

ThinkTank IQ - 8U 50 Bay Server



Key Features

- EIA and SSI compliant 8U form-factor
- Supports EEB 3.61, CEB 1.1, and AMD Quad Opteron server boards
- Supports up to 62 hot-swap 3.5" HDD trays (48 front + 14 rear)
- Integrated backplane design that supports SAS II 6Gb/s interface
- Redundant 1800W - Standard*
- Advanced thermal design with hot-swap fans
- Shock and vibration resistant design

Chassis Specifications

Hard Drive Trays

- 50 Hot Swap HDD Trays (48 Front + 2 Rear) or
- 62 Hot Swap HDD Trays (48 Front + 14 Rear)

Backplane Interface Options:

- SAS II 6Gb/s

Power Supply

- Redundant 1800W - Standard*

Dimensions

- 8U Form Factor - 14" (H) x 17" (W) x 29" (D)

Ventilation

- 8 X Fans (92mm x 92mm x 38mm)

* Certain configuration may require more power



JBOD System Features, Specifications and Enclosure Management Functions

System Features

- Native SAS environment offers a high level of data integrity and availability
- Compatible with Adaptec, AMCC, Areca, ATTO, High Point and LSI SAS RAID controller cards
- Supports 16 hot-swap SAS/SATA II 3Gb/s HDDs
- Auto-negotiates speeds between 1.5G and 3.0Gbps
- Easy system maintenance with modular FRU design
- Supports SSP, SMP, and STP target and initiator
- Supports Table, Direct and Subtractive Routing
- Supports up to 24 TB with SATA II HDDs / 4.8 TB with SAS HDDs Supports staggered HDD spin-up
- Dual hot swappable / redundant power supply modules
- SIM (SAS IO Module) utilizes latest expander ASIC
- Easy in-field firmware upgrade:
 - Standard: via Mini-SAS interface
 - Optional: via DB-9 Serial Port

- 3 X high-speed external Mini-SAS (SFF-8088) interface
- Choice for setting up external ports :
 - Two "IN" ports (host side redundancy) + one "OUT" daisy chain
 - One "IN" port (from host) + two "OUT" daisy chain
- Scalability :
 - Daisy chain / Cascade to next / Added JBODs
 - Seamless storage expansion for growing data demand
- Total MBs per second exceeds 1170
- Audio alert for HDD, Fan, Over-temperature, and Power Supply Failure
- Designed for high reliability 24/7 on-line application
- Reliable, cost-effective and energy-saving Additional controllers will be supported via firmware upgrades

Enclosure Management Functions

- Environment management with SES / SEP support
- In-band and out-of-band enclosure management support
- HDD Failure/Locate/Identify LED Indicator on each drive bay
- Remote management via RAID controller / HBA's GUI and E-mail Notification
- Temperature sensing / notification
- Smart fan features :
 - Status report by RAID Controller GUI
 - Variable fan speed for best thermal and acoustic performance
- PSU module:
 - Status report by RAID controller GUI
 - Hot-swappable and redundant
- Audio Alert /LED indicator for failure events
 - Fan / Over-temperature/ PSU / Under Voltage / Over Voltage

**For more information on ThinkCPTM please call
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Motherboard Specifications

Physical Stats

Form Factor • Extended ATX
Dimensions • 12" x 13" (30.5cm x 33cm)

Processor/Cache

CPU • Dual 1366-pin LGA Sockets
• Supports up to two Intel® 64-bit Xeon® processor(s) of the same type below:
• Intel® Xeon® Processor 5600 Series (Westmere)
• Intel® Xeon® Processor 5500 Series (Nehalem-EP)
QPI • Up to 6.4 GT/s

