

## IT Service Provider With Own Data Center Renews Its Storage Infrastructure For A Long-Term Strategy With Open-E JovianDSS



IT-Beratung HALBE, which operates its own data center, wanted to realign its strategy by replacing the conventional storage and virtualization environment based on DSS V7 and VMware ESXi with a new infrastructure. Taking into account a general cost minimization, the goal was to create a future-proof starting position so that competitive services in the IT and hosting area can be still offered to the customers.

### Technical and business goals

- The basis of the planning was to provide **low latencies and high IOPS**.
- **High availability** and load balancing were also relevant.
- An important part of the project was the **license costs reduction** by switching the hypervisor to Microsoft Hyper-V.



To achieve the goals, IT-Beratung HALBE asked for help from the **Boston Deutschland** – as they had done in the past on several occasions when similar projects were carried out. Boston Deutschland proposed a customized all-flash High Availability storage solution based on the Open-E JovianDSS system with two nodes and a shared JBOD as a storage extension, with a new **virtualization** host as a package.

### Our technology partners:



## Hardware details

### Configuration per cluster node

|                            |  |
|----------------------------|--|
| <b>Server:</b>             | 1HE Supermicro SYS-1029P-WTRT                                |
| <b>Chassis:</b>            | SuperChassis 116AC2 R706WB2                                  |
| <b>Motherboard:</b>        | X11DDW-NT  |
| <b>Power supply:</b>       | Redundant 740W - 80 PLUS Platinum Level Certified            |
| <b>Processor:</b>          | 2x Intel® Xeon® Silver 4112 2.60 – 3,00GHz                   |
| <b>RAM:</b>                | 192 GB DDR4 2933 ECC (12x16GB) Samsung M393A2K40CB2-CVF      |
| <b>RAID:</b>               | 1 x Intel® RAID modules RMS25CB080                           |
| <b>HBA:</b>                | LSI SAS 9300-8E SGL, 8-Port ext. 12Gb/s SFF-8644, SATA + SAS |
| <b>Network connection:</b> | 2x Broadcom NetXtreme E-Series P210TP, Dual-Port 10GBase-T   |
| <b>Boot:</b>               | 2x 128GB SSD/MLC SATA DOM (Mirrored – RAID 1)                |
| <b>Write Log:</b>          | RAM/SSD tiered   |
| <b>Read Cache:</b>         | RAM/SSD tiered   |

# Storage configuration

|                            |   |
|----------------------------|---|
| <b>JBOD:</b>               | 2HE SuperChassis 216BE2C-R741JBOD                                 |
| <b>SSD:</b>                | 13x Toshiba PM5-R 1920GB SSD, TLC, SAS 12Gb/s, 2.5', 15mm, 1 DWPD |
| <b>zPool:</b>              | 2x Raid Z2 (2 Gruppen a 6 Disks) + 1x WarmSpare                   |
| <b>ISCSI Multipathing:</b> | Active-Active configuration                                       |
| <b>Storage capacity:</b>   | 12,58TB usable in two Zpool's                                     |

