

**FAST LTA**  
We secure Petabytes.

**COLD STORAGE**

# Hello.

I am the **SILENT BRICK LIBRARY**  
and I store your data from backup and  
archiving applications securely and flexibly.



**FAST LTA**  
We secure Petabytes.

# FAST LTA.

We secure Petabytes.

FAST LTA introduced its first secure data storage system in 2005. Employing hard disks and developed by company founder Matthias Zahn and his team, the new system was rolled out with an ambitious promise: No data will ever be lost.

Previous technologies had proven unable to live up to such an assurance over the long term – or had meanwhile become too costly or complex.

At the heart of the new storage system is a specially developed hard disk WORM-controller. The controller writes data to connected hard disks linearly and protects it against deletion or alteration down to the lowest hardware level. The redundancy coding provided by erasure coding ensures that defective disks can simply be switched off without the risk of any data loss.

Erasure coding and the linear storage model with WORM sealing is also fundamental to revision-safe **SILENT CUBES** archive storage, as successfully proven in thousands of installations since 2009.

Today, Silent Cubes are found in the majority of German hospitals and clinics, in hundreds of municipal and public service facilities plus more and more medium-size companies. In fact, wherever data needs to be reliably and securely archived for the long-term – frequently in line with various legal requirements – Silent Cubes is the preferred choice.

# 2500

satisfied customers

The innovative **SILENT BRICK LIBRARY** was introduced in 2015 as a further expansion of the product portfolio. The portable, offline-capable **SILENT BRICK** media containers make this specialized storage for backup, archiving and cold storage extremely flexible and virtually infinitely scalable.



# More secure

than any other storage system.

All storage systems developed by FAST LTA feature quintuple protection against data loss:

- **Erasure coding with 4 redundancies** | Each storage unit contains 12 data disks; any four of them can fail simultaneously without any data being lost.
- **Disk mix** | Utilizing four data disks manufactured in three different production lots protects against loss due to faulty components, e.g. firmware issues. This also means the products are never dependent on any one specific type of data medium.
- **Digital Audit** | Each storage unit performs bit-level self-checks on a regular and automatic basis. This eliminates the possibility of data loss due to “bit flips” or other subtle defects.
- **Structural integrity** | FAST LTA products are not based on central-index file systems but rather always store all metadata right along with the payload data. This enables data to be restored solely from the storage units alone.
- **Linear data storage** | All products store data linearly. Thus, while new versions of a file initially take up more space, previous versions can still be retrieved. Any overwriting of data must be initiated manually – and is even impossible in the case of Silent Cubes due to the WORM sealing feature.

# 50 PB

with zero data loss



## Putting the squeeze on ransomware

We're seeing more and more blackmail virus attacks on companies and public entities today. This type of malware encrypts part of a system's stored data and demands a ransom for the encryption key.

The linear storage and structural integrity of all FAST LTA storage products provide inherent protection against any loss of data while the Silent Brick Library's integrated “continuous snapshot” function enables unproblematic restoration of previous versions.

