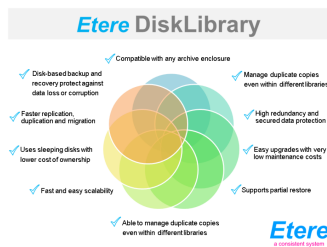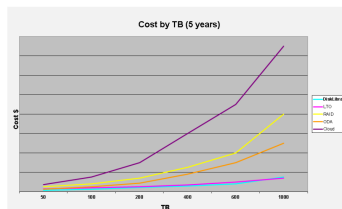# ETERE DISKLIBRARY

Etere DiskLibrary is a next-generation software solution that manages archive based on sleeping disks. It is a cost-efficient alternative to LTO and ODA libraries. It allows to mix any archive enclosure as well as different disk technologies.
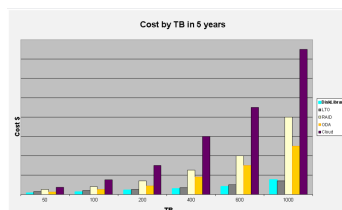

(Better results)

(Etere DiskLibrary)

(Graph of Cost by TB)

(Bar Chart of costs)

Etere DiskLibrary is a disk-based archive solution that bridges the gap between performance and cost-efficiency. It is a cost-efficient alternative to Linear Tape-Open (LTO) tapes and ODA. It features greater flexibility and interoperability as it allows the user to use any archive enclosure instead of a dedicated type. For long-term benefits, Etere DiskLibrary provides easy maintenance and upgrades. The ultra fast retrieval time of Etere DiskLibrary fits better in Newsroom application and MAM, where data needs to be retrieved as fast as it is possible. The easily expandable and small footprint fits in every system.

## Ultra-dense Storage with Greater Flexibility

Etere DiskLibrary uses sleeping disks which enable significant power savings when not in use. The average life span of the disks is also enhanced. With current technology, it costs lesser than LTO for capacity up to 1 PB. Recognizing that data retention and long-term archive are important elements of a broadcasting lifecycle, Etere DiskLibrary is designed to offer greater flexibility and security at a lower cost. Etere DiskLibrary allows unlimited I/O while LTO access is limited by the number of files and linear access. Etere DiskLibrary is also easier to maintain and upgrade.

♦Very low setup costs
♦Very low maintenance costs
♦Smaller footprint compared to LTO and ODA
♦Low power consumption compared to LTO and ODA
♦Extreme density of up to 1.3 PB hard drives using just 10U of rack space
♦Price advantage against LTO with capacity up to 1 PB
♦Unlimited bandwidth
♦Easy to upgrade, mix of different generations and hardware in the same system
♦JBODS and MAID integrated
♦JBODS and MAID enclosures are inexpensive and interchangeable
♦Disk backup provides greater reliability, faster data retrieval and faster write speed
♦Archive based on sleeping disks, this extends Hard Drive lifespan to more than 5 years
♦Centralized database of archival records
♦FAST !! Less than 2 secs to access any data and access multiple data at any point of time

Hybrid Disk and Tape for Long-term Storage Solution

Etere DiskLibrary is a versatile solution that works well on its own or as part of a hybrid disk and tape solution, thus empowering organisations with the flexibility to adapt the most suitable solution based on the functional requirements of the data to be archived. Picking an archive solution that meets the functional requirements of the archived data will not only ensure regulatory compliance, lower costs, and mitigate risks but will also meet operational goals and achieve long-term viability.
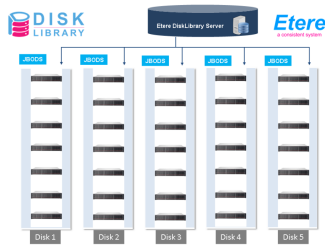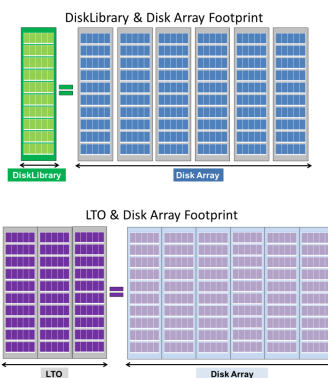
ETERE DISKLIBRARY

