



Technical Specification

VAULT



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1. Unit specifications

CPU:	Intel Xeon CPU
Core Count:	4 CORES
Clock Speed:	3.50GHz
Memory:	32GB (4x8GB)
Unit dimensions:	8.8cm x 43.0cm x 66.0cm (3.5" x 16.9" x 26.0")
Unit weight:	26.5kg (58.4lbs)
Input range:	100 - 240 VAC, 50-60Hz
PSU safety:	EMC - USA-UL listed. Canada-CUL listed, Germany-TUV certified, EN60950/IEC 60950-Compliant, CB report
Power supply:	Dual redundant 500W removable PSUs
Power requirements standby:	11W
Power requirements full load:	240W
Operating temperature range:	10°C - 35°C
Non-operating range:	-40°C - 70°C
Operating humidity range:	8 - 90% non-condensing
Non-operating humidity range:	5 - 95% non-condensing
Unit form factor:	2U rackmount (rack mounts included)

Bootable replacement OS is provided on **Rescue Capsule** USB drive for fast system recovery.

2. Options

- **VAULT LTO-6** Up to 4 x LTO-6 drives
- **VAULT LTO-7** Up to 4 x LTO-7 drives
- **VAULT LTO-8** Up to 4 x LTO-8 drives

3. Connectivity

On Motherboard

- 2 x USB 3.0 and 2 x USB 2.0 ports
- 1 x VGA connector
- 1 x COM port
- 2 x 1Gb Ethernet ports (RJ45)
- 1 x RJ45 dedicated IPMI LAN port

Other

- 2 x 40Gb Ethernet ports (QSFP+) - LTO-8 option
- 2 x 40Gb Ethernet ports (QSFP+) - LTO-7 option
- 2 x 10Gb Ethernet ports (SFP+) - LTO-6 option
- Option for additional 1Gb, 10Gb, 25Gb and 40Gb Ethernet ports (RJ45 or SFP+)

4. Key Features

- **CORE.4 OS**

Ultimately designed to elegantly manipulate data.

With the powerful and highly intelligent CORE.4 operating system at their centre, GB Labs' storage systems can not only govern and regulate read/write requests simultaneously - which is unique to the market - but can make autonomous decisions on how and where to read, or place that data (that's the intelligent bit), in safe and secure ways that both smooths and accelerates the process, saving a lot of time, money, and aggravation.

This is because, as powerful and clever as CORE.4 is, it's ultimately designed to elegantly manipulate data with a fluidity and lightness of touch that is as kind to that data as possible, using as few disks as possible, but always with speed, accuracy, and economy of effort.

Most central storage systems can either read or write, but not at the same time, whether it's an SSD, HDD, or hybrid system. The notion some have that SSD can read/write at the same time is a fallacy. In mixed read/write environments, their performance nosedives.

The inevitable peaks and troughs of read/write processes absolutely kill performance and those systems have little or no in-built intelligence to govern how those read/write requests are handled because, frankly, they're very difficult and complicated algorithms to create, so most manufacturers don't bother.

- **LTO Manager**

The LTO Manager and FlashBack for VAULT and EasyLTO makes it easier for users to preview their archived footage and find the exact film and clips they're looking for, with minimal effort - saving time and money. Created to provide customers with an updated interface, an updated VAULT platform, and a larger range of features to help improve and manage backup and archive workflows. These updates also come complete with the much desired: Tape encryption, Autoloader support and FlashBack tools.

- **FlashBack**

FlashBack is an innovative way of being able to preview the files that are being written to the tape; enriching users' search and browse experience.

FlashBack for VAULT makes it easier for users to preview archived footage and find the exact film and clips they're looking for with minimal effort - saving time and money.

