

Business-Centric Storage

FUJITSU Storage
ETERNUS DX



What do you need when consolidating huge volumes of data on one storage system? Fast response times are an absolute must for virtualization, databases and OLTP. And you need a lot of low-cost capacity to cope with the rising flood of unstructured data. These are enormous challenges in terms of technology and effort.

The ETERNUS DX hybrid storage family is the perfect solution for overcoming these challenges. It balances speed, capacity and costs in one system. Comprehensive automation also reduces operational workloads to a minimum. ETERNUS DX systems, with their SSD tier, deliver "all-flash-like" performance, thus allowing for a gradual transition to all-flash, while high-capacity hard disks store unstructured data at the lowest cost. And thanks to intelligent automation, diverse storage tiers (SSDs, SAS, Nearline SAS) can be managed with a minimum of manpower. Just define the needed response time per volume, and ETERNUS DX does the rest by assigning bandwidth and/or invoking storage tiering. With ETERNUS DX it has never been easier and more economical to implement disaster resilience.

Consolidate your storage landscape efficiently and reliably with ETERNUS DX!



ETERNUS DX – Key Values

The perfect consolidation engine

- Balancing speed and cost in one storage solution
- Making the management of diverse storage tiers easier

Family concept

- Easy upgrade options due to consistent design of hardware and software components
- Easy administration via one management platform: ETERNUS SF

Leading performance architecture

- Competitive all-flash performance on the SSD tier
- Flexible combination of nearline SAS, SAS and SSDs

Service levels adjusted to business needs

- Automated Quality of Service
- Automated Storage Tiering

Business continuity with efficient disaster resilience

- ETERNUS Storage Cluster – transparent failover
- Fast Recovery – minimizes the time needed for rebuilding new RAID groups

Learn more about Business-Centric Storage:
bcs.global.fujitsu.com/

START OUT WITH PERFORMANCE BY DESIGN

The ETERNUS DX performance architecture delivers benchmark-leading I/O performance, bandwidth and response time. Thanks to its SSD tier, performance comes very close to that of all-flash-arrays. The scalable systems are equipped with the latest multicore multithread processors, and the ETERNUS operating system offers extensive parallel processing. Usage of NVMe SSDs for secondary cache and fast interfaces contribute to the overall I/O performance and enable enterprises to process more business transactions for more users and achieve faster response times for business analyses – in addition, administrators can run both types of workloads on one system.

- Process data from more applications on one system
- Reduce the complexity of storage operations
- Improve overall ROI

GUARANTEE SERVICE LEVELS AND OPTIMIZE STORAGE OPERATIONS

As data traffic increases in a storage system, more and more applications are competing for the resources that are available. Unlike other solutions that require sophisticated tuning to resolve performance issues, ETERNUS DX allows for the definition of the priority and the response times desired for specific applications, and it takes care of the rest with its Automated Quality of Service. In addition, Automated Quality of Service can be combined with Automated Storage Tiering (AST) to provide additional leverage whenever competing performance demands arise among the applications in a system. In such cases Automated Quality of Service triggers AST to relocate the data from applications with a higher priority to faster hard disks or SSDs in the system.

- Orchestrate storage resources according to business priorities
- Ensure stable response times automatically
- Keep performance, capacity and costs in balance



USE BEST-IN-CLASS DATA REDUCTION TECHNOLOGIES

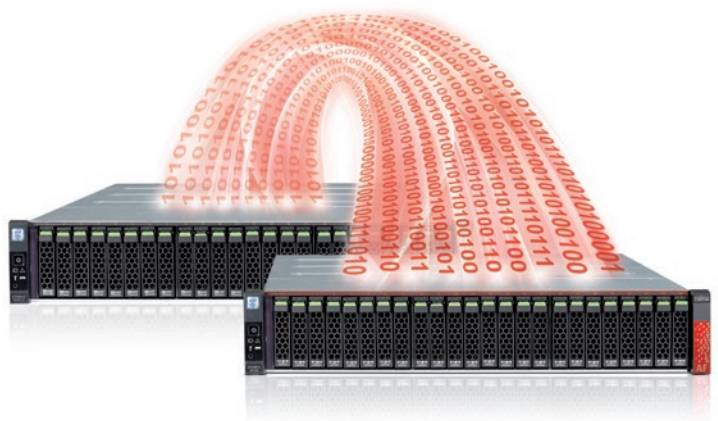
ETERNUS DX provides advanced inline data reduction technologies in combination with flexible configuration options. With deduplication, compression and thin provisioning, the storage capacities needed can be reduced dramatically – for example, SSD capacity by an average factor of five for typical use cases! Moreover, various types of hard disks (SAS, Nearline SAS, SSD) can be mixed in one system in order to balance performance and costs while optimally utilizing data center space. In short, with ETERNUS DX you have all configuration options plus the freedom to precisely adjust powerful data reduction technologies on the basis of storage volumes, so you can balance performance and cost in accordance with application SLAs.

