

DELL EMC READY SOLUTIONS FOR MICROSOFT SQL

Designed for superior performance, significant cost savings and future-ready scalability for your Microsoft SQL Server 2017 environment.

Technical Specifications

Dell EMC Ready Solutions for Microsoft SQL have a wide variety of sizes to accommodate your customers' database size, number of users and use case.¹

Ready Solutions for Microsoft SQL:

- [with Microsoft Storage Spaces Direct Ready Nodes](#)
- [with Dell EMC Unity All-Flash Storage and Data Protection](#)
- [design for Dell EMC XtremIO](#)

Ready Solution for Microsoft SQL with Microsoft Storage Spaces Direct Ready Nodes

	Small database environment	Small to medium database environment	Medium to large database environment	Large database environment
Servers	4 x PowerEdge R640	8 x PowerEdge R640	12 x PowerEdge R640	16 x PowerEdge R640
Chassis	2.5 " Chassis with up to 10 Hard Drives, 2x 2.5" SATA/SAS Drives and 1PCIe slot, 2CPU only (5101052)			
Processor	2 x Intel® Xeon® Platinum 8160 Processors 24C @2.1Ghz			
Memory	768GB (24 x 32GB DR DDR4 2666MT/s RDIMMs)			
Local Disks	10 x 1.92 TB Toshiba SAS SSDs 12 x 1.92 TB Toshiba SAS SSDs			
iDRAC	iDRAC9 Enterprise			
rNDC	N/A			
Add-on NICs	1 x Mellanox Connect X-4 Lx dual port 25GbE			
HBA's	HBA330			
Power Supply	2 x Dell PWR SPLY, 1100W, RDNT, LTON			
Networking				
OOB Switch (optional)	1 x Dell EMC Networking S3048-ON			
Storage NW Switch	2 x Dell EMC Networking S5048-ON 25GbE			
Data Domain NW Switch (optional)	2 x Dell EMC Networking S4048-ON 10GbE			

1. The quantity and configuration of each system depends on the specific size and use case.



Ready Solution for Microsoft SQL with Microsoft Storage Spaces Direct Ready Nodes - Continued

Software

Database	Microsoft SQL Server 2017
Guest OS	Microsoft Windows Server® 2016 Data Center edition
Host OS	Microsoft Windows Server 2016 with Hyper-V®

Services

ProDeploy Enterprise Suite (optional)	Choose ProDeploy on all solution hardware and the ProDeploy Add-on for Storage Spaces Direct Ready Nodes to ensure your S2D cluster is ready to receive a SQL Server workload. Upgrade to ProDeploy Plus for onsite delivery, training credits and 30 days post-deployment configuration assistance.
ProSupport Enterprise Suite (mandatory)	At a minimum ProSupport on all hardware and ProSupport for Software on each Storage Spaces Direct Ready Node is required. Upgrade to ProSupport Plus for a Technology Service Manager that provides a single point of contact across your Ready Solution. For SQL software, ProSupport for Software is an optional service, currently only available in the U.S. and Canada.

Dell EMC Ready Solutions for Microsoft SQL with Dell EMC Unity All-Flash Storage and Data Domain

Servers

PowerEdge R740	
Form Factor	2U
Processor	Intel Xeon Scalable processor family with up to 28 cores per processor
Processor Sockets	2
Chipset	Intel C620 series
Memory	Up to 3 TB (24 DIMM slots): 8/16/32/64/128 GB DDR4 with up to 2,666 MT/s
I/O Slots	Riser options with up to 8 PCIe Gen 3 slots; maximum of 4 x 16 slots
Storage Controllers	<ul style="list-style-type: none"> Internal controllers: PERC H330, H730p, H740p, HBA330, Software RAID (SWRAID) S140 Boot Optimized Storage Solution (BOSS) subsystem: Hardware RAID 2 x M.2 solid-state drives (SSDs) 120 GB, 240 GB External PERC (RAID): H840 External HBA (non-RAID): 12 Gb/s SAS
Network Interface	4 x 1 GB, 4 x 10 GB, 2 x 10 GB + 2 x 1 GB, or 2 x 25 GB Network Daughter Cards

Networking

LAN Switch	2 x Dell EMC Networking S4048-ON 10 GbE
SAN Switch	2 x Connectrix Gen6 6610 24-ports 16Gbps

Storage

Dell EMC Unity 650F	
Controllers per Array	2 (active/active)
Operating Systems	Unity OE 4.4.0.1534750794
Maximum Drives Supported	1,000 per array
Maximum Raw Capacity ²	16.0 PB per array
Storage Media	Write-intensive, read-intensive SSDs with various capacities: 400 GB, 800 GB, 1.6 TB, 1.92 TB, 3.84 TB, 7.68 TB, 15.36 TB

2. Maximum raw capacity will vary based on available drive sizes at time of purchase.

Dell EMC Ready Solutions for Microsoft SQL with Dell EMC Unity All-Flash Storage and Data Domain - Continued

