



## FASTER HOSTING

Web hosting leader realizes dramatic gains with Dell EMC Microsoft Storage Spaces Direct Ready Nodes.



Fasthosts | IT as a Service | United Kingdom

### Business needs

Fasthosts customers needed a high-performant and reliable next-generation virtual private server (VPS) platform to meet their needs. For Fasthosts, the key drivers for this project were to consolidate an existing, legacy platform into a denser, more efficient design while not impacting the customer experience, and to achieve a lower total cost of ownership (TCO) than would be possible with a like-for-like replacement.

### Solutions at a glance

- Dell EMC Microsoft® Storage Spaces Direct Ready Nodes
- Dell EMC PowerEdge™ R730xd servers with Intel® Xeon® processors

### Business results

- Improved performance for customers
- Increased NPS
- Reduced customer tickets
- Consolidated an 11-rack environment into just two racks
- Improved CPU, RAM and storage utilization
- Reduced power usage from 37.5 kW to just 6.6 kW
- Achieved a measurable reduction in platform-affecting incidents and customer contacts
- Simplified management with a Microsoft-based solution

A 5:1 IT consolidation ratio helped Fasthosts save approximately

€447,000 annually



Fasthosts realized ROI on its new VPS platform in just

7 Months



# A web-hosting leader

Fasthosts is one of Europe's largest web-hosting providers. Since 1999, the company has been designing new ways to give its customers everything they need to manage and control their online spaces. Innovation drives everything Fasthosts does as it carries out its mission to offer the latest Internet technologies across a range of services. Those service offerings include domain names, shared web hosting, business-class email, dedicated servers, cloud servers, secure online storage and online backup. Fasthosts also maintains a highly successful reseller channel.

Based in the UK and operating 24/7 from its dedicated UK data centers, Fasthosts keeps more than a million domains running smoothly, while safely delivering more than 42 million email messages each day. All of the company's services can be self-managed through the award-winning Fasthosts Control Panel. By focusing on the needs of customers and employing great people, Fasthosts has created a profitable, fast moving and market-leading organization.

## The path to a new platform

Fasthosts' extensive IT infrastructure foundation includes a virtual private server (VPS) platform that is dedicated predominantly to the hosting needs of 1,700 UK-based customers. This platform was built on the Microsoft Hyper-V hypervisor and NetApp storage arrays.

As the IT professionals at Fasthosts looked to the future and considered the high operational costs, maintenance needs and support issues associated with their legacy VPS platform, they set their sights on new, performant, more reliable and more efficient technologies. Ultimately, they chose Microsoft Hyper-V and Dell EMC Microsoft Storage Spaces Direct Ready Nodes to serve as the foundation for their next-generation VPS platform.

*"Microsoft S2D on Dell EMC Ready Nodes is by far the most cost-effective, performant, resilient platform that you can run today."*

Lee Harrison  
Microsoft Solutions Architect, Fasthosts

The choice to go with the Hyper-V and Storage Spaces direct was clear cut, according to Lee Harrison, the lead architect on the project at Fasthosts.

"It was a natural evolution," Harrison says. "We had been using Hyper-V for several years, and we chose it originally for our VPS platform. There was no need to migrate hypervisors. What Microsoft had done in Window Server 2016, with Storage Spaces Direct and the enhancements to Hyper-V, made it the most cost-effective, resilient and performant platform or solution that we could implement for our customers' virtual machines, for our cloud servers."

Even better, the Dell EMC Ready Nodes approach offered a straightforward path to the benefits of Storage Space Direct.

"Dell EMC did the work to build their Ready Nodes to have the maximum amount of power and storage in a 2U device that conforms and is on a server catalog for Storage Spaces Direct," Harrison says. "It was really an easy design to put forward and to consolidate our existing Hyper-V virtual machines on to."

## Optimized Nodes for Storage Spaces Direct

Microsoft Storage Spaces Direct, known informally as S2D, uses industry-standard servers with local-attached drives to create highly available, highly scalable software-defined storage (SDS) at a fraction of the cost of traditional SAN or NAS arrays. Its converged or hyper-converged architecture simplifies procurement and deployment, while features such as caching, storage tiers and erasure coding, together with hardware innovations such as RDMA networking and NVMe drives, deliver unrivaled efficiency and performance.

Dell EMC Microsoft Storage Spaces Direct Ready Nodes simplify and accelerate the deployment of S2D. The Ready Nodes are optimally configured with the required amount of CPU, memory, network, I/O controllers and storage (SSDs, HDDs or flash devices). The Ready Nodes approach gave the IT team at Fasthosts the confidence and convenience that comes with preconfigured, tested and certified configurations designed for Storage Spaces Direct and backed by world-class support delivered by Dell EMC, which serves as the single point of contact for the entire Ready Solution.

Storage Spaces Direct Ready Nodes deployed at Fasthosts are built on Dell EMC PowerEdge™ R730xd servers with Intel® Xeon® Scalable processors. These servers provide the compute power and the storage density Fasthosts needs to

take full advantage of the benefits of Storage Spaces Direct and the advanced features in Windows Server 2016.

