# FUJITSU

# Datasheet
## Fujitsu ETERNUS DX90 S2 Disk Storage System

The Flexible Data Safe for Dynamic Infrastructures.

### ETERNUS DX S2 DISK STORAGE SYSTEMS

Fujitsu's second generation of ETERNUS DX disk storage systems, ETERNUS DX S2, are The Flexible Data Safe for Dynamic Infrastructures. Enterprise-proven capabilities protect data assets across all types of IT infrastructure. Redundant components, RAID protection and build-in data protection provide the highest system reliability to ensure business continuity is maintained.

ETERNUS DX S2 models are comprehensive disk storage platforms with superior scalability to address the demands of intensive data growth and highest performance. Free choice of modular disk storage and state-of-the-art connectivity across the entire model range delivers maximum configuration flexibility allowing choice in performance and TCO. Data-in-place upgrade options are also available throughout the system's lifecycle to ensure maximum investment protection.

The unified ETERNUS SF storage management software enables single point administration, easy data protection and efficient operation across the entire ETERNUS DX range. In virtualized IT environments in particular, ETERNUS SF perfectly integrates the powerful ETERNUS DX disk storage with minimal administration effort.

### ETERNUS DX90 S2

ETERNUS DX90 S2 with Intel® Xeon® processor is an affordable disk storage system for small and midsize environments. ETERNUS DX90 S2 scales flexibly up to 240 disk drives. Different 2.5 inch, 3.5 inch, SAS, Nearline SAS, SSD drive types are supported even in mixed configurations, to enable efficient implementation of a tiered storage environment. Non-disruptive capacity upgrades are possible just by adding disks or complete enclosures. Data-in-place upgrades lead seamlessly to the next higher ETERNUS DX400 S2 series.

Customers can choose from FC, FCoE, iSCSI, or SAS, host interfaces which can be flexibly changed during the lifecycle. The new FCoE 10Gbit/s interface enables future-proof infrastructure convergence. For simultaneous connection to different network types ETERNUS DX90 S2 can operate interfaces in a mixed configuration. Remote copy of ETERNUS DX90 S2 to a second storage device (ETERNUS DX90 S2 / DX400 S2 series / DX8000) protects valuable data assets against site outages.

ETERNUS SF Express management software provided with ETERNUS DX90 S2 simplifies monitoring, management, and data copy tasks, for single or multiple ETERNUS DX disk storage systems, from a central console.

**Green IT**

**intel Xeon inside™**

**Green Policy Innovation**

**Green Product**
This product cleared our company's original evaluation standard which followed global environmental measures.

# Features and benefits

| Main features | Benefits |
|---|---|
| **The Flexible Data Safe for Dynamic Infrastructures** | ■ Enterprise proven capabilities to protect all data assets<br>■ Redundant components and RAID protection provide highest reliability<br>■ Built-in data protection ensures business continuity |
| **Comprehensive ETERNUS DX S2 Disk Storage Platforms** | ■ Superior scalability captures intensive data growth and highest performance demands<br>■ Free choice of modular disk storage and state of the art connectivity across the entire model range<br>■ Investment protection with upgrade options during the whole lifecycle |
| **Innovative ETERNUS SF Storage Management** | ■ Unified storage management across the entire ETERNUS DX range<br>■ Single point administration, easy data protection and efficient operation<br>■ Powerful disk storage united with minimal administration efforts in virtualized environments |

