FusionStor®

Innovation Infinite

IFS5024

The Perfect SAN Solution for SMB Market

Fusionstor IFS5024 is the most cost-effective SAN storage system for the SMB and Enterprise market. It is a perfect solution to the applications of surveillance, backup and for disaster recovery which can reduce capital expenditure and achieve maximum efficiency at the same time.
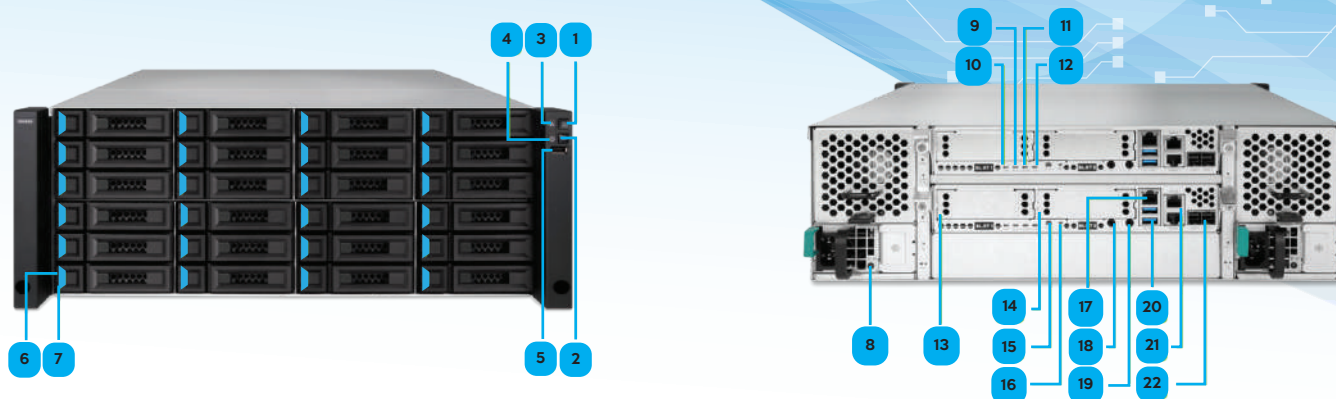
- High Performance SAN storage system with Dual-Active (Active/Active) controller
- High availability design with no single point of failure
- 5th generation Intel® 2-core processor, up to 32GB RAM per controller
- Latest 12Gb SAS 3.0 technology
- Built-in 10GbE iSCSI
- Up to 9,000MB/s sequential read and 4,500MB/s sequential write throughput. up to 900k sequential IOPS
- Scale up solution supports over 8.7PB of raw storage capacity
- FS SANOS (SAN Operating System) 4.0
- Advanced Storage Management
- Thin Provisioning
- SSD Cache (read and write cache)
- Auto Tiering
- Snapshot
- Flexible I/O host cards for iSCSI SAN or Fibre Channel SAN
- Local clone and remote replication for disaster recovery
- Virtualization support for VMware VAAI, Microsoft Hyper-V ODX, and Citrix
- Cache-to-Flash memory protection technology

Application Areas

With the next generation storage platform, the FS5024 series is positioned to provide excellent values for customers and can enable enterprise applications, such as

- Backup and disaster recovery : Symantec, Commvault, Veeam, Acronis
- Surveillance : mega structure (shopping mall/skyscraper), public transportation (airport/train station/highway), secure and smart city infrastructure

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Infinitstor - FS5024 Product Specification

Appearance

1. Enclosure Power Button / LED	7. Disk Drive Status LED	13. Host Card Slot 1 (host card is an optional part)	19. Service port
2. UID (Unique Identifier) Button / LED	8. Power Supply Unit – PSU Indicator & Beep Off Button	14. Host Card Slot 2 (host card is an optional part)	20. USB port
3. Enclosure Access LED	9. Controller Status LED	15. Buzzer Mute Button	21. 10GbEiSCSI Port
4. Enclosure Status LED	10. Master / Slave LED (only for dual controllers)	16. Reset to Factory Default Button	22. 12Gb/s SAS Wide port
5. USB Port	11. Dirty Cache LED	17. Management Port	
6. Disk Drive Power LED	12. UID (Unique Identifier) LED	18. Console Port	

