PROMISE® TECHNOLOGY, INC.

VTrak™ M200f SATA RAID Storage System

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Robust, high-availability, high-performance 8-bay SATA 3Gb/s RAID array with a dual host-port Fibre Channel interface

V Trak

RAID Serial ATA

Low-cost, feature-rich storage for outstanding productivity

The Promise VTrak M200f is a budget-stretching high-performance RAID storage solution optimized for organizations deploying small to medium application clusters, disk-to-disk backup and mid-range SANs. Dual 2Gb Fibre Channel (FC) host interface ports provide connectivity into widely deployed Fibre Channel storage networks, perfect for supplementing existing storage networks and for building new application storage systems. The VTrak M200f combines advanced connectivity and storage features--sophisticated functionality, exceptional performance, rock-solid reliability, and high availability--with intelligent system design for a very affordable solution.

The VTrak M200f--small in price, big on capability

The VTrak M200f combines the benefits of SATA drives with the performance and connectivity of Fibre Channel. High performance, hot-swap SATA drives provide an exceptional platform for low-cost, high-density storage with proven reliability and unparalleled price per gigabyte. The Fibre Channel host interface provides complex SAN and network connectivity support. Enterprise-ready features--fully redundant power and cooling, a battery-backed cache, and Promise's unique Predictive Data Migration™ and PerfectRAID™ technologies--provide high levels of availability and data integrity. And performance delivers a strong showing of up to 400MB/sec sustained throughput.

High storage density for flexibility and economy

The VTrak M200f supports up to 8 off-the-shelf drives per system, in just 2U of standard 19" rack space. By taking advantage of unsurpassed capacity of SATA drives, the VTrak system delivers the highest capacity levels available. Multiple VTrak systems can also be connected to the same SAN or server using standard Fibre Channel features to deliver massive storage to capacity-hungry applications such as disk-to-disk backup, media archiving, video surveillance and compliance storage.

Comprehensive remote management

Promise VTrak M-Class systems feature an updated Promise Array Manager that is embedded into the system, eliminating the need to install additional software on the network. With Promise Array Manager, all VTrak M-Class systems in your network can be configured and monitored through a single, easy-to-manage Web-based graphic user interface. The software works through the VTrak system's Ethernet port--locally or across a network TCP/IP connection--to monitor arrays, configure the system, and provide error reporting through pop-up windows or email notification. The VTrak family simplifies integration with third-party management applications using industry-standard SNMP and WBEM protocols.
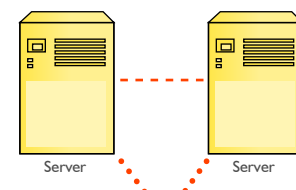
Storage and server consolidation delivers cost savings

The VTrak M200f incorporates advanced SAN and cluster support features such as advanced LUN Masking and Mapping. With support for 256 Logical Drives (LUNs) per array and 32 LUNs per physical drive, the M200f delivers a robust, flexible platform for storage and server consolidation and advanced costs savings. By sharing storage resources among multiple servers, users can take advantage of high availability configurations and employ resource sharing for cost effective storage solutions that maximize capacity utilization. The VTrak M200f supports up to 32 Fibre Channel hosts connecting to and utilizing capacity on the same M200f without security breaches or sharing conflicts.
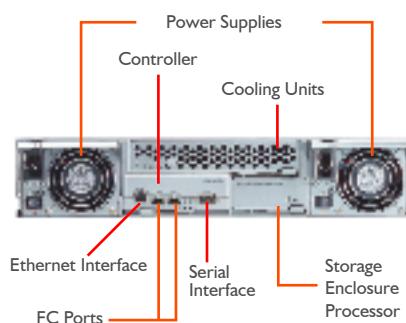
VTrak M200f Highlights

:: 8 hot-swap drive bays in a robust 2U chassis
:: Supports SATA II 3Gb/s drives & NCQ
:: Dual 2Gb Fibre Channel host ports, SAN Fabric
:: Up to 400 MB/s sustained throughput
:: Redundant, hot-swap power and cooling
:: 256MB ECC cache (up to 512MB), w/ battery backup
:: Comprehensive embedded web-based management
:: Network management through web-based application, email, SNMP, WBEM/CIM, SSL
:: LUN Masking and Mapping enable SANs, and large clusters
:: Multiple global or designated hot-spare drives
:: PerfectRAID™ and Predictive Data Migration™ technology for robust error handling and recovery

Server   Server

Ideal for two-node application clusters and disk-to-disk back-up

SERIAL ATA 3Gb/s

Power Supplies
Controller
Cooling Units
Ethernet Interface
Serial Interface
FC Ports
Storage Enclosure Processor

Sophisticated Array Monitoring Tools

Promise Array Management monitoring software offers professional management tools in a simple-to-use, straightforward format. This embedded software works locally or via network TCP/IP connection to monitor arrays. Information windows appear during critical and user-specified events. The software can even be configured to send e-mail notification should an error occur.

