



# Dell EMC Microsoft Storage Spaces Direct Ready Nodes

Software-defined storage building blocks that provide the confidence, convenience and customer support businesses demand

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## Confidence

## Convenience

## Customer support

Windows Server Software-Defined (WSSD) solutions use Microsoft validated designs and follow engineering best practices for deployment and a steady-state operational experience.

## In a software-defined world, hardware matters more than ever

Organizations are drowning in data. To keep up with storage requirements, IT is challenged to find new storage solutions that are simpler, more streamlined and cost-effective than traditional approaches. Microsoft® is answering this need with Microsoft Storage Spaces Direct, which allows you to use industry-standard Dell EMC PowerEdge servers to create highly available, highly scalable storage at a fraction of the cost of traditional arrays. Features like caching, storage tiers and erasure coding, together with support for the latest hardware innovations, like RDMA networking and NVMe drives, deliver unrivaled efficiency and performance. And best of all, Storage Spaces Direct is included with Microsoft Windows Server® 2016 Datacenter.

But just because the storage is software-defined, doesn't mean the hardware doesn't matter. In fact, the opposite is true. The performance and reliability of the software depend heavily on the performance and reliability of the hardware. And not all hardware is created equal. You need a partner you can trust to deliver reliable infrastructure in easily purchased and deployed building blocks with a support experience that keeps you up and running.

## Invest in the hardware that's designed just for Microsoft Storage Spaces Direct

Dell EMC Microsoft Storage Spaces Direct Ready Nodes are preconfigured with certified components and validated building blocks that can simplify ordering and reduce deployment risks while providing a superb customer support experience. Dell EMC Microsoft Storage Spaces Direct Ready Nodes are built on Dell EMC PowerEdge servers, which provide the storage density and compute power to maximize the benefits of Storage Spaces Direct and the advanced feature sets in Windows Server 2016. And you can get a single point of contact for sales and technical support for the solution.

### Confidence

Dell EMC Microsoft Storage Spaces Direct Ready Nodes are preconfigured with certified components, tested and certified by Dell EMC and Microsoft to take the guesswork out of building Storage Spaces Direct clusters.

### Convenience

Preconfigured Dell EMC Microsoft Storage Spaces Direct Ready Nodes make adoption very convenient. And they reduce administrative work with fewer interfaces, fewer steps and less need for specialized knowledge.

### Customer support

You can enjoy the simplicity of a solution that's supported globally by a single vendor — Dell EMC — providing streamlined, collaborative support from the first call.





Testing beyond WSSD certification requirements so you get a high-quality offering that minimizes downtime

## Are you facing any of these challenges?

Designing and configuring new infrastructure for Storage Spaces Direct is complex. Dell EMC Microsoft Storage Spaces Direct Ready Nodes are preconfigured with certified components, tuned and optimized to run Storage Spaces Direct. They have been validated and tested to ensure that all components follow Dell EMC approved manufacturers' lists (AMLs) for firmware and BIOS versions. And they can be delivered with the complex configuration steps completed and tested in known good configurations — including hardware compatibility and driver downloads.

**It takes a long time to design, configure, test and validate hardware for Storage Spaces Direct.**

Each Dell EMC Ready Node includes just the right amount of CPU, memory, network I/O controllers, hard disk drives (HDDs) and solid-state drives (SDDs) that are best suited for Microsoft Storage Spaces Direct, making them incredibly convenient to procure and deploy. Dell EMC publishes a deployment guide that covers multiple scenarios to make deployment even easier. And Dell EMC tests beyond WSSD certification requirements so you get a high-quality offering that minimizes downtime.

**With virtualization, it can be hard to locate the source of a problem, making it hard to know whom to call for help.**

When you have an issue, there's no time to stop and figure out if the source is related to the hardware or software. With Dell EMC Microsoft Storage Spaces Direct Ready Nodes, you can get support for the entire solution from Dell EMC. If you do call in with an issue, you'll benefit from the simplicity of a solution that's supported globally by Dell EMC, providing streamlined, collaborative support from the first call.

## Dell EMC Microsoft Storage Spaces Direct Ready Nodes configuration options

Not all workloads have the same requirements, so Dell EMC provides a variety of ready-to-order configurations based on different requirements.

