

# Expand Your Business with the World's Most Cost Efficient Storage System

Both ETERNUS DX80 S2 as an entry model, and ETERNUS DX440 S2 as a mid-range model set record-breaking SPC Benchmarks<sup>\*1</sup>, with superior all-round processing capability and cost efficiency.

Today, the progress of information and communications technology (ICT) not only affects enterprise information systems but also our daily lives. Data storage and mobility are now integral to the way we communicate; reducing issues of time, distance, and the sharing of information. As ICT becomes commonplace in business and social interaction, ever-increasing amounts of data are accumulated, and these require ever faster and more flexible distribution and exchange. This places storage systems center stage, making them more important than ever before.

Fujitsu through its ICT technology innovation is playing a significant and committed role in the development and deployment of enterprise and social computer systems. An example is the "K computer"<sup>2</sup>, a supercomputer which holds consecutive No.1<sup>\*3</sup> positions on the world's Top500 most powerful computer systems. By integrating practical knowledge with state-of-the-art technologies for highest performance and reliability, Fujitsu is similarly extending its benchmark development of ETERNUS storage products. The aim is to achieve a "Human-Centric Intelligent Society" through the continued development and innovation of high-quality and leading storage systems and solutions, as embodied in ETERNUS.



#### What is the SPC Benchmark?

The Storage Performance Council (SPC) is a vendor-neutral standards body focused on the storage industry. It has created the first industry-standard performance benchmark targeted at the needs and concerns of the storage industry. SPC benchmarks provide a rigorous, audited and reliable measure of performance; <u>http://www.storageperformance.org/join</u>

Fujitsu subscribes to SPC Benchmark testing as a valid and independent way for customers to judge performance results; <u>http://www.storageperformance.org/specs</u>.

- The SPC Benchmark-1 test program is designed to simulate critical business applications through processing multiple, complex transactions. Pseudo-operational workloads of Online Transactions (OLTP), database operations and mail systems are recreated to measure "random access" read/write performance.
- The SPC Benchmark-2 test program is designed to show aggregate performance of the storage subsystem in large-sized, sequential access environments. The program consists of three distinct workload profiles: large file processing, large database queries and video on demand.

- \*1 As of April 18, 2012, ETERNUS DX80 S2 and DX440 S2 achieve world's superior in-class cost efficiency with SPC Benchmarks(below);
  ETERNUS DX80 S2:
- SPC Benchmark-1 IOPS of 34,995.02, Price-Performance of \$2.25/SPC-1 IOPS™ <u>http://www.storageperformance.org/results/benchmark\_results\_spc1#a00111</u> SPC Benchmark-2 MBPS of 2,685.50, Price-Performance of \$ 28.48/SPC-2 MBPS™ <u>http://www.storageperformance.org/results/benchmark\_results\_spc2#b00055</u> • ETERNUS DX440 S2:
- SPC Benchmark-2 MBPS of 5,768.04, Price-Performance of \$ 66.50/SPC-2 MBPS™ http://www.storageperformance.org/results/benchmark\_results\_spc2#b00057
- \* The results above are under registration processing as SPC-1/SPC-2 submissions.
- \* The SPC Benchmark-1, SPC-1 IOPS, SPC Benchmark-2 and SPC-2 MBPS are registered trademarks of the Storage Performance Council.
- \*2 The K computer is being jointly developed by RIKEN and Fujitsu. The "K computer" is the name RIKEN has been using for this supercomputer project.
- \*3 The K computer was designated as being the world's fastest supercomputer, as published in the "TOP500 List" (38th edition) on November 14, 2011. To date, the K Computer has maintained this number-one position.

# What is ETERNUS DX?

The main challenge for storage systems today is no longer just high speed processing of ever larger amounts of data. To meet our social responsibilities as a member of a human centric intelligent society, we also need to address issues like business continuity, energy conservation, and environmental protection.

# Performance - The Quest for Ultimate Productivity

The speed of information access and retrieval, or system performance, directly affects business operations. ETERNUS DX S2 series improves this performance with brand-new technology. As the diagrams below indicate, S2 series performs better, compared to conventional products in simple, random access, read-only performance. In addition, S2 series demonstrates excellent throughput numbers, faster than existing lines, showing best-aggregated storage subsystem performance with simple large, sequentially accessed, read-only workloads.



# Significant Performance Improvement

(Note) Comparisons based on internal Fujitsu measurements

# Reliability – Data Safety for Business Continuity

Data safety is a key component of business continuity. ETERNUS DX series are designed to protect important corporate data assets in a cost-effective manner. Multiple data protection functions including, redundant components, data encryption technologies, efficient backup, and advanced replication functions, are core features of the system. Cost efficiency also means, ETERNUS DX S2 series support both FC interfaces for high-speed data transfer, and iSCSI interfaces for effective low bandwidth network connections, for remote backup disaster recovery configurations.

# Efficiency – Flexible Data Management

Today's customers also require effective storage virtualization technologies that improve their business operations and reduce costs. ETERNUS DX S2 series achieves cost reductions and reduces power consumption with its "thin provisioning" function that avoids the need for upfront capacity planning. In addition the "automated tiering" function means efficient data management by automatically storing business data on the right disk types (SSD, SAS, or Nearline SAS), depending on data importance and access frequency.

# **Ecology** – Environmental Design

Low power consumption and energy savings remain critical themes in environmental protection. Many ETERNUS DX S2 series feature, such as high-density design, component minimization, highly-efficient power supply units and the use of 2.5 inch SAS disk drives, all contribute to significant power savings. In addition, the "eco-mode" function adds further power savings by halting disk rotation when not in use.



# **Experience** – Fujitsu as a Leading ICT Company

Fujitsu ETERNUS DX series has become the system of choice in a wide range of industries, including scientific computation, food, healthcare, energy, traffic, logistics, and manufacturing, covering everything from public and commercial IT infrastructures to supercomputers. This broad spectrum of usage fully demonstrates the ETERNUS DX ability to support the development of both leading industrial and social infrastructures.

#### Contact

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