

# Datasheet

## FUJITSU ETERNUS SF

Storage Cruiser V15.3  
AdvancedCopy Manager V15.3  
ETERNUS SF Express V15.3

Central console and advanced management functions for ETERNUS® DX storage environments.

### Storage Management Software ETERNUS SF

The comprehensive and flexible data management for ETERNUS DX storage systems offers convenient, consistent and powerful tools with enterprise class functionality even for the entry class. Innovative and advanced functions increase operational efficiency and help to implement appropriate service levels. Complementing the integrated ETERNUS DX hardware storage management, the ETERNUS SF storage management software is used to support overall daily operations within the entire storage infrastructure. ETERNUS DX embedded management, together with ETERNUS SF, serve as the overarching basis for the highly efficient Flexible Data Management solution from Fujitsu. It offers the same usability for all operational workflows throughout the ETERNUS DX series, from entry-level systems up to the high-end models.

A high degree of automation and an easy to learn, easy to handle graphical user interface eases all management tasks for daily work and significantly reduces administrator's training efforts with regards to cost and time. Storage resource optimization including implementation of policies for enhancing storage integration and operation, error discovery, health monitoring, capacity management, provisioning, local and remote replication and disaster recovery are presented with a consistent user friendly look and feel. In addition to the cost savings given by ergonomic and unified storage management, ETERNUS SF also enables the elimination of unnecessary maintenance cost; even complex storage management operations can be executed without high-level skills or expensive vendor intervention.

A flexible and transparent license model ensures that customers pay for only the functionality needed saving money in the present and making future costs more predictable.



### ETERNUS SF Express® – the management console for ETERNUS DX entry systems

All ETERNUS DX entry level disk storage systems ETERNUS DX 60/DX60 S2, DX 80/DX80 S2, DX 90/DX90 S2 are shipped with a free-of-charge ETERNUS SF Express license. The ETERNUS SF Express software offers basic management and replication features, as well as simple, wizard based configuration and can monitor multiple ETERNUS DX entry-level disk storage systems with one centralized console. For advanced features ETERNUS SF Express can be easily upgraded to ETERNUS SF.



# Features and benefits

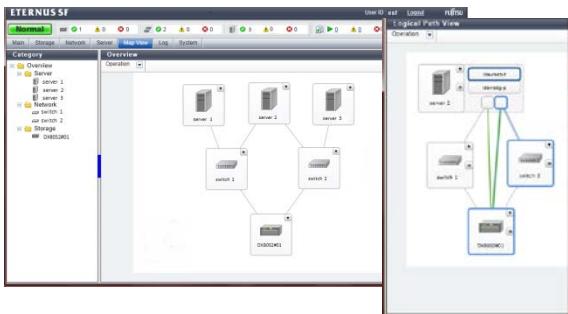
Main features	Benefits
<p><b>Configuration and Correlation Management</b></p> <ul style="list-style-type: none"> <li>■ Automatic device detection, zoning, automatic or manual access path management</li> <li>■ Graphical or tabular display of physical and logical links of the entire SAN infrastructure – storage systems, switches and servers including virtual machines.</li> <li>■ Wizard assisted setup of major features.</li> </ul>	<ul style="list-style-type: none"> <li>■ Reduces operational cost through centralized management and uniform administrative tools.</li> <li>■ Lowers the workload and training needs of administrative staff</li> </ul>
<p><b>Fault Management</b></p> <ul style="list-style-type: none"> <li>■ Permanent device polling and health check of the entire infrastructure</li> <li>■ Status monitoring, automatic and manual status inquiries</li> <li>■ Local or remote deploy of failure event alerts</li> </ul>	<ul style="list-style-type: none"> <li>■ Enables preemptive fault countermeasures</li> <li>■ Reduces needed time for fault and incident detection and error fix</li> </ul>
<p><b>Performance Management</b></p> <ul style="list-style-type: none"> <li>■ Performance monitoring of storage devices and SAN infrastructure</li> <li>■ Setting of performance thresholds and alert policies</li> <li>■ Creation of periodic performance reports</li> <li>■ Monitoring of application performance</li> </ul>	<ul style="list-style-type: none"> <li>■ Improves significantly application data access, availability and performance</li> <li>■ Helps to avoid, identify and eliminate performance bottlenecks</li> <li>■ Increases quality of service</li> </ul>
<p><b>Automated Storage Tiering Management</b></p> <ul style="list-style-type: none"> <li>■ Setup of profiles, policies and tier pools for automatic data movement.</li> </ul>	<ul style="list-style-type: none"> <li>■ Lowers acquisition cost while increasing I/O performance</li> </ul>
<p><b>Capacity Management –Thin Provisioning</b></p> <ul style="list-style-type: none"> <li>■ Setup of thinly provisioned disk pools</li> <li>■ Setting of thresholds and alert policies for capacity expansion</li> </ul>	<ul style="list-style-type: none"> <li>■ Reduces initial investment, total cost of ownership, energy consumption and system footprint</li> </ul>
<p><b>Advanced Replication and Backup Management</b></p> <ul style="list-style-type: none"> <li>■ AdvancedCopy management for local and remote replication</li> <li>■ Non-stop backup for all major database systems</li> <li>■ Backup support for virtualized server environments</li> </ul>	<ul style="list-style-type: none"> <li>■ Enables 24 x 7 business operations for business critical applications in all physical and virtualized server environments</li> </ul>
<p><b>Disaster Recovery Management</b></p> <ul style="list-style-type: none"> <li>■ Setup and management of synchronous and asynchronous array-based replication</li> <li>■ Automated failover in virtualized server environments</li> </ul>	<ul style="list-style-type: none"> <li>■ Prevents loss of vital information and data</li> <li>■ Ensures that services and production can continue under any circumstances</li> <li>■ Reduces server load</li> </ul>
<p><b>Energy Consumption Management</b></p> <ul style="list-style-type: none"> <li>■ Monitoring of power consumption and temperature</li> <li>■ Setting of thresholds and policies for disk spin-down</li> </ul>	<ul style="list-style-type: none"> <li>■ Decreases expenditures for power and cooling</li> </ul>

