

Appliance Series

DD500 Series: Deduplication Storage for Large, Distributed Data Centers

Key Benefits

Scalable Deduplication Storage

- > Fast, inline deduplication with up to 1.2 TB/hour of throughput
- > Extended retention providing up to 1.08 PB of deduplication storage
- > 10-30x data reduction average

Easy Integration

- > Supports leading backup and archive applications from:
 - Symantec EMC
 - HP IBM
 - Microsoft CommVault
 - Atempo BakBone
 - Computer Associates
- > Supports leading enterprise applications including:
 - > Database: Oracle, SAP, DB2, SQL
 - > Email: Microsoft Exchange
 - > Virtual environments: VMware
- > Simultaneous use of VTL, NAS and Symantec OpenStorage (OST)

Multi-Site Disaster Recovery

- > 99% bandwidth reduction
- > Flexible replication topologies
- > Multi-site tape consolidation
- > Remote site replication
- > Cost-efficient disaster recovery

Ultra-Safe Storage for Reliable Recovery

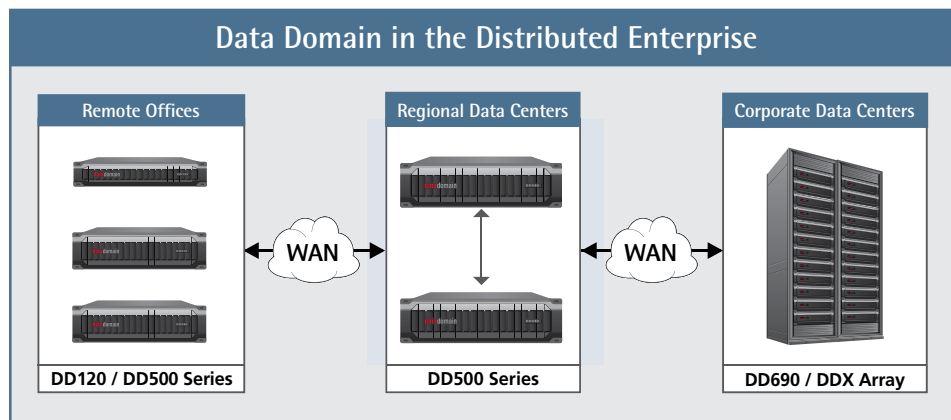
- > Continuous recovery verification
- > Continuous fault detection and healing
- > Dual disk parity RAID-6

Operational Simplicity

- > Lower administrative costs
- > Power and cooling efficiencies for green operation
- > Reduced hardware footprint
- > Supports any combination of backup and archive applications in a single system

Today's traditional disk backup systems go no further than providing a front-end to a tape library infrastructure with a fast cache, temporarily alleviating backup window problems. They fail to replace tape automation technology because they lack the requisite economic and operational qualities. Traditional disk cannot cost efficiently retain backup data for any length of time, and backup data is too large to be replicated over a Wide Area Network (WAN).

Data Domain has revolutionized disk backup and remote office data protection with patented high-speed, inline deduplication. Backup data can be reduced in size by an average of 10-30x, so disk backup storage is now cost-effective for long-term onsite retention and highly efficient for network-based replication to disaster recovery sites.



Scalable Deduplication Storage

Massive Data Reduction

The Data Domain Appliance Series is the industry's highest throughput, most cost-effective and scalable deduplication storage solution for disk backup and network-based disaster recovery (DR).

Data Domain systems store each unique data sequence only once and save significant physical storage capacity by substituting small



DD580 Appliance

references for each identical redundant sequence. Backup data, for example, is ideal for this technology, and Data Domain is the only vendor to offer the benefits of data reduction and the throughput to meet backup windows.

The Appliance Series offers an average of 10-30x data reduction for enterprise recovery images, enabling cost-efficient retention on disk for high speed and more reliable recoveries. Snapshot technology further enables extended local and offsite retention on disk.

Scalable Data Protection

The Appliance Series offers data protection capacities from 55 TB to 1.08 PB of logical storage per appliance for a typical enterprise data set and backup policy. With its high-performance system architecture, the Appliance Series offers up to 1.2 TB/hour of inline deduplication throughput, significantly exceeding LTO-4 performance.

Easy Integration

The Data Domain Appliance Series is qualified with all leading enterprise backup software and archiving applications and easily integrates into the existing storage infrastructure without change for either data center or distributed office data protection.

Multi-Site Disaster Recovery

Connect an appliance to your backup software's media server as either a file server via Ethernet or a virtual tape library (VTL) via Fibre Channel. Symantec OpenStorage option is also supported; all three interfaces can be used simultaneously. It takes just minutes to start backing up and recovering data. If required, duplicating to tape is simple using your existing software for offsite protection and long term retention. For other workloads,

simply copy and paste files or use an archiving application to move data to the appliance.

Data Domain Replicator software is also ideal for network-efficient replication to another site for disaster recovery, remote office data protection or multi-site tape consolidation.

With Data Domain deduplication technology, backup data sets are effectively shrunk by 99%, to a size where network replication is operationally feasible.

Ultra-Safe Storage for Reliable Recovery

Data Domain's Data Invulnerability Architecture provides the industry's best defense against data integrity issues.

