DELL EMC DATA DOMAIN DEDUPLICATION STORAGE SYSTEMS

Data Domain Systems

Dell EMC Data Domain deduplication storage systems continue to revolutionize disk backup, archiving, and disaster recovery with high-speed, inline deduplication. This innovation continues with Dell EMC's new generation of midsized and large enterprise Data Domain systems powered with a Flash SSD. By consolidating backup and archive data on a Data Domain system, you can reduce storage requirements by 10-55x, making disk cost-effective for onsite retention and highly efficient for network-based replication to disaster recovery sites.

Specifications

Table 1. Data Domain controller performance and capacity

	DD2200	DD6300	DD6800[3]	DD9300[3]	DD9800[3]
MAXIMUM THROUGHPUT	Up to 3.8 TB/hr	Up to 8.5 TB/hr	Up to 14 TB/hr	Up to 20 TB/hr	Up to 31 TB/hr
MAXIMUM THROUGHPUT (DD BOOST)	Up to 4.7 TB/hr	Up to 24 TB/hr	Up to 32 TB/hr	Up to 41 TB/hr	Up to 68 TB/hr
LOGICAL CAPACITY[1]	40-860 TB	1.8 - 8.9 PB	2.8 - 14.4 PB	7.2 - 36 PB	10 - 50 PB
W/ DD EXTENDED RETENTION[2]	-	-	5.6 - 28.8 PB	14.4 - 72 PB	20 - 100 PB
W/ DD CLOUD TIER[2]	-	-	8.4 - 43.2 PB	21.6 - 108 PB	30 - 150 PB
MAX USABLE CAPACITY	Up to 17.2 TB	Up to 178 TB	Up to 288 TB	Up to 720 TB	Up to 1 PB
W/ DD Extended retention[2]	-	-	Up to 576 TB	Up to 1.44 PB	Up to 2 PB
W/ DD Cloud Tier[2]	-	-	Up to 864 TB	Up to 2.16 PB	Up to 3 PB
ES30 SHELVES	-	3 TB, 4 TB	3 TB, 4 TB	3 TB, 4 TB	3 TB, 4 TB
DRIVE TYPE	SAS	SAS	SAS	SAS	SAS
DS60 SHELF	N/A	3 TB, 4 TB	3 TB, 4 TB	3 TB, 4 TB	3 TB, 4 TB
DRIVE TYPE	N/A	SAS	SAS	SAS	SAS

1. Mix of typical enterprise backup data (file systems, databases, email, developer files). The low end of capacity range represents a full backup weekly or monthly, incremental backup daily or weekly, to system capacity. The top end of the range represents full backup daily, to system capacity. All capacity values are calculated using Base10 (i.e., 1TB = 1,000,000,000,000 bytes).
2. DD Cloud Tier and DD Extended Retention are mutually exclusive long-term retention solutions
3. The following systems support high availability active/standby configuration: DD9800, DD9300 and DD6800

	DD2200	DD6300	DD6800	DD9300	DD9800
BUILT-IN NETWORKING	1x Mgm't port 4x 1Gbe	1x Mgm't port 1x monitor port 4x 10Gbe	1x Mgm't port 1x monitor port 4x 10Gbe	1x Mgm't port 1x monitor port 4x 10Gbe	1x Mgm't port 4x 10Gbe
OPTIONAL NETWORKING W/ IO CARDS	Up to 8x 1GbE Up to 4x 10GbE Up to 8x 10GBase-T Up to 4x 8GB FC	The 10GBase-T card can auto-negotiate down to support 1GbE Up to 4x quad-port 10GbE SLICs: Optical Up to 4 x quad-port 10GBaseT SLICs (SLIC 1 inclusive) Up to 4 x dual ported 16Gbps FC	The 10GBase-T card can auto-negotiate down to support 1GbE Up to 4x quad-port 10GbE SLICs: Optical Up to 4 x quad-port 10GBaseT SLICs (SLIC 1 inclusive) Up to 4 x dual ported 16Gbps FC	The 10GBase-T card can auto-negotiate down to support 1GbE Up to 4x quad-port 10GbE SLICs: Optical Up to 4 x quad-port 10GBaseT SLICs (SLIC 1 inclusive) Up to 4 x dual ported 16Gbps FC	The 10GBase-T card can auto-negotiate down to support 1GbE Up to 4x quad-port 10GbE SLICs: Optical Up to 4 x quad-port 10GBaseT SLICs (SLIC 1 inclusive) Up to 4 x dual ported 16Gbps FC

