FUJITSU

Data Sheet
FUJITSU Storage ETERNUS AF650 S2 All-Flash Array

Storage Unchained!

ETERNUS AF Storage

FUJITSU Storage ETERNUS AF is an incredibly fast and flexible all-flash storage system for the next generation data center. At an affordable price point, it makes flash the new normal for all tier-1 applications in enterprise IT. Response times are ultra-low – in fact, they set performance records. The ETERNUS AF is also built to be smart, with easily-configurable automated quality of service to ensure each app gets the performance it needs, plus flexible deduplication and compression that can be turned on when required – and off when not. It keeps data safe as houses, with full-fledged DR with mirroring and automated transparent failover.

ETERNUS AF650 S2

The Fujitsu All-Flash Storage system ETERNUS AF650 S2 delivers leading storage performance and automated quality of service management enabling a maximum of system utilization and contributing to a fast ROI. It is the perfect solution when consolidating data of large-scale databases, business-critical applications and business analytics / big data – all into one all-flash system. Extensive high-availability and disaster recovery capabilities make ETERNUS AF650 an ideal storage system for any kind of business data.

Green IT

Green Policy Innovation

Green Product
This product cleared our company's original evaluation standard which followed global environmental measures.

intel XEON inside

vmware READY STORAGE

Features & Benefits

Main Features	Benefits
Based on ETERNUS DX standard architecture	■ Performance optimized design ■ Proven and mature technology ■ System availability of 99.9999% ■ Common management across all-flash and hybrid ETERNUS storage systems
Flexible and flash optimized storage	■ Ultra-low response times for all applications ■ Massive increase of IOPS ■ No complicated tuning measures required ■ Scalable in capacity and connectivity
Selective use of deduplication / compression	■ Decide on volume label whether to use it or not ■ Cost reduction for flash ■ Increased lifespan of flash
Automated Quality-of-Service	■ Control of applications priorities according to business needs. ■ Automation of monitoring and adjustment ■ Minimization of admin efforts ■ Guaranteed service levels
Storage Cluster Option/Transparent failover	■ Avoid planned or unplanned downtimes ■ Enjoy 100% data insurance and non-stop operations
Convincing access performance and latency ■ Random access performance: Up to 810.000 IOPS (4 KB Blocks) ■ Sequential access performance: Max. 23 GB/s (128 KB Blocks) ■ Latency: Less than 1 ms (4 KB Blocks)	■ Sufficient performance for all applications requiring high data rates and low response times

Technical details

General system information

	ETERNUS AF650 S2
No. of controllers	2
No. of host interfaces	32ports [FC(16Gbit/s)], 16ports [FC(32Gbit/s), iSCSI(10Gbit/s)]
Maximum System Memory	512
Maximum Disk Drives	192
Max. no. of drive enclosures	8
Supported RAID levels	0, 1, 1+0, 5, 5+0, 6
Host Interfaces	Fibre Channel (16 Gbit/s, 32Gbit/s) iSCSI (10 Gbit/s)
Max. no. of hosts	4,096
Maximum Storage Capacity	2,949 TB
Drive Type	2.5-inch, SSD (15.36TB / 7.68TB / 3.84 TB / 1.92 TB / 960GB / 400 GB) 2.5-inch, SSD (self-encrypting) (3.84 TB/1.92 TB)
Drive interface	Serial Attached SCSI (12 Gbit/s)
Back-end disk connectivity	4 pairs of four-lane x 12 Gbit/s Serial Attached SCSI buses (SAS 3.0 wide)
Max. no. of LUNs	12,288
No. of snapshots - max.	8,192
Max. no. of copy generations	512
Deduplication	for block
Compression	for block

Performance

Latency	Write 60 µs, Read 160 µs (Minimum)
Sequential access performance	2,560,000 IOPS (100 % Read, 4 KB Blocks)
Random access performance	810,000 IOPS (100 % Read, 4 KB Blocks)

Performance management

Automated Storage Tiering	Yes
Quality of Service	Yes
Automated QoS	Yes
Wide striping	Yes
Note	Automation options can be activated via ETERNUS SF Software

Continuity management

Storage Cluster	Yes
Remote Copy functionality	Synchronous and asynchronous
Note	Options can be activated via ETERNUS SF Software

Information security management

Data confidentiality	Self-Encrypting Disk, Controller based Encryption, HTTPS (SSL), One Time Password, RADIUS, SSH
Data integrity	Cache Protection, Data Block Guard, Disk Drive Patrol

Availability management

Non-disruptive maintenance	Dedicated Hot Spare, Global Hot Spare
Non-disruptive firmware upgrade	Yes
Redundancy	RAID Controller, Power supply, Fan
Hot part replacement	Yes

Capacity management

Thin Provisioning	Yes	
RAID migration	Yes	

Capacity management

LUN online expansion w/o interruption	Yes
Reporting function	Yes
Hot part expansion	Yes

Management

Interfaces	Ethernet (1000 Base-T / 100 Base-TX / 10 Base-T)
Supported protocols	SNMP (version1, 2C, 3), SMI-S 1.6
Administration	Web-based graphical user interface, CLI (Command Line Interface), ETERNUS SF
Remote Support	Event notification (E-mail / SNMP / Syslog), Remote maintenance

