



## 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 10-30x, 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**

	<b>DD2200</b>	<b>DD6300</b>	<b>DD6800</b>	<b>DD9300</b>	<b>DD9800</b>
<b>MAXIMUM THROUGHPUT</b>	3.8 TB/hr	8.5 TB/hr	14 TB/hr	20 TB/hr	31 TB/hr
<b>MAXIMUM THROUGHPUT (DD BOOST)</b>	4.7 TB/hr	24 TB/hr	32 TB/hr	41 TB/hr	68 TB/hr
<b>MAX LOGICAL CAPACITY<sup>1</sup></b>	40-860 TB	1.8 - 8.9 PB	2.8 - 14.4 PB	7.2 - 36 PB	10 - 50 PB
<b>W/ DD EXTENDED RETENTION<sup>2</sup></b>	-	-	5.6 - 28.8 PB	14.4 - 72 PB	20 - 100 PB
<b>W/ DD CLOUD TIER<sup>2</sup></b>	-	-	8.4 - 43.2 PB	21.6 - 108 PB	30 - 150 PB
<b>MAX USABLE CAPACITY</b>	Up to 17.2 TB	Up to 178 TB	Up to 288 TB	Up to 720 TB	Up to 1 PB
<b>W/ DD EXTENDED RETENTION<sup>2</sup></b>	-	-	Up to 576 TB	Up to 1.44 PB	Up to 2 PB
<b>W/ DD CLOUD TIER<sup>2</sup></b>	-	-	Up to 864 TB	Up to 2.16 PB	Up to 3 PB
<b>ES30 SHELVES</b>	-	2 TB, 3 TB, 4 TB <sup>3</sup>	2 TB, 3 TB, 4 TB <sup>3</sup>	2 TB, 3 TB, 4 TB <sup>3</sup>	2 TB, 3 TB, 4 TB <sup>3</sup>
<b>DRIVE TYPE</b>	SAS	SAS, SATA	SAS, SATA	SAS, SATA	SAS, SATA
<b>DS60 SHELF</b>	N/A	3 TB, 4 TB	3 TB, 4 TB	3 TB, 4 TB	3 TB, 4 TB
<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. No SATA Drive for 4TB drives

4. The following systems support High Availability Active/Standby configuration: DD9800, DD9300 & DD6800

	<b>DD2200</b>	<b>DD6300</b>	<b>DD6800</b>	<b>DD9300</b>	<b>DD9800</b>
<b>BUILT-IN NETWORKING</b>	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 1Gbe
<b>OPTIONAL NETWORKING W/ IO CARDS</b>	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 Up to 4 x dual ported 16Gbps FC

**Table 2. DATA DOMAIN PHYSICAL SPECIFICATIONS & ENVIRONMENTALS**

	<b>DD2200</b>	<b>DD6300</b>	<b>DD6800</b>	<b>DD9300</b>	<b>DD9800</b>
<b>WEIGHT (LBS)</b>	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
<b>DIMENSIONS</b>	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
<b>POWER</b> 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)
<b>THERMAL RATING (WATTS)</b>	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
<b>THERMAL RATING (BTU/HR)</b>	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
<b>OPERATING TEMPERATURE/ ALTITUDE<sup>5</sup></b>	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
<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: 7.52 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: 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**

	<b>DD2200</b>	<b>DD6300</b>	<b>DD6800</b>	<b>DD9300</b>	<b>DD9800</b>
<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**

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

SATA (3 Gb/s), 3 TB or 2 TB or 1 TB, & 7200 RPM

Integrated SAS expander module for shelves with SATA drives Point-to-point disk connectivity

\* See Data Domain Controller Performance and Capacity section for Shelves & Drive Type Supported for each controller

## **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): 100-240 V~, 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

Integrated SAS expander module for shelves with SATA drives Point-to-point disk  
connectivity

\* See Data Domain Controller Performance and Capacity section for Shelves & Drive Type  
Supported for each controller

### **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): 200-240 V~, 47 to 63 HZ

Thermal Rating: 3177 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)

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