Data Sheet
FUJITSU Storage ETERNUS CS8000
Datacenter solution for backup automation

Intelligent automation ensures higher, more reliable service levels
Resources are pooled for TCO reductions in complex backup environments by 40%
Unique scalability delivers ongoing cost savings

ETERNUS CS8000

ETERNUS CS8000 is a datacenter solution for backup and archive storage for mainframe and open systems. Using intelligent process automation and the pooling of storage capacities, data is automatically managed between different storage tiers, including SSD, disk, deduplication and tape technology as well as different performance and availability levels.
ETERNUS CS8000 is the most versatile and flexible solution of its kind, reducing the TCO for complex data protection environments by 40%.

Designed to flexibly fulfill various data protection service levels, ETERNUS CS8000 provides automated 24/7 operation, comprehensive high availability with zero downtime and disaster recovery capabilities. Unique scalability in capacity and performance makes ETERNUS CS8000 a viable solution, delivering ongoing cost savings.

Features & Benefits

Main Features	Benefits
Pooling of resources	
■ Infrastructure virtualization for the whole backup and archive storage environment	■ TCO reductions in complex data protection environments by 40%
■ Consolidation of mainframe and open system infrastructures	■ Flexibility to allocate resources as required
Intelligent automation	
■ ILM on SSD, disk, deduplication and tape technology	■ Flexibility in regards to capacity, performance and costs
■ Managing multiple local and remote copies	■ Ensures highest and most reliable service levels
■ 19 years of user driven development for optimizing automated processes	■ Reduces administrator workload and ensures processes
Unique scalability	
■ Storage capacity from 19 TB up to 96 PB (net usable) on disk	■ Long-term investment protection
■ Manage exabytes on tape	■ On-demand scalability to adapt to unpredictable requirements on capacity and performance
■ Backup and recovery performance from 8 TB/h up to 150 TB/h	
■ Decoupled technology lifecycles and automated data migration	■ Faster innovations to leverage latest technology
Split-site solution with cache-mirror	
■ Physical separation (up to 100 km) of one logical system	■ Maximum protection for mission critical data
■ Automated continuation even in case of complete site failure	■ Zero downtime, 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. ETERNUS CS8000 is a datacenter solution for backup environments and the different models come with the flexibility to provide an optimized solution for the customer specific demands.

CS8050 - the branch-office model

- The CS8050 model is typically applied in branch offices to support the integration of a central data protection strategy with an ETERNUS CS8000 model in the main data center. It comes as a VTL system for backup purposes and can be applied with deduplication only, without deduplication, or in mixed operation.
- The integrated and Automated replication functionality allows replicating data to another ETERNUS CS8000 model in the main data center.
- There is another model available, the CS8050 NAS, a reliable, cost efficient storage appliance for archive and second-tier file storage. For more information of this entry-level model of the ETERNUS CS8000 archive platform please refer to the datasheet ETERNUS CS8050 (http://docs.ts.fujitsu.com/dl.aspx?id=c2864360-6ada-43a0-8544-ac58b56414f7).

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 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				
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, VTL with Dedup	VTL, VTL with Dedup, NAS	VTL, VTL with Dedup, NAS	VTL, VTL with Dedup, NAS
Hardware platform	S14	S14	S14	S14
Software version	V 7.1	V 7.1	V 7.1	V 7.1
RAID capacity	14 TB	19 TB - 5.9 PB	19 TB - 96 PB	38 TB - 96 PB
Note	Capacity value calculated using Base10 (i.e. 1TB = 1,000,000,000,000 bytes)			
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
Deduplication Store Option (usable)	7 TB - 14 TB	1 TB - 480 TB	1 TB - 4.8 PB	1 TB - 4.8 PB
NAS Subsystem				
Supported NAS protocols	- (NAS protocol for CS8050 only with dedicated CS8050 NAS model)	NFS CIFS	NFS CIFS	NFS CIFS
NAS Front-end Ports		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)		2 Billion	2 Billion	2 Billion
NAS Back-end Port Options		- (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	Datasheet for ETERNUS CS8050 NAS model: http://docs.ts.fujitsu.com/dl.aspx?id=c2864360-6ada-43a0-8544-ac58b56414f7 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 (Spectrum Protect, prev. Tivoli Storage Manager) Veeam (Backup & Replication) Atempo (Time Navigator) Ceyoniq nscale 7 Dell EMC (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		
Note	Capacity value calculated using Base10 (i.e. 1TB = 1,000,000,000,000 bytes)			
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	20 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 SysARC (System Architect).			

Environment

Room air conditioned	Recommended, at 20° C (68° F)

Environment				
Floor air supply	No			
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 minimut 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 safety	CE, UL/CSA			
Electromagnetic Compatibility	CE, FCC Class A			
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.			
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
www.fujitsu.com/software/

More information

Learn more about Fujitsu ETERNUS CS8000, please contact your Fujitsu sales representative or Fujitsu Business partner, or visit our website.
http://ts.fujitsu.com

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

Copyrights

Disclaimer

Contact
FUJITSU LIMITED
Website: www.fujitsu.com/eternus
2020-05-25 WW-EN