# The Silent Brick.

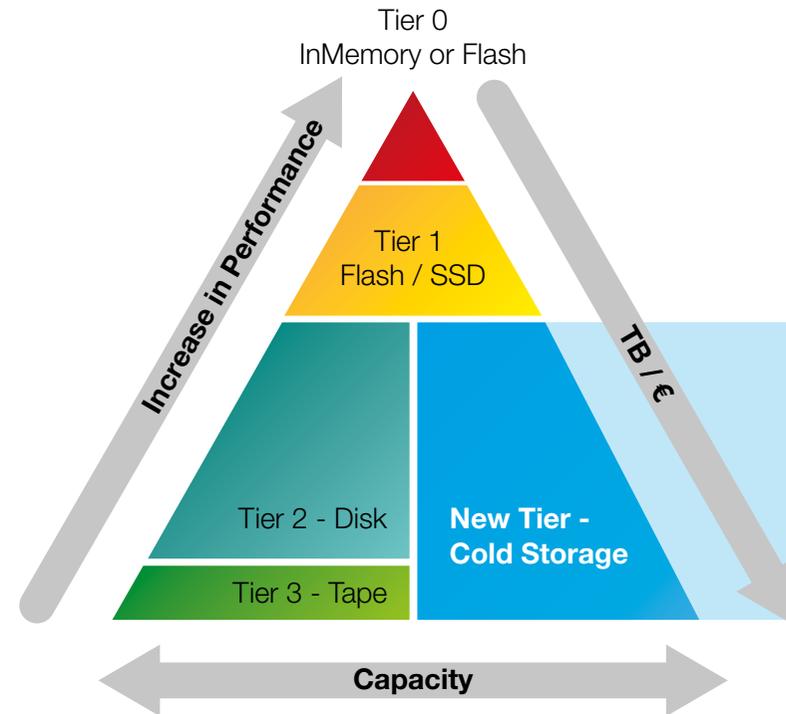
The ideal medium for cold storage.

Data volumes are growing at an average rate of 40% each year. Most of this data is “unstructured” – data that hardly ever changes and is only rarely accessed yet still needs to be readily available at all times.

All this data, for which neither expensive flash arrays nor 100% offline tape storage are ideal solutions, necessitates a new storage medium: **COLD STORAGE**.

**COLD** storage also stands for **C**ost **O**ptimized **L**inear **D**isk Storage at FAST LTA; i.e. cost-effective storage in a linear data structure.

- Archiving unstructured data lightens the backup process and thereby saves time, effort and licensing costs.
- Data not needing to be in constant access can be deemed “cold” and thereby uses no energy.
- When needed, data can be quickly and conveniently retrieved at the speed of hard disk random access technology.
- For many applications, cold storage can assume the role of tier 2 (nearline) and tier 3 (offline) storage, thereby saving costs, reducing complexity and minimizing upkeep.



## Online, Offline and Off-Site

The **SILENT BRICK** is the ideal medium for cold storage. Linear storage provides greater security and localizable data. Data on Silent Bricks can thus be online, offline or off-site.

- **Online:** The hard disk array and a faster connection make Silent Bricks instantly available.
- **Offline:** Individual Silent Bricks can be switched off but still undergo regular Digital Audit checks.
- **Off-Site:** Silent Bricks can be physically removed from the system and transported or safely stored to prevent unauthorized access.

Like an eBook reader, a Silent Brick display will remain on in the absence of power. The actual Silent Brick itself does not have its own power supply or battery.



The surface of the Silent Brick grip handle is touch-sensitive. Just a touch will eject a Silent Brick from its slot (if released).

Full-scale illustration, length: 542mm

Silent Bricks are available in 8 and 16 TB configurations (net, corresponds to 12 or 24 TB gross).

The **SILENT BRICK** is a portable, offline-capable storage container holding 12 hard disks. Up to four disks can all simultaneously fail; erasure coding still ensures that no data will be lost.

The disks are optimally protected in sturdy aluminum housings. The practical grip handle incorporates a configurable ePaper display as an electronic label. Replacing defective disks is a simple process not requiring any special tools.

# The Silent Brick Library.

Flexible. Secure. Scalable.

The **SILENT BRICK LIBRARY** combines the advantages of tape and disk in a flexible, secure and scalable storage system.

The **CONTROLLER** comes with 5 slots for a net capacity of up to 80 TB (120 TB gross).