System Memory

Memory Capacity • 12x 240-pin DIMM sockets
• Supports up to 192 GB 1333 / 1066 / 800MHz DDR3 ECC Registered memory
• Supports up to 48 GB 1333 / 1066 / 800MHz DDR3 ECC / Non ECC Unbuffered memory
• Memory Mirroring supported
Memory Type • 1333 / 1066 / 800MHz ECC Registered / ECC or Non ECC Unbuffered DDR3 SDRAM 72-bit, 240-pin gold-plated DIMMs
DIMM Sizes • 1GB, 2GB, 4GB, 8GB, 16GB
Memory Voltage • 1.5 V / 1.35V
Error Detection • Corrects single-bit errors
• Detects double-bit errors (using ECC memory)
• Supports Intel® x4 and x8 Single Device Data Correction (SDDC)

On-Board Devices

Chipset • Intel® 5520 (Tylersburg) chipset
• ICH10R + IOH-36D
SAS • LSI SAS1068E
• RAID 0, 1, 10 support
• (Optional: AOC-IButton68) RAID 5 support
SATA • Intel ICH10R SATA 3.0Gbps Controller
• RAID 0, 1, 5, 10 support (Windows)
• RAID 0, 1, 10 support (Linux)
IPMI • Support for Intelligent Platform Management Interface v.2.0
• IPMI 2.0 with virtual media over LAN and KVM-over-LAN support
• Winbond® WPCM450 BMC
Network Controllers • Intel® Dual 82576 Dual-Port Gigabit Ethernet (4 ports)

- Supports 10BASE-T, 100BASE-TX, and 1000BASE-T, RJ45 output
- Intel® I/OAT 3 support for fast, scalable, and reliable networking
- VMDq support for better performance of virtualization
- 1x Realtek RTL8201N PHY (dedicated IPMI)
- Matrox G200eW
- Winbond 83627HG chip

Graphics
Super I/O

Input / Output

SAS • 8 SAS / SATA ports
Serial ATA • Six Serial ATA ports
• Six SATA hard drives supported
Floppy • 1 Floppy controller; 1.44 MB
LAN • 4x RJ45 LAN ports
• 1x RJ45 Dedicated IPMI LAN port
USB • 2x USB rear ports
• 2x USB on-board
• 4x USB internal headers
• Total 8 USB 2.0 Compliant
• 1x VGA Port
VGA • 1x VGA Port
Keyboard/Mouse • PS/2 keyboard and mouse ports
Serial Port/Header • 1 Fast UART 16550 serial port
• 1 Fast UART 16550 serial header (Option)

Expansion Slots

PCI-Express • 3 (x8) PCI-E 2.0 (1 in x16 slot)
• 1 (x4) PCI-E slot
PCI • 2x 33MHz PCI slots

System BIOS

BIOS Type • 32Mb SPI Flash EEPROM with AMI® BIOS
BIOS Features • Plug and Play (PnP)
• PCI 2.2
• ACPI up to 3.0
• USB Keyboard support

Management

Software • IPMI (Intelligent Platform Management Interface) v1.5 / 2.0 with KVM support
• Super Doctor III

Power Configurations

- ACPI / ACPM Power Management

PC Health Monitoring

CPU • Monitors for CPU Cores, +1.8V, +3.3V, +5V, ±12V, +3.3V Standby, +5V Standby, VBAT, HT, Memory, Chipset Voltages.
• 6-Phase-switching voltage regulator
• Total of eight fan headers supporting up to 8 fans
• Eight 4-pin fan headers
• 8x fans with tachometer status monitoring
• Support 3-pin fans (w/o speed control)
• Low noise fan speed control (4-pin fan only)
FAN • Monitoring for CPU and chassis environment
• Thermal Control for 8x fan connectors
• PECI
Temperature • Chassis intrusion detection
• Chassis intrusion header
Other Features

Operating Environment / Compliance

RoHS • RoHS Compliant 6/6, Pb Free

Environmental Spec.

