Infortrend®

EonStor CS Family

Scale-out Shared Storage with High Performance and Scalability

Highlights

High Performance

- Performance scales linearly as you add new nodes
- Single cluster performance up to 100GB/s
- 3-node cluster performance up to 18GB/s
- Auto-balancing function evenly distributes data across all nodes and improves data access performance

High Scalability

- Scale-out expansion with up to 144 nodes
- Scale-up expansion with up to 120 drives per node
- Single cluster capacity up to 100PB
- Supports online capacity expansion

High Efficiency

- Hybrid storage (SSD and HDD) to meet diverse application requirements
- Auto tiering to easily make the best use of SSD and HDD
- SSD cache to boost the access of small files

Data Protection

- Complete data protection from drives, nodes, to system backup, minimizing the risk of data loss and ensuring continuous services
- Multiple backup choices, including industry-leading backup software and the built-in backup service

Introduction

EonStor CS is a scale-out shared storage system with high performance and capacity expansion capabilities. With the support of multiple nodes, you can easily integrate data from multiple nodes into a single namespace system architecture via CIFS/NFS protocols, effectively reducing data management hassles and costs. Furthermore, EonStor CS supports flexible storage deployment to meet different application requirements, whether it's throughput-intensive high performance computing (HPC), multimedia applications, or capacity-intensive workloads, such as surveillance, backup, and archive.

High Performance

EonStor CS delivers up to 100+ GB/s throughput that best suits large file applications. The high-end U.2 NVMe hybrid flash series provides better performance at a lower latency with up to 18GB/s speed in a 3-node cluster. By clustering multiple nodes under a single namespace and automatically balancing data across different nodes, CS solves the problem of single node performance limitations and effectively improves access efficiency.

High Scalability

EonStor CS brings scale-out expansion to help manage the ever-increasing data. To enhance performance and capacity, you can add extra CS appliances (or "nodes") to your cluster system, whether during or after the initial setup. This flexible scaling option connects up to 144 CS nodes together and delivers a read/write speed of 100 GB/s with 100 PB of storage. Scale-up expansion is also available where you increase capacity by connecting external expansion enclosures (or "JBOD") to a single CS node, with a maximum of 120 drives in total.
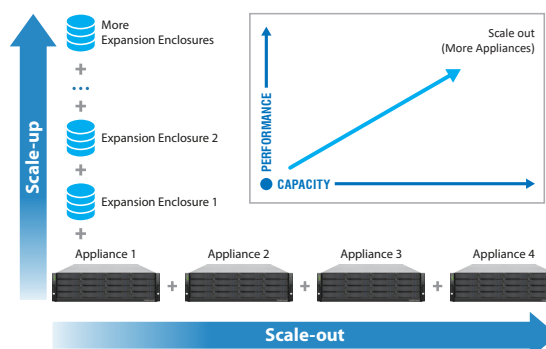
High Storage Efficiency

EonStor CS cluster supports hybrid storage that allows SSD and HDD to reside in a system to satisfy the versatile applications' workloads requirements. Based on the hybrid architecture, EonStor CS can leverage SSDs' advantage as a cache to deliver faster performance for frequently accessed data, while making better use of HDDs in the other node or expansion enclosure as the data archiving media, thereby boosting system performance and reducing the total cost of ownership.

In addition, EonStor CS supports automated tiering, which helps you automatically move data between SSDs and HDDs based on data access frequency. With this feature, you can easily optimize storage efficiency by leveraging SSDs for high-performance I/Os and HDDs for massive data archives.

EonStor CS also includes inline compression and offline deduplication features, reducing storage capacity required and thus saving further storage costs. The inline compression feature compresses raw files in real-time, significantly reducing data size and the transfer time. To deal with repeated files saved by manual backups or archiving, offline deduplication helps you automatically remove duplicated data by disk pool to free up storage space.

## Complete Data Protection and Backup

EonStor CS provides comprehensive data protection and backup solutions to ensure continuous services and ease data management concerns.

At the drive level, EonStor CS incorporated Infortrend's unique RAID technology, which helps the system to run normally while ensuring your data is fully protected even when a drive gets damaged.