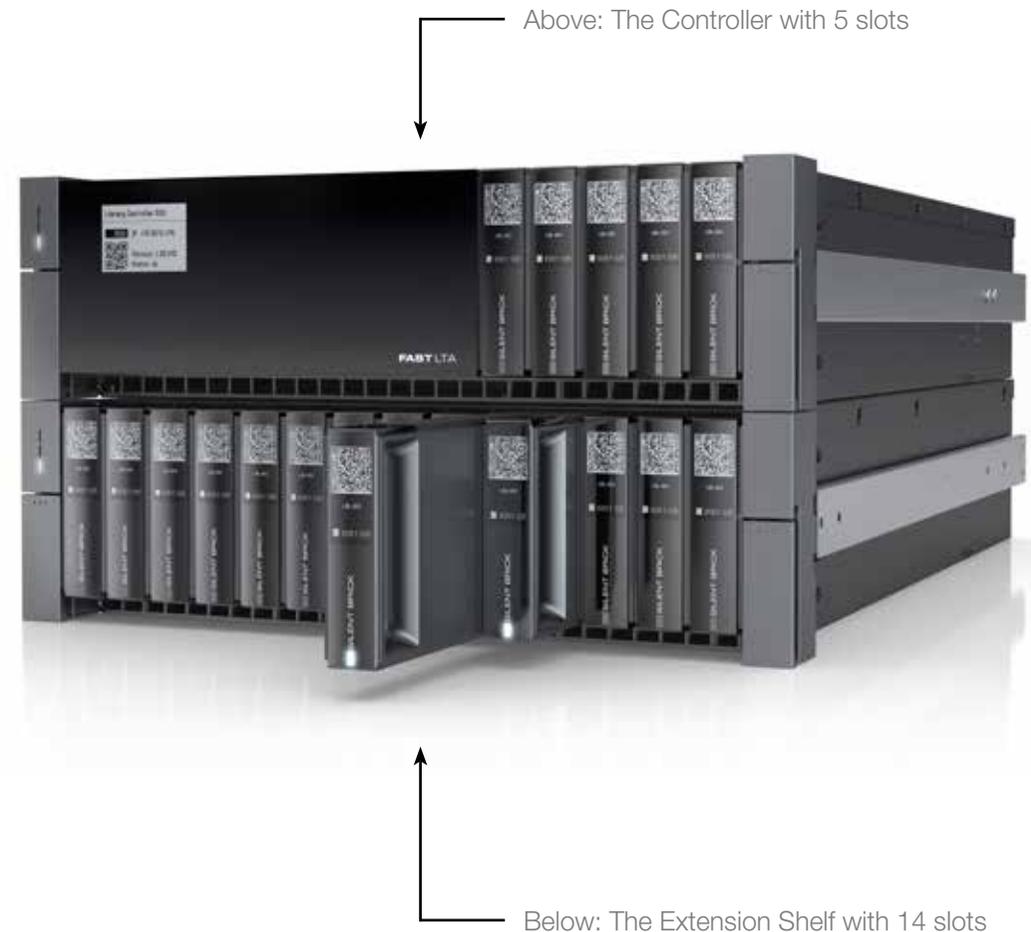
**EXTENSION SHELVES** each have 14 slots for flexibly expanding a Silent Brick Library.

Connection is by network share (SMB or NFS) as SecureNAS or alternatively also as VTL. Even mixed operation within one system is possible. A flexible backup structure can thus be maintained by one storage system.

The Silent Brick Library makes configurable volumes and shares available in the network via **SecureNAS**. Modern software can directly back up data onto the network drives, yet also readily allows for individual department or user drives.

Flexible **replication** of individual volumes or Silent Bricks provides further protection.

The backup software treats **VTL**-configured Silent Bricks like tapes – with the difference being that the recorded data can be reliably accessed at any time.





**FAST LTA**  
We secure Petabytes.

# The Silent Brick Drive.

Maximum security and flexibility in minimum space.

With its 2 slots and slim design, the **SILENT BRICK DRIVE** delivers secure and flexible data storage at only 1U in overall height.

Data can be quickly copied from one Silent Brick to another, for example to create an offline replica. Replication to other Silent Brick Library components in the network is also possible. And, needless to say, Silent Bricks are also interchangeable between systems.

The Silent Brick Drive is available as a complete package including licenses in capacities of 16 and 32 TB (net).

