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Boston Igloo 4U-20T-Stor

OPEN-E JOVIANDSS
CERTIFIED CERTIFIED
HIGH AVAILABILITY
READY

The Boston Igloo 4U-20T-Stor is a high capacity unified file and block storage system that provides both Network Attached Storage (NAS) and iSCSI, Storage Area Network (SAN) functionality with an added level of SSD I/O acceleration.

Delivered as a high availability cluster configuration to keep services online in the event of failure, the solution comprises of a single 4U rackmount system consisting of two individual nodes which have access to a shared storage array supporting up to 24 x 3.5"/2.5" SAS HDD's and SSD's.

Additionally, leveraging Open-E's JovianDSS, the Boston Igloo 4U-20T-Stor provides superior performance, security, and scalability at a fraction of the cost of alternative storage offerings. Advanced features of this software defined storage solution include High Availability with Active-Passive or Active-Active redundancy, Volume Snapshotting, Automatic Failover and SSD read and write caching via a ZFS filesystem.

The versatility of Open-E's JovianDSS also allows administrators to build a combined NAS system with iSCSI SAN functionality while enabling the connection of multiple Network Interface Controllers, including Gigabit Ethernet, 10 Gigabit Ethernet or even 40 Gigabit Ethernet.

This shared SAS storage, dual node platform comes populated as standard with 20 x 2TB Seagate SAS 12Gbit/s 7.2K RPM near line HDD's for data storage and, 2 x 400GB high endurance SSD's and a 400GB mid endurance SSD for write and read caching respectively – delivering excellent performance as a hybrid pool. The result is storage density and the high performance IO requirements for demanding applications without breaking the bank.

Configured by default as a RAID 10, the default storage configuration delivers 20TB of useable capacity for your shared storage deployment, meaning the Boston Igloo 4U-20T-Stor provides the perfect platform for a high density high performance storage solution. with 1600W high efficiency redundant power supplies, 12Gb/s SAS dual expander, 24 x hot swap drive bays and numerous expansion slots, the Boston Igloo 4U-20T-Stor remains the perfect combination of storage and features.

By using SSDs as a dedicated pool of cache to deliver hot data, this software solution lowers your total cost of ownership (TCO) by helping to avoid the cost of IT cycles for application tuning or sourcing more processor, memory, or enterprise HDDs to suit growing application needs.

Key features include:

- 20TB NAS and iSCSI SDS SAN featuring Open-E JovianDSS
- Delivered as a high availability cluster as standard
- Quad RJ45 – Base-T – 1/10Gbit/s Ethernet ports as standard
- 20 x 2TB Enterprise SAS Disks – 20TB useable in mirrored drives
- 2 x 400GB Enterprise SSD and 1 x 400GB Enterprise SSD's for pool cache acceleration
- Open-E JovianDSS license and premium support for 3 years

> Guaranteed data protection
> Enhanced storage performance
> Flexible scalability
> Simplified management
> High Availability
> Thin provisioning
> Tiered RAM and SSD Cache
> Unlimited number of snapshots and clones
> Data compression and in-line deduplication

Boston Igloo 4U-20T-Stor

Guaranteed data protection

Data is your most important resource. This is why the Open-E JovianDSS-based Boston Igloo 4U-20T-Stor includes several mechanisms for data protection. Automatic and scheduled multi-layer data integrity checks ensure data consistency, while unlimited snapshots and clones make it is easy to implement a disaster protection strategy and to instantly roll back to a previous point-in-time. At the same time, a scheduled self-healing mechanism fixes malfunctions and automatically restores full data redundancy in the system. Even when a disk fails, the software-based spare function offers one disk to several ZFS vdevs, saving you money on extra hardware without compromising data safety.

Enhanced storage performance

Nowadays, enterprise storage has to provide big capacity while also being fast, affordable and include reliable support. This is exactly what Boston Igloo 4U-20T-Stor has to offer. Open-E JovianDSS-based Boston Igloo 4U-20T-Stor is an innovative hybrid storage system fusing the capacity of HDDs with the performance of SSDs in a single solution that offers high performance while lowering cost. Additionally, by leveraging capacity optimization technologies and advanced tiered SSD and RAM caching, Boston Igloo 4U-20T-Stor provides an overall efficiency boost and increased cache performance. On top of that, powerful tuning tools allow the system to optimize on I/O heavy databases or high throughput video editing equally well and predefined profiles save annoying testing time.

Flexible scalability

The Boston Igloo 4U-20T-Stor will let you experience unlimited flexibility and minimize unappreciated downtime. Open-E JovianDSS uses a 128-bit file system that includes unlimited snapshots for easy backup, unlimited clones for easy duplication, unlimited capacity with volume sizes up to one Zetabyte, as well as unlimited amount of disks which can be increased on the fly without effort by using thin provisioning. There are no limitations and you may easily control the total cost of ownership and expand your storage infrastructure as data grows.

