

## FibreCAT<sup>®</sup> SX40 Storage Subsystem (SAS)

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**The FibreCAT SX40 SAS storage subsystem is a passive, directly connectable system for data storage or expanding the hard disk capacity of connected PRIMERGY servers. With a height of 2U, the FibreCAT SX40 subsystem meets the requirements for a compact design with high hard disk capacity in 19-inch rack infrastructures.**

Depending on the model, the maximum internal hard disk capacity of a server can soon be exhausted. The FibreCAT SX40 storage system with its SAS technology enables flexible expansion with powerful and highly available hard disks as storage requirements grow.

Up to 12 SAS or SATA hard disks offer a total maximum capacity of 9 Tbytes in an external housing. Cascading of up to 3 FibreCAT SX40s via the second SAS x4 link permits expansion to a maximum of 27 Tbytes of external hard disk capacity.

In the FibreCAT SX40 storage subsystem, the active components – hot-plug hard disks and hot-plug power supply modules – can be replaced while the server is running. The redundant hot-plug power supply units can be connected with phase redundancy via separate power lines. Optimum and secure cooling of the hard disks is ensured by 2 independent fans in each power supply unit.

The FibreCAT SX40 storage subsystem provides information on the operating status of the subsystem and the most important internal modules via LED on the front panel. Hard disks and I/O and power supply units also indicate their operating status directly on the module by means of light-emitting diodes.

The FibreCAT SX40 storage subsystem is integrated in the standard server management product PRIMERGY ServerView Suite. Signaling is based on the SES (SCSI Enclosure Services) standard and is performed via the SAS interface. PRIMERGY ServerView Suite enables, for example,

monitoring of the temperature of the entire subsystem and the most important modules, such as hard disks, power supply units, the integrated fans and the I/O module.

Thanks to S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology), the hard disks autonomously check their operating status and report potential errors in good time. As a result, there is sufficient time to take precautions and replace hard disks that are at risk.

The hard disks in the FibreCAT SX40 can be organized in different RAID levels by means of the server's SAS RAID controller. Depending on the selected RAID array, hard disks can be replaced while the server is online.

Fujitsu Siemens offers ServerView RAID, a uniform management tool with an identical interface for the different vendor-specific tools of the RAID controllers in the PRIMERGY servers. The full functionality of the PRIMERGY SAS RAID controller can also be used and configured with ServerView RAID.



Key features	Benefits
<ul style="list-style-type: none"> <li>■ Up to 12 high performance and high availability SAS or SATA hard disks with max. capacity of 9 Tbyte. Mix and match of SATA and SAS hard disk is now released</li> </ul>	<ul style="list-style-type: none"> <li>■ High reliability and storage capacity for big data volume. With the new 250, 500 and 750 GB SATA hard disks the mixed operation of SAS and SATA HDD is possible.</li> </ul>
<ul style="list-style-type: none"> <li>■ Replaced components while the server is running like hot plug hard disks and power supply module</li> </ul>	<ul style="list-style-type: none"> <li>■ High availability through hard disk change in server operation</li> </ul>
<ul style="list-style-type: none"> <li>■ Status of the components over LEDs</li> <li>■ Integrated in the standard server management ServerView Suite</li> </ul>	<ul style="list-style-type: none"> <li>■ Easy installation and control of the subsystem, e.g. monitoring of the temperature of the subsystem the most imported modules such as hard disks, fans, I/O modules etc.</li> </ul>

<b>Type</b>	FibreCAT storage subsystem	
<b>General specifications</b>		
Number of bays for hot-plug hard disks	12 x 3.5-inch	
SAS addresses for hard disks	Automatic assignment	
Host port	1 SAS SFF 8470 port on the standard SAS I/O module (expander)	
Max. number of power supply units	2 with full redundancy (hot-plug)	
Fans	2 redundant fans per power supply unit	
<b>Connection of hard disks</b>		
Connection (internal)	SAS x4, for up to 12 hot-plug SAS and/or SATA hard disks .	
External SAS port (daisy chain)	Second SAS x4 port for cascading up to 3 FibreCAT SX40s	
Server controller (in PRIMERGY Servers)	RAID controller: LSI MegaRAID ® SAS 4/4ports 256 MB	
RAID levels	0, 1, 5, 10 and 50	
<b>Hard disk drives</b>		
Capacities	73, 146 and 300 Gbytes SAS HDD in the SX40 disk frame 250, 500 and 750 Gbytes, 7,200 rpm SATA HDD in the SX40 disk frame <b>Mix of SAS and SATA possible</b>	
Access time	≥ 4 ms, depending on the HDD type	
Total capacity	Max. 9 Tbytes per JBOD	
1 Gbyte corresponds to a billion bytes in relation to hard disk capacity; the available capacity may vary.		
<b>System management</b>		
RAID status signaling and monitoring of the internal operating parameters via SES and status LEDs on the subsystem.		
<b>Options</b>		
<ul style="list-style-type: none"> <li>- SAS hot-plug hard disks 73 / 146 / 300 Gbytes, 10,000 rpm and 15,000 rpm</li> <li>- Cable lengths</li> <li>- 0,5 and 2m SAS</li> </ul>		
<b>Electrical ratings</b>		
Redundant Hot-Plug power supply modules standard (1+1)		
Output power	750 W /1+1 x each one 750W	
Power supply range	100V – 240V	
Rated frequency	50 – 60 Hz	
Rated current max.	3A – 1,5A / 100V – 240V	
Rated current in basic configuration	1,9A – 1A / 100V – 240V	
Active power max.	300W	
Apparent power max.	330VA	
Heat dissipation	1080kJ/h (1024btu/h)	
<b>Temperature / noise / dimensions / weight</b>		
Operating temperature	10°C – 35°C (IEC 721-3-3 class 3K2)	
Noise emission According to ISO 9296	Idle*	operating* (*ISO 7779)
L <sub>Wad</sub> (1B = 10dB)	6,4B	6,5B
L <sub>pAm</sub> (bystander position)	47dB	47dB

<b>Dimensions</b>	
Overall dimensions (H x W x D)	88 x 480 x 582
Rack (H x W x D)	88 x 480 x 582 mm (mounting depth 563 mm)
Weight	Approx. 30 kg (depending on the configuration)
<b>Standards</b>	
<b>Product safety</b>	
Global	IEC 60950
Europe	EN 60950, EN30571
USA	UL 60950, CSA 60950
Canada	CSA 60950
Saudi Arabia	SASO
<b>Electromagnetic compatibility</b>	
Europe	EN 55022 class A, EN 55024, EN 61000-3-3; EN 61000-2-3
Japan	VCCI class A
Australia / New Zealand	AS/NZ CISPR 22 class A
USA / Canada	FCC CFR 47 class A / ICES 003 class A
<b>Compliance</b>	
Europe (CE)	89/336/EWG (EMV); 72/23 EEC (LVD)
North America	FCC class A
<b>Approvals</b>	
<b>Product safety</b>	
Global	CB
Europe	CE
Germany	GS
USA / Canada	FCC / cUL <sub>US</sub> or cCSA <sub>US</sub>
Japan	VCCI
Russia	Ghost
Australia	C-Tick

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.