It's All About Your Data PROMISE TECHNOLOGY, INC.

VessRAID™1000i Series



Quad Ports iSCSI-to-SAS/SATA RAID 6 Storage System Rediscover IP-SAN in a Click with VessRAID

SAN with iSCSI for Broader Storage Possibilities

VessRAID 1000i series provides four-port iSCSI capacity using block-level transfers over a network, a faster data throughput compared to file-based data sharing like NAS. iSCSI encapsulates SCSI CDBs into TCP/IP packets where they are used to create a SAN. This proven technology includes a variety of IP-based applications and enables you to leverage existing network infrastructure. That means IT managers don't need to install an expensive Fibre Channel fabric to obtain SAN capabilities. With an iSCSI SAN, they can have the consolidated storage space, remote and central management, and the flexibility to increase capacity on-the-fly. With the introduction of the VessRAID iSCSI series, users can easily scale storage architecture, integrate storage pools, reduce administrative load, and optimize storage utilization for a greater efficiency.

iSCSI in Surveillance

Network Video Recording (NVR) is an IP-based digital video recording system designed to operate 24/7, 365 days a year with non-stop A/V recording. This application demands reliable, robust, consolidated storage with remote management capability. VessRAID 1000i series in an IP SAN-based NVR system offers a more cost-effective alternative to the management complexity of a large installed DAS deployment. iSCSI technology encapsulates SCSI CDBs into TCP/IP packets enabling efficient, large block-level file transfers of sequential I/O for archiving and centralized storage management. As a result, you get the benefits of a SAN with the economy and convenience of Ethernet. NVR gives you video surveillance with central management plus consolidated archiving and storage, using proven technologies you already know.



ENERGY SAVING

Totally Green Power

VessRAID features advance hardware design by using 80PLUS power supply! and allows users to power down the system through power scheduler operation to optimize system power effectiveness and energy efficiency. Power scheduling enables the VessRAID system to do a disk-to-disk backup or restore operation on a user-scheduled basis then returns to standby mode when backup is finished, resulting in a considerable 70% cost savings annually.



SMART MANAGEMENT

One-Plug-Auto-Service (OPAS)

OPAS was designed to reduce maintenance complexity as much as possible. With a simple USB stick plug-in to the system's USB port, it helps to shorten the turnaround time of conventional system diagnostic flow, and will come with more advanced applications like firmware upgrade, event log history, system setup restore, and array configuration scripts installation as a full service release.



COMPETITIVE PRICING

Designed for Cost-Sensitive Business

Current economic conditions worldwide have caused enterprises to either cut their IT budgets or slow down their planned deployment of storage facilities. There is a tremendous need of cost-effective yet feature-rich storage solutions, and the Vess family is the right marketing fit at the right time.

Single PSU is 80 PLUS Bronze Certified, Redundant PSUs have 80 PLUS power efficiency









System Highlights and Benefits

- **::** 8/12/16 hot-swappable SAS/SATA drive bays in a robust 2U/3U chassis
- :: Quad-port iSCSI IGb access with link aggregation and jumbo frames support
- **::** 3Gb/s Serial Attached SCSI and Serial ATA drives support
- :: SAS expansion for easy scalability
- **::** 512MB ECC shared cache (up to 2GB), with optional battery backup units
- :: Single or Dual hot-swap redundant power supply unit with 80PLUS Certified
- :: OPAS and UPS Monitor via USB service
- Comprehensive embedded web-based management via Ethernet WebPAM PROe
- :: Power Scheduler Operation
- :: Multiple global or dedicated hot-spare
- ∴ PerfectRAID[™] and Predictive Data Migration[™] technology for robust error handling and recovery
- :: LCD Panel support (optional)
- :: Wake-on-LAN support









