Backup Storage Solution

Broadberry™

Date:
Q3 2017

Application:
Backup Storage

Tags:
Affordable Backup Storage

CUSTOMER:

Tesco PLC
Our operations in the UK are the largest within the Group, with over 3,400 stores and more than 300,000 colleagues working together to serve customers a little better every day.

SOLUTION BRIEF:

Tesco approached Broadberry to supply each of its regional distribution centers around the UK with high capacity, low cost storage for additional backups of it's stock control system.

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TESCO

Application

- High Capacity, Low-Cost Backup Storage

Project Background

Tesco PLC have a total of 20 regional distribution centres in England and Scotland which store all of their inventory before being distributed to various individual Tesco stores ranging from Tesco Express shops to large Tesco Extra stores.

Tesco already had a national computer system in place for managing stock control, as well as a solution for backing this up - however with the ever growing necessity for 100% system uptime, Tesco decided to introduce a third layer of redundancy by storing a second backup of their stock control system locally at every regional distribution centre.

Broadberry had worked with Tesco PLC on a previous project where they were particularly pleased with our service levels, competitive pricing and high performance, and so Broadberry were given the contract to supply this backup system .

Key Requirements:

- 20x Storage Servers Providing 280TB+ Usable Storage
- Low Cost-per-GB
- Compatible with existing software stack
- High-Reliability
- Capable of future storage expandability

Achieved Performance

2241MB/s

Read: 40%
Write 60%

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Broadberry Solution

We decided that our high-density, multi-award winning CyberStore 436S WSS storage appliance would be the best fit for Tesco's needs.

Having beaten DELL, HP and Lenovo to win PC PRO's "Best Rack Server" in 2017, and being supplied to hundreds of UK and international companies the Broadberry CyberStore WSS range is one of our best-selling storage solutions.

Powered by Windows Storage Server 2016, the CyberStore WSS range boasts a user-friendly interface for it's powerful arsenal of enterprise-grade tools as well as open-standards hardware compatibility to ensure easy integration into Tesco's network.

To meet Tesco's requirement of "low-cost, high capacity storage", we configured the Broadberry CyberStore 436S WSS appliance with 36x 10TB Enterprise-Grade SATA drives which offered a great balance of cost per GB.

Key Numbers

360TB
RAW Storage

40GbE
Network Connectivity

147%
Lower Cost than Alternative Vendor Quotations

Solution Specifications

Broadberry CyberStore 436S WSS appliance with 36x 10TB Enterprise-Grade SATA drives which offered a great balance of cost per GB.

Technical Specifications:

- 4U, 36 Bay Dual Controller SAS/SATA Compatible Chassis
- 2x Intel Xeon E5 2630v4 Series Processors
- 96GB RAM - 6x 16GB 2400MHz DDR4 ECC Registered DIMM Modules
- 36x Enterprise-Class SATA 3.5" Hard-Drives
- 2x 240GB Intel SSD S4510 DataCentre SERIES 2.5" SATA3 Drives
- Broadcom MegaRAID SAS 9380-8i8e RAID Controller + CacheVault
- Redundant 1280W Platinum Level (1+1) power supplies with PMBus
- 2x Intel X550T2 Dual 10GbE Network Adapters (LACP Bonded)
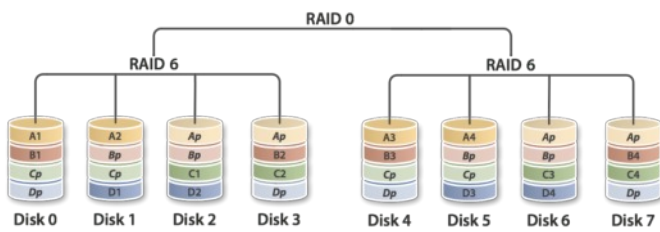- Microsoft Windows Storage Server 2016 - Standard Edition (Includes NAS & iSCSI & Storage Spaces)

Configure Now

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How Our Solution Addresses Key Requirements

20x Storage Servers Providing 280TB Usable Storage

We configured the Broadberry CyberStore 436S WSS storage appliance with 36x 10TB Enterprise-Class SATA drives providing 360TB of RAW storage capacity.

As high performance wasn't a priority and our customer was looking for as much storage as possible for their money, we configured the appliances in a RAID 60 configuration - combining the straight block-level striping of RAID 0 with the distributed double parity of RAID 6.

Usable Capacity:

- 36 x 10TB = 360TB RAW Capacity
- -2 Drives from each RAID set for parity = 16 drives per RAID set for storage (32 drives in total)
- 320 x 0.91 for RAID and file system overhead = 291.2TB Usable Storage Capacity

Low Cost-per-GB

Although our CyberStore range of storage appliances can be configured with 12GB/s SAS and NVMe for blistering performance, SATA can't be beaten when it comes to price per GB. For this application, and in other backup applications where a low price per GB is prioritised over storage performance we usually configure solutions with enterprise-grade SATA drives.