## Software

The browser-based interface allows for user-friendly adapting of Silent Brick Library component configurations. Virtual libraries, volumes and shares can be variably configured quickly and individually. All network, monitoring and user administration settings are likewise made in a snap.

# Backup with Silent Bricks.

Just like tape. Just like disk. Only better.

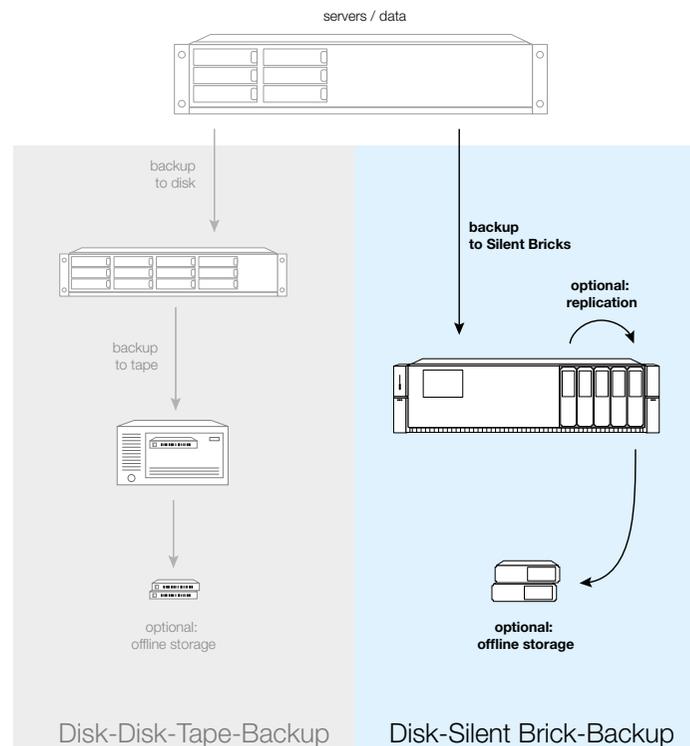
## Replacing your tape backup with Silent Bricks

Based on its integrated VTL (Virtual Tape Library), the Silent Brick Library can directly replace tape backups.

Just as with tape backup, the physical independence of Silent Brick storage containers allows a very simple segregating of incremental, differential and full backups.

The storage costs remain appreciably modest. In addition to the low Silent Brick media costs, maintenance and energy costs are likewise lower than with comparable systems.

And if you use tape to redundantly back up an existing disk backup, you can replace both instances at once with Silent Bricks.



Backup on	<b>Silent Bricks</b>
Access & Restore	<b>Like disk.</b> Data immediately available Random access Direct restore
Offline-capability	<b>Like Tape.</b> Effortless transport Readily stored offline Offline storage uses no energy
Expansion and operating costs	<b>Better.</b> Low marginal costs Lower maintenance costs Excellent energy balance
Security	<b>Better.</b> Digital Audit self-check Erasure coding, 4 redundancies Replication instead of mirroring
Scalability	<b>Better.</b> Media combinable as needed Multiple Controllers possible Star systems possible

## Tried & Tested

FAST LTA has subjected its Silent Brick Library to a full battery of automated tests under real-life conditions running the most common software solutions, including:

- Acronis Backup & Recovery
- Arcserve Backup
- Catalogic DPX
- CommVault Simpana
- EMC Networker
- GRAU Archive Manager
- HP Data Protector
- IBM Tivoli Storage Manager
- Microsoft Data Protection Manager
- Novastor NovaBACKUP
- Quest NetVault
- SEP sesam
- Veeam Backup & Replication
- Veritas Backup Exec
- Veritas Netbackup

## Silent Bricks as disk backup – and beyond

With SecureNAS, the Silent Brick Library is also well-suited as a backup appliance for solutions which store directly to network drives.

