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Data Sheet
Fujitsu Storage ETERNUS CS8000
Central Backup and Archive Storage

Strengthen data resiliency with highest SLA and reduce TCO up to 60% in hybrid IT

ETERNUS CS8000

Based on a long-lasting user-driven development, the ETERNUS CS8000 is the most reliable central repository for backup, archive, second tier and object data. The appliance consolidates data from mainframe and open system environments and can help to reduce the TCO in complex hybrid IT environments by up to 60%.
Data is automatically managed between different storage tiers, including SSD, disk, and tape technology as well as different performance and availability levels. To strengthen the data resiliency the solution creates an airgap with offline backup to tape. Designed to flexibly fulfill various data protection service levels, the ETERNUS CS8000 provides automated 24/7 operation, comprehensive high availability with near-zero downtime and disaster recovery capabilities. Unique scalability in capacity and performance makes it a viable solution, that enables continuous cost savings.

Features & Benefits

Main Features	Benefits
Flexible, modular architecture with pooling of resources ■ Infrastructure virtualization for the whole backup and archive storage environment, including second tier and object data ■ Consolides mainframe and open system infrastructures	■ TCO reductions in complex hybrid IT environments by up to 60% ■ Flexibility to allocate resources as required ■ Reduces floor space, power, and cooling and helps driving sustainability transformation
Intelligent automation with self-healing mechanism ■ ILM on SSD, disk, and tape technology ■ Managing multiple local and remote copies ■ Long-lasting, user-driven development for optimization	■ Flexibility regarding capacity, performance and costs ■ Ensures highest and most reliable service levels and data resiliency ■ Reduces administrator workload and optimizes processes
High performance appliance with unique scalability ■ Storage capacity from 19 TB up to 96 PB (net usable) on disk ■ Manage exabytes of data on tape ■ Backup and recovery performance from 8 TB/h up to 150 TB/h ■ Decoupled technology lifecycles and automated data migration	■ Long-term investment protection ■ On-demand scalability to adapt to unpredictable requirements on capacity and performance ■ Faster innovations to leverage latest technology
Split-site solution with cache-mirror for highest demands ■ Physical separation (up to 100 km) of one logical system ■ Automated continuation even in case of complete site failure	■ Provides maximum protection for mission critical data ■ Ensures highest data resiliency with near-zero downtime and near-zero data loss

Models and architecture

ETERNUS CS8000 architecture
- Four different basic architectures are available: the branch-office model CS8050, the scale-up model CS8200, the scale-out-single-site model CS8400 and the scale-out-split-site model CS8800.

CS8050 - the branch-office model
- The CS8050 VTL system is applied in branch offices to replicate data to a central ETERNUS CS8000 model in the main data center. This 2U systems has all the features of a larger ETERNUS CS8000 appliance with regards to backup to disk requirements. To strengthen the data resiliency CS8050 VTL creates an airgap with offline backup to tape.
- Archiving is becoming more and more an integral part of any modern, intelligent data protection strategy. The CS8050 NAS system is a reliable, cost-efficient storage appliance dedicated for archive and second-tier file storage. The solution features replication, integrated backup and SoftWORM capabilities to ensure business efficiency, continuity and to fulfill compliance regulations.

CS8200 - the scale-up model
- This model is available either as a VTL system for backup purposes, or as a NAS system for archive and second-tier storage purposes. The main components are a pair of front-end nodes to receive the data and a scalable RAID system.
- With a VTL system, the data is first stored to disk. Optional, thanks to tape automation functions, data can be copied to an attached tape library. For disaster recovery scenarios, data can be copied to a remote tape library or replicated to a second ETERNUS CS8000 system. CS8200 can consolidate data from mainframe and open system environments.
- With a NAS system, data can be received via NFS, CIFS and Object interfaces. Optional WORM functionality enables long-term storage for compliant archive purposes. For disaster recovery scenarios, data can be replicated to a second ETERNUS CS8000. Furthermore, an integrated snapshot-based backup is available. This snapshot data can also be replicated to a second ETERNUS CS8000 system.

CS8400 - the scale-out-single-site model
- Backup, archive, second tier and object data from mainframe and open system environments can be consolidated in a single CS8400. Optional CS8400 can also be provided as a VTL-only system or as a NAS-only system.
- All the functions for the CS8200 VTL system are also available for the CS8400 VTL subsystem; the functions of the CS8200 NAS system are available for the CS8400 NAS subsystem.
- In contrast to the scale-up model the CS8400 provides a scale-out approach. It is scalable in capacity as well as in performance. Several front-end nodes, back-end nodes or RAID systems can be easily added. All components are redundantly connected, thus providing a single, high-available real scale-out system without any single point of failure.
- CS8400 supports the cache-mirror feature to increase the availability level for the data itself by enabling the synchronous mirroring of data within the internal RAID systems.
- With the CS8400 NAS subsystem an automated HSM (Hierarchical Storage Management) function is available as an option, using tape automation functionality to copy data to attached tape libraries. WORM tape is supported for compliant archive requirements in addition to the WORM functionality on disk level.

