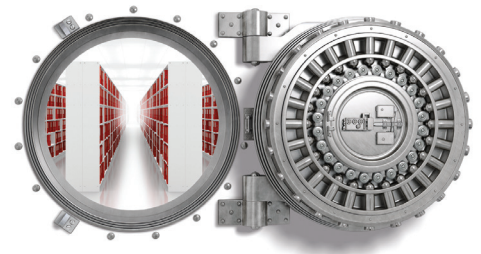


Data Sheet

Fujitsu ETERNUS CS High End V5.1

Data Protection Appliance

Radically simplifying data protection



ETERNUS CS Data Protection Appliances

The Fujitsu ETERNUS CS storage solutions, comprising ETERNUS CS800 and ETERNUS CS High End, offer an outstanding data protection for dynamic infrastructures. ETERNUS CS minimizes backup times and fulfills all recovery time objectives for each business critical environment.

ETERNUS CS enables the consolidation of storage devices for data protection thus simplifying your company's administration, saving energy and lowering the total cost of storage, while making efficient use of the most cost-effective technologies.

ETERNUS CS High End

Fujitsu ETERNUS CS High End is a data protection appliance which radically simplifies backup and archiving for open systems and mainframes. Thanks to a uniform management of disks, deduplicated disks and tapes flexible 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 architectures. Flexible SAN and Ethernet connectivity as well as VTL, NAS and WORM support allow to use one system for backup and archiving.

This unique functionality makes ETERNUS CS High End an ideal solution for a unified and optimized data protection infrastructure.

- One solution for backup and archiving for mainframes and open systems
- Extreme scalability in terms of capacity, costs and high-availability
- Flexible service levels regarding capacity, speed and costs



Features and Benefits

Main features	Benefits
Creating one logical target system	<ul style="list-style-type: none">■ Huge consolidation potential for data protection environments■ Enables easier and step-by-step consolidation projects■ Decoupling technology changes on the server software and target system side enable faster innovation and investment protection■ Reduces administration efforts
Uniform, integrated management of disk and tape	<ul style="list-style-type: none">■ Enables flexible service levels regarding capacity, backup/ restore speed, and media costs
Modular grid architecture	<ul style="list-style-type: none">■ Easy and extreme scalability of capacity, availability, and speed by flexibly adding RAID and processing components■ Enables to consolidate data protection to one unified target system
Cache mirroring, multiple safe, replication and cascading	<ul style="list-style-type: none">■ Enables high availability and disaster recovery for the backup and archive by design
One infrastructure for back and archiving	<ul style="list-style-type: none">■ Flexible connectivity (for SAN, VTL, TCP/IP & NAS) enables further consolidation by supporting SAN and NAS environments■ Enables the use of one data protection appliance for backup and archiving

Optimized backup and archive

Excerpt of ETERNUS CS High End V5.1 capabilities

ETERNUS CS High End is a data protection appliance that radically consolidates and simplifies backup and archiving in heterogeneous IT environments with mainframes, UNIX and x86 systems. It manages data protection centrally using disk and tape technology in a seamlessly integrated and uniform way. Data can be stored on the internal disks of ETERNUS CS High End or on external disks, dedup disks and tape system libraries. A combination is also possible, e.g. creating backups on internal disks for fast restore and also on cost-saving tape for long-term storage. An automated Hierarchical Storage Management handles the migration between the different technologies and replication scenarios. This allows flexible service levels regarding storage capacity, backup / restore speed, availability and media costs. Supporting common interfaces ETERNUS CS High End can be seamlessly integrated in existing data center environments and is, on the one hand connected to server systems and on the other to existing backup and archive libraries.