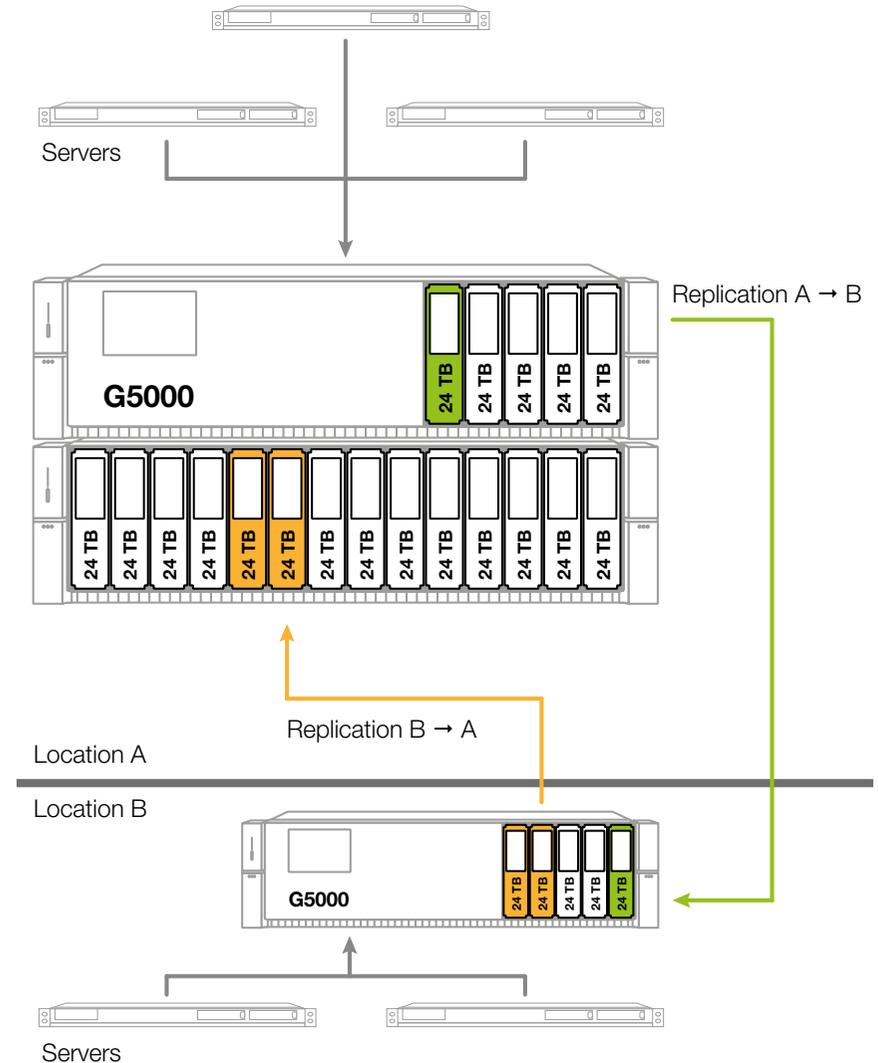
Given the proper software, virtual machines backed up on Silent Bricks can be started directly from the medium in case of emergency. For endpoint backups, the Silent Brick Library can serve as a central storage – depending on configuration, also with transparent file structure – so that every file is immediately available again.

And because some backup scenarios require both disk as well as tape layers, the Silent Brick Library can even offer both methods in parallel in one system: SecureNAS for caching, and VTL for the rotating backup containers.

Unlike other disk libraries, however, the Silent Brick Library needs no further backup such as an additional tape layer.

Replication with the Silent Brick system is a particularly powerful resource. Data can be replicated between independent Silent Brick Library components from individual volumes or Silent Bricks. There is no need to fully mirror the entire system as each system remains independent and fully operational.

