



Data Domain Systems

# DELL EMC DATA DOMAIN DEDUPLICATION STORAGE 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 up to 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

	DD3300	DD6300	DD6800 <sup>3</sup>	DD9300 <sup>3</sup>	DD9800 <sup>3</sup>
<b>MAXIMUM THROUGHPUT</b>	Up to 4. TB/hr	Up to 8.5TB/hr	Up to 14TB/hr	Up to 20TB/hr	Up to 31TB/hr
<b>MAXIMUM THROUGHPUT (DD BOOST)</b>	Up to 7.0TB/hr	Up to 24TB/hr	Up to 32TB/hr	Up to 41TB/hr	Up to 68TB/hr
<b>LOGICAL CAPACITY<sup>1</sup></b>	200TB – 1.6PB	1.8 - 8.9PB	2.8 - 14.4PB	7.2 - 36PB	10 - 50PB
<b>W/ DD EXTENDED RETENTION<sup>2</sup></b>	-	-	5.6 - 28.8PB	14.4 - 72PB	20 - 100PB
<b>W/ DD CLOUD TIER<sup>2</sup></b>	600TB – 4.8PB	-	8.4 - 43.2PB	21.6 - 108PB	30 - 150PB
<b>MAX USABLE CAPACITY</b>	Up to 32TB	Up to 178TB	Up to 288TB	Up to 720TB	Up to 1PB
<b>W/ DD Extended retention<sup>2</sup></b>	-	-	Up to 576TB	Up to 1.44PB	Up to 2PB
<b>W/ DD Cloud Tier<sup>2</sup></b>	Up to 96TB	-	Up to 864TB	Up to 2.16PB	Up to 3PB
<b>ES30 SHELVES</b>	-	3TB, 4TB	3TB, 4TB	3TB, 4TB	3TB, 4TB
<b>DRIVE TYPE</b>	SAS	SAS	SAS	SAS	SAS
<b>DS60 SHELF</b>	N/A	3TB, 4TB	3TB, 4TB	3TB, 4TB	3TB, 4TB
<b>DRIVE TYPE</b>	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

	DD3300	DD6300	DD6800	DD9300	DD9800
<b>BUILT-IN NETWORKING</b>	1x Mgm't port 4x 10G Base-T	1x Mgm't port 1x monitor port 4x 10G Base-T	1x Mgm't port 1x monitor port 4x 10G Base-T	1x Mgm't port 1x monitor port 4x 10G Base-T	1x Mgm't port 4x 10G Base-T
<b>OPTIONAL NETWORKING W/ IO CARDS</b>	The 10GBase-T card can auto-negotiate down to support 1GbE  Up to single dual-port 10GbE SLICs: Optical  Single quad-port 16Gbps FC HBA	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**

	DD3300	DD6300	DD6800	DD9300	DD9800
<b>WEIGHT (LBS)</b>	16 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
<b>DIMENSIONS</b>	17.1" x 27.6" 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
<b>POWER</b> 100-120/200-240V~, 50/60 HZ	16 HDDs: 429 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)
<b>THERMAL RATING (WATTS)</b>	16HDDs: 425 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
<b>THERMAL RATING (BTU/HR)</b>	16HDDs: 1449	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
<b>OPERATING TEMPERATURE/ ALTITUDE<sup>5</sup></b>	10°C to 35°C, 35°C at 3,117 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
<b>NON-OPERATING (TRANSPORTATION) TEMPERATURE</b>	-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)
<b>OPERATING HUMIDITY</b>	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
<b>OPERATION ACOUSTIC NOISE (SOUND POWER)</b>	LWAd: 7.8 bels	LWAd: 7.52 bels	LWAd: 7.52 bels	LWAd: 7.52 bels	LWAd: 7.52 bels
<b>OPERATION ACOUSTIC NOISE (SOUND PRESSURE)</b>	LpAm: 67 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**

	DD3300	DD6300	DD6800	DD9300	DD9800
<b>SAFETY</b>	UL 60950-1, CSA 60950-1, EN 60950-1, IEC 60950-1, GS, SABS, GOST, IRAM				
<b>EMISSIONS</b>	FCC Class A, EN 55022, CISPR 22, VCCI, BSMI, MIC, ICES-003				
<b>IMMUNITY</b>	EN 55024, CISPR 24				
<b>POWER LINE HARMONIS</b>	EN 61000-3-2				

**Table 4. Data Domain Virtual Edition performance and capacity**

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

\*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

**\*\* DD VE Cloud support:**

DD VE can run on-prem or in the cloud up to 96 TB. DD VE runs on VMware, Hyper-V or KVM on-prem, and on AWS, VMware Cloud, Azure, Google Cloud Platform, AWS GovCloud and Azure Government Cloud.

## 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 Retention Lock, Data Domain Virtual Tape Library (VTL) (for open systems and IBMi operating environments). Available add-ons include: Data Domain Boost, Data Domain Cloud Tier for long-term retention, Data Domain Cloud Disaster Recovery, and Data Domain Replicator.

### 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: 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)

## 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)



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