# Topics

## Storage Cruiser and Express

### Device configuration and resource relationship visualization

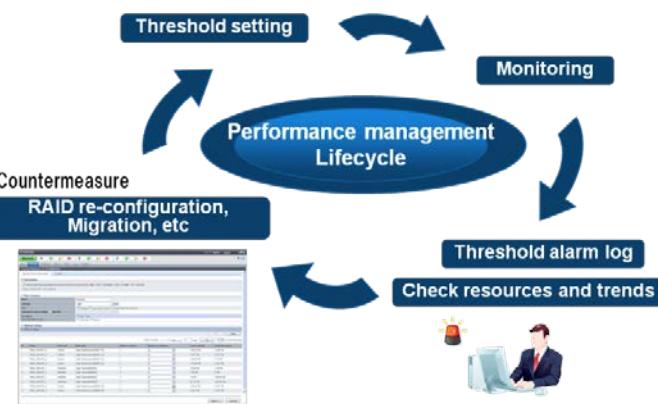
ETERNUS SF Storage Cruiser® displays the relationships and linkages between disk drives and other resources, such as application server file systems, connection paths, mirrored disks and databases, to be displayed in a single display. This provides administrators with an accurate understanding of all resource relationships. It also allows them to more accurately proceed with storage expansions, resolve failures and recover operational status without problems.



### Understanding performance bottlenecks

The ability to display performance information from fibre channel switches and disk storage systems in graphical form means system administrators can understand device operation status, workload conditions and identify resource bottlenecks. In addition, threshold settings enable ETERNUS SF to sound an alarm when devices reach set limits.

Further all the information gathered by these functions can be stored in file formats that enable the production of periodic reports.



### Power saving storage

With ETERNUS SF Storage Cruiser, the Eco-mode function of ETERNUS Disk storage systems can be managed with a full understanding of servers and disk storage system requirements. Eco-mode reduces storage power consumption by stopping disk rotation when not in use. For example, spinning down idle disks of backup purpose for 19 hours a day results in around 18% less power consumption. In addition, with some systems, power consumption efficiency and temperature can be displayed and checked or written to file (\*Note 2).

\*Note 2: Available with ETERNUS DX60/DX60 S2, DX80/DX80 S2, DX90/DX90 S2, DX400 series/DX400 S2 series, DX8000 series/DX8700 S2.

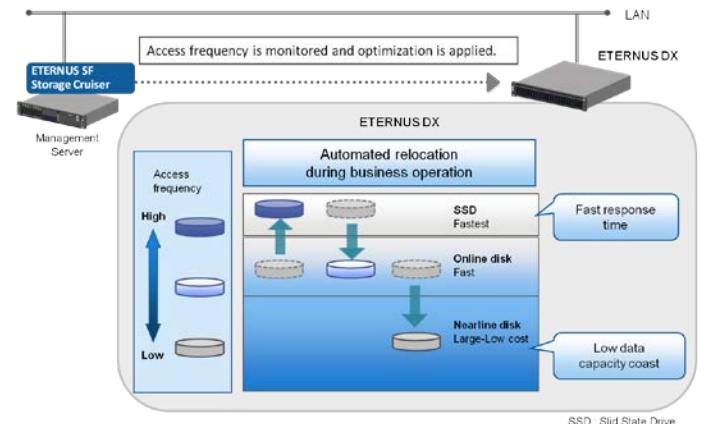
(This feature is also available in Express.)

