

# FAST Silent Cubes

A sustainable/Green IT Archiving Solution that  
reduces energy usage and footprint by 80% or more

A solution that can assist IT  
management (in both the public  
and private sectors) to stay  
within budgets.



up to  
**16 TB**  
in less than one cubic foot  
< 2 watts in standby

find out how >>



## Silent Cubes: the ultimate solution for secure long-term data archives

Maintaining compliance with the myriad of factors impacting data protection, pose a relentless challenge to IT personnel and service providers. Today, the volume of data generated is virtually exploding, while legal stipulations call for ever higher data security measures.

Meanwhile, we frequently hear unsettling reports of data losses; sometimes having a catastrophic impact for the organisations concerned. Silent Cubes are the new, modern, disk-based solution for revision-safe, long-term storage of digital archive data.

Silent Cubes with its **Zero Power** technology is exceptionally efficient and energy-saving, while still giving users the advantages of fixed disk storage; i.e. speed, de-duplication, scalability and reliability.

The system's high-performance NAS - Network Attached Storage - Head Unit together with one or more storage Cubes, provides a highly secure virtual file resource that is available to any current line-of-business applications and both archiving and/or backup software.

## Silent Cubes - specifically designed for secure long-term data archiving

### Comparison by key functionality with optical media and hard-disk storage options

Key Functionality	Relevance for long-term archiving	Silent Cubes archive (WORM Disk)	Optical archive systems (Jukeboxes)	Premium Disk Storage data archives (supplied by large system vendors)
Legal Compliance (technically supported)	✓✓✓	Yes	Yes	Typically with software
Energy consumption (Standby) cost/TB	✓✓✓	< 0,2 Watt/TB	0.10 Watt/TB	Typ. > 50 Watt/TB
Data integrity (long-term security)	✓✓✓	Quadruple redundancy	Only with additional backup	
Performance (Access Speed - Write/Read)	✓	average	low	Very high

## Examples of Silent Cubes already in daily use

Silent Cubes is new to the market but is already installed at several 100 users and in daily use for archiving file, e-mail and HSM servers, and to provide legally compliant long-term storage of digital documents as well as for archiving disk back-ups. Specific examples include: medical imaging (PACS, KIS, RIS, etc.) and

patient records, Driver and automobile registrations, Land register services, Food safety, Environmental protection, Building control, Youth welfare and Child protection Services. All of which generate high volumes of sensitive data requiring to be securely archived; in some cases for 30 years or longer.

## Example Silent Cubes configuration – 5 Year Energy Cost Comparison – for system with total replicated 24 + 24 TB net (useable) archive data capacity

	Premium Hard-Disk Storage	RAID-6 Disk Storage	Digital Tape Libraries	Silent Cubes - with 100% Constant Running	Silent Cubes - with 4% Activity (typical read/write access)
Active ratio	100%	100%	100%	100%	4%
Operating energy consumption - Watts/h	3000	1800	1000	820	190
Costs/year*	\$ 5,782	\$ 3,469	\$ 1,927	\$1,580	\$ 366
<b>5 years energy costs + 8% increase</b>	\$ 31,222	\$ 18,733	\$ 10,405	\$ 8,532	<b>\$ 1,976</b>
*Energy cost/kWh = \$ 0.22 (Power and cooling)					

### Zero Power: “Greener” than any other long-term storage option



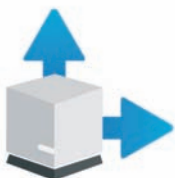
Silent Cubes are based on innovative Zero Power technology and each Cube uses less than 2 watts when in standby mode - including redundant power supplies – and up to only 125W when active storing or retrieving data. Conventional fixed-disk and RAID systems devour lots of energy and are anything but ‘silent’. Using Silent Cubes within your IT facility will not only reduce energy usage for archive data (and be much quieter) but will also normally ‘free-up’ existing premium and/or RAID disk capacity, thereby reducing the need for, or frequency of, costly additions to such primary disk storage systems.

### Cost-effective: Less expensive than any other long-term storage option



Disk-based storage is high-cost; at least until now. Silent Cubes in addition to being energy efficient, fully scalable and quieter, is also less costly. In addition, to also help reduce on-going costs, we offer 5 year fixed-price maintenance; including parts, on-site support and automated system monitoring and reporting.

### Super-redundant: More secure than any other long-term storage option



Silent Cubes provides far greater redundancy resources than any other long-term storage options; including hard-disk, digital tape or optical media, and is more secure than a RAID-6 system. To prevent any systematic failures, each storage Cube is configured with hard disks from three different manufacturers. To boost redundancy even higher, all systems come complete with software, at no extra cost, for local or remote replication, as well a fully automated switchover option between primary and replicated systems.

### Legal compliance: Certified solution for long-term archiving



The compliance option for the Silent Cubes certified WORM storage, supports established international guidelines for revision-safe storage and the system uses identity verification via 512-bit SHA-2 hash coding. The system’s software includes enhanced functionality and data integrity monitoring, as well as providing for variable retention periods to be permanently established for archived data and documents.

# Silent Cube Technical Data

## Head Unit (NAS) with file system and cache

### Product

Network Attached Storage (NAS) with RAID-1 hard disk

### Capacity

Gross/net cache: 2/1 terabyte (RAID-1, 1 TB hard disk)

### Network

Interface: 1000/100/10Base-T

Protocol: SMB/CIFS with Active Directory Support, NFS

Direct connection: FAST LTA API

### Configuration

File system: FAST LTFS linear file system, optimized for WORM storage

Software: LTFS management (preinstalled) Web-based administration and configuration, DHCP client / static IP address configuration

### Remote monitoring

Daily encrypted Email status reports to local admin and service point (opt.),

Web-based intranet/VPN monitoring

### Power consumption

Continuous operation: ~ 90 W, redundant power supply (opt.)

### Physical data (19" wide, 2 U)

Dimensions WxHxD cm (inch): ~ 43 (17) x 8.8 (3.15) x 41 (16)

## Silent Cubes storage unit

### Product

Hard disk-based storage unit with WORM hardware

### Capacity

Number of hard disks: 12 (8 are sufficient to completely restore all data)

### Storage capacity

gross/net (useable): 6/4 terabytes (500 GB hard disks)

or 12/8 terabytes (1 TB hard disks)

or 24/16 terabytes (2 TB hard disks)

### Network

Interface: 1000/100/10Base-T - 10Base-T link in standby mode

### Firmware

WORM: WORM technology

Redundancy: Quadruple redundancy by Erasure Resilient Coding

Data integrity: Automatic, regular self-auditing (Digital Audit) using SHA-512 hash codes, detects hard disk errors and initiates auto repair

### Power consumption

Standby mode: < 2 W, including redundant power supply

Continuous operation: ~ 125 W

### Physical data

Dimensions WxHxD cm (inch): ~ 22 (8.5) x 22 (8.5) x 23 (9)

Weight: ~ 13 kg (28.6 lbs.)

## Silent Cubes in a 19-inch rack

Six storage units fit on one shelf (6U) – in a side-by-side and back-to-back configuration. In excess of a Petabyte of data can be stored in two standard 19-inch rack-mounts.

## Head Unit for VMware

The Head Unit is also now available as a pre-installed virtual machine. All the features of the hardware Head Unit are implemented including Replication (asynchronous), full recovery of head unit from connected storage, high availability cluster (with two VM machines) but also for an increase in the cache size up to 4 TB.

New:  
Head Unit  
for VMware



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Up to 576 TB per 19" rackmount

Less than 100 Watts in standby

*Please call us  
for demonstration!*