CS8800 - the scale-out-split-site model
- All the features, functions and architecture highlights specified for the CS8400 model are also available for the CS8800 model.
- CS8800 also offers a split-site function. One logical ETERNUS CS8800 system can be deployed over two geographically separated sites. The internal ETERNUS CS8800 infrastructure is thus extended to a second site – still representing one single system thanks to the cache-mirror feature. Data can be written to or read from both sites. The system internal automatic failover ensures that data remains available even if a complete site is affected by a disaster. Combined with the highly automated tape integration, the result is a system with no single point of failure which provides the highest levels of data availability and resiliency.

Technical details

General system information

Model	CS8050	CS8200	CS8400	CS8800
Type	Branch-office System	Scale-up System	Scale-out-single-site System	Scale-out-split-site System
Host connectivity options	VTL or NAS and Object	VTL or NAS and Object	VTL, NAS, Object	VTL, NAS, Object
Hardware platform	S16	S16	S16	S16
Software version	V9	V9	V9	V9
RAID capacity	19 TB - 84 TB	19 TB - 7,680 TB	19 TB - 122.88 PB	38 TB - 122.88 PB
Note	Capacity value calculated using Base10 (i.e. 1TB = 1,000,000,000,000 bytes). The model CS8050 VTL provides a fix capacity of 19TB, the CS8050 NAS a fix capacity of 84TB.			

VTL Subsystem

Sustained Performance (max.)	1.4 TB/h	30 TB/h	150 TB/h	150 TB/h
VTL Front-end Ports	4 FC 32 GB	4 to 8 FC 32 Gb / FICON 32 Gb	4 to 84 FC 32 Gb / FICON 32 Gb	4 to 84 FC 32 Gb / FICON 32 Gb
Virtual Tape Drives	max. 32	32 to 64	32 to 5,208	32 to 5,208
Virtual Tape Volumes (max.)	20,000	300,000	3,000,000	3,000,000
VTL Back-end Port Options	4 FC 32 Gb	4 to 8 FC 32Gb	4 to 84 FC 32 Gb	4 to 84 FC 32 Gb
Physical Tape Volumes (max.)	500	50,000	50,000	50,000
Performance Note	To the extent that specific performance specifications for the product are indicated in the product data sheet, these are usually also dependent on the specific use and workload of the product and may therefore not be reached equally in all application situations. Such performance specifications thus do not represent a specifically agreed characteristic or feature of the product, but only serves as an orientation. The responsibility for a sufficient sizing of the overall system functionality lies solely with the user.			

NAS Subsystem

Supported protocols	NFS CIFS	NFS CIFS	NFS CIFS	NFS CIFS
NAS Front-end Ports	2 to 4 x 1 GbE or 2 to 4 x 10 GbE	4 to 8 x 1 GbE or 2 to 8 x 10 GbE	4 to 84 x 1 GbE or 2 to 84 x 10 GbE	4 to 84 x 1 GbE or 2 to 84 x 10 GbE
Number of Inodes (per file system)	200 Million	2 Billion	2 Billion	2 Billion
NAS Back-end Port Options	- (no HSM)	- (no HSM)	2 to 8 active FC 32 Gb 2 to 8 passive FC 32 Gb	2 to 8 active FC 32 Gb 2 to 8 passive FC 32 Gb
Note	If more NAS Front-end Ports are needed, a Special Release Request is required Maximum number of Inodes per file system (Depending if special service such as HSM, VRB or File Protection is applied). Ask for project specific configuration for more details.			

Physical Tape Support

Physical Tape Drives (max.)	8	32	135	135
Physical Tape Libraries supported (max.)	1	10	10	10

Supported environments - excerpt

Host interoperability	Fujitsu (BS2000/OSD, MSP, XSP, VME (ICL)) IBM (z/OS, OS/390, i5/OS, z/VM, z/VSE) Bull (GCOS 8) Open Systems (AIX, HP-UX, Solaris, SUSE LINUX, Red Hat LINUX, z/Linux, Windows, NDMP Backup (NetApp, EMC)) No IBM mainframe support with CS8050 model For additional information or operating systems not listed please contact your Fujitsu sales representative

Supported environments - excerpt

Supported backup and archiving software for open systems	Commvault Software
	Veritas (Backup Exec, NetBackup, EnterpriseVault)
	IBM (Storage Protect, prev. Tivoli Storage Manager)
	Veeam (Backup & Replication)
	Atempo (Time Navigator)
	Ceyoniq nscale 7
	Dell NetWorker
	Micro Focus (Data Protector) (former "HP Data Protector")
	SEP sesam
	For additional information or applications not listed please contact your Fujitsu sales representative
Supported physical tape libraries	Fujitsu (ETERNUS LT Family)
	Quantum (Scalar iSeries)
	Oracle (SL Series)
	IBM (TS4500)
	Spectra Logic (Spectra T50, T120, T950)
	For additional information or tape libraries not listed please contact your Fujitsu sales representative
Supported physical tape drives	IBM (Jaguar 3592 / TS1120 / TS1130 / TS1140 / TS1150)
	Oracle (T9840, T9940, T10000)
	LTO Ultrium (Gen 3, Gen 4, Gen 5, Gen 6, Gen 7, Gen 8)
	For additional information or tape drives not listed please contact your Fujitsu sales representative