VessRAID™ 1000i Series Specifications

System And Controller Features 20	Vessian 10001 Series Specifications				
Prive Support SASSGRIAN, SATAN (LIGRARY), NCQ, TCQ 12 Drives (3.5") 16 Drives (3.5") 17 Drives (3.5") 17 Drives (3.5") 17 Drives (3.5") 18 Drives (3.	VessRAID System	VessRAID 1720i / 1820i	VessRAID 1730i / 1830i	VessRAID 1740i / 1840i	
## Support S.A.S.) 12 Drives (3.5") 16 Drives (3.5") 17 Drives (3.5") 17 Drives (3.5") 18 Drive	System and Controller Features				
SASGIGMA, SATAIL(SCHO)A, NCQ, TCQ Controller Single Intel® 107948 3.04th SASGIGMA, SATAIL(SCHO)A, NCQ, TCQ Controller Single Intel® 107948 3.04th SASGIGMA, SATAIL(SCHO)A, NCQ, TCQ Controller Single Intel® 107948 3.04th SASGIGMA, SATAIL(SCHO)A, NA One Port SAS-wide (x4) for YessjBOD series	Form Factor	2U	2U	3U	
Controller SNS_USAN_SAL	Daine Suresent	8 Drives (3.5")	12 Drives (3.5")	16 Drives (3.5")	
Host Channel Quad Ports full-duplex (Eb SCS)	Drive Support				
Promise Expansion Enclosure N/A One Pror SAS-wide (x4) for Vess(BOD) series	Controller	Single (Intel® IOP348 I.2GHz)			
SIZMB—ZGB ECC cache memory with Optional BBU (Battery Backup Unit)	Host Channel	Quad Ports full-duplex IGb iSCSI			
Error Recovery Level 0 CHAP. SNS and DHCF	Promise Expansion Enclosure	N/A One Port SAS-wide (x4) for VessJBOD series			
SCSI Features Link Aggregation and Jumbo Frames w/ up to 64 Concurrent Sessions (CHAP, SNS and DHCP Microsoft ISCSI MPIO Support	Data Cache	512MB~2GB ECC cache memory with Optional BBU (Battery Backup Unit)			
Coperational Features	iSCSI Features	Link Aggregation and Jumbo Frames w/ up to 64 Concurrent Sessions CHAP, iSNS and DHCP			
RAID Levels RAID 0, 1, IE, 5, 6, 10, 50, 60 Hot sparses Global or Dedicated w/ revertible option Max LUNs per subsystem 256 Max LUNs per array 32 Variable Block and Sector Size 512B, IKB, 2KB, 4KB sector size Slight National Supports Supports Disk Data Format Disk Data Format Supports Disk Data Format (DDF) for drive roaming between VTrak and VessRAID series systems. Media Patrol Background Activities Supports Disk Data Format (DDF) for drive roaming between VTrak and VessRAID series systems. Media Patrol Background Activities Supports Disk Data Format (DDF) for drive roaming between VTrak and VessRAID series systems. Media Patrol Background Activities Supports Disk Data Format (DDF) for drive roaming between VTrak and VessRAID series systems. Media Patrol Background Activities Supports Disk Data Format (DDF) for drive roaming between VTrak and VessRAID series systems. Media Patrol Background Activities Supports Disk Background Activities PDM (Predictive Data Migration)	Command Queue Depth	1024			
Hot spares Global or Dedicated w/ revertible option Max LUNs per subsystem 256	Operational Features				
Max LUNs per subsystem 256 Max LUNs per array 32 Arable Block and Sector Size 5128, 1KB, 2KB, 4KB sector size 524 525 524 525 525 526 527 527 528 528 528 528 528 528	RAID Levels	RAID 0, 1, 1E, 5, 6, 10, 50, 60			
Max LUNs per array 32 Variable Block and Sector Size 512B. 1KB. 2KB. 4KB sector size Supports Disk Data Formats Supports Disk Data Formats Media Patrol Background Synchronizing Initialization Rebuild: Redundancy Check SYMART Condition Pooling, OCE (Online Capacity Expansion)/RLM (RAID Level Migration) Rebuild: Redundancy Check SYMART Condition Pooling, OCE (Online Capacity Expansion)/RLM (RAID Level Migration) Priority Control: Throtter Rate Control and watermarking per BGA (background activities) in Disk and NVRAM PDM (Predictive Data Migration) PerfectRAID: advanced error handling Array Error Recovery Read/Write Check Table, Write Hole Table, Bad Sector Re-map Table, NVRAM event logging System Management System Management Windows 2000, XP. 2003, Vista, 2008 RedHat Linux, SuSE Linux, FreeBSD 7.0 YVMVare ESX Server 3.5 WebPAM PROe/SNMP via Ethernet LCI/CLUL via R[-1] or Ethernet LCI/CLUL via R[-1]	Hot spares	Global or Dedicated w/ revertible option			
