



N-TEC rapidNAS JSS424



With the all-new rapidNAS JSS424, N-TEC introduces their latest product generation of highly available ZFS-based unified storage solutions. This high performance storage server delivers file and block storage in one system to cover all requirements in Network Attached Storage (NAS), iSCSI and Fibre Channel SAN environments.

Running in a two-node high availability cluster configuration, the rapidNAS JSS424 provides business continuity for mission-critical enterprise environments. By using the latest Intel® XEON® processor technology, highest performance is guaranteed. Both nodes provide simultaneous and balanced access to the logical devices. In the case of a failure on one node and a failover is initiated, the other node takes over all client connections, services, devices and processes. To minimize storage and network latency, rapidNAS JSS424 comes with the most modern NVMe and SSD flash technology as well as high speed storage and LAN interfaces with up to 50 Gbps bandwidth.

Each of the nodes provides integrated storage to the cluster, to eliminate single points of failure and

to minimize costs for additional external shelves. For this, the rapidNAS JSS424 offers drive bays configurations for up to 36 x 3.5"/2.5" drives or 24x 3.5"/2.5" plus 24 x 2.5" only drives of SAS/SATA HDDs and SSDs, by only using 4U of rack space per node.

Additionally there is a broad range of interface and expansion options to tailor the system to changing requirements and for protecting the customer's investment. N-TEC offers several support and installation options for the rapidNAS JSS424 up to 24x7 on site service.

The key features:

- High-availability storage server for mission critical, enterprise-level storage applications
- Active-Active configurations
- Low latency optimized
- Integrated 12 Gb/s SAS storage per node
- Highly scalable and expandable

- › Guaranteed data protection
- › Enhanced storage performance
- › Flexible scalability
- › Optimized for Data Centers
- › High Availability
- › Data integrity check
- › Data compression and in-line deduplication
- › Thin provisioning and unlimited number of Snapshots

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Guaranteed data protection

Data is your most important resource. This is why the Open-E JovianDSS-based rapidNAS JSS424 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.

Enhanced storage performance

Nowadays, enterprise storage has to provide big capacity while also being fast, affordable and include reliable support. This is exactly what rapidNAS JSS424 has to offer. Open-E JovianDSS-based rapidNAS JSS424 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, rapidNAS JSS424 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.

Active-active failover resource switching time test results

Total number of targets	Switching time [seconds]	Performance test results [passed/failed]
2	23	passed
10	27	passed
20	29	passed

High Availability

The rapidNAS JSS424 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 rapidNAS JSS424 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.

Flexible scalability

The rapidNAS JSS424 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 Zeta-byte, 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.

Optimized for Data Centers

rapidNAS JSS424 is optimized for the modern data center and ready for compute-intensive applications that involve big data, intensive virtualization workloads and higher-density server configurations. The server allows administrators an intuitive management of storage infrastructures and maintaining continuous operations during updates or refreshes. By choosing rapidNAS JSS424 you benefit from flexible CPU power, networks running 1, 10 or 40 Gb Ethernet, as well as knowledge and experience of N-TEC in rapidNAS JSS424 and developing servers specialized for datacenter.

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

Data integrity check

The rapidNAS JSS424 storage system effectively detects data corruption, as even minor integrity violations could cause loss of data. rapidNAS JSS424 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.

