

# Datasheet

## FUJITSU Storage

### ETERNUS SF Storage Cruiser V16.1

### ETERNUS SF AdvancedCopy Manager V16.1

### ETERNUS SF Express V16.1

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

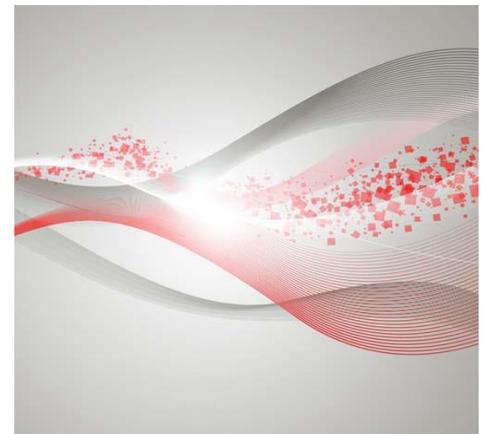
#### Storage Management Software ETERNUS SF

The comprehensive and flexible data management for ETERNUS DX storage systems offers convenient, consistent and powerful tools with enterprise class functionalities 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 Fujitsu's highly efficient Flexible Data Management. It offers the same usability for all operational workflows throughout the ETERNUS DX series, from entry-level systems up to the high-end models. Therefore, acquired management skill can be leveraged over sites and over time.

A high degree of automation and an easy to learn, easy to handle graphical user interface eases all management tasks for the daily work and reduces significantly 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 the ergonomic and unified storage management ETERNUS SF also enables to eliminate unnecessary maintenance cost as even complex storage management operations can be executed without high-level skills or expensive vendor's intervention.

A flexible and transparent license model guarantees that customers pay only needed functionalities and such can grow with rising requirements at foreseeable cost.



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

ETERNUS DX100 S3, DX200 S3 disk storage systems and ETERNUS DX200F all flash array are shipped with a free-of-charge ETERNUS SF Express license. The Express software offers basic management features, as well as simple, wizard based configuration and can monitor multiple ETERNUS DX systems with one centralized console. For advanced features ETERNUS SF Express can be easily upgraded to ETERNUS SF Storage Cruiser.



# Features and benefits

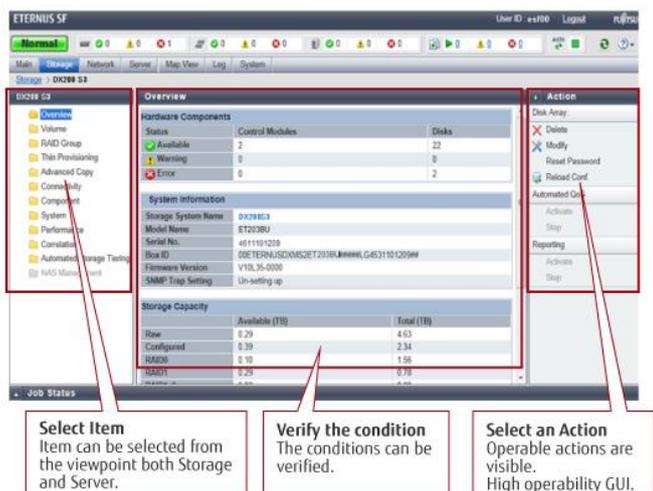
Main features	Benefits
<p><b>Configuration and Correlation Management</b></p> <ul style="list-style-type: none"> <li>■ Automatic device detection, zoning, automatic or manual access path management</li> <li>■ Graphical or tabular display of physical and logical links of the entire SAN infrastructure – storage systems, switches and servers including virtual machines.</li> <li>■ Wizard assisted setup of major features.</li> <li>■ Reporting for volume allocation per server.</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> <li>■ Simplifies the billing procedure</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>Single Console</b></p> <ul style="list-style-type: none"> <li>■ Common console for all the ETERNUS family storage systems</li> <li>■ Common console for both SAN and NAS</li> </ul>	<ul style="list-style-type: none"> <li>■ Acquired management skill can be leveraged over sites and over time</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>■ Auto QoS management based on performance requirements</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>Business Continuity</b></p> <ul style="list-style-type: none"> <li>■ Automated failover in storage systems</li> </ul>	<ul style="list-style-type: none"> <li>■ Enables 24 x 7 , non-stop business operations for storage system field critical down</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

## ETERNUS SF Storage Cruiser ETERNUS SF Express

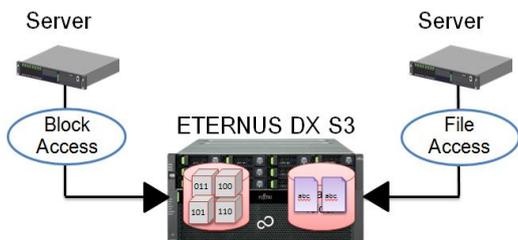
### Single Console

ETERNUS SF Web GUI provides an intuitive single console for entire ETERNUS DX family, and enables administrators to implement storage environments with ease and without high-level skills.