Hardware Specifications

Architecture	Dual (Active-Active)
CPU	
Processor	Intel® 64-bit Dual-Core
Memory	
System Flash	-
Memory Module Pre-installed	4GB DDR4 ECC DIMM (per controller)
Total Memory Slots	2 (per controller)
Memory Expandable up to	32GB (per controller)
Storage	
Drive Bays	3.5" Slot x 16
Maximum Drive Bays with Expansion Unit	616
Compatible Drive Type	3.5" SAS HDD / SAS SED HDD, 3.5" NL-SAS HDD / NL-SAS SED HDD, 2.5" SAS SSD / SAS SED SSD 2.5" SATA SSD / SATA SED SSD (*), 2.5" SAS HDD / SAS SED HDD, 2.5" NL-SAS HDD / NL-SAS SED HDD (*) 6Gb MUX board needed for 2.5" SATA drives in dual controller system
Drive Interface	SAS 12Gb/s
Maximum Internal Raw Capacity	224TB
Maximum Raw Capacity with Expansion Units	8,624TB
Hot Swappable Drive	Yes
External Port	
USB 2.0 Port	1 (Front)
USB 3.0 Port	-
Others	UPS Port x 1, Console Port x 1
Connectivity Port	
1GbE RJ45 LAN Port	1 (Onboard Management Port)
10GbE RJ45 LAN Port	2 (Onboard) / 2 iSCSI (Option: HQ-10G2T)
10GbE SFP+ LAN Port	4 iSCSI (Option: HQ-10G4S2)
16Gb SFP+ Fibre Channel	4 (Option: HQ-16F4S2) / 2 (Option: HQ-16F2S2)
Expansion Port	
12Gb/s SAS Wide Port	2 (Onboard)

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Host Card Expansion	
Gen3x8 Slot	1
Gen2x4 Slot	1
Appearance	
Dimension (H x W x D) (mm)	170.3 x 438 x 515
Chassis Form Factor	19" Rackmount 4U 24 Bay
Net Weight (kg)	25.9
Gross Weight (kg)	28.3
Memory Protection	
Cache-to-Flash Module	Yes
Battery Backup Module + Flash Module	Yes
Others	
System Fan	4 pcs
Replaceable System Fan	Yes
Power Recovery	Yes
Scheduled Power On/Off	-
Wake on LAN/WAN	Yes
Power Supply Unit / Adapter	770W/850W x 2 (80 PLUS Platinum)
Redundant Power Supply	Yes
AC Input Power Voltage	100V-240V
Power Frequency	50-60 Hz, Single Phase
Power Consumption	648W
British Thermal Unit	2,211BTU
LCM Support	Yes
Environment Temperature	
Operating Temperature	0°C to 40°C
Storage Temperature	-10°C to 50°C
Operating Relative Humidity	20% to 80% non-condensing
Non-operating Relative Humidity	10% to 90%
Certification	
Certifications	CE, FCC, BSMI, VCCI, KCC
Warranty	
Standard Warranty	1 / 2 / 3 years Battery backup module : 1 year ; Super capacitor module : 1 year

Software Specifications

Operating System	• 64bit embedded Linux

Storage Management	• RAID level 0 ,1 ,0+1 ,3 ,5 ,6 ,10 ,30 ,50, 60, and N-way mirror
	• RAID EE level 5EE, 6EE, 50EE, and 60EE
	• Flexible storage pool ownership
	• Thin Provisioning (IFS Thin) with space reclamation
	• SSD Cache (IFS Cache [1])
	• Auto Tiering (IFS Tiering [1])
	• Global, local, and dedicated hot spares
	• Write-through and write-back cache policy
	• Online disk roaming
	• Spreading RAID disk drives across enclosures
	• Background I/O priority setting
	• Instant RAID volume availability
	• Fast RAID rebuild
	• Online storage pool expansion
	• Online volume extension
	• Online volume migration [2]
	• Auto volume rebuilding
	• Instant volume restoration
	• Online RAID level migration
	• SED & ISE drive support
	• Video editing mode for enhanced performance
	  Disk drive health check and S.M.A.R.T. attributes
	  Storage pool parity check and media scan for disk scrubbing
	• SSD wear lifetime indicator
	• Disk drive firmware batch update
	• Volume QoS (Quality of Service)
	• Advanced disk awareness