# Technical details

| General Specification | | 2.5" Base Model | | 3.5" Base Model | |
|---|---|---|---|---|---|
| | | **Single Controller** | **Dual Controller** | **Single Controller** | **Dual Controller** |
| RAID Levels | | 0, 1, 1+0, 5, 5+0, 6 | | | |
| Host Interfaces | | Fibre Channel (8/4/2 Gbit/s) | | | |
| | | FCoE (10 Gbit/s) | | | |
| | | iSCSI (10 Gbit/s) or iSCSI (1 Gbit/s) | | | |
| | | SAS (6/3 Gbit/s) | | | |
| Number of controllers | | 1 | 2 | 1 | 2 |
| Number of host interfaces | | 4 | 8 | 4 | 8 |
| Number of hosts | | Max. 1,024 | | | |
| Cache memory capacity | | 4 GB | 8 GB | 4 GB | 8 GB |
| Number of drive enclosures | | Max. 9 | | | |
| Number of drives | | Max. 240 | | Max. 120 | |
| Storage capacity | Physical capacity | Max. 360.0 TB | | | |
| | Logical capacity | Max. 267.0 TB | | | |
| Drives | 3.5-inch | SAS disk drives | 600 GB/450 GB/300 GB (15,000 rpm) | | | |
| | | Nearline SAS disk drives | 3 TB/2 TB/1 TB (7,200 rpm) | | | |
| | | SSD (Solid State Drives) | 200 GB/100 GB | | | |
| - Notes | | 3.5" drives are available only for 3.5" drive enclosures. | | | |
| | 2.5-inch | SAS disk drives | 900 GB/600 GB/450 GB/300 GB (10,000 rpm) | | | |
| | | SSD (Solid State Drives) | 200 GB/100 GB | | | |
| - Notes | | 2.5" drives are available only for 2.5" drive enclosures. | | | |
| Drive interface | | Serial Attached SCSI (6 Gbit/s) | | | |
| Back-End Disk Connectivity | | 1 pair of four-lane x 6 Gbit/s Serial Attached SCSI buses (SAS 2.0 wide) | | | |
| Redundancies | RAID Controller | No | Yes | No | Yes |
| | Fan | Yes | Yes | Yes | Yes |
| | Power Supply | Yes | Yes | Yes | Yes |
| Number of LUN | | Max. 4,096 | | | |
| LUN capacity | | Max. 128 TB | | | |
| Number of Snapshots | Standard (built-in) | 8 | | | |
| | Maximum (option) | 2,048 | | | |
| - Note | | Local Copy License must be purchased to maximize the number of Snapshots | | | |
| Number of copy generations | | 256 | | | |
| Remote Copy feature | | Yes | | | |
| - Note | | Remote Copy Licenses must be purchased for each system | | | |

| Installation Specification | | 2.5" Base Model | 3.5" Base Model |
|---|---|---|---|
| Dimensions (Standard) | Controller enclosure (CE) | CE: 482 × 645 × 88 mm (2U) | CE: 482 × 670 × 88 mm (2U) |
| (W x D x H) | | CE: 19 × 25.4 × 3.5 inch (2U) | CE: 19 × 26.4 ×3.5 inch (2U) |
| | Drive enclosure (DE) | DE: 482 × 540 × 88 mm (2U) | DE: 482 × 555 × 88 mm (2U) |
| | | DE: 19 × 21.3 × 3.5 inch(2U) | DE: 19 × 21.9x 3.5 inch (2U) |
| Service Area | Front | 800 mm (31.5inch) or more | |
| | Rear | 800 mm (31.5inch) or more | |
| Maximum Weight | | 350 kg (35 kg per single enclosure) | |
| | | 770 lb (77 lb per single enclosure) | |

## Installation Specification (Continued)

| Installation Specification (Continued) | | | 2.5" Base Model | 3.5" Base Model |
|---|---|---|---|---|
| Power | Voltage | | AC 100 – 120 V / AC 200 – 240 V | |
| | Phase | | Single | |
| | Frequency | | 50 Hz / 60 Hz | |
| Maximum Power Consumption | AC 100 - 120V | CE | 630 W (640 VA) | 620 W (630 VA) |
| | | DE | 570 W (580 VA) | 550 W (560 VA) |
| | | Max | 5,760 W(CE+2.5"DEx9) | 5,570 W (CE+3.5"DEx9) |
| | | | 5,860 VA(CE+2.5"DEx9) | 5,670 VA(CE+3.5"DEx9) |
| | AC 200 - 240V | CE | 630 W (640 VA) | 610 W (620 VA) |
| | | DE | 570 W (580 VA) | 550 W (560 VA) |
| | | Max | 5,760 W(CE+2.5"DEx9) | 5,560 W (CE+3.5"DEx9) |
| | | | 5,860 VA(CE+2.5"DEx9) | 5,660 VA(CE+3.5"DEx9) |
| Maximum Heat Generation | AC 100 - 120V | | 20,736 kJ/h (19,654 BTU/h) | 20,052 kJ/h (19,006 BTU/h) |
| | AC 200 - 240V | | 20,736 kJ/h (19,654 BTU/h) | 20,016 kJ/h (18,972 BTU/h) |
| Environmental Conditions | Temperature | | 10 – 40°C (Operating) | |
| | | | 50 – 104°F (Operating) | |
| | Humidity | | 20 – 80% RH (Operating) | |
| Altitude | | | 3,000 m | |
| | | | 10,000 ft. | |
| Operating environment | | | FTS 04230 Guideline for Data Center (installation locations) | |
| Operating environment link | | | http://docs.ts.fujitsu.com/dl.aspx?id=e4813edf-4a27-461a-8184-983092c12dbe | |

## Supported RAID Levels

| Supported RAID Levels | |
|---|---|
| RAID 0 | Data striping on several disk drives, not recommended |
| RAID 1 | Mirrored disk drives |
| RAID 1+0 | Data mirroring, then striping of the data over several disk drives |
| RAID 5 | Striping with distributed parity |
| RAID 5+0 | RAID 5 arrays, striped again over several drives |
| RAID 6 | Striping with distributed double parity |