### Unified Storage Management for both SAN and NAS

ETERNUS SF Storage Cruiser or ETERNUS SF Express can manage network attached storages on ETERNUS DX S3 series, through easy to understand ETERNUS SF GUI and wizards. (e.g. network and access permissions for shared folders.)



### Power saving storage

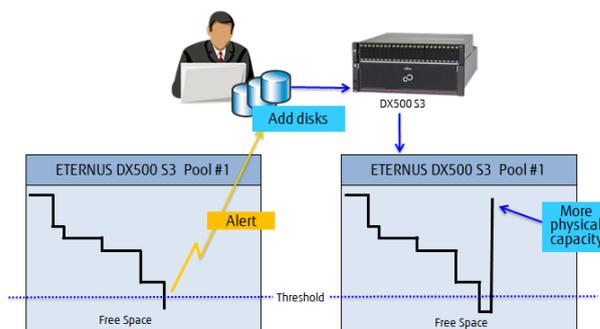
With ETERNUS SF Storage Cruiser or ETERNUS SF Express, the Eco-mode (\*Note 1) function of ETERNUS Disk storage systems can be managed with a full understanding of servers and disk storage system requirements. Eco-mode reduces storage power consumption by stopping disk rotation when not in use. For example, 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 1: Except ETERNUS DX200F.

### Start with a small storage system (Thin Provisioning) (\*Note 2)

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 2: Except ETERNUS DX60.

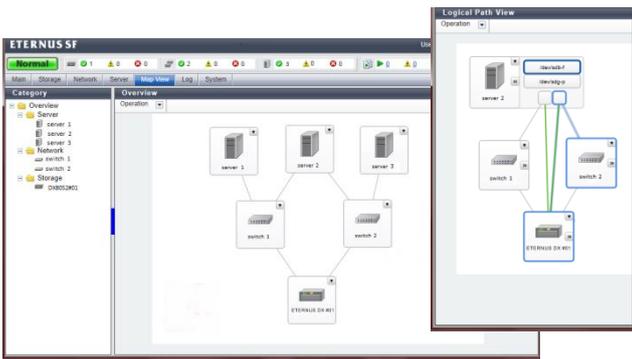


# Topics

## ETERNUS SF Storage Cruiser

### 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.

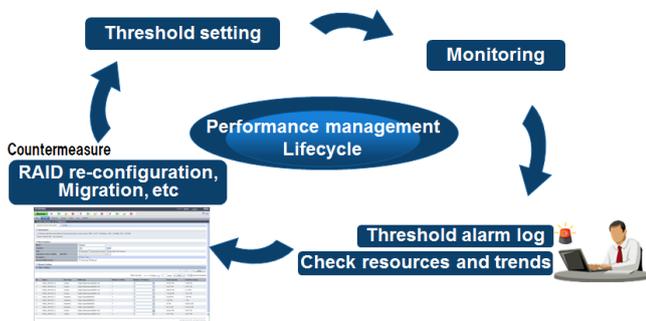


The Reporting function automatically generates periodical usage reports of storage resources in XML format that can be used to check usage or do billing.

### 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.

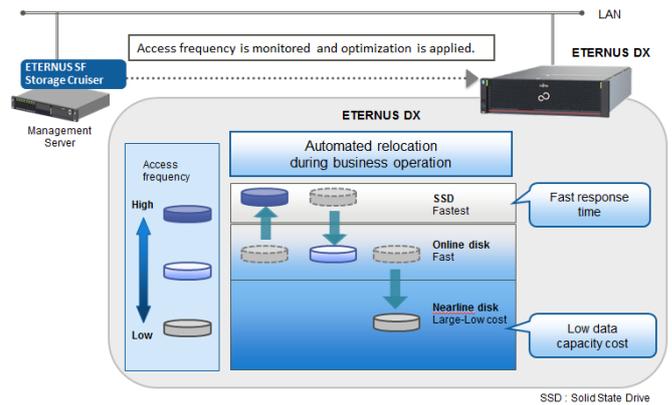
Further all the information gathered by these functions can be stored in file formats that enable the production of periodic reports.



### Optimization Option enables Automated Storage Tiering

Optimization Option (\*Note 3) provides Automated Storage Tiering to enable followings; By small data based relocation, depends on the access frequency, the appropriate performance and saving the use of disks are possible.

\*Note 3: It is supported on ETERNUS DX S3 series, DX80 S2, DX90 S2, DX400 S2 series, DX8700 S2.