Installation specification

Model	CS8050	CS8200	CS8400	CS8800
19" rackmount	Yes			
No. of racks	0	1-3	1-35	2-36
Dimension - per rack (W x D x H)	445 x 700 x 87 mm 17.5 x 27.6 x 3.4 inch	800 x 1200 x 2000 mm 31.5 x 47.2 x 78.7 inch		
Height Unit standard	2 U	42 U		
Power voltage	Industry: 1, 2 or 3 phases of 230 V / US: 2 supplies of 208 V (phase to phase)			
Power frequency	50 / 60 Hz			
Maximum Power Consumption	Industry: 1, 2 or 3 phases of 230 V: 305 W	Industry: 1, 2 or 3 phases of 230 V: 10,160 W	Industry: 1, 2 or 3 phases of 230 V: 152,520 W	
Maximum Power Consumption	US: 2 supplies of 208 V (phase to phase): 305 W	US: 2 supplies of 208 V (phase to phase): 10,160 W	US: 2 supplies of 208 V (phase to phase): 152,520 W	
Power phase	Single, Dual or Triple			
Fuse protection	Industry: 16 A per phase (fuses not coupled) US: 20 A per phase (fuses not coupled) To be cared about by the customer			
Power Connector Options	2 x IEC 320 10A KG	2 x CEE 3x16A (3 phases red plug) 2-6 CEE 1x16A (1 phase blue plug) 2-6 L6-30 (US: 2 phases 208V)		
Notes	Power Connection Options: Default is 2 x CEE 3x16A (best power redundancy, which is highly recommended). Each configuration will be analyzed in SysARC and the internal power distribution will be set for maximum power redundancy. A mix inside a Rack is not allowed. Each rack can be individually configured.			

Model	CS8050	CS8200	CS8400	CS8800
Weight	30 kg	450 kg	554 kg	981 kg
Power consumption (standby)	230 W	2,060 W	2,714 W	5,128 W
Power consumption (under load)	305 W	2,360 W	3,400 W	6,440 W
Heat generation	1,098 kj/h / 1,041 BTU/h	8,496 kj/h / 8,053 BTU/h	12,240 kj/h / 11,601 BTU/h	23,184 kj/h / 21,974 BTU/h
Notes	Weight, power consumption and heat generation are stated for a typical system configuration! Due to high scalability, detailed values are calculated and available through the configuration tool Webarchitect.			

Environment

Room air conditioned	Recommended, at 20° C (68° F)
Floor air supply	No

Environment

Environment				
Temperature (not operating)	-20 - 40 °C	-20 - 40 °C	-20 - 40 °C	-20 - 40 °C
Temperature (operating)	Long term at 20° C (68° F), max. 2 hours at minimum 15° C or maximum of 35° C (59 to 95° F)			
Humidity (operating)	Long Term at appr. 50 % RH; tolerances at 30 to 70 % RH (relative humidity, non-condensing)			
Humidity (not operating)	30 - 70 % (relative humidity, non-condensing)			
Altitude	3,000 m (10,000 ft.)			
Sound pressure (dB/A)	<60			
Operating environment	FTS 04230 – Guideline for Data Center (installation specification)			
Operating environment link	http://docs.ts.fujitsu.com/dl.aspx?id=e4813edf-4a27-461a-8184-983092c12dbe			
Warranty period	2 years			
Warranty type	Onsite warranty			
Recommended Service	- Reactive and proactive Service			

Product				
Product safety	CE, NRTL (UL/CSA/TÜV)			
Electromagnetic Compatibility	CE, FCC Class A			
Electromagnetic Immunity	CE			
CE certification	Self Declaration			
Approvals	CE, UKCA, CB, NRTL, FCC, VCCI, RCM			
Environmental compliance	RoHS compliant, WEEE compliant			
Compliance notes	There is general compliance with the safety/EMC 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.			
Compliance link	https://sp.ts.fujitsu.com/sites/certificates			

In addition to Fujitsu ETERNUS CS8000, 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/products/computing/

Software
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More information

Learn more about Fujitsu ETERNUS CS8000, please contact your Fujitsu sales representative or Fujitsu Business partner, or visit our website.
https://www.fujitsu.com/global/products/computing/storage/data-protection/cs8000/index.html

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 contribute to the creation of a sustainable environment for future generations through IT.
Please find further information at http://www.fujitsu.com/global/about/environment

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