Variable Block and Sector Size 64KB — IMB strips block sizes 512B, IKB, 2KB, 4KB sector size Disk Data Formats Supports Disk Data Format (DDF) for drive roaming between VTrak and VessRAID series systems. Media Patrol Background Activities Background Activities Packground Synchronizing: Initialization Rebuild; Redundancy Check SPHART Condition Pooling, OCE (Online Capacity Expansion)/RLM (RAID Level Migration) Priority Control. Throttle Rate Control and watermarking per BGA (background activities) in Disk and NVRAM PDM (Predictive Data Migration) PerfectRAID " advanced error handling Arry Error Recovery Read/Write Check Table, Write Hole Table, Bad Sector Re-map Table, NVRAM event logging System Management Supported OS WebPAM PROJSNIPP via Ethernet CLICLU via Rij-II or Ethernet CLICLU via Rij-II	Max LUNs per subsystem	256			
Disk Data Formats SizB, IKB, ZKB, 4KB sector size Disk Data Formats Supports Disk Data Format (DDF) for drive roaming between VTrak and VessRAID series systems. Media Patrol Background Synchronizing: Initialization Background Activities Priority Control: Proctice Rate Control and watermarking per BGA (background activities) in Disk and NVRAM PPM (Predictive Data Migration) PPM (Predictive Data Migration) Priority Control: Throttle Rate Control and watermarking per BGA (background activities) in Disk and NVRAM PPM (Predictive Data Migration) Priority Control: Throttle Rate Control and watermarking per BGA (background activities) in Disk and NVRAM PPM (Predictive Data Migration) Priority Control: Throttle Rate Control and watermarking per BGA (background activities) in Disk and NVRAM Priority Control: Throttle Rate Control and watermarking per BGA (background activities) in Disk and NVRAM Priority Control: Throttle Rate Control and watermarking per BGA (background activities) in Disk and NVRAM Priority Control: Throttle Rate Control and watermarking per BGA (background activities) in Disk and NVRAM Priority Control: Throttle Rate Control and watermarking per BGA (background activities) in Disk and NVRAM Windows 2000, XP, 2003, Vista, 2008 Read/Write Check Table, Write Hole Table, Bad Sector Re-map Table, NVRAM event logging Priority Control: Throttle Rate Control Priority (Priority Read) Windows 2000, XP, 2003, Vista, 2008 RedHat Linux, SuSE Linux, FreeBSD 7.0 WebPAM PROJES/SMMP via Ethernet LCD Control Panel Ethernet, Byll Serial Port, USB SMMP, SSL, Telnet, SLP Event Notification England Priority Signal Priority	Max LUNs per array	32			
Background Activities Media Patrol Background Synchronizing: Initialization Rebuild: Redundancy Check	Variable Block and Sector Size				
