



Consolidate your datacenter with a cluster that can handle **8 VMs** doing heavy OLAP analytics or **12 VMs** processing robust OLTP requests



Transform raw data into insights
48,391 IOPS
and
4,857 MB/s throughput



Process multiple workloads
48 separate 300GB database query sets in
46 minutes



Keep orders moving
14,049 online transactions per second

Meet growing online transaction demands and make smarter business decisions

Increase the scope of your efforts through quick order processing or in-depth data analysis with Dell EMC Microsoft Storage Spaces Direct Ready Nodes

For workloads ranging from transactional applications to big data analysis, a system that doesn't adequately support your customer demands or enable smart decision-making strategies can threaten your company's success. A hyper-converged infrastructure solution could be the right answer for many businesses with growing application and data storage requirements.

Dell EMC™ Microsoft® Storage Spaces Direct Ready Nodes are suitable for database workloads and come pre-configured as a complete hardware and software solution. At Principled Technologies, we set up a four-server Microsoft Storage Spaces Direct (S2D) cluster environment based on the Dell EMC PowerEdge™ R740xd servers and explored how well this solution handled both online transactional processing (OLTP) workloads and online analytical processing (OLAP) data warehouse queries. Dell EMC Microsoft Storage Spaces Direct Ready Nodes delivered the strong performance a company with growing application and data storage requirements needs—so you can give users the service they demand, quickly and confidently.

The basis of any good hyperconverged storage solution is good hardware

When your IT team assembles their own software-defined storage (SDS) solution, they have a slew of questions to consider. Is the solution future-proofed? Do the components they're assembling play well together? Do they have all the components they'll need? Will the solution be cost-effective over the long haul? And, most importantly, is someone paying close attention to storage capacity and performance requirements?

Preconfigured SDS solutions such as Dell EMC Microsoft Storage Spaces Direct Ready Nodes are jointly validated by Microsoft and Dell EMC. So, while choosing Dell EMC Microsoft Storage Spaces Direct Ready Nodes doesn't eliminate all the above considerations, it can simplify ordering and reduce deployment risk. The basic package also comes with one price tag, which ensures that no hidden costs pop up down the line. Of course, you can still fine-tune that package to meet your specific needs, but you're not required to design, configure, and validate the hardware yourself.

Our testing proved that Dell EMC Microsoft Storage Spaces Direct Ready Nodes built on a cluster of Dell EMC PowerEdge R740xd servers handled both robust OLTP workloads and large-block OLAP data warehouse queries quickly while maintaining a small form factor.

Software-defined storage enables dynamic storage provisioning and provides a range of data storage options to meet the evolving demands of business. But that storage opportunity is only as good as the performance of the hardware it's built on. You need servers that provide the storage density and compute power necessary to harness data for business insights and to support many database transactions.

An SDS solution like Dell EMC Microsoft Storage Spaces Direct Ready Nodes can add flexibility and scalability to organizations that use OLTP workloads to process customer-to-business and business-to-business requests, and to those that use OLAP database servers to process data analytics information. Software-defined storage also benefits companies that use virtualization technologies to share compute and storage resources across many VMs hosting critical applications. SDS solutions are designed to keep your applications highly available by spreading data across the entire cluster. So, your data stays online and accessible, even when a node fails.

We highlight OLAP and OLTP workloads in this report, but Dell EMC Microsoft Storage Spaces Direct Ready Nodes are a valuable and versatile solution for many use cases. Find other options at dell.com/s2dreadynodes.

Dell EMC Microsoft Storage Spaces Direct Ready Nodes

According to Dell EMC, these Ready Nodes are preconfigured to provide the storage density and compute power necessary to meet the demands of a dynamic enterprise environment.¹

Dell EMC PowerEdge R740xd

According to Dell EMC, PowerEdge R740xd rack servers balance storage scalability and performance in a 2U two-socket platform, making it an ideal platform for Dell EMC Microsoft Storage Spaces Direct Ready Nodes.²

Storage Spaces Direct

Storage Spaces Direct is a Microsoft Windows Server® software-defined storage solution that pools direct-attached storage from the servers in your cluster. According to Microsoft, it also provides built-in fault tolerance so everything stays online and highly available.³

These scenarios are hypothetical, but the decisions the characters face are real. At Principled Technologies, we tested the performance of Dell EMC Microsoft Storage Spaces Direct Ready Nodes (see the [science](#) addendum to this report for all of the details). Read on to see how they can help you implement smart data-based strategies quickly.



Build better customer relationships

Frank belongs to a small credit union and does all his banking online. His credit union doesn't want to move everything to the cloud because they want the data security that comes with direct management of mission-critical IT assets. Frank doesn't know about any of that, though—he just wants his money to be safe; his transactions to go through smoothly; and his online experience to be as effortless as possible.

Our test results show that if his credit union used Dell EMC Microsoft Storage Spaces Direct Ready Nodes, Frank and other current and potential customers could simultaneously conduct business without a hiccup.

Keep orders moving



14,049 online transactions per second



Optimize your marketing budget

Isobel is the creative genius behind successful digital marketing campaigns for an elite international clothing retailer. While the world thinks she must have a crystal ball for predicting trends, Isobel accomplishes these feats by collecting and analyzing everything from industry trends to purchasing patterns and social media posts for the next big thing. She leaves no stone unturned in her research process.

Our test results show that if Isobel's retailer invested in Dell EMC Microsoft Storage Spaces Direct Ready Nodes, the solution could handle additional OLAP data warehouse queries if the customer service, public relations, and sales departments followed her lead and created customized criteria of their own.

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Conclusion

Our hands-on testing shows that Dell EMC Microsoft Storage Spaces Direct Nodes in a four-server cluster environment based on Dell EMC PowerEdge R740xd servers can handle both robust OLTP transaction applications and heavy OLAP analysis workloads. This Ready Node supported 12 VMs processing 14,049 online transactions per second in our OLTP scenario or 8 VMs processing 48 separate large-block 300GB database query sets in 46 minutes in our OLAP scenario.

These results demonstrate that choosing Dell EMC Microsoft Storage Spaces Direct Nodes as your software-defined storage solution provides the storage density and compute power necessary to give users the service they demand and make smarter business decisions. Plus, it eliminates the hassle of designing, configuring, and testing hardware yourself.



- 1 Dell EMC Microsoft Storage Spaces Direct Ready Nodes - Solution overview, accessed April 11, 2018, <https://www.dell.com/learn/us/en/04/shared-content~data-sheets~en/documents~microsoft-storage-spaces-direct-ready-nodes-solution-overview-en.pdf>
- 2 Dell EMC PowerEdge R740xd Rack Server, accessed April 11, 2018, http://www.dell.com/en-us/work/shop/cty/pdp/spd/poweredge-r740xd/pe_r740xd_12238
- 3 Storage Spaces Direct overview, accessed April 11, 2018, <https://docs.microsoft.com/en-us/windows-server/storage/storage-spaces/storage-spaces-direct-overview>

Read the science behind this report at <http://facts.pt/xJDpJA> ►



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