

## CoreVault SAN Storage



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Dual-Controller Unified IP/FC SAN/NAS Storage System



### PRODUCT OVERVIEW

The Quant CoreVault SAN Storage is a dual-controller, unified SAN/NAS storage platform engineered for high performance and high availability on an Intel server architecture. It supports IP and Fibre Channel connectivity, modular expansion, and a unified management GUI for simplified operations in enterprise and surveillance workloads.

### KEY HIGHLIGHTS

- Active-Active dual controllers with fast failover and cache mirroring for continuous service.
- Advanced RAID services (VRAID 3.0) including delta reconstruction/synchronization and metadata protection.
- HASS disk health analytics with proactive checks and SMART-based prediction to reduce disk failures.
- Hot-swappable modular design: controllers, PSUs, BBU, fans, and drives (1+1 redundant subsystems).
- Unified protocols: FC, iSCSI, SMB/CIFS, and NFS with up to 2,048 LUNs.

## Core Technologies

### DUAL-CONTROLLER HIGH AVAILABILITY

- Active-Active (dual-active) controller operation with load sharing. CoreVault SAN Storage | Unified SAN/NAS Storage
- Fast controller switching designed to minimize application impact during failover.
- 1+1 mirrored write-cache: write cache is mirrored between controllers over a high-speed PCIe channel for data protection.

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## Core Technologies

### VRAID 3.0 ADVANCED VIRTUAL RAID

- Delta reconstruction: rebuilds only invalid blocks after a disk returns online to shorten rebuild time.
- Delta synchronization: skips already-written blocks to reduce sync overhead while keeping performance stable.
- Read error correction: corrects latent read errors by rewriting repaired blocks during read operations.
- Permanent RAID metadata protection using multiple metadata copies and separation techniques.
- RAID roaming to maintain RAID group state and data integrity when moved to another system.

### HASS DISK RELIABILITY TECHNOLOGY

- Proactive health checks to detect potential errors early.
- Real-time error tracking with analytics based on historical patterns.
- Online SMART monitoring with alerts and recommended actions (repair / warning)

## Reliability, Efficiency, and Management

### RELIABLE HARDWARE & DATA PROTECTION

- Intel 64-bit multi-core platform with ECC memory and a 64-bit storage OS for 24x7 operation.
- Hot-swap modular FRUs: controllers, PSUs, BBU, fans, and drives.
- Redundant BBU to preserve write-cache data during power outages.
- Over-temperature protection and inrush-current protection during drive spin-up.
- NMI monitoring module: forces safe mode and secures write-cache if the system becomes unresponsive.
- Comprehensive alarms: LEDs, buzzer, email, SNMP trap, and SMS (where supported).

### GREEN & SIMPLE MANAGEMENT

- High-efficiency redundant power design and intelligent DC-DC conversion.
- Temperature-controlled fans adjust speed based on system load/temperature.
- Web-based multi-device management with a graphical interface; CLI with auto-complete (serial/Telnet/SSH).
- Cross-platform remote management on Windows, Linux, and macOS.

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## Reliability, Efficiency, and Management

### RESILIENCY CHECKLIST

- Redundant controllers, PSUs, fans, and BBU
- Cache mirroring for write protection
- Advanced RAID rebuild acceleration
- Multi-channel alarms and SNMP monitoring

### PRODUCT SPECIFICATIONS

MODEL	CoreVault ME4000	CoreVault ME4000V	CoreVault ME3050
Form factor	4U 24-bay, 19-inch rack-mount		2U 24-bay, 19-inch rack-mount
Expansion enclosure (EXP)	4U 24-bay		
Architecture	Pluggable controller architecture		
Controller mode	2 controllers, Active-Active		
Main Processor	Intel multi-core 64-bit processor (4-64 cores, configurable with E3 single-socket series, E5 dual-socket series, Xeon extended processors)		
9600TB	9600TB		
System memory	32 GB to 2 TB		64 GB to 8 TB
Mirrored write cache	4-128GB with power-loss protected write cache		
Front-end Interface Types	10/100/1000Base-T Ethernet interface, 10G SFP+ interface, 40G QSFP28 interface		
Max Front-end Host Ports	8*GE+16*GE/8*10GE/8*FC	8*GE+6*PCIe slot	4*GE+6*PCIe slot
Back-end Interface Types	x4 12Gb, SAS3.0		Optional x4 12Gb, SAS3.0CLe slot
Other Interfaces	2*VGA/4*USB/2*RS232/2*FE		
Supported Protocols	FC, iSCSI, SMB/CIFS, NFS		
LUN	Supports 2048 logical volumes, Max single profile volume is 128TB		

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MODEL	CoreVault ME4000	CoreVault ME4000V	CoreVault ME3050
HDD	1-24TB 3.5inch SATA / SAS HDD/ 1-16TB 2.5inch SAS HDD/ SAS SSD		4-15.36TB U.2 NVME
RAID Levels	RAID 0, 1, 5, 10, 6		
Hot Spare Disk Types	Dedicated hot spare, idle disk hot spare		
Software Features	1024 I/O Redirect snapshots, snapshot-based remote replication (non-production environment)		
RAID Features	Supports reconstruction, Delta reconstruction, automatic Delta synchronization, RAID group allows multiple disks to experience media errors, read error write repair, permanent metadata protection		
Other Features	Self-start when power on, power on hard disk one by one, hard disk locate and alarm, every hard disk slot power control, SFF8644 signal enhancement, fan regulation by temperature		
Hypervisor Features	KVM, VMware, XenServer, Hyper-V		
Alarm Features	Supports console alarms, indicator light alarms, buzzer alarms, email alarms, SNMP Trap alarms, SMS alarms, etc.		
Data Protection	Snapshots, LUN copy, remote replication		
Management	Web-based multi-machine management, CLI (with auto-completion function, accessible via serial port, Telnet, SSH), SNMP		
Operating System	Supports Windows, Linux, Solaris, HP-UX, AIX, FreeBSD, etc.		
Power Input	AC 100V~127V/200V~240V; 60Hz/50Hz		
Power Supply	1+1 550W, optional 800W / 1300W	2+2 1300W	
BBU	Embedded BBU, standard lithium battery version (super capacitor version optional for E3 processor)		
Operating Environment	+5°C~+35°C; humidity +10%~+90%	88(H)*440(W)*760(D)mm	
Product Dimensions	175(H)*440(W)*680(D)mm		
Certification	CE, UL, FCC, ISO 14001:2015		
Country of Origin	Malaysia		
Warranty	3 Years		