### Optimization Option enables Automated Storage Tiering

Optimization Option (\*Note 3) provides Automated Storage Tiering to enable followings;

- Data are allocated between drives for maximum efficiency according to their use.
- Better performance is obtained along with lower storage and management costs
- Flexible choice of metrics like peak or average and ability to define fine-tuned monitoring patterns enable to focus on critical operations for business applications. It is also possible to define a per-volume policy based on fixed allocation rates between tiers.

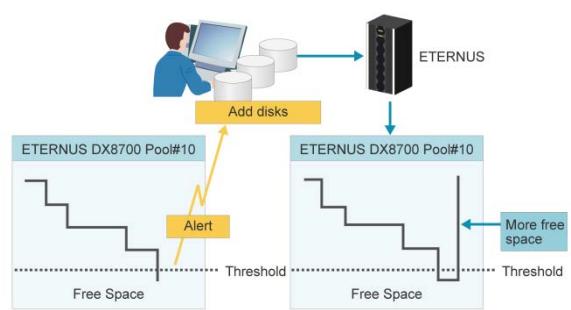
\*Note 3: It is supported on ETERNUS DX80 S2, DX90 S2, DX400 S2 series, DX8700 S2.



### Start with a small storage system (Thin Provisioning) (Note 1)

Thin Provisioning enables you to start by using limited physical disk capacity while allocating the full capacity requirement as virtual disks to servers. Physical disks can then be added as usage demands without effect on server operation. This reduces both initial and ongoing costs as well as power consumption. ETERNUS SF Storage Cruiser provides threshold monitoring which prevents physical disk capacity shortages. Its visualization of physical capacity changes allows system administrators to predict shortages and provide capacity expansion in a timely manner. This ensures operation halts are avoided.

\*Note 1: It is available with ETERNUS DX80 S2, DX90 S2, DX400 series/DX400 S2 series, DX8000 series/DX8700 S2, ETERNUS4000 model 400/600, and ETERNUS8000 model 800/1200/2200 (This feature is also available in Express.)

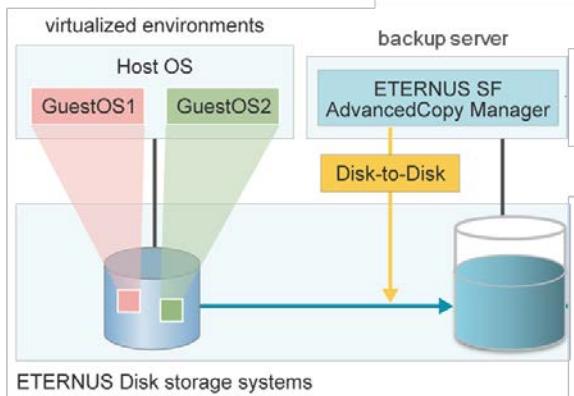


# Topics

## AdvancedCopy Manager and Express

### Integrated Backup to Support Physical Environments and Virtualized Environments

In both physical environments and virtualized environments, Disk-to-Disk backup operations on a per LUN basis are available for resources to be backed up. They are also applicable to virtual machine resources in a virtualized environment built using Windows Server® 2008, Hyper-V® or VMware® VMFS. Since it is not needed to change the operation for each environment, the complexity of operations and the increase of operational costs can be held down even for a change to virtualized environment from physical environment. In addition, a backup server performing backup processes, backups can be done without imposing loads on the operating system.

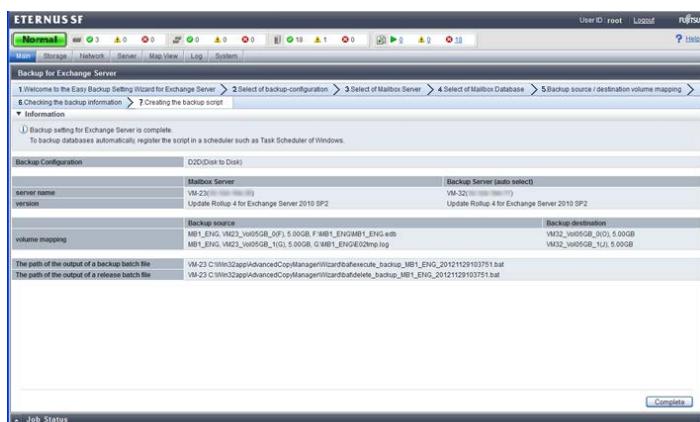


### Achieving backup operation without stopping database system

ETERNUS SF AdvancedCopy Manager can perform backup operations in cooperation with Oracle®, Symfoware®, Microsoft® SQL Server®, DB2 and Microsoft Exchange Server without stopping database operations, allowing for 24 x 7 continuous application operations.