**FAST LTA**  
We secure Petabytes.



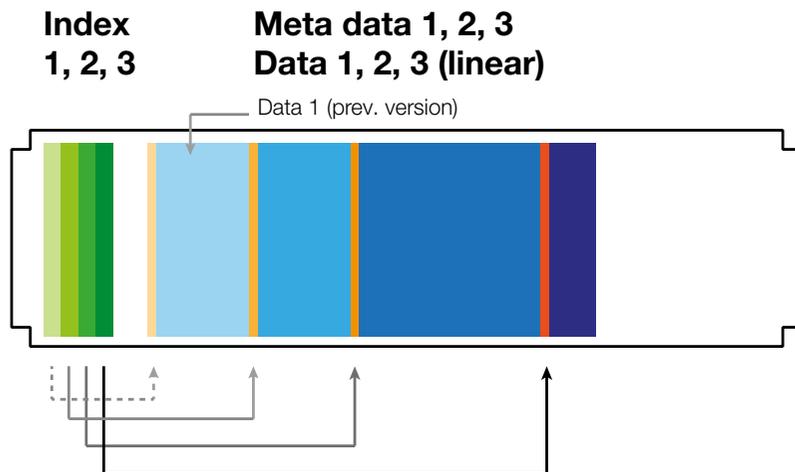
# Silent Bricks as SecureNAS.

Secure storage right from the start.

Even the most secure disk storage requires backups so that data cannot be deleted either accidentally by users or intentionally by hackers. The increasing threats posed by viruses which encrypt data and demand ransom from users also necessitate “cold backups.”

The **SILENT BRICK LIBRARY** already has its own backup built right in. Its linear storage structure means that new or altered data is always written to free memory instead of overwriting previous versions, thereby preserving the earlier versions.

If data is then inadvertently changed or deleted, the **Continuous Snapshot** function ensures that previous versions can be restored at any time. The end result: Human errors, hackers and viruses don’t stand a chance!



The Silent Brick Library is a **structurally secure** data storage system. Instead of relying only on a central index, which makes accessing raw data impossible when damaged, the metadata for restoration is always stored right along with the raw data. This enables all data to be restored even in the event of a complete failure of the central file management.

Unstructured data, which hardly ever changes and is only rarely accessed, should not burden your backup nor increase licensing costs.

Archive all this data into the **SILENT BRICK LIBRARY** right from the start.

- Immediately securely stored
- Lightens the primary storage
- Reduces backup expenditures
- Minimizes licensing costs

## From network storage to deep archive – always stay secure

Today's needs revolve around "active archives," not "dead" ones. On the one hand, growing volumes of data from monitoring, sensor systems and studies should be stored securely with the lowest possible upkeep and energy usage yet on the other hand, they must be immediately and individually available when needed.

### Customizable scalability

The SILENT BRICK LIBRARY meets these requirements – and is thereby in essence infinitely scalable by simply adding additional Silent Bricks.

### Cold storage

Data on Silent Bricks can be stored online, offline and off-site. In the offline mode, Silent Bricks are subject to regular Digital Audits but otherwise use no energy.

### 10-year product life

All of our components and systems are designed to operate for a minimum of 10 years. For this reason, we also offer 10-year service contracts under set terms.



# 10 YEARS

LIFESPAN

SERVICE AGREEMENT

INVESTMENT PROTECTION

ALL INCLUSIVE SERVICE

# Cold Storage.

So many applications. Which is right for you?

Wherever large volumes of data need to be economically and securely archived, and yet instantly available at all times, the **SILENT BRICK LIBRARY** is able to spring into action as an invaluable cold storage system.

The portable, offline-capable **SILENT BRICK** storage container thereby opens up additional applications for a number of industrial sectors.

Flexible slot allocation makes the Silent Brick Library virtually infinitely scalable. Even inactive Silent Bricks are automatically subject to regular Digital Audit self-checks.

## Quickly provide extra space

Temporary projects or studies can take up lots of storage space at short notice. Silent Bricks make it very easy to add space by keeping extra Silent Bricks offline and loading them into the system as needed.

Adding new Silent Bricks to existing volumes dynamically expands the available storage space.

## Free up primary storage

Even if local disk space needs to be quickly “freed up” for a new project at short notice, Silent Bricks are at the ready for the secure archiving of completed project data.