Background Activities Background Synchronizing; Initialization Rebuildin Redundancy Check SMART Condition Pooling, OCE (Online Capacity Expansion)/RLM (RAID Level Migration) Priority Control, Throtte Rate Control and watermarking per BGA (background activities) in Disk and NVRAM PDM (Predictive Data Migration) Perfect,RAID" advanced error handling Array Error Recovery, Read/Write Check Table, Write Hole Table, Bad Sector Re-map Table, NVRAM event logging System Management Supported OS Windows 2000, XP, 2003, Vista, 2008; RedHat Linux, SuSE Linux, FreeBSD 7.0 VMWare ESX Server 3.5 WebPAM PROe/SNMP via Ethernet CLIC(LU via R)-It or Ethernet LCD Control Panel (Optional) OPAS/IPS Honitor via USB service Power Scheduler Control Anagement Interfaces/Protocols Ethernet, R, I-Il Serial Bort, USB SNMP, SSL, Telinet, SLP Event Notification Email, SNMP, NETSEND, Buzzer, LEDs, LCD Control Panel System Information AC Input Current (Maximum) 6A (100V); 3A (240V) Single/Dual 350W 90-264 VIul-ranging w/PFC 80P(LUSB Beonze/ROPLUS Efficiency Hot swappable and redundant (Dual) FAN N+1 Design Temperature 5'* - 40°C' (-40° - 60°C non operational) Relative Humidity 1096 to 8096 non-condensing Belative Humidity 1097 1087 2381 (22.81 27.78 bs) w/o drives 11 / 12.8 kg (23.27 28.22 bs) w/o drives 11 / 12.8 kg (23.27 28.21 bs) w/o drives 11 / 12.8 kg (23.27 28.21 bs) w/o drives 11 / 12.8 kg (23.27 28.21 bs) w/o drives 11 / 12.8 kg (23.27 28.21 bs) w/o drives 11 / 12.8 kg (24.27 28.21 bs) w/o drives 11 / 12.8 kg (24.27 28.21 bs) w/o drives 11 / 12.8 kg (24.27 28.21 bs) w/o drives 11 / 12.8 kg (24.27 28.21 bs) w/o drives 11 / 12.8 kg (24.27 28.21 bs) w/o drives 11 / 12.8 kg (24.27 28.21 bs) w/o drives 11 / 12.8 kg (25.27 28.21 bs) w/o drives 11 / 12.8 kg (23.27 28.21 bs) w/o drives 11 / 12.8 kg (28.27 28.21 bs) w/o drives 11 / 12.8 kg (28.27 28.21 bs) w/o drives 11 / 12.8 kg (28.27 28.21 bs) w/o drives 12 / 45.4 kg Linux Versan Lunch Versan Lunch Versa	Disk Data Formats				
PerfectRAID "advanced error handling Array Error Recovery Read/Write Check Table, Write Hole Table, Bad Sector Re-map Table, NVRAM event logging	Background Activities	Background Synchronizing; Initialization Rebuild; Redundancy Check SMART Condition Pooling, OCE (Online Capacity Expansion)/RLM (RAID Level Migration)			
Supported OS	RAID Robustness	PerfectRAID™ advanced error handling Array Error Recovery			
Supported OS	System Management				
CLI/CLU via R]-II or Ethernet LCD Control Panel (Optional) OPAS/UPS Monitor via USB service Power Scheduler Control	, -	RedHat Linux, SuSE Linux, FreeBSD 7.0			
Event Notification Email , SNMP, NETSEND, Buzzer, LEDs, LCD Control Panel	Management Tools	CLI/CLU via RJ-11 or Ethernet LCD Control Panel (Optional) OPAS/UPS Monitor via USB service			
System Information	Management Interfaces/Protocols	Ethernet, RJ-II Serial Port, USB SNMP, SSL, Telnet, SLP			
AC Input 90 ~ 264 VAC, 47 ~ 63Hz Current (Maximum) 6A (100V); 3A (240V) 7/8A (100V); 3.5/4A (240V) Single/Dual 350W 90-264V full-ranging w/PFC 80PLUS® Beonze/80PLUS Efficiency Hot swappable and redundant (Dual) Hot swappable and redundant (Dual) Hot swappable and redundant (Dual) FAN N+1 Design Temperature 5° ~ 40°C² (-40° ~ 60°C non operational) Relative Humidity 10% to 80% non-condensing Dimensions (H x W x D) 88.2 x 446.2 x 461 mm 3.5 x 17.6 x 18.1 in 3.5 x 17.6 x 18.1 in 10.8 / 12.6 kg (23.81 / 27.78 lbs) w/o drives 16 / 17.8 kg (35.27 / 39.24 lbs) w/ drives 16 / 17.8 kg (35.27 / 39.24 lbs) w/ drives 18.8 / 20.6 kg (41.45 / 45.41 lbs) w/ drives 23.6 / 25.4 kg (52.03 / 56 lbs) v Weight CE, FCC Class B, VCCI, BSMI, CB, KCC, C-Tick, UL/cUL, TUV Base Configuration RICE Single PSU: 1; Dual PSU: 2) Quick Start Guide, Set of Screws, CD (Product Manual, SNMP files, QSG)	Event Notification	Email , SNMP, NETSEND, Buzzer, LEDs, LCD Control Panel			
