



EUROstor ES-8700CLB Cluster-in-a-box



The ES-8700CLB is a 4U 24-Bay Cluster-in-a-box solution offering high-availability in an active-active configuration and supports 12Gbs SAS. It is Open-E JovianDSS High Availability Ready, and comes with two Server Boards (one per node) that are each supporting dual Intel® Xeon® processors in the E5-2600 v3 and v4 product family. Overall cluster performance is significantly increased as both nodes process I/Os and provide simultaneous and balanced access to the logical devices. The ES-8700CLB with Open-E JovianDSS eliminates single point of failures and is optimized for mission-critical, enterprise-level storage applications.

Key features of the system:

- High-availability storage server optimized for mission-critical, enterprise-level storage applications
- Fully redundant, fault-tolerant system supporting hot swappable compute nodes and storage drives

- Two compute nodes, Active-Active configuration, each supporting two Intel® Xeon® Processors E5-2600 v3 and v4 product family
- 10 GbE, PCIe NTB or SAS link between nodes for communication and failover
- Built-in LSI SAS3x48R SAS/SATA expander per node
- Intel® Trusted Platform Module (TPM) header to support Intel® Trusted Execution Technology (TXT)
- 6 PCIe 3.0 slots

Capacity of the ES-8700CLB can be increased with a 4U 24-Bay SAS 12G JBOD with optional interposer compatible trays, housing single/dual expander (field upgradable) modules, four fans and redundant power supply. With its short-depth design the JBOD provides full redundancy and high availability for critical, performance driven storage demand.

- › Guaranteed data protection
- › Enhanced storage performance
- › Flexible scalability
- › Simplified management
- › Data integrity check
- › Tiered RAM and SSD Cache
- › Unlimited number of snapshots and clones
- › Data compression and in-line deduplication

Guaranteed data protection

Data is your most important resource. This is why the Open-E JovianDSS-based ES-8700CLB 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 RAID arrays, saving you money on extra hardware without compromising data safety.



ES-8700CLB

Enhanced storage performance

Nowadays, enterprise storage has to provide big capacity while also being fast, affordable and include reliable support. This is exactly what ES-8700CLB has to offer. Open-E JovianDSS-based ES-8700CLB 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, ES-8700CLB 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.



24-bay JBOD

Flexible scalability

The ES-8700CLB 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. This way, you are able to quickly and easily manage ES-8700CLB with Open-E JovianDSS, barely involving actions of a storage administrator.

Data integrity check

The ES-8700CLB storage system effectively detects data corruption, as even minor integrity violations could cause loss of data. ES-8700CLB ensures reliability by check-summing individual blocks of data and once faulty blocks have been detected they are automatically rewritten. If the same error is found several times the data blocks are moved to different parts of the HDD. Each read/write is checked automatically plus you can schedule to perform checks on not accessed blocks. All actions are done in atomic writes to ensure consistency of your data and to reduce data loss, even during power cuts.

Tiered RAM and SSD Cache

The Open-E JovianDSS-based ES-8700CLB 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 ES-8700CLB data is always saved on HDDs and only Hot Data is stored in RAM and SSD to ensure data safety and increase performance.