- Increase capacity with inline data reduction technologies
- Balance capacity and performance on demand

MITIGATE RISKS WITH 100 PERCENT ASSURANCE – ETERNUS STORAGE CLUSTER

Configurations that guarantee the high availability of mission-critical data are seen as expensive and complex, and many business enterprises do not feel comfortable managing these environments and thus simply avoid them. That is why ETERNUS DX features full disaster recovery with replication, mirroring and transparent failover. Mission-critical data is mirrored automatically in an ETERNUS Storage Cluster. The failover can be executed in both directions and between different ETERNUS DX and ETERNUS AF all-flash models, thus supporting non-stop operations very efficiently.

- Automate for the worst case
- Benefit from simple and safe transparent failover
- Maintain business continuity



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"We can scale up by a factor of three with only small additional investment, which prepares us for rapid growth over the next five years."

Marcin Koczkodaj, IT Infrastructure Manager, ABC Data

SIMPLIFY STORAGE MANAGEMENT AND ADMINISTRATION

The ETERNUS DX series, in concert with ETERNUS SF storage management software, ensures a high degree of freedom when it comes to realizing storage strategy. The reason: ETERNUS DX is a system family based on a consistent design, from the entry-level models to scalable entry-level and midrange systems, and culminating in the high-end storage systems. The ETERNUS SF storage management software features an intuitive web GUI. Useful wizards, system data visualization and automated routine administration tasks help reduce the monitoring and management workload.

- Scale and upgrade easily from one model level to the next
- Reduce complexity and cost of administration
- Protect investments in technologies and know-how

BOOST OPERATIONAL EFFICIENCY WITH UNIFIED STORAGE

The scalable entry-level and midrange models of the ETERNUS DX product family offer block and file access within the same storage controller. This simplifies storage consolidation and helps reduce operational complexity. The identical implementation in all supported models allows for flexible interoperability, for example, in terms of snapshots or transparent failover. Furthermore, the user experience for administrators is identical, so that less training is required.

- Use block and file storage within one system
- Improve the consolidation effect
- Leverage operational efficiency through interoperability

The graphic consists of six panels arranged in a 2x3 grid, each with a red background and white text and icons. The top row features: 1) 'Performance by DESIGN' with a red circle icon; 2) 'Automated quality of service and AST' with a grey robot icon; 3) 'Deduplication and Compression' with a white DNA helix icon. The bottom row features: 4) '100% Data Assurance' with a white hard drive icon and hands; 5) 'Simplified management and administration' with a white square icon and a path of small squares; 6) 'Boost operational efficiency with unified storage' with a white rocket icon.



ETERNUS DX Online Storage Family

	ETERNUS DX60	ETERNUS DX100	ETERNUS DX200	ETERNUS DX500	ETERNUS DX600	ETERNUS DX8900
Architecture	Flexible and seamless family design with uniform storage management					
Segment	Entry-level	Scalable unified entry-level and midrange systems				Enterprise systems
Maximum Raw Capacity SSD	31 TB	4,424 TB	8,110 TB	16,220 TB	32,440 TB	141,558 TB
Maximum Raw Capacity HDD	576 TB	1,728 TB	3,168 TB	6,336 TB	12,672 TB	80,064 TB
Maximum Disk Drives	96	144	264	528	1,056	6,912
Storage Controllers	1/2	1/2	1/2	2	2	2-24
Maximum Cache Capacity	8 GB	32 GB	64 GB	256 GB	512 GB	18 TB
Maximum Second-level Cache (Extreme Cache)		800 GB	800 GB	5.6 TB	5.6 TB	307.2 TB
Host Interfaces	8/16 Gbps FC 1/10 Gbps iSCSI 6/12 Gbps SAS	8/16/32 Gbps FC 1/10 Gbps iSCSI 12 Gbps SAS		8/16/32 Gbps FC 1/10 Gbps iSCSI 1/10 Gbps Ethernet		8/16/32 Gbps FC 1/10 Gbps iSCSI
Storage Management	ETERNUS SF V16 Software Suite					
Continuity Management		Remote Equivalent Copy (REC) Storage Cluster - Transparent Failover				
	Local Advanced Copy					
Performance Management		Automated Storage Tiering Automated Quality of Service				
Information Security Management		Self-encrypting Drive Controller-based Encryption				
Availability Management	Reliability/RAID Protection Redundant Controller and Components					
Capacity Management	Thin Provisioning		Deduplication/Compression		Compression	
Virtualization		VMware Virtual Volumes (VVOL) Support				
Efficiency		Unified Storage				



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Fujitsu Limited

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