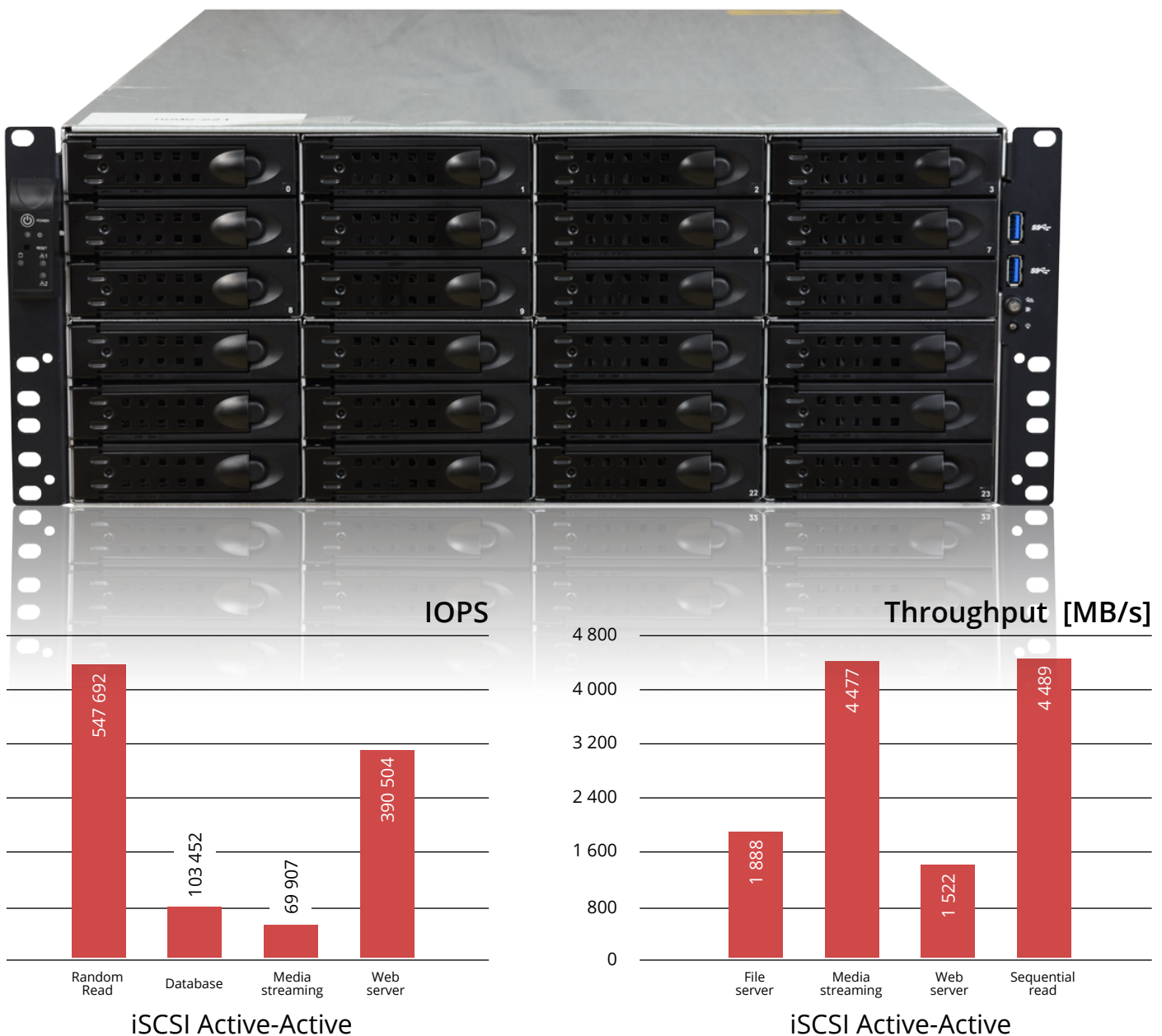
HA Storage Server – business continuity for mission-critical environments

Data compression and in-line deduplication

The rapidNAS JSS424 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 rapidNAS JSS424 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.

Thin provisioning and unlimited number of snapshots

The rapidNAS JSS424 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 rapidNAS JSS424 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 rapidNAS JSS424 it is easy to manage storage capacity and set notifications when physical space shrinks.



Hardware details

	Default configuration	Options
CPU	Intel® Xeon® Processor E5-1650 v4 3.60GHz	Single and Dual Socket Intel® Xeon® Processor E5-16xx and E5-26xx
RAM	128GB	Up to 1TB
HDDs	4TB HGST HUS726040AL5210 400GB SANDISK Optimus SAS SSD	2,5" SAS SSD: up to 3.2TB 2,5" SAS HDD 10 and 15 krpm, up to 1.8TB 3,5" NL SAS HDD up to 10TB
Raw capacity	80TB	360TB internal JSS424, up to 2.6TB with external JBODs
Hard drive interface	SAS	SAS 12Gb/s, FC 16Gb/s
Network interface	2 x 1GbE, 2 x 10GbE, 2 x 25GbE	40, 50, 100GbE, 16 Gb/s Fibre Channel
Form factor	4U	2U with 8 or 24 bay, 8U with 48 or 72 bay
Power	2 x 1200W	-



N-TEC

N-TEC GmbH is located near Munich in Germany, and is specialized in developing economic, universally applicable and highly scalable storage solutions. The close cooperation with industry-leading manufacturers enables N-TEC to keep their products always on the current state of the art. Working together with Open-E since almost 15 years, N-TEC got a lot of experience in creating tailor-made Open-E based solutions for their customers from various industrial sectors such as healthcare, digital media and broadcast, aerospace and automotive, science and education as well as CCTV. Their practical expertise in combination with the broad knowledge in storage and server technology clearly distinguishes N-TEC from its competitors.

By its own R&D department N-TEC is always able to work on customer-specific requirements and fulfill them promptly. Aside from a wide range of powerful and highly available NAS, iSCSI and Fibre Channel storage solutions, N-TEC also offers audit-compliant WORM archiving solutions. BTO server systems, rentable server and storage as well as disk and tape backup solutions backup are completing the product program of N-TEC.

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/>

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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.