### Integration for Exchange Server

The setup wizard for Exchange Server 2010, 2013 Backup and Restore with AdvancedCopy Manager spares the administrator tedious manual operations and dramatically reduces setup time.



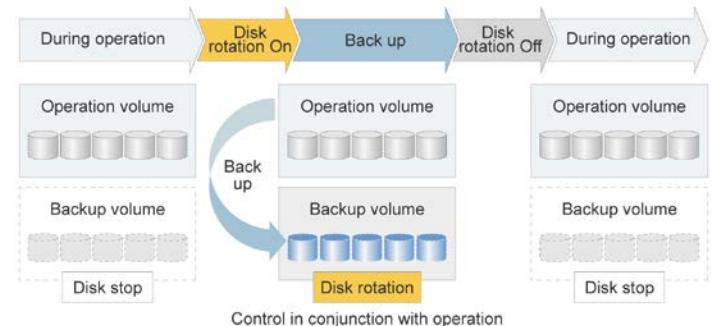
### Achieving backup operation without stopping Hyper-V guest OS

ETERNUS SF AdvancedCopy Manager can perform backup operations in cooperation with Hyper-V without stopping guest OS operations via VSSHP.

### Backup with reduced power consumption

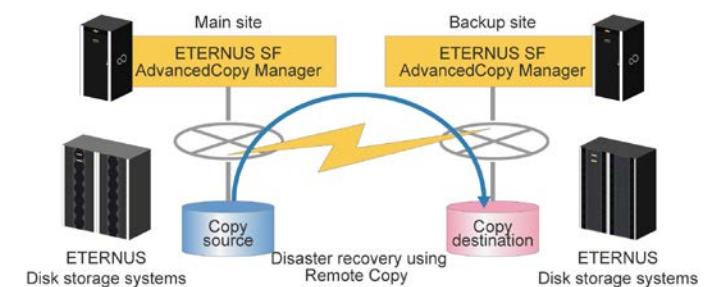
Using ETERNUS disk storage systems eco-mode, storage power consumption can be reduced by rotating backup disks only during backup operation. For example, in backup operation with the ETERNUS DX80 Disk storage system, it can be reduced by 10% (\*Note 1). In addition, in cooperation with ETERNUS SF Storage Cruiser, power consumption and temperature can be visualized to check the power saving efficiency.

\*Note 1: When operating backup volumes for 5 hours a day in the system environment configured with 36 x 450GB disk drives (RAID5) and 36 x 1TB disk drives (RAID5).



### Disaster recovery solution

ETERNUS SF AdvancedCopy Manager supports remote copy capability using ETERNUS Disk storage systems connected via WAN. Secure disaster recovery can be achieved by allocating ETERNUS Disk storage systems for backup data storage at quake-proof and other disaster proof locations.



\*Note : DtoD copy feature is supported by Express. Operating system level and Application level data consistency must be managed by the operator in Express.

# Technical details

## Support Devices

### ETERNUS SF Storage Cruiser

#### General specifications

Supported Devices	Disk Storage Systems	ETERNUS DX60/DX60 S2, DX80/DX80 S2, DX90/DX90 S2 ETERNUS DX410/DX410 S2, DX440/DX440 S2 ETERNUS DX8400, DX8700/DX8700 S2 ETERNUS2000(except M50) ETERNUS4000(except M80/M100), ETERNUS8000 ETERNUS CS800, ETERNUS CS2000 NetApp® FAS series, V series
	Tape Libraries	ETERNUS LT20/LT20 S2, LT40/LT40 S2, LT60/LT60 S2 ETERNUS LT200, LT210, LT220, LT230, LT250, LT270
	Fibre Channel Switches	Brocade® 12000, 24000, 48000 Brocade 8000, 7800, 7500, 6730, 6710, 6510, 6505, 5000, 5100, 5300, 5450 Brocade 4016, 4016 4D, 4100, 4900 Brocade 3250, 3850, 3014, 3200, 3800k, 3900 Brocade 200E, 300 Brocade DCX 8510, Brocade DCX-4S Brocade AP7420 PRIMERGY® Fibre Channel Switch Blade PRIMERGY BX600 Fibre Channel Switch Blade ETERNUS SN200 MDS9513, MDS9509, MDS9506, MDS9216, MDS9120 PRIMERGY Fibre Channel Switch Blade S26361-F3144-E1/L1, S26361-F3144-E2/L2, S26361-F3144-E4, S26361-F3144-E6, S26361-F3144-E14, S26361-F3144-E16, S26361-K1305-V14, S26361-K1305-V26, S26361-K1305-V126 McDATA® Intrepid 6140 McDATA Spheron 4500

