Data Sheet
FUJITSU Storage ETERNUS CS8000
Data Protection Appliance

Radically simplifying backup and archiving

ETERNUS CS Backup Appliance

The ETERNUS® CS portfolio offers data protection solutions for all company sizes and needs:
ETERNUS CS200c is an integrated backup appliance providing small and midsized environments with a complete solution without the need for additional backup software.
ETERNUS CS800 is a deduplication appliance dedicated for cost eficient backup to disk in small and midsized environments.
The uniied data protection appliance ETERNUS CS8000 allows upper midsized and large enterprises a complete consolidation of backup and archiving infrastructures of open systems and mainframes.

ETERNUS CS8000

FUJITSU Storage ETERNUS CS8000 is a united data protection appliance for the complete consolidation of backup and archiving infrastructures of open systems and mainframes.

Thanks to uniform management of disks, deduplicated disks and tapes fexible service levels regarding capacity, speed and cost can be provided. A modular grid architecture delivers extreme scalability of capacity and performance. Integrated data mirroring and replication features enable comprehensive disaster recovery concepts.

Flexible SAN and Ethernet connectivity as well as VTL, NAS and WORM support allow you to use one system for backup and archiving. And support for the cloud gateway functionality makes ETERNUS CS8000 an ideal and future-proof solution for a uniied and optimized data protection infrastructure.

Features & Benefits

Main Features	Benefits
One consolidation platform for backup and archiving for open systems and mainframes	• Thanks to complete consolidation all disk and tape target systems for mainframes and open systems enable large savings in infrastructure investments and costs of operation. • Combining VTL and the NAS option for backup, archiving and second-tier ile storage in one appliance further increases operational eficiency • Integrated management of disks, deduplicated disk and tapes enables fexible service levels in terms of capacity, backup/restore speed and media costs • The support for cloud gateway functionality leverages own investments in storage capacity and enables disaster recovery concepts without investing in own DR sites
Extremely scalable grid architecture	• Flexible scalability of performance and capacity reduce high upfront pre-investments and support a pay-as-you grow approach • Allocate storage resources for data protection according to business priorities • Industry-leading backup and restore performance enable you to manage extreme data growth and volume without migration risks • Parallelization of deduplication processes delivers the performance headroom required to beneit from data reduction even in petabyte-scale environments
Comprehensive high availability and disaster recovery capabilities	• No single point of failure even for the deduplication store • Asynchronous replication and synchronous mirroring enable fexible DR concepts depending on remote distance and recovery time needs • Manages multiple data copies on local and remote targets to align the availability level of data with its importance to the business • Automated processes ensure a highly eficient DC operation, easy media migrations, scheduled media refreshes to prevent data corruption and the ability to eliminate fatal errors in highly complex data protection environments

Models and architecture

ETERNUS CS8000 architecture

- Three different basic architectures are available, the "scale-up" model CS8200, the "scale-out-single-site" model CS8400 and the "scale-out-split-site" model CS8800. Each model is an appliance built with several components providing fully redundant solution architectures.

CS8200 - the scale-up model

- The CS8200 model is available either as a VTL system for backup purposes, or as a NAS system for archive and second-tier file storage purposes. The main components are a pair of front-end nodes and a scalable RAID system. The front-end nodes receive the data and store it on the RAID system.
- With a VTL system, the data is first stored to disk. Thanks to the ETERNUS CS8000 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 can be replicated to a second ETERNUS CS8000 system via integrated and automated storage-based asynchronous replication. An option for data which is to remain only on disk is that the appliance can be provided with an integrated high-available deduplication disk store with automatic failover. To consolidate data protection infrastructures and to ensure investment protection, CS8200 can be provided for mainframe and open system environments, even in parallel.
- With a NAS system, data can be received via NFS and CIFS 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 system via an integrated and automated storage-based asynchronous replication. Furthermore, an integrated and automated backup is available in order to protect the data on the NAS system. This backup data can also be replicated to a second ETERNUS CS8000 system.

