
- Higher system bandwidth, designed for higher performance
- Advanced remote management access lowers cost of ownership
- Increased server management through real-time server control and configurable alert notification
- Validated and tested SCSI, LAN, and graphics support save time and money for integration
- Power for full system configuration; PFC for increased efficiency
- Great complement to RAID redundancy, no downtime required to add or change hard drives

## NA440BX Server Platform

- ❶ Single or dual Pentium® II processors, 350-400 MHz with 100 MHz system bus
- ❷ Three dedicated PCI slots
- ❸ Four DIMMs for up to 1 GB SDRAM
- ❹ Dual-channel ultra/wide SCSI
- ❺ Emergency Management Port (EMP)
- ❻ PCI Video with 2 MB SGRAM
- ❼ Flash BIOS for easy upgrades
- ❽ Intel 82558 EthernetExpress™ PRO100+
- ❾ One dedicated ISA slot, one shared PCI/ISA slot
- ❿ Hot-swap SCSI, five hard drive bays
- ⓫ Hot-swap SCSI backplane, five SCA connectors and thermal sensor
- ⓬ Four fans for system cooling
- ⓭ 300W PFC power supply



## Processor/Cache

<b>Processor Supported</b>	350 or 400 MHz Pentium® II processor with 100 MHz system bus; with 512KB integrated L2 cache (single or dual processing) 266,300,333 MHz Pentium II processor with 66 MHz system bus; with 512 KB integrated L2 cache (single or dual processing)
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## System Memory

<b>Memory Capacity</b>	4 DIMM sockets for PC/100 100 MHz
<b>Memory Type</b>	Supports up to 512 MB unbuffered DIMMs or one GB registered DIMMs (32 MB minimum) of 72-bit ECC or 64-bit Non ECC
<b>DIMM Sizes</b>	168-pin gold plated DIMM sockets
<b>Error Detection</b>	32, 64, 128 and 256 MB (registered) Corrects single-bit errors, detects double-bit errors (ECC memory)

## Hot Swap Drive Bays (NA440BX)

<b>Drives</b>	Supports 5 SCA 3.5" (1.0" high) HDD Hot swap drive carriers included (5)
<b>SCSI Backplane</b>	SCA connectors, thermal sensors
<b>Drive Cooling</b>	Two fans attached to bay

## Internal Drive Bays (NC440BX)

<b>Drives</b>	Supports six SCA 3.5" (1.0" high) or three @ 3.5", (1.6" high)
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## Cooling

Three 92mm fans (NA440BX)  
Two 120mm fans (NC440BX)  
One 80mm fan (in power supply)  
All fans provide RPM data for fan failure prediction and detection

## Integrated I/O

<b>SCSI</b>	Symbios* Logic 53C876 Dual Channel Ultra(one wide, one narrow)
<b>Network</b>	One Intel 82558 EtherExpress Pro+ 10/100 Mbps 100 baseTx, RJ45 Output
<b>Graphics</b>	Cirrus Logic* GD 5480 1,280 x 1,024; 16 colors 2 MB 10 ns SGRAM
<b>Serial Ports</b>	Two Asynch, RS-232C, 9 pin and 10 pin
<b>Parallel Port</b>	IEEE 1284, 25 pin bidirectional
<b>Floppy Controller</b>	1.44 MB, 2.88 MB, 3-mode support
<b>Keyboard/Mouse Port</b>	PS/2, 8240A compatible
<b>IDE</b>	Two independent channels (total four)

## Server Management Instrumentation

<b>Emergency Management</b>	Remote management via external modem; reset, power up/down control, read system event log
<b>Failure detection</b>	Voltage variation, thermal, operating-system watchdog, fan failure, hard-disk failure, power-supply failure, processor status, ECC memory, heat-sink fan check
<b>Event Logging</b>	Non-volatile to prevent loss in event of a power disruption
<b>Security</b>	Chassis intrusion, video blanking, password protection

## Intel Server Control Features

<b>Server Software</b>	Operating system supported: Windows* NT Server 4.0, Novell Netware* Server 4.11, UnixWare* 7.0
<b>Management Console</b>	Allows a single administrator the flexibility to monitor multiple servers Operating system supported: Windows NT Server 4.0, Windows NT Workstation 4.0, Windows 95
<b>System Health Monitor</b>	Temperature, voltage, cooling fans, chassis intrusion, ECC memory, processor status, power-supply status, on board NIC and SCSI, OS hang monitoring via Watchdog Timer

## Alert Notification

When a configured event takes place, these methods of notification are available

<b>Critical Event Actions</b>	Network broadcast, SNMP trap, writing into System Event log (non volatile storage), Message box Graceful operating system shutdown with reboot or power off at administrator's discretion Immediate power off or reset Immediate generate NMI or reset
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## Expansion Slots

<b>Description</b>	(all full length and available) Three dedicated PCI bus master, one dedicated ISA, one shared PCI/ISA
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## System

<b>Form Factor</b>	Specialized mid-tower server chassis
<b>Height</b>	19.3" (49.02 cm)
<b>Width</b>	8.3" (21.08 cm)
<b>Depth</b>	17.7" (44.96 cm)
<b>Weight</b>	33.8 lbs. (15.3 kg), without peripherals

## Peripheral Bays

<b>External</b>	2 @ 5.25"; 1/2 height (1.6") (NA440BX) 3 @ 5.25"; 1/2 height (1.6") (NC440BX) 1 @ 3.5"; 1/3 height (1.0") floppy installed
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## Electrical

<b>DC Power Supply</b>	300W with Power Factor Correction (PFC)
<b>AC Voltage/Frequency</b>	115v/60 Hz; 230v/50 Hz (auto ranging)
+5V	26A maximum continuous
+5V standby	.08A maximum continuous
+12V	10.A maximum continuous
+3.3V	16A maximum continuous
-5V	.25A maximum continuous
-12V	0.5A maximum continuous

## Environment

<b>Operating Temperature</b>	Operating +5°C to +35°C Non-operating -40°C to +70°C ambient
<b>Relative Humidity</b>	Non-operating 95% RH @ 30°C non-condensing Acoustics 45 dB at typical office temperature (65-75°F)
Electrostatic discharge	20KV per Intel environmental test specification

## Regulations

<b>Safety</b>	meets or exceeds the following requirements
U.S./Canada	UL 1950, CSA 950-95, 3rd Edition (UL and cUL)
Europe/CE Mark	EN 60950 2nd Edition (with Amendments 1 to 3) (CE Mark Complies with EC Directive 73/23/EEC); German GS Mark to EN60950
International	IEC 950 2nd Edition (Amendments 1 to 4): CB Certificate
Norway/Sweden/ Denmark/Finland	EMKO-TSE (74-SEC) 207/94: NEMKO Licensed
Australia/New Zealand	AS/NZS 3260 (based on IEC 950 CB Certificate and Report)
<b>Electromagnetic Compatibility (EMC)</b>	
U.S.	FCC CFR 47 Part 15, Class B;
Canada	ICES-003, Class B
Europe/CE Mark	EN55022, Class B & EN50082-1 (CE Mark—complies with EC Directive 89/336EEC)
International	CISPR 22, Class B 2nd Edition
Japan	VCCI, Class B (ITE) (based on CISPR 22 requirements)
Australia/New Zealand	AS/NZS 3548 (based on CISPR 22)

## Ordering Information

Reference <http://channel.intel.com/go/serverbuilder> for more information on all of Intel's server building blocks, including product support and technical information. For configurations, please contact your nearest Intel sales representative or authorized distributor.



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