MAGUAY
KNOWLEDGE AS A SERVICE

Maguay PowerStor
HA Metro Cluster

Maguay is one of the leading Romanian computer system builders with notebooks, PCs, servers, and storage marketed under its own brand. Maguay is also a leading integrator of complex IT projects - able to implement and deliver hardware and software turnkey solutions by ensuring the quality of service and support.

Their latest Maguay PowerStor non-shared data storage solution is an Intel-based server with **Intel® Xeon® CPU** that enables building storage appliances that are flexible and can be tailor-made according to the most demanding customer requirements.

The ZFS- and Linux-based Open-E JovianDSS data storage software and Maguay hardware certified solution provides:

- Fault tolerance (no downtime)
- 100GbE connectivity
- Low-latency
- Data integrity
- The highest protection
- An unlimited number of snapshots and clones

On top of that, there are the advanced **Intel® Security features (like Intel® PFR , Intel® TME, and Intel TPM)** that are the built-in advantages of this solution.

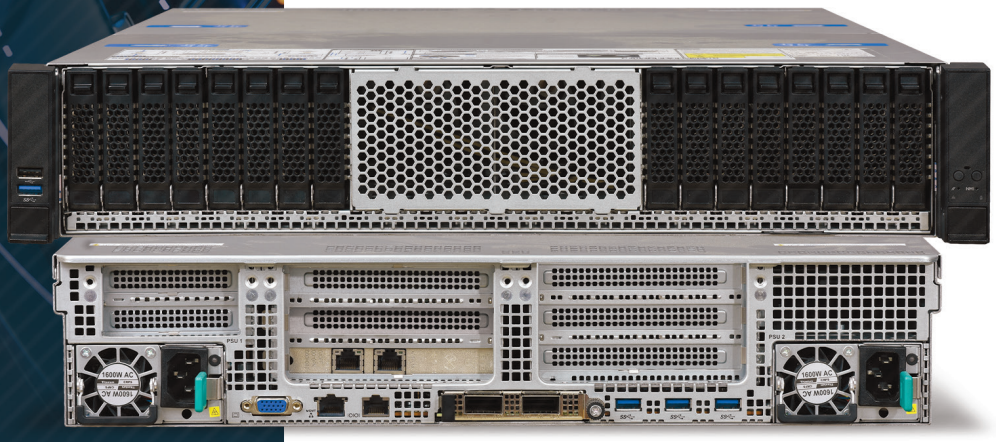
Additionally, Maguay PowerStor system has been certified with **ATTO FastFrame N312 Dual-Port QSFP28 100GbE Network Card Adapter**, which provides not only an outstanding bandwidth but also enables **RDMA (Remote Direct Memory Access)** support in Open-E JovianDSS.

Maguay is Open-E's long-term Gold Partner which is proof of the company's in-depth knowledge of the Open--E software. Due to that, Maguay offers an Open-E certified solution together with reliable technical support, from the initial installation to daily maintenance.

This ultra-fast solution by Maguay and Open-E can be seamlessly used for video streaming and video surveillance storage (even videos of the highest resolution). It can be also utilized as a high-performance NAS appliance with **NVIDIA® DGX™ systems**, designed especially for accelerating AI initiatives.

Recommended for:

Education | **Health Research** | **Space Research** | **Automotive** | **Energy** | **Oil & Gas** | **Governmental Cloud purposes**



With the Open-E certified Maguay PowerStor you can build:

- Reliable private CloudBox
- High-performing I/O storage
- Fast storage for Big Data ZFS appliances
- Storage for HPC and AI

open-e JovianDSS

Ultra-fast and multi-purpose Maguay PowerStor

Guaranteed data protection

Data is your most important resource. This is why the Open-E JovianDSS-based Maguay PowerStor includes several mechanisms for data protection. **Automatic and scheduled multi-layer data integrity checks** ensure data consistency, while **unlimited snapshots and clones** make it 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.

