DELL Technologies

Technical Specifications

Dell ObjectScale

Dell ObjectScale is an enterprise-grade, cloud-scale object storage platform. With ObjectScale, any organization can deliver scalable public cloud services with the reliability and control of a private-cloud infrastructure. ObjectScale provides S3 and multiprotocol support for object workloads and enables organizations to easily manage globally distributed storage infrastructure under a single global namespace with anywhere access to content. ObjectScale features fully-integrated turnkey appliance options that bundle software and Dell PowerEdge servers into an easily deployed object system.

ObjectScale is currently in its fourth generation of hardware appliances, the X-Series, building on the legacy of the EMC Centera, Atmos and ECS object storage platforms that predated ObjectScale. The X-Series currently is comprised of the X560 and XF960 appliances and the EX-Series is comprised of one additional product carrying the ECS brand, EX5000.

ObjectScale X560	ObjectScale XF960	ECS EX5000
		
The X560 is a modern, general-purpose HDD platform. It offers the perfect blend of economy and density for AI data lake storage, featuring hardware innovations based on PowerEdge R760xd2. Rack capacity ranges from 60TB to 9.22PB.	The XF960 is the next leap in all-flash object storage for enterprises looking to super-charge their AI insights and innovations. XF960 delivers extreme scale, speed and resiliency through extensive hardware advances based on PowerEdge R760xd. Rack capacity ranges from 230.4TB to 23.59PB.	A high density, hot disk-swappable, object storage system, the EX5000 packs up to 16.8PB per rack and can grow into exabyte-scale with ease. It's an ideal platform for long-term retention, storage consolidation and multi-purpose object storage requirements including S3 and archive workloads.

Features	ObjectScale X560	ObjectScale XF960	ECS EX5000
Node architecture	▪ Intel x86 servers ▪ Integrated storage ▪ 6, 12 or 24 disk drives per node	▪ Intel x86 servers ▪ Integrated storage ▪ 6, 12 or 24 disk drives per node	▪ Intel x86 servers ▪ Integrated storage ▪ Up to 100 disk drives per node
Network connectivity	▪ 25GbE FrontEnd ▪ 25GbE BackEnd	▪ 100GbE or 25GbE* FrontEnd ▪ 100GbE BackEnd **Supported when customer-provided (requires 25GbE switch and adapter)*	▪ 25GbE FrontEnd ▪ 25GbE BackEnd
Rack configurations	▪ 1, through 16 node configurations (5 node minimum initial rack) ▪ HA power	▪ 1, through 16 node configurations (5 node minimum initial rack) ▪ HA power	▪ EX5000S: 1, through 7 node configurations (5 node minimum initial rack) ▪ EX5000D: 2, through 14 node configurations (8 node minimum initial rack) ▪ HA power
Storage configurations	▪ Unstructured storage up to 9216TB per rack	▪ Unstructured storage up to 23,592TB TB per rack	▪ Unstructured storage up to 16,800TB per rack
Architecture	▪ Titan S standard 42U cabinet ▪ 2U node containing server and disks ▪ Fully accessible – field serviceable ▪ Conventional front to back cooling ▪ HA power cabling and cooling	▪ Titan S standard 42U cabinet* ▪ 2U node containing server and disks ▪ Fully accessible – field serviceable components ▪ Conventional front to back cooling ▪ HA power cabling and cooling **Rack is optional and shipped separatety from nodes. Rack integration performed at customer site.*	▪ Titan S standard 42U cabinet ▪ EX5000S: 5U chassis containing server and disks ▪ EX5000D: 5U chassis containing server and disks ▪ Fully accessible – field serviceable components ▪ Conventional front to back cooling ▪ HA power cabling and cooling
Min / max cluster size	▪ 5 node minimum (with 12+4 erasure coding) ▪ No maximum	▪ 5 node minimum ▪ Maximum:64 nodes	Single: ▪ 5 node minimum ▪ No maximum Dual: ▪ 8 node minimum ▪ No maximum
Min / max rack configuration	▪ Min: 1 node = 1 server with included disks ▪ Max: 16 nodes = 16 servers with included disks	▪ Min: 1 node = 1 server with included disks ▪ Max: 16 nodes = 16 servers with included disks	Single: ▪ Min: 1 chassis = 1 server with included disks ▪ Max: 7 chassis = 7 servers with included disks Dual: ▪ Min: 1 chassis = 2 server with included disks ▪ Max: 7 chassis = 14 servers with included disks (14 nodes per 42U rack)
Node:disk ratios	1:6, 1:12, 1:24	1:6, 1:12, 1:24	EX5000S: 1:25, 1:50, 1:75, 1:100 EX5000D: 1:25, 1:50
Disk type (7200rpm, SATA)	2TB, 4TB, 8TB, 16TB, 20TB, 24TB	7.68TB TLC, 15.36TB FIPS SED TLC, 30.72TB QLC, 61.44TB QLC	16TB, 20TB, 24TB
Memory	256GB	256GB	192GB
Cache SSD for improved metadata read/write cache performance	1.6TB drive (included)	N/A	960GB drive (included)