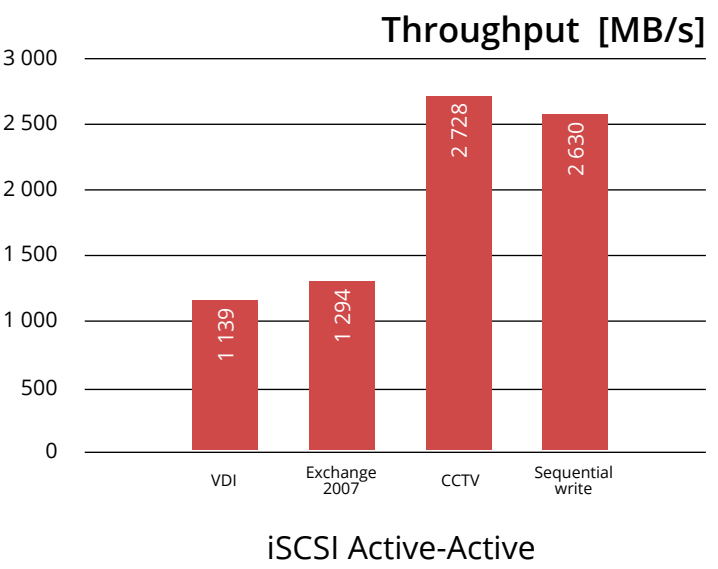
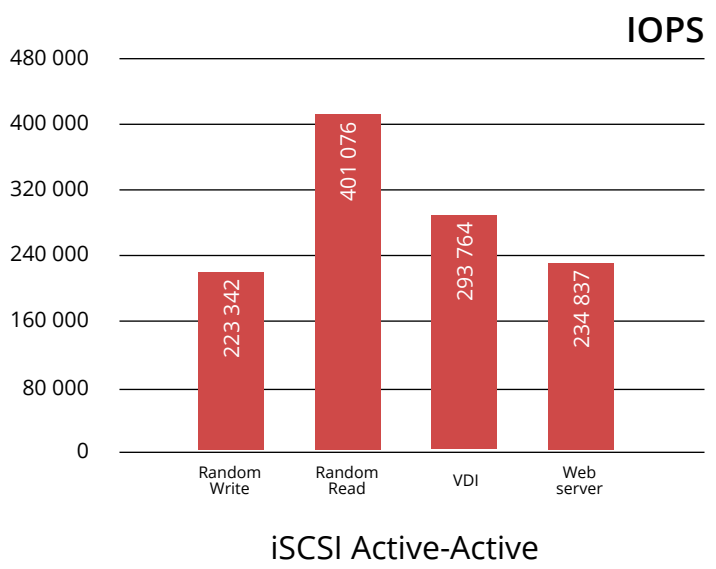
The tests with the ES-8700CLB were done in Active-Passive mode with one customer client. With an additional server you can gain 40% higher results due to more processors with more cores and threads. The tests were conducted with fio benchmark. The system includes ATTO 40GbE cards. It did not contain SSDs for Read and Write cache, but performance of the server may increase with high performance SSDs.

Unlimited number of snapshots and clones

Every Open-E JovianDSS-based ES-8700CLB 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 ES-8700CLB 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

ES-8700CLB offers data compression for 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 ES-8700CLB 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.



EUROstor ES-8700CLB

Hardware information

| | Default configuration | Options |
|----------------------|--|--------------------------------------|
| CPU | Intel® Xeon® Processor E5-2650 v4 3.60GHz | Each Intel® Xeon® E5-26xx |
| RAM | 128GB DDR4 2133 MHz | 1,024GB per compute node |
| RAW capacity | 154TB | Up to 240TB per JBOD |
| Hard drive interface | 12Gb HBA SAS | More / other FC HBAs |
| Network interface | Intel® Ethernet Connection I217-LM Intel® Ethernet Controller I210-AT Intel® 82599ES 10 Gigabit Ethernet Controller ATTO FastFrame NQ42 QSFP+ Optical Interface | More / other 1/10/25/40/100Gbit NICs |
| Form factor | 4U | - |
| Weight | 47KG | - |
| Power | 1200W 1+1 redundant power supply 80+ | - |
| Fan | 4 x 60x56mm hot swap fans | - |



EUROstor

EUROstor has been a manufacturer of storage systems for more than 12 years. Originally manufacturing RAID systems, today the main part of the product portfolio are server based systems, acting as flexible storage servers, tailor-made for the customers' needs.

Solutions range from small file servers and CCTV storage to high available storage clusters, scale-out clusters and cloud solutions.

EUROstor is located in Filderstadt near Stuttgart (Germany) sells to professional end users all over Europe, SMBs, universities and research institutes and data centers.

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/>

Partner Contact

EUROstor
Hornbergstrasse 39
70794 Filderstadt
Germany

E-mail: sales@EUROstor.com
Website: www.EUROstor.com
Phone: +49 711/707091-70
Fax: +49 711/707091-60

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.