Continuous recovery verification along with extra levels of data protection continuously detect and protect against data integrity issues during the initial backup and throughout the data lifecycle. Unlike any other enterprise array or file system each appliance ensures recoverability is verified and then continuously re-verified.

The systems are configured with dual disk parity RAID-6, so two disks can fail simultaneously and the system will remain healthy. Fans and power supplies (N+1) are redundant and easy to replace for added system resilience.

Operational Simplicity

Data Domain systems are very simple to install and manage resulting in lower administrative and operational costs.

All Data Domain systems have an automatic call-home system reporting capability, called Auto-Support, which provides email notification on complete system status. This non-intrusive alerting and data collection capability enables proactive support and service without administrator intervention, further simplifying ongoing management.

Because of the massive data reduction, less physical equipment is required. This makes the physical footprint significantly smaller and consequently the systems are energy efficient because they require less power and cooling.

DD500 SERIES	DD510	DD530	DD565	DD580
Capacity: Raw ³	Up to 3.75 TB ⁴	Up to 7.5 TB ⁴	Up to 23.5 TB ⁵	Up to 31.5 TB ⁵
Logical Capacity: Standard ^{1,3}	55 TB ⁴	110 TB ⁴	320 TB ⁵	430 TB ⁵
Logical Capacity: Redundant ^{2,3}	135 TB ⁴	285 TB ⁴	810 TB ⁵	1.08 PB ⁵
Maximum Throughput	435 GB/hr	540 GB/hr	1 TB/hr	1.2 TB/hr
Power Dissipation ⁶	487 W	487 W	648 W	687 W
Cooling Requirement ⁶	1663 BTU/hr	1663 BTU/hr	2213 BTU/hr	2346 BTU/hr

1. Mix of typical enterprise data (file systems, databases, mail, developer files), full backup weekly, incremental backup daily, to system capacity.
2. Mix of typical enterprise data (file systems, databases, mail, developer files), full backup daily, to system capacity.
3. All capacity values are calculated using Base10 arithmetic (i.e., 1TB = 1,000,000,000,000 bytes) and the maximum raw capacity configuration.
4. Includes support for 6-drive capacity expansion, available separately.
5. Includes support for up to 2 add-on 8 TB shelves for the DD565, and 3 add-on 8 TB shelves for the DD580, available separately.
6. Controller only

SOFTWARE

Data Domain Operating System (DD OS) 4.6 or later

Software Features

Global Compression, Data Invulnerability Architecture including end-to-end verification (ongoing) and integrated dual disk parity RAID-6, snapshots, telnet, FTP, SSH, email alerts, scheduled capacity reclamation, Ethernet failover and aggregation, Data Domain OpenStorage, Replicator and Retention Lock optional software

Management

Data Domain Enterprise Manager, GUI, SNMP, and command line management interface

Protocols

NFS v3 over TCP, CIFS, NDMP v2, Symantec OpenStorage (OST), tape library emulation (VTL) over Fibre Channel

HARDWARE PLATFORM

3U 19-inch, rack mountable, use in 4-post rack, hot-plug disks, redundant fans, N+1 power supplies, serial port, 2 copper 10/100/1000 Ethernet ports and optional dual port copper or optical 1Gb Ethernet and dual port copper or single point optical 10 Gb Ethernet

System Weight

DD510/530 - 9 Drives: 68 lbs (30.9 kg)
DD510/530 - 15 Drives: 78 lbs (35.5 kg)
DD565/DD580: 78 lbs (35.5 kg)

System Dimensions (WxDxH)

19" x 27" x 5.2" (48.3 cm x 68.6 cm x 13.2 cm)
3 EIA Units

System Expansion

DD510/DD530: Up to 15 drives
DD565: Up to two 8 TB ES20 expansion shelves
DD580: Up to three 8 TB ES20 expansion shelves

Minimum Clearances

Front, with Bezel: 1.56" (4.0 cm)
Rear: 5" (12.7 cm)

Operating Current

115VAC/230VAC
DD510/DD530 - 9 Drives: 3.5/1.8 Amps
DD510/DD530 - 15 Drives: 4.2/2.1 Amps
DD565: 5.6/2.8 Amps
DD580: 6.0/3.0 Amps

System Thermal Rating

DD510/DD530 - 9 Drives: 1393 BTU/hr
DD510/DD530 - 15 Drives: 1663 BTU/hr
DD565: 2213 BTU/hr
DD580: 2346 BTU/hr

Operating Temperature

5°C to 35°C (41°F to 95°F)

Operating Humidity

20% to 80% non-condensing

Non-operating (Transportation) Temperature

-40°C to +65°C (-40°F to +149°F)

Operating Acoustic Noise

Max 75 dBA, at rear of unit when all drives seek simultaneously

REGULATORY APPROVALS

Safety: UL 60950-1, CSA 60950-1, EN 60950-1, IEC 60950-1, GS, SABS, GOST, IRAM, CCC
Emissions: FCC Class A, EN 55022, CISPR 22, VCCI, BSMI, MIC, CCC
Immunity: EN 55024, CISPR 24
Power Line Harmonics: EN 610003-2