Enhanced storage performance

Nowadays, enterprise storage has to provide **big capacity** while also being fast, affordable, and including reliable support. This is exactly what Maguay PowerStor has to offer. Open-E JovianDSS-based Maguay PowerStor HA Metro Cluster is an **innovative data storage system** fusing the capacity of large and fast NVMe SSDs with ultra-fast RAM read and write caching to create flexible all flash-based solutions that offer high performance while lowering the cost. 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.

Optimal resource utilization

Maguay PowerStor fully utilizes your storage resources thanks to many high-end features included in Open-E JovianDSS. These features are especially crucial when deploying virtual environments. With **deduplication and compression**, you are able to virtually increase your storage size and use **thin provisioning to easily grow physical storage capacity without downtime**. More efficient use of disk space also allows for longer disk retention periods. Tiered caching will allow reaching high-performance values from all disks which can be managed and monitored in Maguay PowerStor. This server fully leverages hybrid storage, combining **high performance and high capacity at an affordable price**.

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 Maguay PowerStor with Open-E JovianDSS, barely involving the actions of a storage administrator**.

Maguay brand meant from the very beginning next-generation computing technology, built without any compromise. And so is the Maguay PowerStor HA Metro Cluster powered by Open-E JovianDSS.
Buy the solution now!

High Availability solution functionality test results

Functionality test name	Functionality test results [passed/failed]
Manual Failover	**Passed**
Automatic Failover triggering after network failure	**Passed**
Automatic Failover triggering after shutdown test	**Passed**
Automatic Failover triggering after reboot test	**Passed**
Automatic Failover triggering after power-off	**Passed**
Automatic Failover triggering after I/O test	**Passed**

Active-active failover resource switching time test results

Total number of targets	Switching time [seconds]	Performance test results [passed/failed]
2	17	**Passed**
10	19	**Passed**
20	18	**Passed**

High Performance and High Availability for the Most Demanding Storage Environments

High Availability

The Maguay PowerStor 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 Maguay PowerStor 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) address 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

Thin provisioning and an unlimited number of snapshots

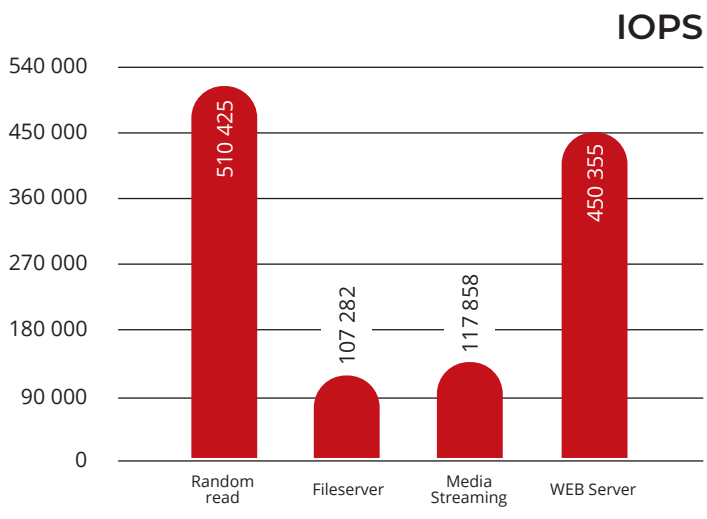
Maguay PowerStor uses **thin provisioning to improve your storage utilization** by allocating an exact amount of server space at the required time. You'll eliminate the cost of unused storage space and never again have to pre-allocate storage up front and buy too much hardware. There is no need for evaluating storage requirements and taking the risk of rebuilding the entire system when it runs out of space. Also, every Maguay PowerStor allows an **unlimited number of snapshots – greatly simplifying backups, replications, and data recreation** in case of accidental deletes or viruses. Snapshots are a must-have option for effective disaster recovery scenarios. Schedule snapshots for months, weeks, hours, or even minutes. With Maguay PowerStor it is easy to manage storage capacity and set notifications when physical space shrinks.