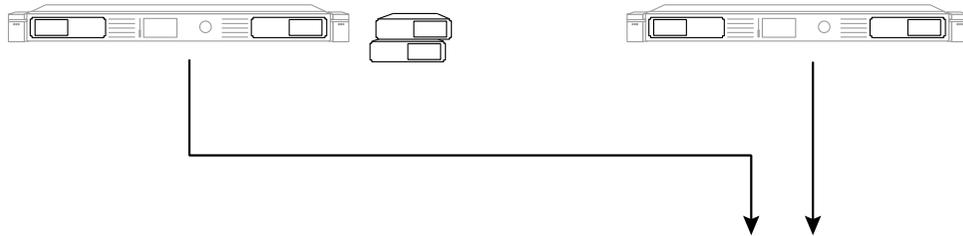
Particularly the Silent Brick Drive with its 2 Slots and fast USB3 interface can quickly free up the primary storage at the local workstation.

The secured data is available when needed via the Drive or a central Silent Brick Library.

## Secure data transport

Existing networks are usually insufficient when it comes to transporting multiple terabytes of data over greater distances. By contrast, physically transporting the data on Silent Bricks offers several advantages:

- Silent Bricks are sturdy and well protected against transport damages
- Data on Silent Bricks is secured against loss with quadruple redundancy
- The data is immediately available at the target destination in all its entirety without copying



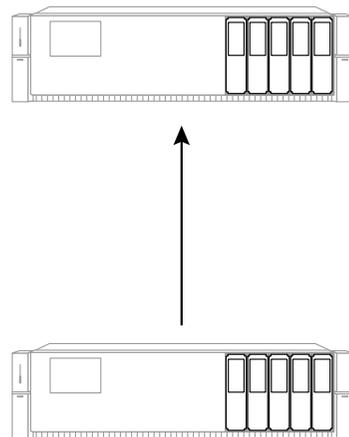
### Local backup with central archive

If data is to be stored locally as well as in a central archive, a star topology is used.

Silent Brick Drives or the Silent Brick Controller can securely store data onto the Silent Bricks at the local locations.

Flexible replication provides for the additional volumes to be archived in a central Silent Brick Library.

In case of emergency, the replica can be quickly transferred from the central archive to the respective external site, the data is then immediately available again in all its entirety.

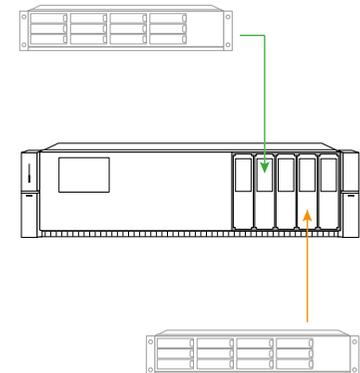


### Physical client capability

In some cases, it is vital to store different application, user or customer data as physically separate entities.

The linear data structure ensures that data which belongs together is also stored together in physical proximity. It is thus possible to assign dedicated Silent Bricks to different departments, applications or clients – and easily remove them from the overall system if needed.

Even with replications serving as additional backups, data can easily be located on designated Silent Bricks.



# Technical Data.

## Silent Brick

### Secure storage container for cold storage

#### Configuration

- 12 hard disks from 3 different production batches, 2.5 inch

#### Data security

- Erasure Resilient Coding with 4 redundancy reserves (ERC 12/8)

#### Capacity (gross)

- 12 TB (1 TB hard disks) / 24 TB (2 TB hard disks)

#### Capacity (net)

- 8 TB / 16 TB

#### Dimensions (H/W/D)

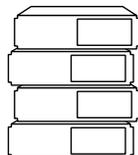
- 115 / 30 / 542 mm

#### Weight (with disks)

- approx. 2 kg

#### Features

- ePaper display as electronic label
- no tools required to open the housing and replace defective disks