### Quality of Service (QoS) Management

The ETERNUS SF Storage Cruiser Quality of Service Management Option sets (\*Note 4) QoS values based on performance requirements and dynamically adjusts the values along with the result of performance monitoring.

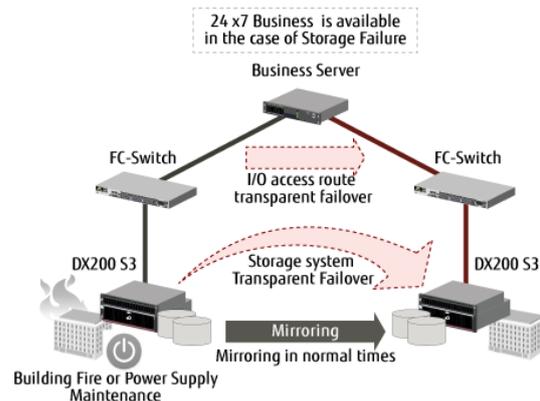
This feature makes it easier for the user to start the QoS settings. In addition, by combination of QoS management and Optimization Option, the further performance effect can be expected.

\*Note 4: ETERNUS DX S3 series, DX200F.

### Automated Storage Failover Management

The ETERNUS SF Storage Cruiser Storage Cluster Option sets (\*Note 5) allow Non-stop business in a critical failure in storage array area bases to be available. The ETERNUS SF product provides a monitor the ETERNUS storage systems and I/O is continued by the secondary ETERNUS DX system transparently.

\*Note 5: ETERNUS DX S3 series

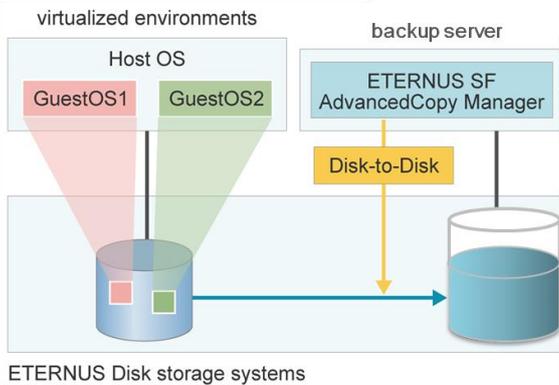


# Topics

## ETERNUS SF AdvancedCopy Manager

### 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.

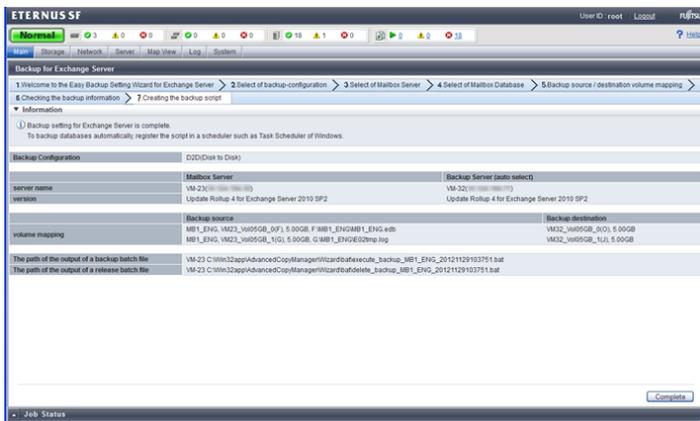


### Achieving backup operation without stopping database system

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 and Microsoft SQL Server

The setup wizard for Exchange Server and Microsoft SQL Server 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

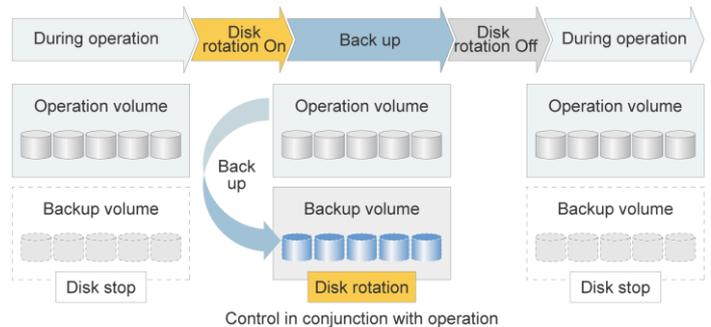
ETERNUS SF AdvancedCopy Manager can perform backup operations in cooperation with Hyper-V without stopping guest OS operations via VSSHP.

On the NAS (Network Attached Storage) architecture implemented on ETERNUS DX S3 series, shared folder backup and restore leverages the speed and reliability of ETERNUS SF AdvancedCopy Manager for NAS resources.