Storage		Dell EMC Unity 650F
Array Enclosures	Disk processor enclosure (DPE) with two form factors: <ul style="list-style-type: none"> • 2U with 25 x 2.5-inch drives • 2U with 8 x 3.5-inch drives 	
Drive Enclosures	Support for: <ul style="list-style-type: none"> • 2U 25-drive trays for 2.5-inch drives • 3U 80-drive trays for 2.5-inch drives 	
RAID Options	1/0, 5, 6	
Embedded SAS I/O Ports per Array	4 x 4-lane 12 Gb/s SAS ports for back-end connectivity	
Embedded CNA Ports per Array	4 ports: 8/16 Gb FC, 10 Gb IP/iSCSI, or 1 Gb RJ45	
Embedded 10GBASE-T Ports per Array	4	
Maximum FC Ports per Array	20	
Maximum SAN Hosts	2,048	
Maximum LUN Size	256 TB	

Data Protection with Data Domain Backup Appliance

	DD6300 All-in-One Base Configuration	DD6300 All-in-One Expanded Configuration
Rack Height	2U	2U
Processor	E5-2620 V3	E5-2620 V3
Memory Configuration (non-extended retention)	48 GB	96 GB
DIMMs	6 x 8 GB	12 x 8 GB
Supported Capacity (non-extended retention)	76 TB (28 TB internal + 48 TB external)	180 TB (36 TB internal + 144 TB external)
HDDs in 3.5-inch bays	7 or 7+5	12
SSDs in 2.5-inch bays	1	2
NVRAM	NVRAM 8g Model 3	NVRAM 8g Model 3
SAS I/O Modules (quad-port 6 Gb/s SAS)	> 0 for internal storage only; > 1 with external storage	> 0 for internal storage only; > 1 with external storage
SAS String Depth (max): ES30	1	4
SAS String Depth (max): DS60	0	1

Services

ProDeploy Enterprise Suite (optional)	Choose ProDeploy on all solution hardware and the ProDeploy Add-on for Dell EMC Unity as part of SQL Ready Solution implementations. Upgrade to ProDeploy Plus for onsite delivery, training credits and 30 days post-deployment configuration assistance.
ProSupport Enterprise Suite (mandatory)	At a minimum ProSupport is required on all solution hardware components. Upgrade to ProSupport Plus for a Technology Service Manager that provides a single point of contact across your Ready Solution. For SQL software, ProSupport for Software is an optional service, currently only available in the U.S. and Canada.

Dell EMC Ready Solutions for Microsoft SQL: Design for Dell EMC XtremIO

Servers		Dell EMC PowerEdge R840
Form Factor	2U	

Dell EMC Ready Solutions for Microsoft SQL: Design for Dell EMC XtremIO - Continued

Servers	
	Dell EMC PowerEdge R840
Processor	Intel Xeon Gold 6154 CPU @ 3.00GHz with 18C
Processor Sockets	4
Chipset	Intel C620 series
Memory	1.5 TB (24 x 64GB) LRDIMMs with up to 2,666 MT/s
I/O Slots	Up to 6 x PCIe Gen 3 slots
Storage Controllers	Internal controllers: H740p, HBA330
iDRAC	iDRAC9 Enterprise
Add-on NICs	Intel Ethernet Server Adapter X520-2
HBAs	2 x QLE2692 Dual Port 16Gb FC HBA
Network Interface	4 x 1GB, 4 x 10GB, 2 x 10GB + 2 x 1GB, 2 x 25GB
Power Supply	2 x Dell 2000W power supply module
Networking	
LAN Switch	2 x Dell EMC Networking S4148F-ON 10 GbE
SAN Switch	2 x Connectrix Gen6 6610
Storage	
	Dell EMC XtremIO X2
Controllers per Array	2 per X Brick (Total 4)
Active-Active Controllers	4 (2 per Brick)
Front-end FC Ports	8 ports per Brick (Total 16)
SSD Enclosures	Two DAE
Number of SSDs	72 x 2TB
Raw / Usable Capacity	Total Raw 125.7TB / Total Usable 111.7TB
InfinBand Switches	2
Software	
Database	Microsoft SQL Server 2017
Hypervisor OS	ESXi 6.7
Windows OS	Microsoft Windows Server 2016
RHEL OS	Red Hat Enterprise Linux (RHEL) 7.6
XMS Version	6.2.0-85_ndu
Services	
ProDeploy Enterprise Suite (optional)	Component-level deployment services are available for all hardware included in the SQL Ready Solution Design for XtremIO. ProDeploy Plus is recommended for onsite delivery, training credits and 30 days post-deployment configuration assistance.
ProSupport Enterprise Suite (mandatory)	At a minimum ProSupport is required on all solution hardware components. Upgrade to ProSupport Plus for a Technology Service Manager that provides a single point of contact. For SQL software, ProSupport for Software is an optional service, currently only available in the U.S. and Canada.



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