## Software:

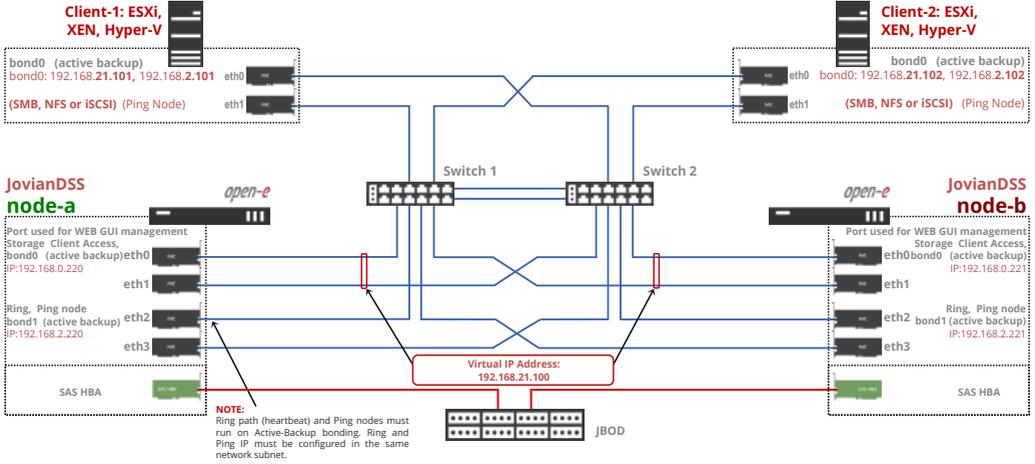
|           |   |
|-----------|---|
| <b>2x</b> | Open-E JovianDSS Basic License          |
| <b>1x</b> | Open-E JovianDSS Storage Extension 32TB |
| <b>1x</b> | Shared HA Cluster Feature Pack          |
| <b>2x</b> | Premium Support - 3 Years from Open-E   |

## Virtualization:

|           |  |
|-----------|--|
| <b>4x</b> | Hosts - Microsoft Hyper-V                  |
| <b>1x</b> | 2HE BigTwin(TM) Supermicro SYS-2029BT-HNTR |



# Network configuration

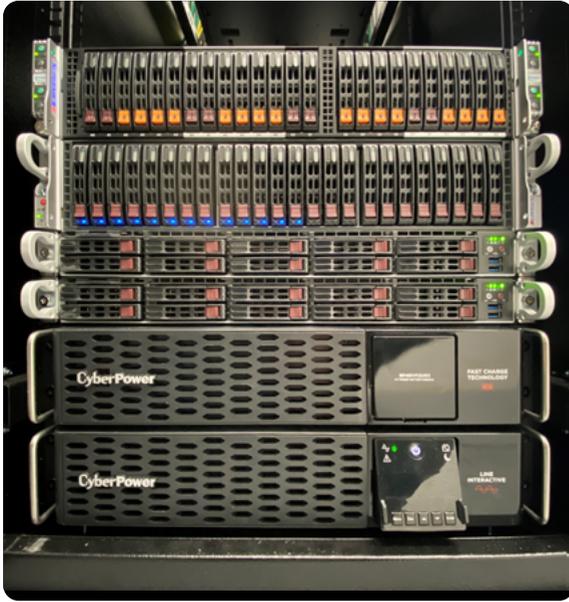


|                                     |          |
|-------------------------------------|----------|
| Unformatted gross storage capacity: | 23.04TB  |
| Net unformatted storage space:      | 15.36TB  |
| Gross formatted storage capacity:   | 20.97TiB |
| Net formatted storage capacity:     | 13.98TiB |
| Usable data storage capacity:       | 12.58TiB |

# Zpool data groups visualization



# The server rack in detail



- ◀ BigTwin™ Hyper-V hosts 4 nodes
- ◀ Disk shelf - JBOD
- ◀ Open-E JovianDSS node 1
- ◀ Open-E JovianDSS node 2
- ◀ CyberPower battery pack
- ◀ CyberPower UPS system

## The Shared-HA Cluster Principle

The solution designed by Boston Deutschland ensures that if one node fails due to a defect, the second node immediately takes over and a so-called „automatic failover“ is initiated. Both nodes access shared storage (JBOD) for this purpose.

**This means that day-to-day business can continue smoothly without any disruptions or loss of performance.** Of course, in the event of a failure, the administrator is informed directly via an auto support message, so the defect can be rectified immediately and both systems can once again operate redundantly.

The High Availability solution is provided by Open-E JovianDSS directly.

# History

Mr. Thomas Halbe, Managing Director at IT-Beratung HALBE, has more than **30 years of experience in the storage environment** and has already worked with many solutions from well-known manufacturers such as Compaq, HPE, and Dell. However, thanks to the partnership with Boston Deutschland, he recognized the potential of the Software-Defined Storage approach, which is enabled by Open-E storage solutions.