CS8400 - the scale-out-single-site model

- The CS8400 model is a unified data protection appliance. Backup, archive and second-tier file storage, data from mainframe and open system environments can be consolidated in a single CS8400. In addition to this unified approach, CS8400 can 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 dedicated front-end nodes can be added flexibly in order to increase the data transfer from the hosts to the ETERNUS CS8400 system. Several dedicated back-end nodes that handle the data transfer to the attached tape libraries can also be easily added. Of course, the internal RAID system providing the disk capacity is scalable, but several RAID systems can also be easily added, thus providing a single storage pool of up to 22.2 PB, for the overall system. 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 in order 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 integrated and automated HSM (Hierarchical Storage Management) function is available as an option, using tape automation functionality in order 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.

Technical details

General system information

	CS8200	CS8400	CS8800
Model	CS8200	CS8400	CS8800
Type	Scale-up System	Scale-out-single-site System	Scale-out-split-site System
Host connectivity options	VTL, VTL with Dedup, NAS	VTL, VTL with Dedup, NAS	VTL, VTL with Dedup, NAS
Hardware platform	S12	S12	S12
Software version	V6.0 SP02	V6.0 SP02	V6.0 SP02
RAID capacity	7 TB - 1,392 TB	7 TB - 22,272 TB	7 TB - 22,272 TB

VTL Subsystem

Sustained Performance (max.)	30 TB/h	150 TB/h	150 TB/h
VTL Front-end Ports	4 to 8 FC 16 Gb / FICON 8 Gb	4 to 40 FC 16 Gb / FICON 8 Gb	4 to 40 FC 16 Gb / FICON 8 Gb
Virtual Tape Drives	32 to 64	32 to 1,280	32 to 1,280
Virtual Tape Volumes (max.)	300,000	1,500,000	3,000,000
VTL Back-end Port Options	4 to 8 FC 16 Gb	4 to 40 FC 16 Gb	4 to 40 FC 16 Gb
Physical Tape Volumes (max.)	50,000	50,000	50,000
Deduplication Store Option (raw)	1 TB - 960 TB	1 TB - 4,500 TB	1 TB - 4,500 TB

NAS Subsystem

Supported NAS protocols	NFS CIFS	NFS CIFS	NFS CIFS
NAS Front-end Ports	4 to 5 x 1 GbE or 2 to 5 x 10 GbE	4 to 40 x 1 GbE or 2 to 40 x 10 GbE	4 to 40 x 1 GbE or 2 to 40 x 10 GbE
NAS Shares (max.)	2,048	2,048	2,048
Number of Files	2 Billion	2 Billion	2 Billion
NAS Back-end Port Options	- (no HSM)	4 to 16 active FC 16 Gb 4 to 16 passive FC 16 Gb	4 to 16 active FC 16 Gb 4 to 16 passive FC 16 Gb

Physical Tape Support

Physical Tape Drives (max.)	10	112	112
Physical Tape Libraries supported (max.)	10	10	10

Supported environments - excerpt

Host interoperability	Bull (GCOS S) Fujitsu (MSP, XSP, VME (ICL), BS2000/OSD) IBM (z/OS, OS/390, i5/OS, z/VM, z/VSE) Open Systems (AIX®, HP-UX®, Solaris®, SUSE® LINUX®, Red Hat® LINUX, z/Linux, Windows®, NDMP Backup (NetApp, EMC®) For the detailed support matrix please contact your Fujitsu sales representative
Supported backup and archiving software for open systems	Atempo (Time Navigator) CommVault (Simpana) Computer Associates (BrightStor ARCserve Backup) EMC (NetWorker, DiskXtender) HP (DataProtector) IBM® (Tivoli® Storage Manager) SEP (Sesam) Seven Ten Storage (StorFirst Altus) Symantec® (Backup Exec, NetBackup, EnterpriseVault) Veeam (Backup & Replication) For the detailed support matrix please contact your Fujitsu sales representative
Supported physical tape libraries	Fujitsu (ETERNUS LT40, LT60, LT130, LT160, LT270; 90S4-221; 3560; FibreCAT TX24/ TX4S) IBM (3494, 35S4 / TS3500) Oracle®/ StorageTek® (SL500, SL1400, SL3000, SLS500, L1S0, L700/E, L5500, PowderHorn 9310, TimberWolf 9740) Quantum/ADIC (Scalar i500, Scalar i2000, Scalar i6k, Scalar 10k, Scalar 100, Scalar 1000, AML/J, AML/E, AML/2) Spectra Logic (Spectra T50, T120, T200, T3S0, T6S0, T950) For the detailed support matrix please contact your Fujitsu sales representative