The operating system was configured on 2x 240GB Intel SSD S4510 DataCentre SERIES 2.5IN SATA3 Drives in RAID 1 Mirror configuration at the rear of the chassis. This configuration provided 291TB of usable storage capacity at a very competitive price and allowed for up to 4 drives to fail before any data would be lost.

Compatible with existing software stack

All Broadberry server and storage solutions are built to open hardware standards and offer fantastic compatibility with other vendors hardware including HPE, DELL, Lenovo and more.

Our solutions are also built to be fully compatible with all major virtualisation and backup platforms.

We configured Tesco's CyberStore storage servers with Windows Storage Server 2016 which could be easily integrated into their existing Microsoft-based infrastructure.

High-Reliability

All Broadberry server and storage solutions are built to the highest standards and use the same leading brand components as you'll find in tier 1 integrators servers such as Intel processors, Samsung memory and Seagate hard drives.

The only difference is that we don't re-brand these components as we don't go down the path of vendor-lockin, this gives our customers peace of mind their getting the best prices available for their solution and never paying inflated prices for commodity components like hard drives when they buy, or should they decide to upgrade in the future.

Over the past 25 years our CyberStore range of storage appliances have been sold to almost every university in the UK , thousands of the world's largest brands as well as SMB's looking for affordable storage. Over these years Broadberry storage solutions have gained a reputation for fantastic reliability at a competitive price.

To maximise reliability we also configured Tesco's solution with CacheVault technology which improves write performance and minimises data-loss risk by backing up the data cached by the RAID controller in the event of power failure.

Capable of future storage expandability

We configured the CyberStore 436S for Tesco with a Broadcom MegaRAID SAS 9380-8i8e which handled the internal array as well as providing external connectivity to JBOD storage enclosures.

Future expandability could be provided by either a Broadberry JBOD Storage appliance or another brands JBOD server.

CyberStore WSS® Multi-Award Winning Storage Servers

The Broadberry CyberStore WSS® range is a Network Attached Storage and iSCSI SAN range of storage appliances ranging from 1U to 4U with a storage capacity of up to 864TB in a single appliance.

Based on ultra-reliable hardware from leading component manufacturers, the CyberStore WSS® is ideal for unified storage and with a massive selection of customisation options available, this flexible solution can be configured for almost any and every storage application from a first small business storage server to high availability enterprise-class storage appliances with built-in failover.

Since 2012 the CyberStore WSS® range has consistently beaten Fortune-100 server OEM's as the best storage appliance available year-after-year.

Voted Best Storage Appliance

"With its new storage server, Broadberry Data Systems has beaten the blue chips: the CyberStore 224S-WSS is the first commercially available appliance running Microsoft's latest Windows Storage Server 2016 (WSS2016). And it delivers a powerful hardware package at a very reasonable price."

IT Pro | Review June 2017

CyberStore WSS® Applications

CyberStore storage servers are used by everyone, from small businesses to the largest organisations in the world.

IP Surveillance

ISPs & Cloud Hosting

Education Sector

TV / Media Industry

Small Business Complacency Storage

Powering Small Businesses, the CERN project and Everyone In-between

The uses of the CyberStore range are almost infinite, from the BBC archiving the programmes we grew up watching, to CERN using them to store big data collected researching how our universe was created.

In today's world, storage appliances are used in almost every aspect of our lives across all market sectors and industries. The flexibility and configurability of Broadberry CyberStore storage servers make them very popular in a wide range of markets.

The education sector is a very popular user of CyberStore appliances due to it's competitive pricing compared to Dell and HP and data deduplication feature that compresses data by up to 70%. We supply our storage solutions to all 10 out of the top 10 universities in the UK including Oxford and Cambridge as well as many colleges and schools.

Another big market for the CyberStore WSS range is IP Surveillance, with storage requirement rapidly growing as HD cameras become the norm, the CyberStore WSS' renowned reliability, fast performance and high availability make it the perfect solution to store this data securely and cost-effectively.

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Storage Servers
Configure From £1,078

Multi award-winning, enterprise-grade storage solutions used by the world's top organisations.

As-well as thousands of SMBs for everything from backup and replication to high-availability storage.

Rackmount Servers
Configure From £434

Year-after-year voted the best servers available by the most influential IT brand in the UK.

Our CyberServe range of servers are used by all of the UK's top universities and thousands of SMBs.

Workstations
Configure From £234

Ultra high performance workstations built for the most demanding applications.

Our CyberStation range boasts everything from silent workstations to GPU supercomputers.

Trusted by the Worlds Biggest Brands

We have established ourselves as one of the biggest storage providers in the UK, and since 1989 supplied our server and storage solutions to the world's biggest brands. Our customers include:

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