	Hybrid (2U)		All-NVMe (2U)	All-flash (2U)	All-flash (1U)		Hybrid (1U)	
Server	PowerEdge R740xd		R740xd	R740xd	PowerEdge R640		R640	
Chassis	12 x 3.5” front bay + 4 x 3.5” mid bay + 2 x 3.5” rear bay	12 x 3.5” front bay	24 x 2.5” front bay including 12 NVME drives	24 x 2.5” front bay	10 x 2.5” front bay	10 x 2.5” front bay + 2 x 2.5” rear bay	10 x 2.5” front bay	10 x 2.5” front bay + 2 x 2.5” rear bay
Processors	Intel® Xeon® Scalable (select Silver/Gold/Platinum options)							
Memory	128GB–1.5TB							
Storage controller	Internal HBA330							
Storage OS boot	BOSS with dual M.2 240GB (RAID 1)							
Storage cache  <small>WI = write intensive MU = mixed use</small>	Up to 6x SAS/SATA WI/MU SSDs	2 or 4x SAS/SATA WI/MU SSDs					2x SAS/SATA WI/MU SSDs	2/3/4x SAS/SATA WI/MU SSDs
Storage capacity	Up to 12x 3.5” NL-SAS/SATA HDD	4 or 8x 3.5” NL-SAS/SATA HDD	4–12x PCIe SSD NVMe MU drives	4–24x 2.5” SAS/SATA SSDs	4–10x SAS/SATA SSDs	4–12x 2.5” SAS/SATA SSDs	4/6/8x NL-SAS/SATA/SAS 10K HDD	4/8/9x NL-SAS/SATA/SAS 10K HDD
Network cards	Add-in-card: 1 or 2x Mellanox® ConnectX®-4 LX dual port 25GbE  or  1 or 2x QLogic® FastLinQ® QL41262 dual port 25GbE Network daughter card (NDC): dual port 10GbE + dual port 1GbE					rNDC: Mellanox ConnectX-4 LX  or  QLogic FastLinQ QL41262 dual port 25GbE	Add-in-card: 1 or 2x Mellanox ConnectX-4 LX dual port 25GbE  or  1 or 2x QLogic FastLinQ QL41262 dual port 25GbE  NDC: dual port 10GbE + dual port 1GbE	
System software	Integrated Dell Remote Access Controller (iDRAC) 9							
Software (optional)	Windows Server 2016 Datacenter Edition comes with Microsoft Storage Spaces Direct							

For VDI workloads, see Reference Architectures for Dell EMC Microsoft Storage Spaces Direct Ready Nodes for VDI with [Microsoft Remote Desktop Services \(RDS\)](#) and [Citrix® XenDesktop®](#).

## Why Dell EMC?

The combination of Dell and EMC brings together two industry-leading companies with strong reputations for value and innovation. Dell EMC holds leadership positions in some of the biggest and largest-growth categories in the IT infrastructure business, and that means you can confidently source your IT needs from one provider — Dell EMC.

- #1 in hyper-converged systems<sup>1</sup>
- #1 converged infrastructure<sup>2</sup>
- #1 in traditional and all-flash storage<sup>3</sup>
- #1 virtualized data center infrastructure<sup>4</sup>
- #1 cloud IT infrastructure<sup>5</sup>
- #1 server virtualization and cloud systems management software<sup>6</sup>
- #1 in data protection<sup>7</sup>
- #1 in software-defined storage<sup>8</sup>

## Services and financing

### Dell EMC Professional Services

**Solutions customized for your needs**

Leverage onsite integration or application implementation with [Dell EMC Professional Services](#).

#### Deployment assistance when you need it

You can trust Dell EMC to deploy the racked configuration in your data center, including network cabling, operating system, firmware and hypervisor with [Dell EMC ProDeploy](#).

#### Support is always on for you

Enjoy unlimited access to 24x7 chat, email and phone support services with how-to assistance and disaster recovery from [Dell EMC ProSupport](#).

### Dell Financial Services

- Full-service leasing and financing solutions are located throughout the U.S., Canada and Europe.
- Dell Financial Services can finance the total technology solution.
- Efficient electronic quoting and online contracts offer the best customer experience.

Learn more about [Dell Financial Services](#).

## Get a handle on data growth right away

Don't wait to find out more about how you can get the confidence, convenience and customer support you require to adopt Microsoft Storage Spaces Direct. Contact your Dell EMC sales representative, or visit the [Dell EMC Microsoft Storage Spaces Direct Ready Nodes page](#) to learn more.

### Contact us

To learn more, contact your local representative or authorized reseller.



<sup>1</sup> IDC WW Quarterly Converged Systems Tracker, December 2017, Vendor Revenue — CY17Q3.

<sup>2</sup> IDC WW Quarterly Converged Systems Tracker, Q1 2017, June 2017, Vendor Revenue.

<sup>3</sup> IDC WW Quarterly Enterprise Storage Systems Tracker, September 2017, Vendor Revenue — EMC Q2 2017.

<sup>4</sup> Dell EMC Annual Report, 2015.

<sup>5</sup> IDC WW Quarterly Cloud IT Infrastructure Tracker, April 2017, Vendor Revenue — EMC Q4 2016.

<sup>6</sup> IDC WW Virtual Machine and Cloud System Market Shares 2016, July 2017.

<sup>7</sup> Dell EMC Pulse, "Gartner Recognizes EMC as a Leader in the 2016 Data Center Backup and Recovery Software Magic Quadrant," June 2016.

<sup>8</sup> IDC WW Semiannual Software Tracker, 2H2016, April 2017.