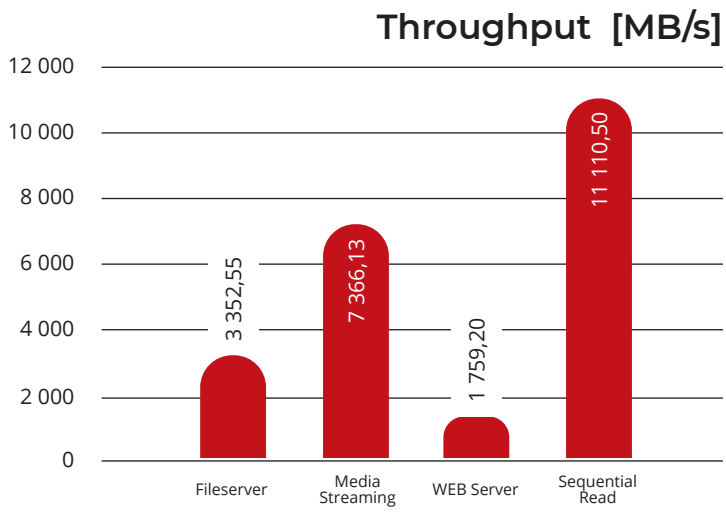
Data integrity check

The Maguay PowerStor storage system effectively detects data corruption, as even minor integrity violations could cause loss of data. It **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 drives. 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.

Data compression and in-line deduplication

Maguay PowerStor offers data compression to minimize storage capacity usage, ultimately boost performance, and take 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 Maguay PowerStor 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.





Hardware details

	Default configuration	Options
Motherboard	Intel® Server Board M50CYP2SBSTD	-
CPU	2x Intel® Xeon® Gold 6334 CPU 3.60GHz	Intel® Xeon® Gold 6354
RAM	16x 16GB Samsung M393A2K40DB3-CWE	32GB, 64GB, 128GB DDR4-3200 RDIMM modules (max 32)
Storage raw capacity	16TB	Up to 368.64TB with 24 pcs of 15.36TB SSDs
Data drives	12x 1920GB Micron 7400 PRO SSD NVMe (1920GB, 2.5'', M.2)	2.5" M.2 following capacities: 3.84TB, 7.68TB, 15.36TB
Read cache	Automatic Failover triggering after I/O test	-
Write log	-	-
Hard drive interface	-	-
Network interface	1x Intel® PRO/1000 PT Dual Port Server Adapter 1x Intel® Ethernet Network Adapter E810-CQDA2 for OCP 3.0	Intel Ethernet Controller X710 for 10GbE / ATTO FastFrame N312 Dual-Port QSFP28
Form factor	2U	-

About Maguay

The most important objective of Maguay is to strengthen the company's position as the main Romanian system builder of servers and storage solutions, as well as an IT systems integrator and various IT solutions.

Maguay develops its own IT products, software platforms, and complete integrated solutions for its customers, with a TCO report (total cost of ownership) / competitive quality. The expertise gained in time is based on the integration of the most current and viable technologies in the most complex and varied projects. The company has built a strong reputation among customers and partners, having satisfied customers with which it has long-term partnerships. We provide software-defined storage solution (SDI) based on standardized hardware (Maguay servers) and high-performance software.

Maguay Computers SRL
23rd Bratului Street
020565, Bucharest
Romania

office@maguay.ro
Phone: +40 21 210 38 09
www.maguay.ro

About Open-E

Open-E, founded in 1998, is a well-established developer of IP-based storage management software. Its flagship product Open-E JovianDSS is a robust, award-winning storage application which offers excellent compatibility with industry standards, and is the easiest to use and manage. Additionally, it is of the most stable solutions on the market and undisputed price performance leader.

Thanks to its reputation, experience and business reliability, Open-E has become the technology partner of choice for industry-leading IT companies. Open-E accounts for over 37,000 installations world-wide and has received numerous industry awards and recognition, also with its product Open-E DSS V7. For further information about Open-E, its products and partners, visit 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.