Backup or archive data are written to the internal disks of ETERNUS CS High End and can then be transferred to different libraries, such as tape, dedup systems or disks. The existing landscape is transformed into one virtual target system for data protection comprising of backup and archive to disk and to tape – all under one unified seamless management. The servers and the utilized backup and archiving software suites “see” only one logical and pooled entity to which they can write or read backups and files. Most of the commercially available software suites are supported. The complete capacity is now pooled tape and disk libraries can now be easily consolidated. As the internal disks of ETERNUS CS High End also act as speed matching buffers there is less need to operate several tape libraries in parallel just for throughput considerations. Furthermore automatic data migration functions enable the migration of data without interrupting operations, e.g. if a library is phased out or replaced by newer model.

In addition to the Fibre Channel based connectivity the Virtual Network Storage (ViNS) functionality provides TCP/IP connectivity and supports Active Directory and LDAP environments. This ensures easy integration of ETERNUS CS HE in NAS environments. Files can be easily transferred to ETERNUS CS High End for backup or archiving purposes or to migrate less frequently used files from an online storage system to a backend system. By combining virtual tape library functionality (VTL) with file backup and archiving ETERNUS CS High End can act as one unified and optimized target system for all backup and archiving needs offering a huge consolidation potential for the complete data protection environment. This is also supported by the modular grid architecture enabling a flexible addition of processing and RAID components to scale performance and capacity to extreme dimensions.

An initial project can be started with a very small configuration which can grow step-by-step as the consolidation of the existing data protection landscape makes progress. Up to 16 internal RAID controllers manage 3.6 PByte of data. Up to 10 front-end processing nodes and 10 back-end processing nodes avoid bottlenecks in the transfer of data between servers and ETERNUS CS High End and from there to connected tape or disk sub-systems. The system has comprehensive high-availability and disaster recovery capabilities. The internal disk cache can be mirrored between two sites; data can be saved in multiple copies. Thanks to rich replication functions data can be transferred over very long distances thus supporting global organizations. Replications can even be cascaded from one system to another to a third and so on. Replication is supported via FC or TCP/IP protocol; data can be compressed and encrypted. It also enables the integration of local data protection for subsidiaries with central data centers.

Technical details S11

Models at a glance*	Single VTC System	Disk Library Systems	ViNS Systems	VTL/ViNS Systems
Model	CS50	CS500 DL CS1500 DL	CS1500 ViNS CS2000 ViNS	CS500, CS1000, CS1500, CS2000, CS3000, CS4000, CS5000
VTL Frontend Ports	2 to 4 FC 8Gb	4 to 40 FC/FICON 8Gb	None	4 to 40 (FC/FICON 8Gb)
VTL Backend Ports	2 to 4 FC 8Gb	4 to 40 FC 8Gb	None	4 to 40 FC 8Gb
Virtual Tape Drives	16 to 32	32 to 256	None	32 to 1280 (FC), 640 (FICON)
NAS Front-end Ports	None	Option: 4x1GbE to 80x1GbE or 2x10GbE to 40x10GbE	4x1GbE to 80x1GbE or 2x10GbE to 40x10GbE	Option: 4x1GbE to 80x1GbE or 2x10GbE to 40x10GbE
NAS Back-end Ports	No	Option: 4 to 16 active FC 8Gb 4 to 16 passive FC 8Gb	Option: 4 to 16 active FC 8Gb 4 to 16 passive FC 8Gb	Option: 4 to 16 active FC 8Gb 4 to 16 passive FC 8Gb
Physical Tape Drives supported	1 to 2	Option	Option	2 to 112
Physical Tape Libraries supported	2	Option	Option	10
Option Deduplication Store	None	None	None	Per back-end node (see ETERNUS CS800 specifications)
Data Storage (RAIDS)				
RAID Capacity (uncompressed)	2.4 TB	12 to 3648 TB	5.4 TB to 3648 TB	5.4 TB to 3474 TB
Sustained Performance	Up to 1.4 TB/h ²	Up to 4 TB/h (CS500 DL) ¹ Up to 54 TB/h (CS1500 DL) ¹	Up to 27 TB/h (CS1500 ViNS) ² Up to 34 TB/h (CS2000 ViNS) ²	Up to 5 TB/h (CS500/CS1000) ¹ Up to 54 TB/h (CS1500) ¹ Up to 68 TB/h (CS2000 – CS5000) ¹
Number of Files supported	None	Option (CS1500 DL): Max. 2 Billion	Max. 2 Billion	Option: Max. 2 Billion
Virtual Tape Volumes supported	20,000	300,000	-	Max. 3,000,000
Physical Tape Volumes supported	500	Option	-	Max. 50,000

