

**ABACUS**

Open-E JovianDSS HA2026-HC Cluster-in-a-Box

Certified by Open-E, the **Open-E JovianDSS HA2026-HC Cluster-in-a-Box** solution is built specifically to deliver High-Availability data storage for mission-critical file services (SMB/NFS), virtualization, and high-performance database workloads. Additionally, it serves as an ultra-reliable, high-throughput solution for enterprise backup repositories and disaster recovery across hybrid on-premises and cloud environments.

The **Open-E JovianDSS HA2026-HC Cluster-in-a-Box** system is built upon a strong collaboration between Abacus, Open-E, and AIC. Abacus leverages its extensive technical expertise to design purpose-built, high-performance deployment topologies:

Performance-Optimized All-Flash Chassis: The system utilizes the cutting-edge AIC HA2026-HC "Cluster-in-a-Box" server enclosure. Built for high-speed, hot-swappable 2.5" dual-port PCIe Gen5 NVMe SSDs, this 2U dual-node form factor prioritizes extreme throughput and ultra-low latency to comfortably sustain modern enterprise workloads.

Enterprise Software-Defined Storage: Pre-loaded with Open-E JovianDSS (a Linux- and 128-bit ZFS-based storage operating system), the system provides native features such as automated data self-healing, protection against silent data corruption, copy-on-write transactional writes, and absolute data integrity.

True High Availability: Featuring redundant, active-active hot-swappable dual-node server modules, the system completely eliminates single points of failure to guarantee continuous business operation.



**High
Performance
Storage**



**Mission-critical
File Services**



**High-Performance
Database
Workloads**



**Enterprise
Level
Virtualization**



**Hybrid
On-Premises and
Cloud Environments**



open-e 
JovianDSS

Zero-Downtime Reliability with ZFS-Powered High-Availability Clustering

Support for High-Speed, Next-Generation Ethernet Interfaces

To satisfy the massive bandwidth demands of modern networks, the Open-E JovianDSS HA2026-HC Cluster-in-a-Box fully supports certified high-speed Ethernet interfaces with speeds up to 100 GbE per port. This high-throughput capability ensures that the storage cluster can effortlessly feed data-heavy applications, high-performance database workloads, and virtualized environments without encountering network bottlenecks. By integrating ultra-fast Ethernet, Abacus ensures that your storage infrastructure is not only fully optimized for today's high-speed data centers but is also future-proofed for the evolving bandwidth requirements of tomorrow.

True Active-Active Node Clustering

Ensure continuous operational availability and eliminate single points of failure across your entire storage environment. Unlike traditional single-chassis storage arrays that rely on shared backplanes or passive controllers, the Open-E JovianDSS HA2026-HC Cluster-in-a-Box architecture leverages two completely independent, redundant server nodes within a unified "Cluster-in-a-Box" configuration. Each node is equipped with its own dedicated processing power, system memory, redundant power supplies, and network interfaces. This active-active clustering mechanism ensures that if one node experiences a hardware fault or undergoes scheduled maintenance, a seamless, automatic failover of the virtual host occurs behind the scenes. Your active virtual machines, database engines, and network clients remain completely unaffected, maintaining continuous data availability and productivity.

Flexible Installation, Expansion, and Modernization

Investing in the Open-E JovianDSS HA2026-HC Cluster-in-a-Box protects your budget and prevents restrictive vendor lock-in. Because Open-E JovianDSS is an open, software-defined storage platform, the entire architecture can be dynamically scaled, upgraded, or migrated as your business requirements evolve. Organizations have the freedom to upgrade specific system components—such as expanding system RAM, integrating next-generation Network Interface Cards (NICs), swapping out Host Bus Adapters (HBAs), upgrading processors, or populating the chassis with denser storage media—without being forced to replace the entire array or adhere to rigid hardware lifecycles. This flexibility provides Abacus clients with exceptional cost control, protection of capital investments, and a highly customizable growth path.