“The R730xd server simply offered the best design in terms of how many disks you can fit in the server, the processor and the memory bus,” Harrison notes. “And it also had the supported firmware for Storage Spaces Direct. It was just the obvious choice. At the end of the day, it’s a standard 2U server, therefore easily supportable by the data center and operations teams, optimized for Storage Spaces Direct.”

## Consolidating the platform

Harrison and his colleagues at Fasthosts worked closely with a highly respected Dell EMC senior principal engineer, Terry Storey, on the design of the new VPS platform. These efforts led to a greatly consolidated system that packed more performance and storage into a much smaller footprint.

The legacy VPS platform, which spanned 11 racks, had approximately 100 Hyper-V compute servers, three NetApp systems and 32 management servers. With its Ready Nodes solution, Fasthosts consolidated that environment into two racks with 16 Hyper-V compute servers, six storage servers and four backup servers.

“We realized a consolidation ratio of 5:1 onto this platform,” Harrison says. “We went from 11 racks to two racks. It was an amazing consolidation.”

Table 1. Before and After.

	Before With Microsoft Storage Spaces classic and NetApp storage arrays	After With Dell EMC Microsoft Storage Spaces Direct Ready Nodes
Racks	11	2
Hyper-V compute nodes	~100	16
VMs per host	12.5	62.5
CPU efficiency	1.4%	10%
RAM utilization	55.4%	75%
Storage utilization	34.6%	90%
Power usage	37.5 kW	6.6 kW

Along with this consolidation came dramatic gains in system efficiency and resources utilization. Table 1 provides look at the projected gains, which Fasthosts is now realizing in its production environment.

From an operational perspective, the platform was denser, it was more efficient, it used less rack space and it helped reduce operational costs, says Paul Summers, Head of IT operations at Fasthosts.

“What that meant in real terms is that we could achieve an annual savings of around €447,000,” Summers says. “Those are the savings we realize when we take the full costs into consideration, in terms of power, data center cost, depreciation, licensing, etc. So moving from this large VPS platform to this consolidated platform delivered a very high level of operational savings.”

“All of the costs together added up to tremendous operational cost savings,” Harrison emphasizes. “Based on the business case, the return on investment was around seven months. So it was a very solid, no-brainer business case to make this consolidation, to make this move.”

## Powerful performance

Prior to putting the platform into production, the Fasthosts IT team conducted lab tests using the Microsoft framework VM Fleet, a tool that uses multiple virtual machines to generate IOPS on a platform. The tests were conducted on the primary storage cluster, which would serve as the live storage for the company’s customers. In these tests, the new platform lived up to the Fasthosts name — it was really fast.

“We saw around 850,000 IOPS in testing,” Harrison says. “These were fantastic numbers, tempered with the usual caveat that this was a simulated workload. We wouldn’t expect to achieve those results in a real-world scenario when there are so many different workloads, random I/Os and different block sizes from customers doing different things with their VMs. But what it did do is give us the comfort that those were better numbers than we had seen from many of the storage platforms.”

Summers notes that to get the equivalent performance from a storage-array vendor, both the day 1 and ongoing support costs would have been much higher. “So in terms of TCO over the projected platform lifetime, that really added weight to the business case,” he says.

# The view from the production environment

Since going live, the new VPS platform has lived up to the expectations of the Fasthosts IT team, in terms of performance, reliability, efficiency and manageability. When they talk about the platform, the company's IT professionals mention their high comfort level in working with a Microsoft-based solution that is running on highly reliable, fully supported Dell EMC hardware.

For John Barnes, a Fasthosts Systems Engineer, ease of management is an important benefit of the new platform, especially when compared to the legacy platform that required both Microsoft and NetApp management expertise.

"It's so much easier to manage a solution that is based on a Microsoft design," Barnes says. "Even if you're not quite sure how to do something, it's the same Microsoft technology, so the toolset is much closer to what you're used to. That really makes that evolution a lot easier. And, obviously, the consolidation has made management a lot easier as well."

"It's good, very good," adds Harrison, the system architect. "From a design/architecture point of view, this is one of the easiest designs, not only because it was a progression of our core skillsets, but the technology evolving from Microsoft and Dell EMC made it a really easy choice. And the support was still there. It was the obvious choice. Microsoft S2D on Dell EMC Ready Nodes is by far the most cost-effective, performant, resilient platform that you can run today."

And, of course, there are all those business-driven bottom-line numbers — like realizing close to half a million euros in annual savings and achieving ROI in about seven months.

"From a business point of view, the numbers speak for themselves," says Summers, the Head of IT operations. "You dream of these sorts of projects that deliver these kinds of returns and these kinds of business benefits. And it's very rare that you find them. This was an excellent project, and the whole team here working with Dell EMC and Microsoft has been a fantastic experience."



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