VTL=Virtual Tape Library

NAS=Network Attached Storage

*Short model description:

- Single VTC System: Single processor VTL system for rack-mount use.
- Disk Library Systems: Entry Disk Library system with scalable high capacity RAID storage. Upgrade options for physical tape support are available.
- ViNS Systems: ViNS only models, frontend in Ethernet technology only.
- VTL/ViNS Systems: Scalable VTL/ViNS systems with different hardware entries, individual configuration options for one or two locations, cache mirroring, automatic failover and disaster recovery.

¹ with a compression ratio 2:1 (more than 90 TB/h with selected CS2000 – CS5000 models with a compression ratio 3:1)² without compression

Technical details

Installation Specification

Dimension (H x W x D)	90 x 484 x 770 mm (3.54x19.05x30.31 inches)	2,003 x 700 x 1,050 mm (per Rack) (78.86 x 27.56 x 41.33 inches)
Height (Standards)	2 HU server	42 HU racks
Weight (kg / lbs)	20 / 44	280 to appr. 7700 / 617 to appr. 16976
Power consumption (kW)	0.5	1.05 up to appr. 52
Heat emission (BTU/h)	1,800	4015 up to appr. 176.800
Sound pressure (dB(A))	<60dB(A)	
Rated Voltage	Industry: 2 or 3 phases of 230 V	US: 2 supplies of 208 V (phase to phase)
Fuse protection	Industry: 16 A per phase (fuses not coupled)	US: 20 A per phase
Power Connection Options	EE single phase(blue plug), CEE triple phase (red plug), L6-30 connector (US 208V) All installation data will be without Deduplication hardware installed	

Environmental

Room air conditioned	Recommended, at 20°C (68°F) with a RH of 50-60%
Floor air supply	no
Temperature Operating limits	15°C to 35°C (59 to 95°F) at 30 to 70% relative humidity, non-condensing
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)
Operating environmental guideline	FTS 04230 – Guideline for Data Center (installation locations)
Operating environment Link	http://docs.ts.fujitsu.com/dl.aspx?id=e4813edf-4a27-461a-8184-983092c12dbe

Maintenance and Support Services

Services portal	Solution Contract: http://solutions.us.fujitsu.com/www/content/support/server_storage_support/index.php
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Compliance with Standards

Product safety	CE, UL/CSA (others on request)
Radiation, EMI	CE, C-tick, FCC, VCCI (others on request)
EMI Class	Class B

Supported Environments

	Web-Store: http://docs.ts.fujitsu.com/dl.aspx?id=02c0faa4-9961-49e0-a099-cfd01100482d
	For the detailed information of operating systems and applications please contact your Fujitsu sales representative

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For more information, please visit: <http://solutions.us.fujitsu.com/> and <http://twitter.com/fujitsuamerica>

Fujitsu platform solutions

In addition to Fujitsu ETERNUS CS High End Data Protection Appliance, 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/

- PRIMERGY®: Industrial standard server
- SPARC Enterprise®: UNIX server
- PRIMEQUEST®: Mission-critical IA server
- ETERNUS: Storage system
- BS2000 mainframes

Software

www.fujitsu.com/software/

- Interstage®:
Application infrastructure software
- Systemwalker®:
System management software

More information

Learn more about Fujitsu ETERNUS CS High End, please contact your Fujitsu sales representative, Fujitsu business partner, or visit our website.

<http://solutions.us.fujitsu.com/www/content/products/storage/ETERNUS/index.php>

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/



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