Unified SAN and NAS Platform

Consolidate fragmented storage silos into a single, high-performance infrastructure. The Open-E JovianDSS HA2026-HC Cluster-in-a-Box seamlessly bridges block-level storage (SAN) and file-level storage (NAS) protocols under a single, unified management plane. By natively supporting block-level access through iSCSI, Fibre Channel, and NVMe-oF, alongside file-level access via SMB and NFS protocols, this platform allows organizations to eliminate the administrative overhead of maintaining separate hardware arrays. This unified architecture provides a highly versatile foundation that can simultaneously run demanding virtualization environments, high-transaction databases, corporate file shares, Linux environments, and heavy backup repositories.



Maximize your business's data storage protection and reliability with **Open-E JovianDSS HA2026-HC Cluster-in-a-Box**. Contact us today to learn more and enhance your data storage capabilities!
Explore 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	Passed
Automatic Failover triggering after reboot	Passed
Automatic Failover triggering after power-off	Passed

Active-active failover resource switching time test results

Total number of targets	Switching time [seconds]	Performance test results [passed/failed]
2	25	Passed
10	30	Passed
20	36	Passed

Unlock Next-Gen NVMe Speeds with Smart Data Storage Efficiency



Data Compression and In-Line Deduplication

Maximize cost efficiency, available storage capacity, and the lifespan of your high-performance NVMe storage pool without incurring any additional licensing costs. The Open-E JovianDSS HA2026-HC Cluster-in-a-Box system, features fully integrated, native data compression and deduplication mechanisms executed in real-time (in-line). By operating directly on-the-fly, before data is physically written to the media, these features eliminate redundant blocks of information and optimize the structure of stored data packets. Consequently, the system not only drastically reduces physical disk space utilization but also significantly decreases write amplification on high-speed NVMe SSDs. This translates directly to a substantially extended operating lifecycle and trouble-free operation of your flash memory in the most demanding, 24/7 business environments. What is particularly important from a budget optimization

Advanced ZFS-Based Data

Mitigate the risks of silent data corruption, sudden power failures, and multi-drive failure scenarios. At the core of the Open-E JovianDSS HA2026-HC Cluster-in-a-Box is the enterprise-grade, 128-bit ZFS file system managed by Open-E JovianDSS. Utilizing a transactional Copy-on-Write architecture, the system guarantees atomic write operations, ensuring that files are never partially written or corrupted during unexpected outages. Native mathematical checksums are constantly calculated for both data and metadata blocks, allowing the system to perform continuous, automated background scrubs and execute self-healing repairs immediately if a redundant copy is available. This robust data consistency has been rigorously validated in real-world testing environments using advanced diagnostic storage performance tools and file integrity checks.

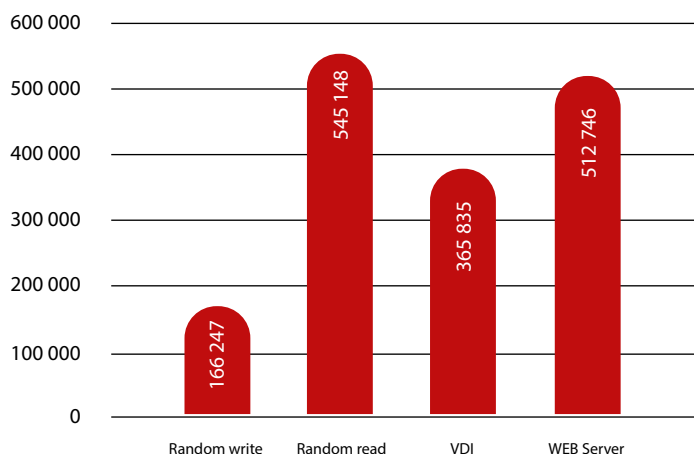
Native ZFS Encryption

Maximize the security, operational flexibility, and cost-efficiency of your enterprise storage environment without being bound to vendor-locked hardware. Native ZFS encryption added in the latest Open-E JovianDSS Up33 version delivers granular, software-defined protection at the dataset and volume (zvol) level using industry-standard AES-256-GCM encryption. By executing compression prior to encryption, the system preserves full data reduction benefits, such as LZ4 compression, without compromising your security posture. Furthermore, because ZFS encryption is metadata-aware, administrators can perform critical background tasks like scrubs, resilvers, and snapshots as “No-Key” operations, maintaining data integrity and redundancy without ever loading decryption keys or exposing plaintext. By moving cryptographic protection to the file system layer, Open-E JovianDSS allows you to secure sensitive corporate data on high-performance commodity drives while eliminating the need to use specialized Self-Encrypting Drives.