### Backup with reduced power consumption

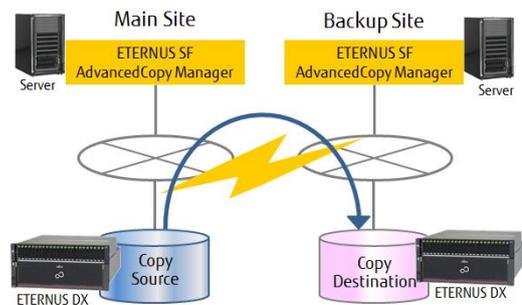
Using ETERNUS disk storage systems eco-mode, storage power consumption can be reduced by rotating backup disks only during backup operation. For example, in backup operation with the ETERNUS DX600 S3 Disk storage system, it can be reduced by 20% (\*Note 6). In addition, in cooperation with ETERNUS SF Storage Cruiser, power consumption and temperature can be visualized to check the power saving efficiency.

\*Note 6: When operating backup volumes for 4 hours a day in the system environment configured with 72 x 600GB disk drives (RAID5) and 132 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.



# Technical details

## Support Devices

### ETERNUS SF Storage Cruiser

**General specifications**

<b>Supported Devices</b>	<b>Disk Storage Systems</b>	ETERNUS DX100 S3, DX200 S3, DX500 S3, DX600 S3 ETERNUS DX60/DX60 S2, DX80/DX80 S2, DX90/DX90 S2 ETERNUS DX410/DX410 S2, DX440/DX440 S2 ETERNUS DX8400, DX8700/DX8700 S2 ETERNUS CS800, ETERNUS CS2000 NetApp FAS series, V series
	<b>All Flash Array</b>	ETERNUS DX200F
	<b>Tape Libraries</b>	ETERNUS LT20/LT20 S2, LT40/LT40 S2, LT60/LT60 S2 ETERNUS LT200, LT210, LT220, LT230, LT250, LT270, LT270 S2
	<b>Fibre Channel Switches</b>	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 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

### ETERNUS SF AdvancedCopy Manager

**General specification**

<b>Supported Devices</b>	<b>Disk Storage Systems</b>	ETERNUS DX100 S3, DX200 S3, DX500 S3, DX600 S3 ETERNUS DX60/DX 60 S2, DX80/DX80 S2, DX90/DX90 S2 ETERNUS DX410/DX410 S2, DX440/DX440 S2 ETERNUS DX8400, DX8700/DX8700 S2
	<b>All Flash Array</b>	ETERNUS DX200F

### ETERNUS SF Express

**General specification**

<b>Supported Devices</b>	<b>Disk Storage Systems</b>	ETERNUS DX100 S3, DX200 S3, ETERNUS DX60/DX60 S2, DX80/DX80 S2. DX90/DX90 S2
	<b>All Flash Array</b>	ETERNUS DX200F

## Installing Platform

### Installing specifications

#### Manager Platforms

<b>Solaris (except Express)</b>	Solaris 11 (11/11 or later), Solaris 10
<b>Windows</b>	Microsoft Windows Server 2012, 2012 R2 Microsoft Windows Server 2008, 2008 R2
<b>Linux</b>	Red Hat Enterprise Linux 6 Red Hat Enterprise Linux 5
<b>VMware</b>	VMware® vSphere 5 */5.1*/5.5* VMware® vSphere 4*/4.1 * * Guest OS is supported as a manager platform.
<b>Hyper-V</b>	Windows Server 2012 Hyper-V Windows Server 2012 R2 Hyper-V Hyper-V 2.0

#### Agent Platforms

#### (Storage Cruiser, AdvancedCopy Manager)

<b>Solaris</b>	Solaris 11 (11/11 or later), Solaris 10
<b>Windows</b>	Microsoft Windows Server 2012, 2012 R2 Microsoft Windows Server 2008, 2008 R2 Microsoft Windows Server 2003, 2003 R2
<b>Linux</b>	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
<b>Unix</b>	HP-UX 11i v3, HP-UX 11i v3 (IPF) HP-UX 11i v2, HP-UX 11i v2 (IPF) HP-UX 11i v1 AIX 7.1/6.1
<b>VMware</b>	VMware® vSphere 5* /5.1*/5.5* 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.
<b>Hyper-V</b>	Windows Server 2012 Hyper-V * Windows Server 2012 R2 Hyper-V* Hyper-V 2.0 * *Note: Only AdvancedCopy Manager-Agent. (End to End list display feature is available without installation of Storage Cruiser Agent program.)

#### Client

<b>Web Browser</b>	Internet Explorer 8, 9, 10, 11 Firefox ESR 17, ESR 24
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# More information

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



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2014-06-02 WW-EN