	ETERE DiskLibrary	Alto	Tape LTO-5	Tape LTO-7	RAID System	Cloud Glacier	Cloud S3
Cold Data Access Speed (ms)	YES	No	No	No	Yes	No	No
Stored Data Lifetime-100 years or more	YES	Yes	No	No	No	NA	NA
Ultra Low Electricity Consumption	YES	Yes	No	No	No	NA	NA
Very Low Housing Costs	YES	Yes	No	No	No	NA	NA
Very Low Maintenance	YES	Yes	No	No	No	NA	NA
100% Ownership Costs	YES	Yes	No	No	No	No	No

Key Features

♦All-in-one software-based solution that works with a simple PC setup
♦Users are able to use any archive enclosure and mix disks of any size
♦Users are able to mix hardware from different vendors
♦Fast and powerful performance with Windows SQL database integration
♦Can be configured with JBODS and MAID for high performance, fast restores and large capacity for a smaller energy consumption and footprint
♦Fast data recovery and restoration when compared to tapes
♦Easy upgrades with very low maintenance costs
♦Able to cluster multiple disk archives to create a geographically distributed archive
♦Off-premise deployments, configurations and upgrades at distributed locations
♦Provides both logical and physical redundancies that protects your data
♦Archive based on sleeping disks with low energy consumption and longer disk life
♦Customisable settings for user rights
♦Faster replication, migration and integration
♦Distributed architecture ensures a fault-resilient and fault-tolerant performance
♦Highly scaleable solution that can be upgraded easily and quickly
♦Supports partial restore, manage restorations according to specific requirements
♦Able to handle large data capacity with no limitations, suitable for media enterprises
♦SMPTE 2034 data format
♦Reads any disk from any computer, standard NTFS file system
♦Disk encryption to avoid unauthorized access

DiskLibrary & Disk Array Footprint

DiskLibrary / Disk Array

LTO & Disk Array Footprint

LTO / Disk Array

JBODS and MAID

JBODS

♦JBODS-derived from "just a box of disks"
♦Multiple hard disk drives which may be independent or combined into one or more logical volumes using a volume manager
♦Smaller footprint
♦Each drive can be accessed from the host PC as a separate drive
♦Mix different disk sizes in JBODS

MAID

♦MAID stands for Massive Array of Idle Disks
♦Large number of densely packaged disk drives
♦Only active drives are spinning
♦Reduces power consumption-up to 85% more efficient than traditional disk solutions
♦High performance and fast restores
♦Prolongs the life of the drives by more than 6 times
♦Suitable for Write Once Read Occasionally (WORO) application

Disaster Recovery and Data Replication

Etere DiskLibrary clusters multiple disk archives to create a geographically distributed archive that provides both logical and physical redundancies. Protection levels can be customised and media files can be accessed, restored and replicated quickly. Users are able to select the number of copies to be stored on different disks distributed across different locations. In the event of a disk failure or even a site-wide disaster, Etere DiskLibrary enables data recovery with minimal recovery time, thus ensuring the best data protection for all your digital assets.

ETERE DISKLIBRARY

Sample - Dell Storage - MD1280

Etere DiskLibrary is compatible with **Dell Storage MD1280 Dense Enclosure** which is an Ultra-dense server storage capacity at an affordable price per gigabyte. The MD1280 operates as a JBOD. Add storage capacity to your PowerEdge servers simply and efficiently to take advantage of the Dell's competitive price per gigabyte.

Storage
Drive performance and capacity:
3.5" NL-SAS 6Gb HDD (7.2K): 4TB, 6TB
3.5" NL-SAS 4kn 6Gb HDD (7.2k): 6TB
3.5" NL-SAS 512e 6Gb HDD (7.2K): 8TB

RAID Controllers
2 Enclosure Management Modules (EMM) provide redundant enclosure management capability

Scalability
Up to 672TB when using 84 x 8TB NL-SAS 3.5" HDDs

Maximum Usable Capacity
Up to 1.3PB when using 2 enclosures, maximum of 168 8TB HDDs

Connectivity
6GB SAS

Chassis
5U, 84 hot-pluggable 3.5" drive bays

Power
Wattage: 2800 AC only
Input voltage range: 200-240 VAC
Frequency range: 50/60 Hz

Management
Server dependent

Sample - Infortrend - JB 3060

Etere DiskLibrary is compatible with **Infortrend JB 3060**. Available in single or dual controller configurations, it features hot-swappable modular redundant 80 PLUS power supplies.