## Management

| Management | |
|---|---|
| Interfaces | Ethernet (1000 Base-T / 100 Base-TX / 10 Base-T) |
| Supported protocols | SNMP (version1, 2C, 3), SMI-S 1.4 |
| Administration | Web-Environment, CLI (Command Line Interface), ETERNUS SF Express |

## Supported OS For ETERNUS SF Express

| Supported OS For ETERNUS SF Express | |
|---|---|
| Operation Management Server | Microsoft® Windows Server®2008 Standard (32-bit) (64-bit) including R2 |
| | Microsoft® Windows Server® 2008 Enterprise (32-bit) (64-bit) including R2 |
| | Microsoft® Windows Server® 2008 Datacenter (32-bit) (64-bit) including R2 |
| Operation Management Client | Microsoft® Windows® 7 Home Premium |
| | Microsoft® Windows® 7 Professional |
| | Microsoft® Windows® 7 Ultimate |
| | Windows Vista® Home Basic |
| | Windows Vista® Home Premium |
| | Windows Vista® Business |
| | Windows Vista® Enterprise |
| | Windows Vista® Ultimate |
| | Windows® XP Home Edition |
| | Windows® XP Professional |
| | Microsoft® Windows Server®2008 Standard (32-bit) (64-bit) |
| | Microsoft® Windows Server® 2008 Enterprise (32-bit) (64-bit) |
| | Microsoft® Windows Server® 2008 Datacenter (32-bit) (64-bit) |

## Options

| License | ETERNUS SF Local Copy License |
|---|---|

## Noise Emission

| Noise Emission | 2.5" Base Model | 3.5" Base Model |
|---|---|---|
| Sound Power Level (LWAd) | 6.6 B | |
| Sound Pressure Level (LpAm) | 49 dB(A) | |
| - Notes | measured with single enclosure according to ISO7779 and declared according to ISO9296 | |

## Warranty

| Global Factory Warranty | 2 years |
|---|---|

## Maintenance and Support Services

**The perfect extension of the product specific base warranty for optimized operation.**
Recommended Service: 24 x 7 Fujitsu support for enterprise class services.
Please check your specific service level with your FUJITSU sales organization or partner.

## Supported configurations

**A wide range of host operating systems, servers as well as applications is supported.**
For a detailed support matrix check:
http://www.fujitsu.com/global/services/computing/storage/eternus/products/diskstorage/dx-entry/supported-device/

## Compliance With Standards

| Product safety | UL60950-1, CSA-C22.2 No. 60950-1, EN60950-1, IEC60950-1, GOST-R |
|---|---|
| Electromagnetic Compatibility | CNS13438(C6357) Class A, FCC CFR47 part 15 Class A, ICES-003 Class A, |
| | EN55022 Class A, VCCI Class A, AS/NZS CISPR22 Class A |
| Electromagnetic Immunity | EN55024 |
| CE certification | Electromagnetic Compatibility Directive 2004/108/EC |
| | Low Voltage Directive 2006/95/EC |
| Environmental compliance | RoHS-compliant (Restriction of hazardous substances) |
| | WEEE-compliant (Waste electrical and electronic equipment) |
| - Notes | There is general compliance with the safety requirements of all European countries and North America. National approvals required in order to satisfy statutory regulations or for other reasons can be applied for on request. |

# More information

## Fujitsu platform solutions

In addition to Fujitsu ETERNUS DX, Fujitsu provides a range of platform solutions. They combine reliable Fujitsu products with the best in services, know-how and worldwide partnerships.

### Dynamic Infrastructures

With the Fujitsu Dynamic Infrastructures approach, Fujitsu offers a full portfolio of IT products, solutions and services, ranging from clients to datacenter solutions, Managed Infrastructure and Infrastructure-as-a-Service. How much you benefit from Fujitsu technologies and services depends on the level of cooperation you choose. This takes IT flexibility and efficiency to the next level.

### Computing products

www.fujitsu.com/global/services/computing/
- PRIMERGY: Industry standard server
- SPARC Enterprise: UNIX server
- PRIMEQUEST: Mission-critical IA server
- ETERNUS: Storage system

### Software

www.fujitsu.com/software/
- Interstage: Application infrastructure software
- Systemwalker: System management software

## More information

Learn more about Fujitsu ETERNUS DX90 S2, please contact your Fujitsu sales representative, Fujitsu business partner, or visit our website.
www.fujitsu.com/eternus/

## Fujitsu green policy innovation

Fujitsu Green Policy Innovation is our worldwide project for reducing burdens on the environment. Using our global know-how, we aim to resolve issues of environmental energy efficiency through IT. Please find further information at:
www.fujitsu.com/global/about/environment/



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