

DDX Array Series

High-Speed, Inline Deduplication for the Data Center

Key Benefits

Scalable Deduplication Storage

- > Fast, inline deduplication with up to 43.2 TB/hour of throughput
- > Extended retention providing up to 28.3 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

To protect your data, are you backing it up to keep daily versions? Are you sending tapes offsite via truck to protect against disasters? If you are using current generation tape drives at LTO-4 speeds, you also likely require a disk system to cache the backups to ensure tape drives can stream at their rated speed.



DDX Array

Data Domain deduplication storage systems provide a simple, reliable, cost-effective disk-based alternative to tape. Using your existing backup or archive software and storing to disk, you can eliminate data redundancy, and data can be retained on disk for longer onsite retention or replicated or "vaulted" across a Wide Area Network (WAN) affordably for disaster recovery (DR) and longer term retention.

The Data Domain DDX Array Series is the industry's most scalable, high performance deduplication storage system, leveraging the power of Data Domain high-speed, inline deduplication for data center performance and functionality. The DDX Array Series is available in 4, 8 and 16 controller configurations, uses integrated or third-party external storage, and is designed to provide backup and archive storage for data centers with at least 20 TB of application data. The DDX Array Series offers modular, scalable growth with the data center manageability expected in sites with large storage requirements.

Scalable Deduplication Storage

Massive Data Reduction

The DDX Array Series stores all data received but uses only disk capacity for each unique data sequence, saving significant physical storage capacity. Data Domain is the only array vendor to offer the benefits of fast, inline deduplication, with high enough throughput to meet today's performance requirements. The DDX Array Series includes integrated WAN vaulting for off-site DR and longer term retention.

Scalable Data Protection

The DDX Array Series offers up to 28.3 PB of usable storage per array for a typical enterprise data set and backup policy, making it simple to have 6-18 months of retention on disk in the same number of "floor tiles" that would normally provide only a couple days of disk staging. With its high performance system architecture, DDX offers up to 43.2 TB/hour of throughput. Modular scalability enables simple expandability as your business challenges grow. With internal storage, it's the most operationally efficient disk-based solution using as little as 1.6 watts/TB of power and as little as 12U of 19" rack space per petabyte.

Easy Integration

The DDX Array Series is qualified with all leading enterprise backup and archive software and easily integrates into existing infrastructures. Enterprise backup software is optimized to store to a file system or tape library for best practices in backup-to-disk. Each DDX controller can connect to multiple backup servers via Ethernet as a file server, using NFS, CIFS or NDMP, as a disk-based target using application specific interfaces such as Symantec OpenStorage and via Fibre Channel emulating tape libraries. It takes only minutes to begin backing up and recovering data.

For other workloads, simply copy and paste files or use an archiving application to move data to a Data Domain DDX Array.

Multi-Site Disaster Recovery

The DDX Array Series complements all Data Domain appliances, acting as a hub for recovery images vaulted efficiently from up to 1,440 smaller sites running Data Domain appliances for disaster recovery, remote office data protection, tape consolidation or longer term retention. The Data Domain Replicator software option makes network-efficient replication with DDX possible by reducing backup data by as much as 99% day to day, automating and centralizing

remote data movement with industry-leading bandwidth reduction.

Ultra-Safe Storage for Reliable Recovery

The Data Domain 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 initial backup and throughout the data life cycle. Unlike any other enterprise array or file system each DDX controller ensures recoverability is verified and then continuously re-verified.

The DDX Array Series can be configured with dual disk parity RAID-6 using internal storage; or provisioned from third-party external RAID arrays.

Operational Simplicity

Using its integrated web-based management console, the Data Domain Enterprise Manager, the DDX Array Series is designed for administrative simplicity. The inherent management simplicity of the DDX combined with the benefits of data reduction and network-efficient replication further reduce your overall costs and enables you to seamlessly scale your data protection environment.

SPECIFICATIONS	DDX		
Number of Controllers ⁴	16	8	4
Capacity: Raw ³	Up to 768 TB	Up to 384 TB	Up to 192 TB
Logical Capacity: Standard ^{1,3}	Up to 11.3 PB	Up to 5.6 PB	Up to 2.8 PB
Logical Capacity: Redundant ^{2,3}	Up to 28.3 PB	Up to 14.1 PB	Up to 7 PB
Maximum Throughput	43.2 TB/hr	21.6 TB/hr	10.8 TB/hr
Remote Office Sites	1,440	720	360

1. Mix of typical enterprise data (file systems, databases, mail, user files), full backup weekly, incremental backup daily, to system capacity
2. Mix of typical enterprise data (file systems, databases, mail, user files), full backup daily, to system capacity
3. All capacity values are calculated using Base10 (i.e. 1TB = 1,000,000,000,000 bytes)
4. Based on DD690 controller

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

19-inch rack-mount enclosure

Controllers

Up to 16 Data Domain DDX controllers