Host Ports
♦ Six 12GB/s SAS ports (3 per controller)

Drive Connectivity
♦ 12Gb/s SAS connectivity
♦ S.M.A.R.T. support
♦ Automatic bad-sector reassignment
♦ Dedicated bandwidth to each connected drive

Maximum Number of Drives
♦ 60 Per System

Rack Support
♦ 4U, 19-inch rackmount

Green Design
♦ 80 PLUS-certified power supplies delivering more than 80% energy efficiency
♦ Intelligent multi-level drive spin-down

Availability and Reliability
♦Redundant, hot-swappable hardware modules

PSU
♦Power supplies: Two 1200W
♦AC voltage: 100-127VAC/12.47A, 200-240VAC/7.08A with PFC (auto-switching)
♦Frequency: 47-63Hz

ETERE DISKLIBRARY

Sample - Hewlett Packard Enterprise - HPE D6020

Etere DiskLibrary is compatible with **Hewlett Packard HPE D6020 Disk Enclosure**. The D6020 Enclosure is designed for data-intensive environments and it is a storage enclosure for dense, cost-effective external storage expansion for massive data capacity applications. The zoned direct-attach capabilities of the D6020 Enclosure allows server administrators to build local storage on the fly according to their configuration requirements.

Features

The HPE D6020 Disk Enclosure with dual I/O modules provides a 12 Gb/s SAS unit that is designed with two pull-out disk drawers to support Large Form Factor (LFF) SAS, SAS midline drives or SSDs in just 5U of rack space for customers needing a dense storage option with a low acquisition cost. The simplicity of an in-rack storage solution reduces your expense and complexity from the storage architecture.

Build Local Storage on the Fly for BladeSystem Servers

The HPE D6020 Disk Enclosure with dual I/O modules uses the management software of the 6 Gb/s SAS BL Switch to group D6020 Enclosure units disk drives and assign them to individual blade servers. These drives now appear as local storage to that server. With the D6020 Enclosure models zoned direct-attach capabilities server administrators can build local storage on the fly according to their configuration requirements. Just add additional drives to the D6020 Enclosure and zone to a newly deployed blade server, or add capacity to the zone of an existing blade server configuration. There is no need for complex configuration or rewiring.

High-Performance 12 Gb/s SAS Connectivity to External Storage

The HPE D6020 Disk Enclosure with dual I/O modules delivers 12 Gb/s host connectivity enabling higher performance, eases configuration/deployment and broadens supported features of a D6020 Enclosure using HPE Smart Array P441, P841 or the P741m Controllers or HPE 6 Gb/s SAS BL Switches. With the D6020 Enclosure, applications and storage are installed in the same rack. Latency is reduced as data does not travel over large distances. Solid State Drive support with integrated "wear gauge" helps improves application performance and allows customers to reduce their operating costs by reducing foot prints and power consumption.

Sample - Supermicro - SuperChassis 826SE1C-R1K02JBOD

Etere DiskLibrary is compatible with **Supermicro: SuperChassis 826SE1C-R1K02JBOD**

Key Features

♦ Extreme High Density Storage Chassis support 24x (12 front + 12 middle) 3.5" SAS/SATA 12Gb/s Hot-Swap Bays
♦ Single Expander Backplane Boards support SAS/SATA HDDs with 12Gb/s throughput
♦ 4x Mini-SAS HD ports for Internal/External Cascading
♦ 1000W (1+1) Redundant High-efficiency Titanium Level power supplies with PMBus
♦ Optimize cooling with 5x 8cm Hot-Swap redundant fans
♦ JBOD Power Control Board with IPMI for remote monitor and power on-off; Internal Connection Cables Included

Form Factor

2U SAS3 Simply double JBOD storage enclosure
Height 3.5", **Width** 17.2", **Depth** 34"
Net Weight 19.5 kg, **Gross Weight** 37.19 kg
Packaging (W x H x L) 29.09" x 11.96" x 51"
Drive Bays: 24 x 3.5" hot-swap drive bay

Backplane

12-port 2U Simply-Double SAS3 12Gbps single-expander backplane, support up to 8x 3.5-inch SAS3/SATA3 HDD and 4x NVMe/SAS3/SATA3 storage devices
System Monitoring: IPM
Certification: Titanium Certified

Sample - JetStor - SAS 780JH

Etere DiskLibrary is compatible with **JetStor SAS 780JH**, an ultra high density 19-inch 4U rackmount JBOD unit that features optional dual controllers, the SAS2 (6Gb/s) or SAS3 (12Gb/s) interface that are designed to fit in with environments that require a highly reliable and continuous data growth. It is also a versatile Disk Expansion system, that is designed for high capacity and scalability storage in IT demands.