The Leader in SATA RAID

Promise Technology, Inc., recognized as the originator and worldwide leader of ATA RAID since 1997, has offered high-performance solutions for PC storage since 1988. Today the world's biggest OEMs and resellers look to Promise for ongoing innovations in SATA RAID design as the company continues to lead with the most powerful and economical alternatives to traditional RAID controllers and subsystems.

www.promise.com

VTrak M200f Specifications

System and Controller Features

Drive Support	8 Drives (3.5" x 1" only) -- Supports Serial ATA I & II (SATA) drives
External I/O Ports	Dual 2 (two) Gigabit Fibre Channel ports - utilizing standard SFPs for flexible cabling options (SFPs are optional ordered parts from Promise)
Sustained Throughput	Up to 400MB/s (using both ports cached)
Data Cache	256MB cache (max. to 512MB) automatic write cache destaging and 72-hour battery backup
Command Queue Depth	1024 commands

Fibre Channel Features

Dual independent Fibre Channel ports for host access, 2Gb full duplex
Supports SFP cages which could house either optical or copper SFP connectors
Auto negotiates speed and connection between 1 and 2 Gb
Supports Fibre Channel-arbitrated loop (FC-AL), FC-AL-2, point-to-point, and switched fabric topologies
N_Port supporting N_Port (Point to Point) and F_Port (Fabric Attached)
NL_Port supporting NL_Port (Private Loop) and FL_Port (Public Loop)
Supports Class 3 service only

Operational Features

RAID Levels	RAID 0, 1, 1E, 5, 10, 50 --Any combination of these RAID levels can exist at once Configurable RAID stripe size 8K, 16K, 32K, 64K, 128K, 256K and 1MB stripe size per disk. Background task priority tuning: adjustment of minimum I/O reserved for server use during all background tasks.
Hot-spares	Global and dedicated (per array) hot spare with revertible hot spare support
Max LUNs per subsystem	256 in any combination of RAID levels and array types
Max LUNs per array	32 logical drives (LUNs). Supports LUN Carving by allowing an array to be divided into multiple logical drives. RAID level, Stripe size, sector size and cache policy is settable per LUN; Out of order LD deletion and re-creation
LUN Masking and Mapping	Supports up to 32 hosts based on FC node name
Disk data formats	Supports Disk Data Format (DDF) for industry wide standardization and drive roaming between systems
Background Activities	Media Patrol; Background synchronizing; Foreground initialization; Rebuild; Redundancy Check; SMART condition pooling; OCE (Online Capacity Expansion); RLM (Raid Level Migration); Priority Control, Rate control and watermarking per BGA in Disk and NVRAM
RAID Robustness	Bad sector re-mapping table; PDM (Predictive Data Migration); Read Check Table; Write Check Table; Write Hole table; NVRAM event logging
SCSI Commands	Supports extensive SCSI command set equivalent to SCSI/FC hard disk drives; Host initiator based LUN Mapping and LUN masking for SAN boot and configuration; Variable sector size (512 to 4K) to break OS 2TB limitation; 16Byte CDB support for 64 bit LBA address as well

System Management

Supported Operation Systems	Windows 2000, Windows 2003, Linux (Red Hat, SuSE), Macintosh OS X
Embedded Management Tools	WebPAM Embedded (Ethernet), Command Line Utility via serial port or Telnet; Embedded Web server and mgmt support - no host agent needed; In Band (FC) as well as out of Band (Ethernet, RS-232); Extensive CLI (RS-232 or telnet), CLU and feature rich, user friendly GUI support; SNMP and CIM support for monitoring; Auto, Express and Advanced configuration support for novice and skilled user
Management Interfaces/Protocols	Ethernet, RS232 (Serial); SNMP, SSL, WBEM/CIM, Telnet, Microsoft VDS; Email, audible (buzzer), and visible (LEDs) alarms

Mechanical Specifications

Current (Maximum)	8 A @ 100 Vac; 4 A @ 200 Vac (current rating with two power cords)
Power Consumption	260 Watts (under load)
Power Supply	Dual 360W, 100-240 Vac auto-ranging, 50-60 Hz, dual hot swap and redundant with PFC, N+1 design
Thermal Output	887 BTU/hour (max current)
Temperature/ Humidity	5º~40ºC (-40º~60ºC non operational); Max. relative humidity = 95%
Dimensions (h x w x d)	3.5 x 17.56 x 23.5 in (8.9 x 44.6 x 59.7 cm)
Weight	44.09 lbs (20 kgs) w/o drives, 52.91 lbs (24 kgs) w/8 drives**
Safety	CE, FCC ClassA, BSMI, VCCI, MIC, cUL, TUV, CB, C-Tick
Limited Warranty	3 Years complete system

* Check www.promise.com for latest operating system, HBA, and hard disk drive compatibility.
** Assume each HDD = 0.5 Kg
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