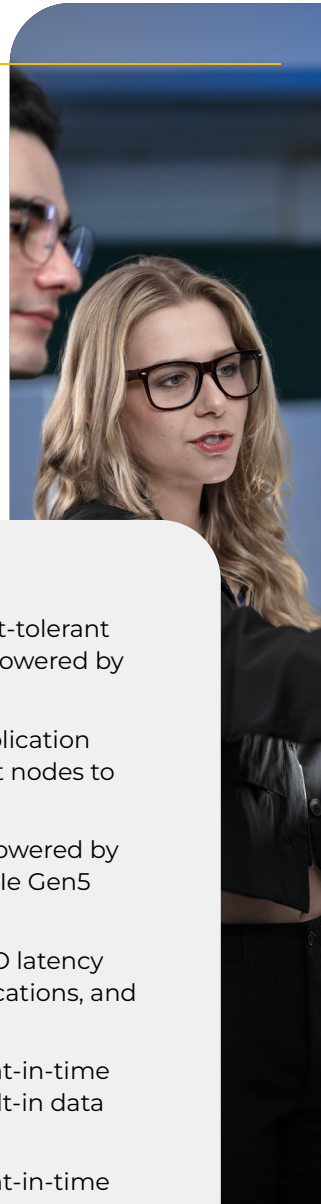


Open-E, Share & Sipafer S.p.A.

HIGH-PERFORMANCE HYPERCONVERGED METRO CLUSTER SOLUTION FOR CONTINUOUS WHOLESALE LOGISTICS AND BUSINESS OPERATIONS



Executive Summary:

- **Platform Architecture:** Implementation of a fully fault-tolerant hyperconverged OpenStor JovianDSS Metro Cluster powered by Open-E JovianDSS Data Storage Software
- **Business Continuity:** Real-time synchronous data replication and automatic failover mechanisms across redundant nodes to eliminate downtime and prevent data loss
- **Hardware Foundation:** Enterprise-grade 1U servers powered by dual AMD EPYC™ processors and high-endurance PCIe Gen5 NVMe SSDs
- **I/O Optimization:** Drastic reduction in data storage I/O latency for critical ERP management systems, logistical applications, and high-frequency APIs.
- **Data Resilience:** Enhanced cyber protection and point-in-time recovery via data storage-level ZFS snapshots and built-in data integrity features.
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Requirements and Objectives

Sipafer S.p.A. is a well-established Italian leader in the wholesale distribution of hardware, construction materials, plumbing supplies, and industrial technical products. Today, it stands as a key benchmark for retailers, construction firms, and trade professionals, thanks to its extensive product catalog, modern logistics, and a commercial network capable of delivering fast, precise, and uninterrupted service.

The company operates in an increasingly competitive and dynamic market characterized by a growing number of SKUs, customers demanding rapid and reliable deliveries, and an **aggressive push toward the digitalization of commercial and logistical processes**. In this environment, seamless data management and the ability to guarantee zero-downtime services play a strategic role in maintaining high-quality offerings and preserving market competitiveness.

To support this operational model, Sipafer requires a robust, secure, and high-performing IT infrastructure capable of ensuring business continuity even during hardware failures or peak workloads. Since daily business operations depend heavily on ERP management systems, **logistics software, and digital services must remain continuously available and lightning-fast**, even a few minutes of downtime could trigger shipping delays, halted sales, or customer service disruptions.

At the same time, **growing exposure to cyber threats** makes it indispensable to safeguard information assets using advanced technologies, real-time data replication, snapshots, and solutions that guarantee resilience and rapid recovery in the event of an attack. Added to this is the crucial requirement for an easily scalable platform that can adapt fluidly to company growth while remaining simple to manage, thereby reducing operational complexity and optimizing internal IT resources.





Project Objectives

Sipafer aimed to modernize its infrastructure by building a high-performance, resilient environment for its mission-critical corporate applications. Their primary objective was to **maximize system speed** and data storage efficiency, drastically reducing response times for users and accelerating high-frequency backend data streams.

To maintain this ecosystem, Sipaffer decided to implement **real-time, zero-impact infrastructure monitoring capable of instantly detecting anomalies**. Ultimately, the company wanted to ensure absolute operational continuity and data integrity. By deploying a High-Availability data storage cluster and leveraging ZFS snapshots, they intended to **protect against hardware failures and cyberattacks**, enable rapid point-in-time recovery, and achieve a robust disaster recovery posture with minimal downtime.

From Concept To Custom Solution

To meet Sipaffer's strict performance and security needs, Open-E Platinum Partner Share Distribuzione designed and delivered a **custom hyperconverged solution running on redundant enterprise hardware**. At the heart of Share's hardware implementation was the flagship Open-E software - Open-E JovianDSS.

By combining Share's expert integration with Open-E's ZFS-based synchronous replication, this **OpenStor Metro Cluster** setup provided Sipaffer with top-tier infrastructure resilience, ultra-low latency, and absolute data protection against any critical disruption.