Tech Specs
Drive Capacity
SATA 3.5" :1TB (7,200 rpm), 2TB (7,200 rpm), 3TB (7,200 rpm), 4TB (7,200 rpm), 6TB (7,200 rpm), 8TB (7,200 rpm) and 10TB (7,200 rpm) - 780JH single controller only
SAS 3.5": 1TB (7,200 rpm), 2TB (7,200 rpm), 3TB (7,200 rpm), 4TB (7,200 rpm), 6TB (7,200 rpm), 8TB (7,200 rpm) and 10TB (7,200 rpm)
SAS 2.5": 450GB (10,000 rpm), 600GB (10,000 rpm), 900GB (10,000 rpm), 1.2TB (10,000 rpm) and 1.8TB (10,000 rpm)
SSD 2.5": 480GB, 600GB, 800GB, 1TB and 2TB - 780JHD dual controller requires MUX adapters
S.M.A.R.T., NCQ and OOB Staggered Spin-up capable drives supported.

Per enclosure maximum capacity of 800TB when using 10TB SAS or SATA drives.
Technical Specifications
JBOD Controller: 780JH: Single / 780JHD: Dual
Host / Expansion Ports: Four, 6Gb/s or 12Gb/s SAS (SFF-8088) per controller
Disk Interface: SAS2/SAS3/SATA3 (6Gb/s or 12Gb/s)
Drives (unit): 80 hot-swap, 2.5" / 3.5"
Enclosure
Tray lock: Yes
Disk status indicators: Access / Fail LED
Single Backplane: SAS / SATA Cableless
PS/Fan modules: 650W x 4 (w/PFC)
Turbo Fans: Twelve
Power: AC 90V-254V Full Range, 50Hz-60Hz
Amps: 10A for 115VAC, 5A for 230VAC
Default Slide Rail: Post to Post 800mm~1090mm (32"~42")
Optional Slide Rail: Post to Post 750mm~900mm (29"~35")
Environmental
Relative Humidity: 10% to 80% non-condensing (operating), 10% to 90% non-condensing (non-operating)
Operating Temperature: 50°F - 104°F (10°C ~ 40°C)
Physical Dimensions(W x D x H): 19" wide, 37" deep, 7" (4U) high
Weight (Without drives): 100 lb. / 45.5 kg.
Compatibility
Operating Systems: Windows Server 2008/ 2012/ 2012 R2/ 2016, Win 8/Win 10, VMWare ESX Server, vSphere, XenServer, Oracle/Solaris, Linux, MAC OS X, and others to be announced
Safety / EMI: RoHS, CE, FCC, BSMI, UL, cUL, WEEE

ETERE DISKLIBRARY

Sample - HGST - 4U60G2 Storage Platform

HGST 4U60G2 Storage Platform
Scalable Capacity
♦ Up to 720TB in 4U of rack-height. Scalable to 2.88PB

Reliable
♦ 5-year limited warranty on the drives and enclosure

Quicker Integration
♦ Pre-qualified and pre-tested Ultrastar HDD or SSD modules

Enterprise Grade
♦ Hot-swappable components, SCSI Enclosure Services, Microsoft® certified

Expandable
♦ Host connectivity: 4 x HD Mini-SAS ports per I/O module. Supports up to 8 hosts

Key Features
♦ Up to 60 integrated Ultrastar® drive modules
-drive module capacity includes 12TB, 10TB, 8TB and 6TB
♦ Hybrid capability: can be configured with up to twelve (12) 800GB SSDs to create separate performance tiers within the platform
♦ Available with SAS drives for HA applications or with SATA drives for cost-optimized applications
♦ Available with 512e or 4Kn sector size (by part number)
♦ Supports up to 4 storage enclosures for daisy-chaining
♦ Host connectivity: 4 x HD Mini-SAS ports per IO Module
♦ Fully compliant with 12Gb/s SAS 3 interconnect
♦ Hot-swappable components: two power supplies with integrated fans, drive modules, and IO Modules
♦ Cable Management Arm (CMA) eliminates tangled cables during servicing of hotswappable CRUs
♦ SCSI Enclosure Services (SES-3)
♦ Microsoft certified for Windows Server 2012, 2012R2, 2016
♦ 5-year limited warranty

Configurations
♦ 720TB using Ultrastar 12TB helium HDDs
♦ 600TB using Ultrastar 10TB helium HDDs
♦ 480TB using Ultrastar 8TB helium HDDs
♦ 360TB using Ultrastar 6TB helium HDDs
♦ 240TB using Ultrastar 4TB helium HDDs
♦ 192TB using Ultrastar 8TB helium HDDs
♦ 144TB using Ultrastar 6TB helium HDDs
♦ 96TB using Ultrastar 4TB helium HDDs

