



Resilient Data Platforms: the key value for your IT

Fujitsu Storage
ETERNUS DX
Hybrid Storage

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 highcapacity 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
- Hardware accelerated deduplication and compression
- Lean and unified stack without dedicated hypervisor

Service levels adjusted to business needs

- Automated Quality of Service
- Automated Storage Tiering (AST)

Business continuity with efficient disaster resilience

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

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

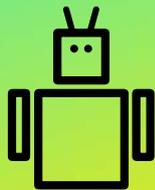
ETERNUS DX provides advanced hardware accelerated data reduction technologies in combination with flexible configuration options. Offloading the compression and/or deduplication process to Storage Acceleration Engine (SAE) leads to hardware accelerated compression/deduplication which is faster than conventional compression/dedupe. 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 and compression without performance impact
- Balance capacity and performance on demand

Use best-in-class data reduction technologies



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

Boost operational efficiency with unified storage



ETERNUS DX uses a fully virtualized unified stack without dedicated hypervisor which eliminates communication overheads and boosts performance. 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 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. Simple, optimized user interface with useful wizards, system data visualization, powerful performance monitoring features 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

Simplify storage management and administration

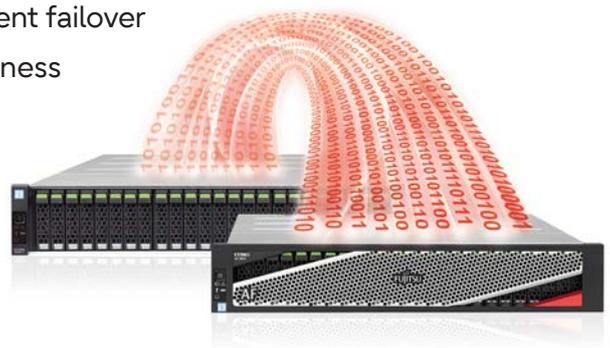


Mitigate risks with 100 percent assurance – ETERNUS Storage Cluster



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. Missioncritical 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 nonstop operations very efficiently.

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



“We needed a powerful, high-capacity storage system that also provided good value for money. That’s why we chose the Fujitsu Storage ETERNUS DX600.”

Jörn Westermann, Head of Cloud & Infrastructure, noris network AG



ETERNUS DX – perfect storage solutions for your business demands

ETERNUS DX online storage family

	ETERNUS DX100	ETERNUS DX200	ETERNUS DX600	ETERNUS DX900	ETERNUS DX8900
Architecture	Flexible and seamless family design with uniform storage management				
Segment	Scalable unified entry-level and midrange systems				Enterprise systems
Maximum raw capacity SSD	4,424 TB	8,110 TB	32,440 TB	70,779 TB	141,558 TB
Maximum raw capacity HDD	2,592 TB	4,752 TB	18,634 TB	40,723 TB	119,808 TB
Maximum disk drives	144	264	1,056	2,304	6,912
Storage controllers	1/2	1/2	2	2–4	2–24
Maximum cache capacity	32 GB	128 GB	768 GB	3 TB	18 TB
Maximum second-level cache (Extreme Cache)	1.6 TB	1.6 TB	25.6 TB	51.2 TB	307.2 TB
Host interfaces	8/16/32 Gbps FC 1/10 Gbps iSCSI 12 Gbps SAS 1/10 Gbps Ethernet		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				

Learn more about ETERNUS storage:
www.fujitsu.com/eternus
www.fujitsu.com/eternus-dx



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