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

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shaping tomorrow with you
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

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

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

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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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

"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
# ETERNUS DX Online Storage Family

<table>
<thead>
<tr>
<th></th>
<th>ETERNUS DX60</th>
<th>ETERNUS DX100</th>
<th>ETERNUS DX200</th>
<th>ETERNUS DX500</th>
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<td>Flexible and seamless family design with uniform storage management</td>
<td>Scalable unified entry-level and midrange systems</td>
<td>Enterprise systems</td>
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<td><strong>Segment</strong></td>
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<tr>
<td><strong>Maximum Raw Capacity SSD</strong></td>
<td>31 TB</td>
<td>4,424 TB</td>
<td>8,110 TB</td>
<td>16,220 TB</td>
<td>32,440 TB</td>
<td>141,558 TB</td>
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<tr>
<td><strong>Maximum Raw Capacity HDD</strong></td>
<td>576 TB</td>
<td>1,728 TB</td>
<td>3,168 TB</td>
<td>6,336 TB</td>
<td>12,672 TB</td>
<td>80,064 TB</td>
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<td><strong>Maximum Disk Drives</strong></td>
<td>96</td>
<td>1/4</td>
<td>264</td>
<td>528</td>
<td>1,056</td>
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<td><strong>Maximum Cache Capacity</strong></td>
<td>8 GB</td>
<td>32 GB</td>
<td>64 GB</td>
<td>256 GB</td>
<td>512 GB</td>
<td>18 TB</td>
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<tr>
<td><strong>Maximum Second-level Cache (Extreme Cache)</strong></td>
<td>800 GB</td>
<td>800 GB</td>
<td>5.6 TB</td>
<td>5.6 TB</td>
<td>307.2 TB</td>
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<td>8/16/32 Gbps FC 1/10 Gbps Ethernet</td>
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