Applications/Environments
♦ Storage appliances
♦ Security/Surveillance
♦ High Performance Computing (HPC)

ETERE DISKLIBRARY

(Top View)

90x 3.5" Hot-swap
SAS3/SATA3 Drive Bays
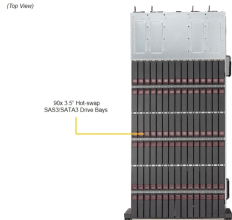
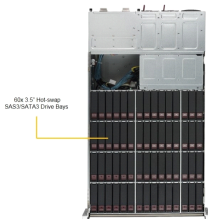## Sample - Falcon 9000JB DiskLibrary Platform

Etere DiskLibrary is compatible with **Falcon 9000JB DiskLibrary Platform**. StoneFly's Falcon series high-capacity systems are ideal for high volume environments. With increasing demand for longer archive time, better video resolution and higher frame rates, each high-capacity Falcon solution ensures maximized data retention and scalable performance.

Key Features

♦ Up to 720TB Capacities in 4U Rackmount
♦ Compatible with Leading Industry Archive Software
♦ Open Hardware Platform
♦ Redundant High Efficiency 80-PLUS® Platinum Certified Power Supply
♦ Supports Optional Cloud Connection for Video Archiving

Technical Specifications

♦ Form Factor: 19″ 4U Rackmount with Quick-Release Rapid Mounting Rails
♦ Drive Trays: 90 x 3.5″/2.5″ 12Gb/s hot-swap SAS drive bay top Loading
♦ Backplane: 12Gb SAS
♦ Cooling: 5 x 80mm heavy duty Fans with PWM Cooling Fans speed control
♦ Power: Redundant 1000 Watt 95% High Efficiency 80-PLUS® Platinum Digital Power Supply
♦ Controls: Power On/Off and System Reset Button
♦ Indicators: Power Status LED, Hard Drive Activity LED, 2x Network Activity LEDs, Fan Fail/System Overheat LED, Unit Identification (UID) LED
♦ Operating Temperature: 10°C ~ 35°C (50°F ~ 95°F)
♦ Operating Relative Humidity: 8% ~ 90% Non-Condensing
♦ Non-Operating Temperature: -40°C ~ 60°C (-40°F ~ 140°F)
♦ Non-Operating Relative Humidity: 5% ~ 95% Non-Condensing
♦ Dimensions: 7″(H)x 17.2″(W) x 30.2″(D)

60x 3.5" Hot-swap
SAS3/SATA3 Drive Bays

Sample - Falcon 6000JB Disk Library Platform

Etere DiskLibrary is compatible with **Falcon 6000JB Disk Library Platform**. StoneFly's Falcon series high-capacity systems are ideal for high volume environments. With increasing demand for longer archive time, better video resolution and higher frame rates, each high-capacity Falcon solution ensures maximized data retention and scalable performance.

Key Features

♦ Up to 480TB Capacities in 4U Rackmount
♦ Compatible with Leading Industry Archive Software
♦ Open Hardware Platform
♦ Redundant High Efficiency 80-PLUS® Platinum Certified Power Supply
♦ Supports Optional Cloud Connection for Video Archiving

Technical Specifications

♦ Form Factor: 19″ 4U Rackmount with Quick-Release Rapid Mounting Rails
♦ Drive Trays: 60 x 3.5″/2.5″ 12Gb/s hot-swap SAS drive bay top Loading
♦ Backplane: 12Gb SAS
♦ Cooling: 5 x 80mm heavy duty Fans with PWM Cooling Fans speed control
♦ Power: Redundant 1000 Watt, 95% High Efficiency 80PLUS® Platinum Digital Power Supply
♦ Controls: Power On/Off and System Reset Button
♦ Indicators: Power Status LED, Hard Drive Activity LED, 2x Network Activity LEDs, Fan Fail/System Overheat LED, Unit Identification (UID) LED
♦ Operating Temperature: 10°C ~ 35°C (50°F ~ 95°F)
♦ Operating Relative Humidity: 8% ~ 90% Non-Condensing
♦ Non-Operating Temperature: -40°C ~ 60°C (-40°F ~ 140°F)
♦ Non-Operating Relative Humidity: 5% ~ 95% Non-Condensing
♦ Dimensions: 7″(H)x 17.2″(W) x 30.2″(D)