Supported environments - excerpt

Supported physical tape drives	IBM (Magstar 3590, Jaguar 3592 / TS1120 / TS1130 / TS1140) LTO Ultrium (Gen 1, Gen 2, Gen 3, Gen 4, Gen 5, Gen 6) Oracle / StorageTek (T9S40, T9940, T10000) For the detailed support matrix please contact your Fujitsu sales representative

Installation specification

	CS8200	CS8400	CS8800
Model	CS8200	CS8400	CS8800
Dimension - per rack (W x D x H)	700 x 1050 x 2030 mm 27.6 x 41.3 x 79.9 inch		
Height unit standard	42 U		
No. of racks	1-3	1-35	2-36
Weight	992.10 lbs. (450 kg)	1221.36 lbs. (554 kg)	2162.73 lbs. (9S1 kg)
Power voltage	Industry: 1, 2 or 3 phases of 230 V / US: 2 supplies of 20S V (phase to phase)		
Power frequency	50 / 60 Hz		
Maximum Power Consumption	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 20S V (phase to phase): 10,160 W	US: 2 supplies of 20S V (phase to phase): 152,520 W	
Power consumption (standby)	2,060 W	2,714 W	5,128 W
Power consumption (under load)	2,360 W	3,400 W	6,440 W
Heat generation	S,496 kj/h / S,053 BTU/h	12,240 kj/h / 11,601 BTU/h	23,1S4 kj/h / 21,974 BTU/h
Notes	Weight, power consumption and heat generation are stated for a typical system coniguration! Due to high scalability, detailed values are calculated and available through the coniguration tool SysARC (System Architect).		
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 CEE 3x16A (3 phases red plug) 2-6 CEE 1x16A (1 phase blue plug) 2-6 L6-30 (US: 2 phases 20SV)		
Notes	Power Connection Options: Default is 2 x CEE 3x16A (best power redundancy, which is highly recommended). Each coniguration 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 conigured.		

Environmental

Room air conditioned	Recommended, at 20°C (68°F)
Floor air supply	No
Temperature (operating)	Long term at 20°C (6S°F), max. 2 hours at minimum 15°C or maximum of 35°C (59 to 95°F)
Temperature (not operating)	-20 - 40°C (-4 -104°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 speciication)
Operating environment link	http://docs.ts.fujitsu.com/dl.aspx?id=e4S13edf-4a27-461a-S1S4-9S3092c12dbe

Warranty

Enhanced Plus Warranty	1 year
Service level	Onsite Service
Warranty Terms & Conditions	www.fujitsu.com/support

Maintenance and Support Services - the perfect extension

Recommended Service	24x7 Onsite Service with 4h Response Time
Service Lifecycle	5 years after end of product life
Service Weblink	http://solutions.us.fujitsu.com

Compliance

Product safety	CE, UL/CSA
Electromagnetic Compatibility	CE, FCC Class A

Compliance

Electromagnetic Immunity	CE, FCC
CE certification	2011/65/EC
Approvals	RoHS
Environmental compliance	RoHS compliant
Compliance 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.

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Fujitsu OPTIMIZATION Services

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.

Fujitsu Portfolio
Build on industry standards, Fujitsu offers a full portfolio of IT hardware and software products, services, solutions and cloud offering, ranging from clients to datacenter solutions and includes the broad stack of Business Solutions, as well as the full stack of Cloud offering. This allows customers to leverage from alternative sourcing and delivery models to increase their business agility and to improve their IT operation's reliability.

Computing Products
http://solutions.us.fujitsu.com/

Software
http://solutions.us.fujitsu.com/www/content/products/software/index.php

More information

Learn more about Fujitsu ETERNUS CS8000, please contact your Fujitsu sales representative or 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 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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