Supported OS for ETERNUS SF

Operation Management Server	Microsoft® Windows Server® 2016 Microsoft Windows Server 2012, 2012 R2 Microsoft Windows Server 2008, 2008 R2 Solaris® 11 (11/11 or later) Solaris® 10 Red Hat® Enterprise Linux® 7 Red Hat® Enterprise Linux® 6 Red Hat® Enterprise Linux® 5 VMware® vSphere® 6.0, 6.5 VMware® vSphere® 5/ 5.1/ 5.5 Microsoft Windows Server 2016 Hyper-V Microsoft Windows Server 2012 Hyper-V, 2012 R2 Hyper-V Microsoft Windows Server 2008 Hyper-V, 2008 R2 Hyper-V Hyper-V 2.0
Operation Management Client	Internet Explorer® 9, 10, 11 FireFox® ESR 17, 24, 31, 38, 45, 52 Microsoft Edge® 25 Chrome® 60 Chrome® 47, 50 (Android®) Safari 8, 9 (iOS)

Supported configurations

All major host operating systems, servers and business applications
Detailed support matrix:
http://www.fujitsu.com/global/support/products/computing/storage/all-flash-array/supported-configurations/

Installation specification

19" rackmount	Yes	
Service Area	Front: 850 mm (33.5 inch) or more Rear: 850 mm (33.5 inch) or more	
Power voltage	AC 100 - 120 V / AC 200 - 240 V	
Power frequency	50 / 60 Hz	
Power supply efficiency	92 % (80 PLUS gold)	
Maximum Power Consumption	AC 100 - 120 V: 4,260W (4,350VA)	
Maximum Power Consumption	AC 200 - 240 V: 4,370W (4,460VA)	
Power phase	Single	
	ETERNUS AF650 S2	2.5-inch Drive Enclosure
Dimensions (W x D x H)	482 x 805 x 133 mm 19 x 31.7 x 5.2 inch 3 U	482 x 540 x 88 mm 19 x 21.3 x 3.5 inch 2 U
Weight	54 kg (119 lb)	35 kg (77 lb)
Maximum Power Consumption (AC 100 - 120 V)	820W (830VA)	430W (440VA)
Maximum Power Consumption (AC 200 - 240 V)	930W (940VA)	430W (440VA)

Environment

Maximum Heat Generation	AC 100 - 120 V: 15,800: kJ/h
	AC 200 - 240 V: 16,200: kJ/h

Environment

Temperature (not operating)	0 - 50 ℃	
Humidity (operating)	20 - 80 % (relative humidity, non-condensing)	
Humidity (not operating)	8 - 80 % (relative humidity, non-condensing)	
Altitude	3,000 m (10,000 ft.)	
Sound pressure (LpAm)	54dB(A)	
Sound power (LWAd; 1B = 10dB)	7.2B	
Noise notes	Measured with single enclosure according to ISO 7779 and declared according to ISO 9296	
Operating environment	Site Planning Guide	
Operating environment link	http://docs.ts.fujitsu.com/dl.aspx?id=dcd40f02-7a1d-4ed9-9c4f-705c8ff67ea9	
Type	ETERNUS AF650 S2	2.5-inch Drive Enclosure
Maximum Heat Generation (AC 100 - 120 V)	3000 kJ/h	1600 kJ/h
Maximum Heat Generation (AC 200 - 240 V)	3400 kJ/h	1600 kJ/h

Compliance

Product safety	UL 60950-1, CSA 60950-1, EN 60950-1, IEC 60950-1
Electromagnetic Compatibility	CNS 13438, FCC Part-15 Subpart B Class A, ICES 003 Class A, EN55032, VCCI Class A, AS/NZS CISPR 32 class A
Electromagnetic Immunity	EN 55024
CE certification	2014/30/EU, 2014/35/EU, 2011/65/EU
Approvals	CB, CE, C-Tick, FCC, EAC, GS, VCCI
Environmental compliance	RoHS compliant, WEEE 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

Warranty

Warranty period	3 years
Warranty type	Onsite warranty
Warranty Terms & Conditions	www.fujitsu.com/support

Product Related Services - the perfect extension

Support Pack Options	- Globally available in major business areas: 9x5, Next Business Day Onsite Response Time 9x5, 4h Onsite Response Time (depending on country) 24x7, 4h Onsite Response Time (depending on country)
Recommended Service	- 24x7, Onsite Response Time: 4h
Service Lifecycle	5 years after end of product life
Service Weblink	http://www.fujitsu.com/support

Fujitsu products, solutions & services

In addition to FUJITSU ETERNUS AF650 S2, Fujitsu provides a range of platform solutions. They combine reliable Fujitsu products with the best in services, know-how and worldwide partnerships.

Fujitsu Portfolio

Built 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 offerings. This allows customers to select from alternative sourcing and delivery models to increase their business agility and to improve their IT operation's reliability.

Computing Products

www.fujitsu.com/global/products/computing/

Software

www.fujitsu.com/software/

More information

Learn more about Fujitsu ETERNUS AF650 S2, 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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