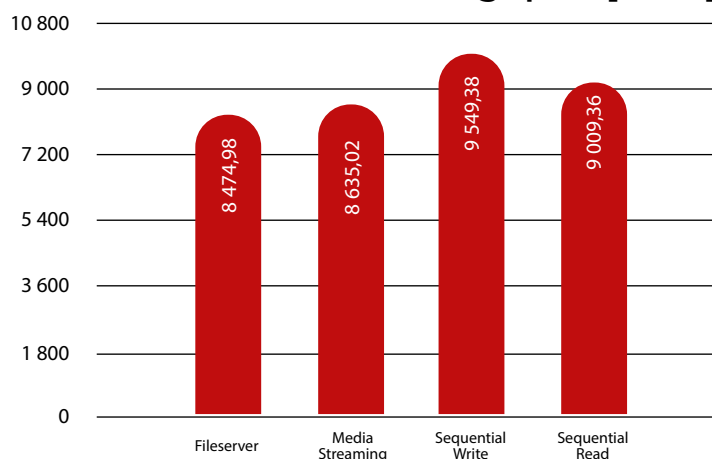
Unlimited Snapshots and Clones

Ensure robust disaster recovery with the Open-E JovianDSS HA2026-HC Cluster-in-a-Box unlimited Snapshots and Clones. Integrated with Open-E JovianDSS, the system gives you the power to instantly restore data after a deletion, corruption, or ransomware attack. You get full control to customize read-only snapshot schedules and closely monitor storage metrics, including setting alerts for low physical space. These features guarantee optimal performance and efficiency without limits on how many snapshots or clones you create.

IOPS



Throughput [MB/s]



*The test were conducted in a configuration of 2 pools (1 per node) in a 2-way Mirror Setup, with each pool containing 2 disks.

Hardware details

Default Settings	
Chassis	AIC HA2026-HC
Motherboard	AIC Server Board Hercules (rev C01)
CPU	AMD EPYC 9174F 16x 4.10GHz (16C/32T, boost 4.40GHz)
RAM	12x SK Hynix HMCG78AHBRA477N DDR5 RDIMM ECC 6400MHz (16GB) = 192GB
Storage raw capacity	2x KIOXIA CM7-R 1.92TB U.2 NVMe Gen5. KCMYXRUGIT92
Boot Medium	2x Kingston KC3000 512GB M.2 NVMe Gen3. SKC3000S512G
Network interface	Broadcom BCM57416 NetXtreme-E, 2x10GbE 10GBASE-T, onboard Broadcom BCM57508 NetXtreme-E, 2x100GbE QSFP56 (node interconnect) Mellanox ConnectX-5 Ex MCX516A-CDAT, 2x100GbE QSFP28
Form factor	2U

About Abacus Electric, s.r.o.

Abacus Electric is the largest Czech server manufacturer with ISO9001 certification and over a twenty five-year tradition on the market. In 2025, more than 3,000 servers were produced, and Abacus Electric has long remained in the top three server suppliers in the Czech market. Abacus Electric supplies a wide range of server and storage devices for web hosting, server and desktop virtualization, private and public cloud, AI, HPC, GPU, data storage, and other applications. Thanks to partnerships with key manufacturers (AMD, Intel, Broadcom, Areca, Asus, Kingston, Kioxia, NVIDIA, Open-E, Samsung, Supermicro, WDC), the range of servers and storage solutions is exceptional in its variety and features.

Abacus Electric, s.r.o.

Planá 2
37001 Ceske Budejovice
Czech Republic

@ servers@abacus.cz

+420 (387) 001450

https://www.abacus.cz/

About Open-E

Founded in 1998, Open-E is a well-established developer of IP-based storage management software. Our flagship product, Open-E JovianDSS, is a robust, comprehensive, and award-winning data storage application known for its excellent compatibility, ease of use, and stability. It's an undisputed leader in price-performance with over 41,000 installations worldwide. Building on this expertise, we've introduced Open-E JovianVHR, a software-defined data storage solution specifically designed to act as the immutable data storage target for a Hardened Repository from Veeam. With a reputation for business reliability and a commitment to innovation, Open-E has become the technology partner of choice for industry-leading IT companies.

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.