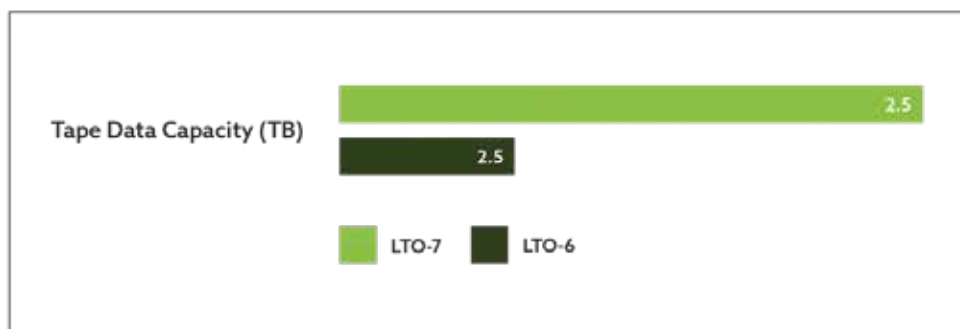
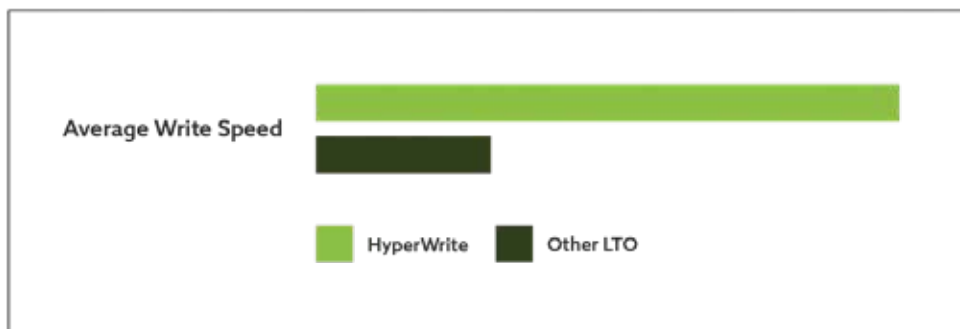
When media is on the tape, we cannot preview files straight from the tape (especially when the tape is not in the drive), so we take a small clip from the file and generate a thumbnail preview of various points throughout.

- **HyperWrite**

GB Labs developed the HyperWrite technology to significantly reduce the time it takes to write to tape, while extending the life of your LTO tape and drive.

Typical LTO systems pause after each file is written without optimisation. This means that typical LTO systems can take all day to finish a single job.

By using HyperWrite, GB Labs crushes long write times by writing at native LTO speeds of up to 360MB/s even with small files. By intelligently optimising how we write to tape, there is a massive reduction in the wear to the LTO tape itself as well as the drive.



- **Replication**

Designed to create near-line, or online, backups of your data. Replication is used to transfer files between GB Labs systems and other storage systems. All replications are performed using Smart Sync, which means that files are only sent when they need to be. Files can be checksummed for extra security to ensure that files are transferred correctly.

- **Active Directory**

If you have an Active Directory (AD) server on your network, you can enable the system to authenticate against the users on the AD server, and use that authentication with AFP, SMB and HTTP.

- **Tape Catalog**

VAULT stores all activity and extensive amounts of metadata within 1 master file that is kept on the unit. This file can be backed up easily to client or serv-

ers manually or through automatic scheduling. The Tape Catalog can also be shared between multiple VAULT units, either on or off-site so as to provide a single, universal catalog.

- **Multiple Sources**

VAULT is able to use multiple, simultaneous network locations as a source for data archiving.

5. File System

XFS is a 64-bit, high-performance, journaling file system used on all GB Labs storage platforms. XFS is particularly proficient at parallel I/O due to its design based on allocation groups. This enables extreme scalability of the I/O threads, file system bandwidth, and file system sizes when spanning multiple storage devices.

XFS ensures data consistency by performing metadata journaling and supporting write barriers. Capacity allocation is performed through extents with data structures stored in B+ trees, improving the overall file system performance, especially when handling large files. Delayed allocation helps in preventing file system fragmentation, while online defragmentation is also supported.

As a feature unique to CORE OS XFS, I/O bandwidth can be pre-allocated for a guaranteed rate, that is suitable for many real-time applications.

6. API and third-party integration

There is a complete API for the VAULT product range, which is also readily available to provide powerful integration with other servers running management services, such as; MAM and DAM software.



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