Simplified management

Managing Open-E JovianDSS and its extensive features is easy and intuitive compared to many competing solutions on the market. The WebGUI provides a quick overview and management of all storage resources and features. After extensive analyses of storage usage and user interaction the clicks per step in each functionality have been reduced to a minimum, i.e. in creating iSCSI targets or when expanding the size of your storage. vThis way, you are able to quickly and easily manage Boston Igloo 4U-20T-Stor with Open-E JovianDSS, barely involving actions of a storage administrator.

Active-active failover resource switching time test results

Total number of targets	Switching time [seconds]	Performance test results [passed/failed]
2	20	passed
10	24	passed
20	26	passed

High Availability solution functionality test results

Functionality test name	Functionality test results [passed/failed]
Automatic Failover triggering after reboot test	passed
Automatic Failover triggering after power-off	passed
Automatic Failover triggering after I/O test	passed

High Availability

The Boston Igloo 4U-20T-Stor is a perfect option if you are looking to deploy a High Availability cluster setup with NFS or iSCSI for storing business- critical data. With the Open-E JovianDSS High Availability Cluster Feature Pack the Boston Igloo 4U-20T-Stor ensures reliability and redundancy through failover in case of a failure. By using the cluster management software, all features related to the cluster setup can be quickly accessed and maintained - everything is in one place and guarantees ease of use for the storage administrator. Moreover, Open-E JovianDSS includes an independent Virtual IP (VIP) addresses feature. With this, VIPs can be used by multiple servers and flexibly switched at all times. When a hardware failure is detected, VIPs are automatically moved from the primary to the secondary node without the client servers noticing a timeout.

Thin provisioning

Boston Igloo 4U-20T-Stor uses thin provisioning to improve your storage utilization by allocating just the exact amount of server space at the time it is required. You'll eliminate the cost of unused storage space and never again have to pre-allocate storage up front and buy too much hardware. In Boston Igloo 4U-20T-Stor there is no need for evaluating storage requirements and take the risk of rebuilding the entire system when it runs out of space. With this system it is easy to manage storage capacity and set notifications when physical space shrinks. This is a highly scalable solution – just add physical disks as your data grows.

Tiered RAM and SSD Cache

Open-E JovianDSS-based Boston Igloo 4U-20T-Stor works as a tiered storage environment - dramatically speeding up access to frequently accessed files. It uses a caching algorithm to cache "often used" and "recently used" data separately, and provides the best performance for your storage by tiering hot data between RAM and SDD Cache. In Boston Igloo 4U-20T-Stor data is always saved on HDDs and only Hot Data is stored in RAM and SSD to ensure data safety and increase performance.
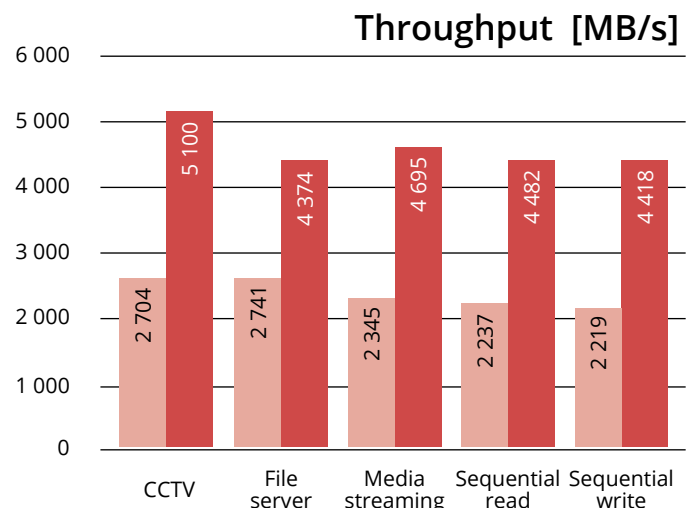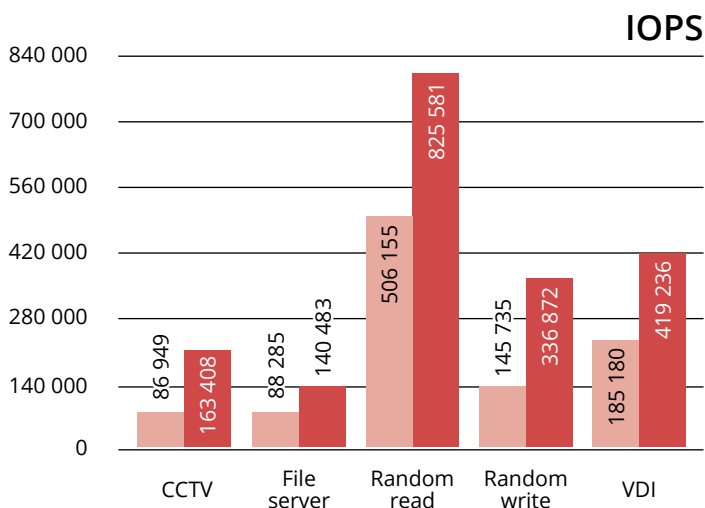
Unlimited number of snapshots and clones

Every Open-E JovianDSS-based Boston Igloo 4U-20T-Stor allows an unlimited number of snapshots and clones – greatly simplifying back-ups, replications and data recreation in case of accidental deletes or viruses.