To deliver extensive operational safety, the system implemented by Share utilizes the advanced capabilities of Open-E JovianDSS software. It enables **synchronous automation**, ensuring data is written to both nodes simultaneously for instant, disruption-free failover if a single node fails. Additionally, the underlying ZFS architecture guarantees data integrity through automatic self-healing. Ultimately, **Share provided the high-safety solution, powered by Open-E's robust software engine**.

Developed in Partnership – Built for Long-Term Use

Share's team built the high-performance environment from the ground up, starting with a secure, low-latency network design. They then **deployed Open-E JovianDSS onto the Metro Cluster nodes**, initializing high-speed ZFS storage pools on PCIe Gen5 NVMe arrays to maximize throughput. To ensure business continuity, Share utilized the software's advanced features to configure **synchronous data replication and automated failover groups**.

Before going live, Share conducted rigorous disaster recovery testing, including simulating full node blackouts and power losses. Powered by Open-E JovianDSS, **the system performed flawlessly, executing automated failovers with zero data corruption**. Finally, Share executed a seamless live migration of all virtual machines and datasets with zero disruption to workflows. Through this seamless collaboration, Share successfully used Open-E's powerful software to create a resilient, hyperconverged enterprise solution.

OpenStor

open-e 
JovianDSS

Key Features of the Solution

- ✓ **Continuous High Availability:** Combining synchronous data replication between nodes with automated failover setup ensures critical uptime. If a primary node drops offline, the secondary node seamlessly assumes the active workload with zero disruption.
- ✓ **Substantial Performance Gains:** Transitioning to pure enterprise-class PCIe Gen5 NVMe data storage and high-frequency AMD EPYC™ processing power cut data access delays. Even during severe peak workloads, the cluster maintains flat latencies and consistent response times.
- ✓ **Proactive Environmental Control:** Advanced centralized dashboards, detailed performance metrics, and automated alerting systems track pool health, volume structure, and latency, catching technical anomalies before they impact operations.
- ✓ **Optimized Storage Pipelines:** Deploying dedicated high-speed networking links maximizes storage throughput, speeding up large logistical data transfers and business-critical synchronization flows.

Architecture, Operations & Licensing

Architecture at a Glance

- **Roles:** Hyperconverged fault-tolerant Metro Cluster architecture optimized for enterprise business continuity.
- **Data Path:** Direct synchronous reads and writes between cluster nodes via dedicated replication paths, entirely bypassing standard network bottlenecks.
- **Additional Protection:** ZFS snapshots, native block-level checksums, and metadata self-healing support production data layers.

Hardware Advantages for Performance and Parallelism

- **Compute Foundation:** Dedicated 1U GIGABYTE servers outfitted with dual AMD EPYC™ 9004/9005 series processors in an AMD EPYC™ 9274F configuration (24 cores / 48 threads running at 3.4 GHz per processor)
- **Memory and Power Resilience:** Equipped with 48 high-speed DDR5 ECC REG 5600 MHz memory modules and dual-redundant 1600W Titanium-efficiency power supplies for maximum parallel computing workloads.
- **Data Storage Arrays:** High-performance enterprise PCIe Gen5 NVMe SSDs utilizing Kioxia CD8P-R 3.84 TB drives (read-intensive) paired with Kioxia CM7-V 3.2 TB drives (mixed-use, 3 DWPD endurance rating) for low-latency pool response.
- **Cluster Interconnect:** Node synchronization is powered by dedicated 25 GbE SFP28 links reserved for real-time replication, backed by Intel X710-DA2 10 GbE SFP+ adapters for network service distribution and 1 GbE interfaces for out-of-band management.
- **Operational Simplicity:** Centralized software management coupled with proactive hardware alerting reduces day-to-day administrative burdens on the IT department while sharpening asset governance.
- **Dynamic Scalability:** On-the-fly expansion allows the addition of compute nodes or storage capacity dynamically without service suspension, avoiding architectural overhaul expenses or downtime.

Locations, Licensing & Support

- 2x Open-E JovianDSS Base OS Licenses
- 2 x 48 TB Storage Extension
- Open-E JovianDSS Advanced Metro Cluster Feature Pack
- Premium Support for 3 years

About Sipaffer S.p.A.

Sipaffer S.p.A. is a prominent wholesale distributor specializing in hardware, industrial technical products, plumbing supplies, and building materials. Operating modern logistical hubs and a rapid commercial network, Sipaffer acts as a vital B2B supply chain partner for retail establishments, infrastructure firms, and trade specialists nationwide.

About Share Distribuzione SRL

Share Distribuzione S.r.l., founded in 1989, is a specialized Italian distributor and provider of enterprise server and storage solutions. Share Distribuzione's core business centers on the distribution and production of high-performance network servers, advanced storage architectures (including DAS, SAN, and NAS), and storage software. Through key strategic acquisitions and official partnerships with leading global brands such as Supermicro and Open-E, the company delivers a comprehensive portfolio of enterprise hardware and components. Additionally, Share Distribuzione designs high-availability solutions featuring automatic failover under its proprietary brand, Openstor, all backed by dedicated on-site technical assistance.

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. For more information about Open-E, its products, and partners, please visit: **www.open-e.com**.

For more information, visit:

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