Features	ObjectScale X560	ObjectScale XF960	ECS EX5000
Raw capacity (per node with full complement of disks)	48TB, 96TB, 192TB, 384TB, 480TB, 576TB	184TB, 369TB, 737TB, 1475TB	1600TB, 2000TB, 2400TB
Max raw capacity (per rack)	Up to 9,216TB	Up to 23,593TB	Up to 16,800TB
Node dimensions	▪ 2U x D (837 mm) ▪ Weight (maximum): 40.18 kg/88.6 lb with 24 drives	▪ 2U x D (736mm / 28.98 inches) ▪ Weight (maximum):: 36.1kg/79.58lbs with 24 drives	▪ 5U x D (970.4 mm) with CMA ▪ Weight (maximum): 125kg/276lb
Rack dimensions	▪ H(78.4") x W(23.6") x D(47.2") – including the front door ▪ Weight: 1076kg/2372lb with 4 switches, 16 2U nodes	▪ H(78.4") x W(23.6") x D(47.2") – including the front door ▪ Weight: 852kg/1877lb with 4 switches, 16 2U nodes	▪ H(78.4") x W(23.6") x D(47.2") – including the front door ▪ Weight: 1179kg/2600lb with 4 switches, 7 5U nodes
Max power	.7043 kVA per 2U node with 24 drives	1.136kVA per 2U node	2.4 kVA per 5U chassis
Max heatload	5250 BTU/hr for every 2U node	3878 BTU/Hr for every 2U node	8344 BTU/Hr for every 5U chassis
Power specifications (server)	2X1400W power supplies per node (HA)	2X1400W power supplies per node (HA)	2X2400W power supplies per node (HA)

Power specifications (rack)	▪ Connection: 6 single phase L6-30 (redundant power)
	  ▪ 30A circuit breaker (A) max. per AC power source
	▪ 2 three-phase WYE S52.30 (redundant power)
	  ▪ 32A circuit breaker (A) max. per AC power source
	▪ 2 three-phase delta CS-8365C (redundant power)
	  ▪ 50A circuit breaker (A) max. per AC power source
	▪ Input voltage (VAC): 200-240
	▪ Frequency (Hz): 50 - 60
		▪ Connection: 6 single phase L6-30 (redundant power)
		  ▪ 30A circuit breaker (A) max. per AC power source
		▪ 2 three-phase WYE S52.30 (redundant power)
		  ▪ 32A circuit breaker (A) max. per AC power source
		▪ 2 three-phase delta CS-8365C (redundant power)
		  ▪ 50A circuit breaker (A) max. per AC power source
		▪ Input voltage (VAC): 200-240
		▪ Frequency (Hz): 50 - 60
			▪ Connection: 8 single phase L6-30 (redundant power)
			  ▪ 30A circuit breaker (A) max. per AC power source
			▪ 4 three-phase WYE S52.30 (redundant power)
			  ▪ 32A circuit breaker (A) max. per AC power source
			▪ 4 three-phase delta CS-8365C (redundant power)
			  ▪ 50A circuit breaker (A) max. per AC power source
			▪ Input voltage (VAC): 200-240
			▪ Frequency (Hz): 50 – 60

Connectivity	▪ Network: dual 25 GbE front end switches and dual 25 GbE back end switches (internal traffic) per rack	▪ Network: dual 100 GbE front end switches and dual 100 GbE back end switches (internal traffic) per rack	▪ Network: dual 25 GbE front end switches and dual 25 GbE back end switches (internal traffic) per rack
	Uplink connectivity: up to 16x10 GbE, 16x25 GbE, 8x40GbE or 8x100GbE uplinks to customer network (800 Gb/s maximum bandwidth), including high availability configuration		
Backend aggregation switches	N/A	Yes	N/A
Environmental specifications	▪ Operating temperature (°F/°C): 41 - 86/ 5 - 30 ▪ Max. altitude: 7,500 ft/ 2,286 m @ 86°F/30°C ▪ Relative humidity: 20 - 80% non-condensing ▪ Raised floor: not required	▪ Operating temperature (°F/°C): 41 - 90/ 5 - 32 ▪ Max. altitude: 7,500 ft/ 2,286 m @ 90°F/32°C ▪ Relative humidity: 20 - 80% non-condensing ▪ Raised floor: not required	▪ Operating temperature (°F/°C): 41 - 90/ 5 - 32 ▪ Max. altitude: 7,500 ft/ 2,286 m @ 90°F/32°C ▪ Relative humidity: 20 - 80% non-condensing ▪ Raised floor: not required
Upgrade options	▪ Scale out by additional nodes ▪ 6 drive capacity upgrade kit	▪ Scale out by additional nodes ▪ 6 and 12 drive capacity upgrade kits	▪ Scale out by additional nodes ▪ 25 drive capacity upgrade kit

Learn more about
Dell ObjectScale solutions

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