AC Input 90 ~ 264 VAC, 47 ~ 63Hz Current (Maximum) 6A (100V); 3A (240V) 7/8A (100V); 3.5/4A (240V) Single/Dual 350W 90-264V full-ranging w/PFC 80PLUS® Beonze/80PLUS Efficiency Hot swappable and redundant (Dual) Hot swappable and redundant (Dual) Hot swappable and redundant (Dual) FAN N+1 Design Temperature 5° ~ 40°C² (-40° ~ 60°C non operational) Relative Humidity 10% to 80% non-condensing Dimensions (H x W x D) 88.2 x 446.2 x 461 mm 3.5 x 17.6 x 18.1 in 3.5 x 17.6 x 18.1 in 10.8 / 12.6 kg (23.81 / 27.78 lbs) w/o drives 16 / 17.8 kg (35.27 / 39.24 lbs) w/ drives 16 / 17.8 kg (35.27 / 39.24 lbs) w/ drives 16 / 17.8 kg (35.27 / 39.24 lbs) w/ drives 18.8 / 20.6 kg (41.45 / 45.41 lbs) w/ drives 23.6 / 25.4 kg (52.03 / 56 lbs) v Quick Start Guide, Set of Screws, CD (Product Manual, SNMP files, QSG) Warranty and Support	System Information				
Current (Maximum) 6A (100V); 3A (240V) 7/8A (100V); 3.5/4A (240V) Power Supply Single/Dual 350W 90-264V full-ranging w/PFC 80PLUS Efficiency Hot swappable and redundant (Dual) Single/Dual 350W 90-264V full-ranging w/PFC 80PLUS Efficiency Hot swappable and redundant (Dual) Single/Dual 450W 90-264V full-ranging w/PFC 80PLUS Efficiency Hot swappable and redundant (Dual) 80PLUS® Beonze/80PLUS Efficiency Hot swappable and redundant (Dual) Hot swappable and redundan	•	90 ~ 264 VAC. 47 ~ 63Hz			
Single/Dual 350W 90-264V full-ranging w/PFC 80PLUS® Beonze/80PLUS Efficiency Hot swappable and redundant (Dual) Hot swappable and redundant (Dual) Hot swappable and redundant (Dual)	•		6A (100V): 3A (240V)	7/8A (100V): 3 5/4A (240V)	
Temperature S° ~ 40°C² (-40° ~ 60°C non operational)		Single/Dual 350W 90-264V full-ranging w/PFC 80PLUS® Beonze/80PLUS Efficiency	Single/Dual 350W 90-264V full-ranging w/PFC 80PLUS® Beonze/80PLUS Efficiency	Single/Dual 450W	
Temperature S° ~ 40°C² (-40° ~ 60°C non operational)	FAN	N+I Design			
Relative Humidity	Temperature	5			
Sa.2 x 446.2 x 461 mm 3.5 x 17.6 x 18.1 in 3.5 x 17.6 x 18.1 in 5.1 x 17.6 x 18.1 i	· · · · · · · · · · · · · · · · · · ·				
Safety/EMI Safety/EMI Safety/EMI Safety and Support Safety and Saf	•	9	88.2 x 446.2 x 461 mm	130.1 x 446.2 x 461 mm	
Safety/EMI CE, FCC Class B, VCCI, BSMI, CB, KCC, C-Tick, UL/cUL, TUV VessRAID 2U/3U Unit w/ Drive Carrier RJI1-to-DB9 Serial Data Cable, Power Cord (Single PSU: I; Dual PSU: 2) Quick Start Guide, Set of Screws, CD (Product Manual, SNMP files, QSG) Warranty and Support	,	3.5 x 17.6 x 18.1 in	3.5 x 17.6 x 18.1 in		
VessRAID 2U/3U Unit w/ Drive Carrier RJII-to-DB9 Serial Data Cable, Power Cord (Single PSU: 1; Dual PSU: 2) Quick Start Guide, Set of Screws, CD (Product Manual, SNMP files, QSG) Warranty and Support	vveignt			23.6 / 25.4 kg (52.03 / 56 lbs) w/ drives	
Base Configuration RJII-to-DB9 Serial Data Cable, Power Cord (Single PSU: 1; Dual PSU: 2) Quick Start Guide, Set of Screws, CD (Product Manual, SNMP files, QSG) Warranty and Support	Safety/EMI	CE, FCC Class B, VCCI, BSMI, CB, KCC, C-Tick, UL/cUL, TUV			
	Base Configuration	RJII-to-DB9 Serial Data Cable, Power Cord (Single PSU: 1; Dual PSU: 2)			
Warranty 3 years limited warranty ³	Warranty and Support				
rananj s jeus inneed martantj	Warranty	3 years limited warranty ³			
Supported Hardware Options LCD Panel, Front Bezel, Sliding Rail, Battery Backup Unit, SAS Cable	Supported Hardware Options				

¹Microsoft® WHQL for Windows Server 2003 and 2008

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:: Promise USA

:: Promise EMEA

:: Promise China

:: Promise Germany

:: Promise Japan

:: Promise Italy

:: Promise Taiwan

:: Promise UK

²Operational Temperature between 5° ~ 35°C if BBU installed ³BBU is covered by one year limited warranty ©2009 Promise Technology, Inc. Specifications subject to change without notice.