Table 2. Data Domain physical specifications and environmentals

	DD2200	DD6300	DD6800	DD9300	DD9800
WEIGHT (LBS)	7 HDDs: 65 lbs 12 HDDs: 73 lbs	7 HDD: 74 lbs 12 HDD: 82 lbs	4 HDD / 2 SSD: 68 4 HDD / 4 SSD: 70	4 HDD / 5 SSD: 71 4 HDD / 8 SSD: 76	8 SSD: 112 lbs 15 SSD: 117 lbs
DIMENSIONS	19" x 29" x 3.5" 2U EIA rack units	19" x 30.5" x 3.4" 2U EIA rack units	19" x 30.5" x 3.4" 2U EIA rack units	19" x 30.5" x 3.4" 2U EIA rack units	19" x 27.7" x 6.8" 4U EIA rack units
POWER 100-120/200-240V~, 50/60 HZ	7 HDDs: 406 VA 12 HDDs: 502 VA	7 HDD / 1 or 2 SSD: 773 VA 12 HDD / 1 or 2 SSD: 773 VA	4 HDD / 2 SSD: 794 VA 4 HDD / 4 SSD: 794 VA	4 HDD / 5 SSD: 866VA 4 HDD / 8 SSD: 866 VA	1887 VA (200-240 V)
THERMAL RATING (WATTS)	7 HDDs: 394 Watts 12HDDs: 487 Watts	7 HDD / 1 or 2 SSD : 530 Watts 12 HDD / 1 or 2 SSD : 530 Watts	4 HDD / 2 SSD: 560 Watts 4 HDD / 4 SSD: 560 Watts	4 HDD / 5 SSD: 645 Watts 4 HDD / 8 SSD: 645 Watts	1887 Watts
THERMAL RATING (BTU/HR)	7 HDDs: 1,344 12HDDs: 1,662	7 HDD / 1 or 2 SSD: 1808 12 HDD / 1 or 2 SSD: 1808"	4 HDD / 2 SSD : 1910 4 HDD / 4 SSD: 1910"	4 HDD / 5 SSD: 2200 4 HDD / 8 SSD: 2200"	6118
OPERATING TEMPERATURE/ ALTITUDE[5]	10°C to 35°C, 35°C at 7,500 ft	10°C to 35°C, 35°C at 7,500 ft	10°C to 35°C, 35°C at 7,500 ft	10°C to 35°C, 35°C at 7,500 ft	10°C to 35°C, 35°C at 7,500 ft
NON-OPERATING (TRANSPORTATION) TEMPERATURE	-40°C to +65°C (-40°F to +149°F)	-40°C to +65°C (-40°F to +149°F)	-40°C to +65°C (-40°F to +149°F)	-40°C to +65°C (-40°F to +149°F)	-40°C to +65°C (-40°F to +149°F)
OPERATING HUMIDITY	20% to 80% non-condensing	20% to 80% non-condensing	20% to 80% non-condensing	20% to 80% non-condensing	20% to 80% non-condensing
OPERATION ACOUSTIC NOISE (SOUND POWER)	LWAd: 7.52 bels	LWAd: 7.52 bels	LWAd: 7.52 bels	LWAd: 7.52 bels	LWAd: 7.52 bels
OPERATION ACOUSTIC NOISE (SOUND PRESSURE)	LpAm: 65 db	LpAm: 67.6 db	LpAm: 67.6 db	LpAm: 67.6 db	LpAm: 56.4 db

5. Derate 1.1°C/1,000 ft above 7,500 ft to 10,000 ft

Table 3. Data Domain controller regulatory approvals

	DD2200	DD6300	DD6800	DD9300	DD9800
SAFETY	UL 60950-1, CSA 60950-1, EN 60950-1, IEC 60950-1, GS, SABS, GOST, IRAM				
EMISSIONS	FCC Class A, EN 55022, CISPR 22, VCCI, BSMI, MIC, ICES-003				
IMMUNITY	EN 55024, CISPR 24				
POWER LINE HARMONIS	EN 61000-3-2				

Table 4. Data Domain Virtual Edition performance and capacity

	DD VE* at 16 TB	DD VE* at 96 TB
MAXIMUM THROUGHPUT	Up to 2.1 TB/hr	Up to 4 TB/hr
MAXIMUM THROUGHPUT (DD BOOST)	Up to 5.6 TB/hr	Up to 11.2 TB/hr
LOGICAL CAPACITY	Up to 800 TB	Up to 4.8 PB
LOGICAL CAPACITY W/ DD CLOUD TIER	Up to 2.4 PB	Up 14.8 PB
MAX USABLE CAPACITY	Up to 16 TB	Up to 96 TB
MAX USABLE CAPACITY W/ DD CLOUD TIER	Up to 48 TB	Up to 288 TB

*Throughput drawn running DD VE with 16 TB & 96 TB instances: Host server: 2x Intel Xeon CPU (6 Cores each) @ 2GHz, 128GB memory, 2x10GbE NIC; Storage: DAS with 3TB 7200RPM SAS Drives, RAID6, Battery Powered HBA Cache Enabled, Disk Cache Disabled

Software

Software features

Global Compression™, Data Invulnerability Architecture, including inline verification and integrated dual disk parity RAID 6, snapshots, telnet, FTP, SSH, email alerts, scheduled capacity reclamation, Ethernet failover and aggregation, Link Aggregation Control Protocol (LACP), VLAN tagging, IP aliasing, Data Domain Boost, Data Domain Encryption, Data Domain Extended Retention, Data Domain Replicator, Data Domain Retention Lock optional software, Data Domain Virtual Tape Library (for open systems and IBM i operating environments) and Data Domain Cloud Tier for long-term retention.