Snapshots are read-only points-in-time and allow for easy roll-back. They are a must-have option for effective disaster recovery scenarios and in Boston Igloo 4U-20T-Stor you may schedule snapshots for months, weeks, hours or even minutes. Whereas, a clone is a writable copy of a snapshot and allows to easily duplicate virtual machines and scale out for virtual networks instantly and without duplicating data.

Data compression and in-line deduplication

Boston Igloo 4U-20T-Stor offers data compression tor minimizing storage capacity usage and ultimately boosting performance and taking less space on your storage. Find resource-friendly compression protocols (lz4) with low system resource utilization at medium compression rates, but also protocols that are able to achieve very high rates for archiving or backup (as gzip-9). The in-line deduplication feature in Boston Igloo 4U-20T-Stor removes redundant data and minimizes storage capacity usage. The software checks each block for redundancy in the system and if it finds a match the new block isn't written; instead, a shortcut leading to the original block is created. Such a system can reach a deduplication ratio of 3:1 or more, which means that if you place 3TB of data it will only use 1TB of physical disc space. This feature is especially interesting for highly repetitive data, i.e. in VDI, server virtualization or backup, where much higher deduplication ratios can be reached.

IOPS

	CCTV	File server	Random read	Random write	VDI
Active-Passive	86 949	88 285	506 155	145 735	185 180
Active-Active	163 408	140 483	825 581	336 872	419 236

Throughput [MB/s]

	CCTV	File server	Media streaming	Sequential read	Sequential write
Active-Passive	2 704	2 741	2 345	2 237	2 219
Active-Active	5 100	4 374	4 695	4 482	4 418

■ Active-Passive   ■ Active-Active

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Hardware information

	Default configuration	Options
CPU	2x Intel® Xeon® E5-2630 v4 Processors	-
RAM	128GB DDR-4 Reg ECC 2133MHz	-
RAW capacity	40TB	Up to 210TB, more with additional disk shelves
Read cache	400GB	1.6TB
Write log	400GB	-
Hard drive interface	SAS3 12Gbit/s	-
Network interface	4 x 10GbE Base-T	40GbE QSFP
Form factor	4U	-
Weight	46kg	-
Power	1.600W Redundant Power Supplies Titanium Level (96%)	-
Fan	4x 8cm and 4x 4cm PWM cooling fans Redundant cooling	-
Power consumption	Idle: 450W (Estimated) Load: 715W (Estimated)	-

Boston Limited

Boston Limited has been providing first-to-market technology to a diverse client base since 1992. In 1994, Boston became the first company to bring Silicon Valley-based Super Micro Computer, Inc. (NASDQ: SMCI) to Europe, reselling their high-performance, energy efficient motherboards, chassis and server systems. Since then Boston has become one of Supermicro's most respected technology partners and a world renowned systems integrator, designing our own award-winning range of server, storage and workstation solutions.

Partner Contact

Boston Limited
Unit 5, Curo Park
Frogmore, St Albans,
Hertfordshire, AL2 2DD
United Kingdom

E-mail: sales@boston.co.uk
Website: www.boston.co.uk
Phone: +44 (1727) 876 100

About Open-E

Open-E is a well-established developer of IP-based storage management software. Open-E JovianDSS and Open-E DSS V7 are robust, award-winning enterprise storage applications which offer excellent compatibility with industry standards, and are the easiest to use and manage. Additionally, they are some of the most stable solutions on the market and undisputed price/performance leaders. Open-E accounts for over 27,000 installations world-wide and has received numerous industry awards and recognition. Thanks to our reputation, experience and business reliability, Open-E has become the technology partner of choice for industry-leading IT companies.

For further information about Open-E, its products and partners, visit http://www.open-e.com/

About the Open-E JovianDSS Server Certification

Open-E JovianDSS delivers software-defined storage which results in a wide variety of different hardware requirements such as performance range, capacity capability, and connectivity. To ensure compatibility and robust storage environments, all selected partners offer storage systems which are tested, benchmarked and certified by Open-E. This way, customers are able to use solutions that require exceptional security and redundancy, without compromising performance.