The collaboration between the two companies has existed since 2010. At that time – when the entry into the „virtualization world“ was initiated, Open-E DSS V6 system served as the basis to provide the single nodes and later also high availability clusters. With Open-E DSS V7 and its active/active cluster, the performance level was increased again, and until the beginning of 2020, it was used as the recommended in-house storage solution. Thanks to this continuous partnership, many Open-E DSS V6/V7 on-premise installations could be realized and provided for the end-customers.

**IT-Beratung HALBE is well-versed in dealing with Open-E systems, which is why they stand firmly behind this solution scenario.** This trust pays off. The core customer base includes small and medium-sized companies, public utilities, tax consultants, retirement homes, craft and service businesses, which always expect reliable storage for their data. Also, the independence of the hardware, which can be tailor-made, several times ensured the price advantage for SAN or NAS solutions based on Open-E systems. Boston Germany, which is Open-E Platinum Partner, has already implemented a large number of projects and has several certified technicians, as well as systems at its disposal - therefore was able to incorporate the relevant expertise into this project.

## Positive side effects

The space required in the server rack has been significantly reduced. In the past, an entire server rack was filled with hardware for this purpose, but now it's been decreased to only one third.

Comparable solutions could only be realized by significantly **exceeding the budget of more than 20,000 EUR.**

The handling of failures of any kind has been improved considerably with Open-E JovianDSS compared to DSS V7.

# Customer feedback

Thomas Halbe, Managing Director / IT-Beratung HALBE:

"The main reason we have chosen the redundant fail-proof storage solution based on Open-E JovianDSS presented by Boston Server & Storage Solutions was the perfect harmonization of stability, performance, scalability, and flexibility (which is more and more important these days).

It allows us to react perfectly to the market needs. Another noteworthy aspect is **the amount of electricity saved, about 4 kWh per day**, which, thanks to the modern hardware, also benefits the environment and has a positive impact on our electricity costs. Especially the transparent advice in the area of hardware design possibilities on the part of Boston Germany, along with a fair price, convinced me - à la bonne heure.

With this solution, we have created the optimal set of their applications in the home office for our customers."

## Another remark on data center operation in IT-Beratung HALBE

Many IT service providers rent server rack capacity from external data centers and store their customer data there. As a rule, the customer has a contract with the company. However, there is usually no contract with the data center itself.

This is why many customers do not even know where and in which country their data is effectively stored. Serious problems can arise here, e.g. in the event of the IT service provider's insolvency.

In such cases, the end-customer often has to prove where its data was stored in order to regain access or control. Quite apart from the red tape that takes up additional time, for many customers, this can have an enormous impact on their own day-to-day business and is, therefore, a critical consideration.

IT-Beratung HALBE **guarantees its customers' access to their data 24h**, and the customer has a direct contract with the provider.

# About IT-Beratung HALBE

IT-Beratung HALBE was founded in May 2002 by Mr. Thomas Halbe as a consulting, IT, and service company. The company is 100% privately held. The company is located in Willich near Düsseldorf. Since 2011, IT-Beratung HALBE also focuses on housing and hosting customer applications in its own data center in Germany. The customers are small and medium-sized enterprises such as tax consultants and auditors as well as non-profit organizations. Another part of the business is data recovery of damaged hard drives for private and business customers. Since 2017, the company has been supporting customers with compliance requirements such as the General Data Protection Regulation.

# About Boston Server & Storage Solutions

Boston Germany was founded in 2010 in Munich-Feldkirchen, as a subsidiary of British Boston LTD, and specializes in building, testing, and manufacturing customized high-performance IT business solutions in the server and storage segment. Boston Group is the longest standing and largest Supermicro partner in Europe and has excellent product knowledge. Boston offers the latest well-optimized high-performance technologies. The product and solution portfolio is complemented by additional services such as training, support, certification, project partnership, financing, marketing, and PR support.

# 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 that offers excellent compatibility with industry standards, and is the easiest to use and manage. Additionally, it is one of the most stable solutions on the market and an 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 30,000 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](http://www.open-e.com)

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