### ETERNUS SF AdvancedCopy Manager

#### General specification

Supported Devices	Disk Storage Systems	ETERNUS DX60/DX 60 S2, DX80/DX80 S2, DX90/DX90 S2 ETERNUS DX410/DX410 S2, DX440/DX440 S2 ETERNUS DX8400, DX8700/DX8700 S2 ETERNUS2000(except M50), ETERNUS4000 (except M80/M100), ETERNUS8000
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### ETERNUS SF Express

#### General specification

Supported Devices	Disk Storage Systems	ETERNUS DX60/DX60 S2, DX80/DX80 S2, DX90/DX90 S2
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# Installing Platform

## Installing specifications

### Manager Platforms

Express)	Oracle Solaris (except	Oracle Solaris® 11 (11/11 or later), Oracle Solaris 10, Oracle Solaris 9
	Windows	Microsoft Windows Server 2012 Microsoft Windows Server 2008 R2 Microsoft Windows Server 2008 Microsoft Windows Server 2003 R2 Microsoft Windows Server 2003
	Linux	Red Hat® Enterprise Linux®6 Red Hat Enterprise Linux 5
	VMware	VMware vSphere® 5 */5.1* VMware vSphere 4*/4.1 * * Guest OS is supported as a manager platform.
	Hyper-V	Windows Server 2012 Hyper-V Hyper-V 2.0

### Agent Platforms

#### (Storage Cruiser, AdvancedCopy Manager)

	Solaris	Solaris 11 (11/11 or later), Solaris 10, Solaris 9
	Windows	Microsoft Windows Server 2012 Microsoft Windows Server 2008 R2 Microsoft Windows Server 2008 Microsoft Windows Server 2003 R2 Microsoft Windows Server 2003
	Linux	Red Hat Enterprise Linux 6 Red Hat Enterprise Linux 5 Red Hat Enterprise Linux AS v.4 Red Hat Enterprise Linux ES v.4 SUSE Linux Enterprise Server 11
	Unix	HP®-UX 11i v3 (IPF), HP-UX 11i v3 (PA-RISC), HP-UX 11i v2 (IPF), HP-UX 11i v2 (PA-RISC), HP-UX 11i, HP-UX 11.0 AIX® 7.1/6.1 AIX 5L 5.1-5.3 * *Note: Storage Cruiser- Agent supports only 5.3 in AIX 5L 5.x.
	VMware	VMware vSphere 5* /5.1* VMware vSphere 4*/4.1 * *Note: Host OS and Guest OS can be managed as a Storage Cruiser-Agent without installation of Storage Cruiser-Agent program. For details, please contact a sales representative or sales partner.
	Hyper-V	Windows Server 2012 Hyper-V * Hyper-V 2.0 * *Note: Only AdvancedCopy Manager-Agent. (End to End list display that is one of the features provided by Storage Cruiser is supported as Storage Cruiser.)
Client	Web Browser	Internet Explorer® 8, 9, 10 Firefox® 3.6, Firefox ESR 10

## About Fujitsu America

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### Fujitsu platform solutions

In addition to Fujitsu ETERNUS SF Management Software, 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/](http://www.fujitsu.com/global/services/computing/)  
- PRIMERGY: Industrial standard server  
- SPARC® Enterprise: UNIX® server  
- PRIMEQUEST®: Mission-critical IA server  
- ETERNUS: Storage system

### Software

[www.fujitsu.com/software/](http://www.fujitsu.com/software/)  
- Interstage: Application infrastructure software  
- Systemwalker®: System management software

### More information

To learn more about Fujitsu ETERNUS SF, please contact your Fujitsu sales representative, Fujitsu business partner, or visit our website.  
<http://solutions.us.fujitsu.com/www/content/products/storage/ETERNUS/index.php>

### 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/](http://www.fujitsu.com/global/about/environment/)



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