

# Tetraedro expands its storage tiers easily and cost-efficiently with **StarWind Virtual SAN**

“ StarWind VSAN very much simplified our storage maintenance. We have a lot more options in choosing what disks to buy and when to expand our storage. ”

**André Marques, IT Manager, Tetraedro**



## About the Company

**TETRAEDRO** is engaged in the Hosting of business-critical applications in Virtual Private Servers, with a special focus on small and medium companies. It is based in Lisbon, Portugal.

<http://www.tetraedro.pt/>

## Industry

Windows Server VM Hosting,  
IT Support

## Contact Person

**André Marques**, IT Manager

## Problem

Growth of the IT infrastructure and the resulting need in a highly available SAN with flexible storage options.

## Solution

**TETRAEDRO** deployed StarWind Virtual SAN, which allowed to grow several storage tiers independently, with no downtime, high performance and at predictable price.

## COMPANY

### The company's focus areas are the following:

- Specialized Hosting with high availability (Private Virtual Servers)
- Business Continuity Solutions (Business Continuity, Disaster Recovery)
- e-mail Security Solutions (antispam, antivirus)
- Information Technology Outsourcing
- Information Technology Consulting
- Cloud Services:
  - e-mail Hosted Exchange
  - Hosted Dynamics CRM
  - Cloud Storage
  - Cloud Backup

## PROBLEM

The company's primary IT infrastructure before deployment of StarWind included HP DL Servers connected to MSA SANs. To host Virtual Private Server to the clients, which are mostly SMBs, the Hyper-V cluster is used. The company possesses 8 CPUs and 578 GB of RAM, and the number of users – the hosting clients – exceeds 150.

Under such conditions, Tetraedro needed a SAN that would be Highly Available, able to support over 4 high-density Hyper-V Hosts, and with flexible storage options, to make it possible for the company to offer different service levels.

## SOLUTION

After the comparison of several solutions, Tetraedro has chosen StarWind Virtual SAN. The determining factor here was that StarWind allowed to easily grow their several storage tiers independently and with predictable pricing, as well as performance.

With StarWind VSAN, it became much easier for the company to handle the storage – for example, they expanded the SSD storage and switched disks around with no downtime.

### IT infrastructure after implementation of StarWind SAN

Host – Supermicro 6028R-E1CR24N with 2x E5-2620V4  
640GB RAM in 64GB DIMMs  
4xSSD SAMSUNG SM863 480GB (RAID5)  
7xSSD Kingston DC400 960GB (RAID5)  
6x TOSHIBA 6TB SATA3 (RAID10)  
4x HITACHI 1.2TB SAS3 10K 128MB 2.5" (RAID5)  
2x INTEL S3510 240GB 2.5" (RAID1)  
AOC-MTG-I4S and AOC-STG-B4S

### StarWind iSCSI Targets setup

1 iSCSI target per Service Level for internal use of the Cluster and others to share with other Clusters

SSD Internal: 5,3TB, 5GB cache  
SAS: 3TB, 5GB cache  
SATA Internal: 5TB, 5GB cache  
SATA HPs: 6TB, 5GB cache  
SSD HPs: 1,3TB, 1Gb cache  
Witness disk for the cluster

StarWind provided various options in choosing what disks to buy and when to expand the storage.

StarWind also helped to solve the issue with random RAID card failures in one of the nodes. With the protection it offers, Tetraedro managed to troubleshoot the problem with no downtime.

## FUTURE PLANS

The company has implemented StarWind Enterprise 2-node hyperconverged edition. The features they find the most valuable in StarWind are synchronous replication and cache running on a Hyper-V Host.

StarWind VSAN is implemented as an integral component to the company's hosting infrastructure and allows to deploy high performance and resilient SSD, SAS and SATA volumes to the clusters.

With the data growth, the company plans to move from the hyperconverged cluster to dedicated storage nodes, then eventually a third node. For the DR plan, they would like to try StarWind asynchronous replication.