System management

Data Domain Management Center, Data Domain System Manager, SNMP, and command line management interface.

Data management

NFS v3 over TCP, CIFS and DD Boost over 1 GbE or 10 GbE or Fibre Channel, tape library emulation (VTL) over Fibre Channel, and NDMP Tape Server.

Data Domain rack

Power configuration

Single phase is standard, optional 3-phase.

Two power domains (base and extended), each redundant.

Power inlet count

Either two (for redundant base configuration) or four (for redundant extended configuration).

Plug types

NEMA L6-30p or IEC 60309 332P6

Power capacity

200-240 V~, single-phase, 47-63 Hz 4,800 VA (base configuration) 9,600 VA (extended configuration)

AC protection

30 A site circuit breaker on each power domain

Dimensions

40U available rack capacity

Height: 75 in (190.8 cm); Width: 24.0 in (61.1 cm); Depth: 39.0 in (99.2 cm) Weight:

380 lbs (173 kg) when empty

ES30 Expansion shelf

External interface (host/expansion)

Dual 4 lane 6 Gb/s serial attached SCSI II (SAS) ports per Link Control Card (LCC)— one for host and one for expansion

Connector type

SFF-8088 connectors (mini-SAS)

SAS cable length

Up to 5 meter

Disk drives

15-drive bays per ES30 expansion shelf, support low profile, one inch high, 3.5-inch form factor drives Drives Choices*
SAS (6 Gb/s), 3 TB or 2 TB, & 7200 RPM

Dimensions

Height: 5.25 in (13.34 cm)

Width: 19.0 in (48.3 cm)

Depth: 14.0 in (35.56 cm)

Weight: 68 lbs (30.8 kg)

Operational

Power (VA): 280VA or 235W, (100-240V ~, 47 to 63 Hz)

Thermal Rating: 800 BTU/hr

Operating Temperature:

Ambient temperature: 41º F to 104º F (5º C to 40º C)

Temperature gradient: 18º F/hr (10º C/hr)

Relative humidity extremes: 20% to 80% noncondensing

Elevation: -50 to 7500 ft (-16 to 2300 m)

Non-Operating (Transportation) Temperature:

Ambient temperature: -40º F to 149º F (-40º C to 65º F)

Temperature gradient: 45º F/hr (25ºC/hr)

Relative humidity: 10% to 90% noncondensing

Elevation: -50 to 35,000 ft (-16 to 10,600 m)

DS60 Expansion shelf

External interface (host/expansion)

Quad 8 lane 12 Gb/s serial attached SCSI II (SAS) ports per Link Control Card (LCC)— Half of each port is blocked allowing the use of standard mini-SAS-HD connectors – one port is used for the host connection and the other is used for expansion. The host controller runs at 6Gb/s to the DS60

Connector type

SFF-8088 connectors (mini-SAS)

SAS cable length

Up to 5 meter

Disk drives

60-drive bays per DS60 expansion shelf, support low profile, one inch high, 3.5-inch form factor drives Drives Choices*

SAS (6 Gb/s), 3 TB or 4 TB, & 7200 RPM

Dimensions

Height: 8.75 in (22.23 cm) 5U (4U plus 1U cable management tray)

Width including rails: 17.50 in (44.45 cm)

Depth (chassis only): 34.5 in (87.63 cm)

Maximum depth (fully configured): 36.4 in (92.46 cm)

Weight: 225.0 lbs (90.7 kg) (with FRUs installed)

Operational

Power (VA): 980 VA or 931W (200-240V ~, 47 to 63 Hz)

Thermal Rating: 3177 BTU/hr

Operating Temperature:

Ambient temperature: 41° F to 104° F (5° C to 40° C)

Temperature gradient: 18° F/hr (10° C/hr)

Relative humidity extremes: 20% to 80% noncondensing

Elevation: -50 to 7500 ft (-16 to 2300 m)

Non-Operating (Transportation) Temperature:

Ambient temperature: -40° F to 149° F (-40° C to 65° F)

Temperature gradient: 45° F/hr (25°C/hr)

Relative humidity: 10% to 90% noncondensing

Elevation: -50 to 35,000 ft (-16 to 10,600 m)

Learn more about Dell EMC Data Domain

Contact a Dell EMC Expert