## Silent Brick Drive

### Network cold storage with 2 slots

#### Configuration

- 2 Silent Brick storage container slots

#### Capacity

- up to 48 TB gross, 32 TB net (uncompressed)

#### Connection

- 1 GBit LAN
- Dual 10 GBit LAN (optional)
- USB 3.0 for fast data transfer from USB storage media

#### Dimensions (H/W/D)

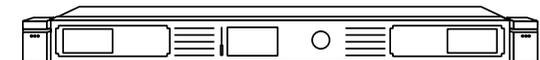
- 1U / 19 inch / approx. 60cm

#### Weight

- approx. 7kg (empty) /
- approx. 12 kg (with 2 Silent Bricks)

#### Features

- ePaper status display
- Copy button for Silent Brick > Silent Brick or USB > Silent Brick



## Silent Brick Library Controller

### High performance cold storage server with 5 slots

#### Specifications

- Intel XEON® Quad-Core CPU
- Redundant power supply units
- GPU for redundancy calculation (ERC), lossless compression, 256-bit AES encryption

#### Connection

- Dual 8G Fibre Channel or Dual 10 GBit LAN (SFP+, RJ45 optional)
- 3x 1 GBit LAN (IPMI, 2x fall-back data)
- 6x 100 MBit LAN (4x control, 2x administration)

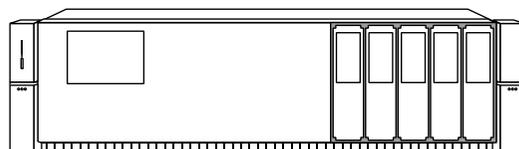
#### Configuration

- 5 Silent Brick storage container slots, up to 80 TB (net) / 120 TB (gross, uncompressed), expandable via SAS Dual Wide Link 8x 6 GBit

#### Dimensions (H/W/D)

#### Weight

- 3U / 19 inch / 785 mm
- 17 kg (empty) / 27 kg (with 5 Silent Bricks)



## Silent Brick Extension Shelf

### Storage expansion for the Silent Brick Library

#### Configuration

- 14 Silent Brick storage container slots up to 224 TB (net) / 336 TB (gross, uncompressed)

#### Connection (data)

- Serial Attached SCSI (SAS) Dual Wide Link 8x 6 GBit/s

#### Connection (management)

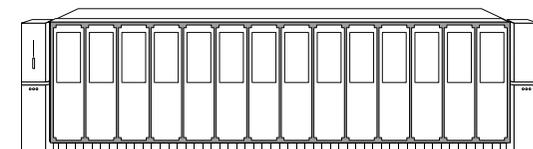
- 4x 100 MBit LAN

#### Dimensions (H/W/D)

- 3U / 19 inch / 785 mm

#### Weight

- 17 kg (empty) / 45 kg (with 14 Silent Bricks)



## FAST LTA.

### A passion for data protection.

We secure petabytes – the motto of FAST LTA AG, Munich. Underlying this slogan is a solemn promise to make sure our customers never lose data. A promise reflected in each and every detail of the storage products developed by Matthias Zahn and his team.

FAST LTA's own commitment: No data shall ever be lost. Which is why we develop all our critical components ourselves, extensively testing and continually improving them. This includes the implementation of redundant erasure coding far superior to conventional RAID in protecting against data loss. FAST LTA supplements this technology with the self-checking Digital Audit and employs Disk Mix, the use of three different hard disk models within one storage unit, to provide each redundancy array with an added layer of security. Storage products from FAST LTA are so secure that – provided the physical location itself is secure – no further backup is ever necessary.

FAST LTA is certified to ISO 9001.

#### **FAST LTA**

Ruedesheimer Str. 11  
80686 Munich, Germany  
Phone: +49 (89) 890 47 - 0  
Fax: +49 (89) 890 47 - 890  
Email: [info@fast-lta.com](mailto:info@fast-lta.com)  
[www.fast-lta.com](http://www.fast-lta.com)

**[www.silentbricks.com](http://www.silentbricks.com)**