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iSCSI Host Connectivity	• CHAP & mutual CHAP authentication • SCSI-3 PR (Persistent Reservation for I/O fencing) support • iSNS support • VLAN (Virtual LAN) support • Up to 256 iSCSI targets • Jumbo frame (9,000 bytes) support • Up to 512 hosts per controller • Up to 1,024 sessions per controller
Fibre Channel Host Connectivity	• FCP‑2 & FCP-3 support • Auto detect link speed and topology • Topology supports point to-point[3] and loop • Up to 256 hosts per controller
High Availability	• Dual-Active (Active/Active) SAN controllers • Cache mirroring through NTB bus • ALUA support • Management port seamless failover • Fault-tolerant and redundant modular components for SAN controller, PSU, FAN module, and dual port disk drive interface • Dual-ported HDD tray connector • Multipath I/O and load balancing support (MPIO, MC/S, Trunking, and LACP) • Firmware update with zero system downtime
Security	• Secured Web (HTTPS), SSH (Secure Shell) • iSCSI Force Field to protect from mutant network attack • iSCSI CHAP & mutual CHAP authentication • SED & ISE drive support
Storage Efficiency	• Thin Provisioning (IFS Thin) with space reclamation • Auto Tiering (IFS Tiering[1]) with 3 levels of storage tiers
Networking	• DHCP, Static IP, NTP, Trunking, LACP, VLAN, Jumbo frame (up to 9,000 bytes)

Advanced Data Protection	• Snapshot (IFS Snap), block-level, differential backup
	  • Writeable snapshot support
	  • Manual or schedule tasks
	  • Up to 64 snapshots per volume
	  • Up to 64 volumes for snapshot
	  • Up to 4,096 snapshots per system
	• Remote Replication (IFS Replica)
	• Asynchronous, block-level, differential backup based on snapshot technology
	  • Traffic shaping for dynamic bandwidth controller
	  • Manual or schedule tasks
	  • Auto rollback to previous version if current replication fails
	  • Up to 32 schedule tasks per controller
	• Volume clone for local replication
	• Configurable N-way mirroring
	• Integration with Windows VSS (Volume Shadow Copy Service)
	• Instant volume restoration
	• Cache-to-Flash memory protection[1]
	  • M.2 flash module
	  • Power module: BBM (Battery Backup Module) or SCM (Super Capacitor Module)
	• Support USB UPS and network UPS with SNMP management

Virtualization	• Server Virtualization & Clustering • Latest VMware vSphere • VMware VAAI for iSCSI & FC • Windows Server 2016, 2012 R2 Hyper-V • Microsoft ODX • Latest Citrix XenServer
Easy Management	• USB LCM[1], serial console support, online firmware update • Intuitive Web management UI, secured web (HTTPS), SSH (Secured Shell), LED indicators • S.E.S. support, S.M.A.R.T. support, Wake-on-LAN, and Wake-on-SAS
Green & Energy Efficiency	• RESTful API support • 80 PLUS Platinum power supply • Wake-on-LAN to turn on or wake up the system only when necessary • Auto disk spin-down
Host Operating Systems Support	• Windows Server 2008, 2008 R2, 2012, 2012 R2, 2016 • SLES 10, 11, 12 • RHEL 5, 6, 7 • CentOS 6, 7 • Solaris 10, 11 • FreeBSD 9, 10 • Mac OS X 10.11 or later
Note	[1] The function is optional and is not included in the default package. [2] The feature is based on RAID level migration of disk groups on the fly in thick provisioning pools. [3] 16Gb Fibre Channel only supports Point-to-Point topology.

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