- Operating Temperature: 10° to 35° C (50° to 95°F)
- Non-operating Temperature: -40° to 70° C (-40° to 158° F)
- Operating Relative Humidity: 8% to 90% (non-condensing)
- Non-operating Relative Humidity: 5 to 95% (non-condensing)

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ThinkCP™
Technologies

8 Ports PCIe SAS RAID Controller



Product Specifications

System Architecture

- Intel Dual Core 800/1200 MHz IOP348 I/O processor for RAID core and SAS microcode
- 256MB on-board DDR2-533 SDRAM with ECC protection
- One 240-pin DDR2-533 DIMM socket with default 512MB of SDRAM with ECC protection, upgrade to 4GB
- Support write-through or write-back cache
- Support 4 to 24 internal and 4 to 8 external SAS ports
- Multi-adapter support for large storage requirements
- BIOS boot support for greater fault tolerance
- BIOS PnP (plug and play) and BBS (BIOS boot specification) support
- Support extreme performance RAID 6 function
- NVRAM for RAID configuration & transaction log
- Redundant flash image for adapter availability
- Battery Backup Module ready (Option)
- RoHS Compliant

RAID Features

- RAID level 0, 1, 10, 3, 5, 6, 30, 50, 60, Single Disk or JBOD
- Multiple RAID selection
- Online array roaming
- Online capacity expansion and RAID level migration simultaneously
- Online volume set growth
- Instant availability and background initialization
- Automatic drive insertion / removal detection and rebuilding
- Greater than 2TB per volume set (64-bit LBA support)
- Disk scrubbing / array verify scheduling for automatic repair of all configured RAID sets
- Support spin down drives when not in use (MAID)
- Support NTP protocol synchronize RAID controller clock over the on board Ethernet port

Disk Bus Interface

- 4/8/12/16/24 internal/SAS ports or 4/8 external SAS ports
- Up to (128) SAS or 3 SATA II drives using SAS expanders
- Up to 3Gb/s per port

Environmental

- Operating Temperature:
 - Temperature: +5C to 50C
 - Humidity: 15-80%, non-condensing
- Storage Temperature:
 - Temperature: -40C to 70C
 - Humidity: 5-90%, non-condensing

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Controller Highlights

- Supports up to (128) SAS or SATA II drives using SAS expanders
- 3 Gb/s throughput at each drive ports
- Support up to 4GB DDR2-533 cache
- Family includes 4/8/12/16/24 internal or 4/8 external SAS ports for easy expansion
- Intel RAID engine to support highest speed RAID 6
- Online capacity expansion, RAID level/stripe size migration
- Online volume set growth
- Redundant flash image for adapter availability
- Support greater than two TB per volume set and battery backup module (BBM)
- SES2, SMP and SGPIO enclosure management
- Broad operating support including Windows, Linux, FreeBSD, Soaris and more systems

Host Connectivity

- Systems status indication through global HDD activity/fault connector, individual fault connector, LCD/12C connector and alarm buzzer
- SMTP support for email notification
- SNMP support for remote manager
- Enclosure management (SES2, SMP and SGPIO) ready

RAID Management

- Field-upgradeable firmware in flash ROM

In-Brand Manager

- Hot key "boot-up" McBIOS RAID manager via M/B BIOS
- Web browser-based McRAID storage manager via ArchHttp proxy server utility
- Support Command Line Interface (CLI)
- API library for customer to write monitor utility
- Single Admin Portal (SAP) monitor utility
- Disk Stress Test (DST) utility for production

Out-of-Brand Manager

- Firmware-embedded web browser-based McRAID storage manager, SMTP manager and SNMP agent and Telnet function via Ethernet port
- API library for customer to write monitor utility
- Support Push Button and LCD display panel

Operating System

- Windows 2000/XP/Server 2003/Vista
- Linux
- FreeBSD
- Novell Netware 6.5
- Solaris 10 x 86/x86_64
- SCO Unixware 7.x.x
- Mac OS X 10.x (EFI BIOS Support)

Electrical

- Power Requirements
 - 1.10W max. +3.3V
 - 10.92W max. +12V



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