In terms of node protection, EonStor CS supports Replica and Erasure Code protection mechanisms to generate redundant data across all nodes, preventing downtime caused by a single node failure. In the event of a faulty node, CS initiates the self-healing function to recover data.

At the folder level, CS offers Folder Remote Replication (Rsync) for remote file-level backup. This feature not only prevents production downtime due to local site storage failure but also duplicates the folder access control list (ACL) of the files.

RAID

Drive Failed

Drive Protection

Node Failed

Node Protection

In terms of data backup, CS works seamlessly with industry-leading backup software like Veeam, Veritas, and Commvault. Additionally, CS provides a built-in backup service feature, allowing direct data backup from file servers to CS without the need for additional backup software.
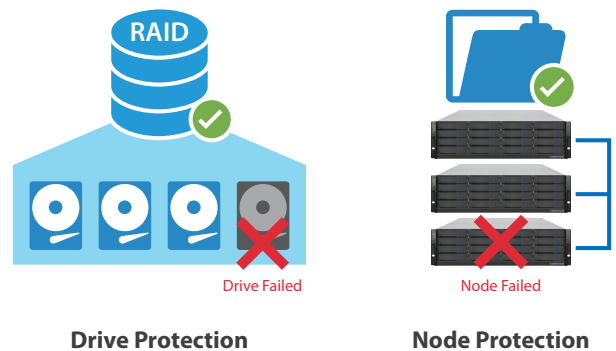
Intelligent Drive Management

EonStor CS uses an intelligent algorithm to not only reduce the total amount of the write times to SSD to prolong SSD lifespan but also prevent a simultaneous failure of multiple SSD that causes data loss. In addition, EonStor CS monitors and estimates SSD's remaining lifespan and sends out a notification to remind the administrator to replace the SSD which is about to fail.

Easy to Manage and Deploy

EonStor CS comes with a cluster deployment wizard that facilitates system initialization within 30 minutes, after which the cluster will be ready to go.

EonStor CS provides EonOne, a web-based user interface for centralized management of multiple systems, monitoring performance and capacity usage, and configuring all related system settings. On the user side, EonStor CS provides the EonView utility that simplifies shared folder access.

A CS cluster stores dozens of PB of data under a single namespace, allowing IT personnel to centrally manage all the data, thus eliminating data islands.

PHYSICAL SPECIFICATIONS

Product Series		CS 2000	CS 3000	CS 4000	CS 4000B	CS 4000U
Form Factor	2U 14-bay	-	-	-	-	CS 4014**UG**
	2U 25-bay	-	-	-	CS 4025**GB**	-
	3U 16-bay	-	CS 3016**G**	CS 4016**G**	-	-
	4U 24-bay	-	CS 3024**G**	CS 4024**G**	-	-
	4U 60-bay	CS 2060**G**/2060**D**	CS 3060**G**/3060**D**	CS 4060**G**/4060**D**	-	-
	Note: G: Single node　　**D**: Dual nodes　　**B**: 2.5" drive　　**U**: NVMe storage					
Number of Nodes		1 to 144				
CPU (per Node)		Intel® Xeon® D - 4 Core	Intel® Xeon® D - 8 Core	Intel® Xeon® D - 12 Core		
Cache Memory (per Node)		Default DDR4 64GB, up to 256GB				
Supported Drives		• 3.5" 12Gb/s SAS 7,200 RPM HDD • 3.5" 6Gb/s SATA 7,200 RPM HDD			• 2.5" SAS SSD • 2.5" SATA SSD	2.5" U.2 NVMe SSD (must be purchased from Infortrend)
		Note: For the latest compatibility details, refer to our official website for the latest Compatibility Guide.				
Max. Drives (per Node)		**G** model: 120　　**D** model: 180			120	89
		Note: The maximum number of drives varies by model.				
Onboard SAS Expansion Ports		**G** model: 2　　**D** model: 4			2	
Management Port (per Node)		• 1GbE (RJ-45) x 1				
Network Types	Front-end	• 10GbE (SFP+) x 2 • 10GbE (SFP+) x 4 • 25GbE (SFP28) x 2 • 25GbE (SFP28) x 4				
	Internal	• 10GbE (SFP+) x 2 • 25GbE (SFP28) x 2 • 25GbE (SFP28) x 4				
Network Type Combinations		• Front-end (10GbE x 2) + Internal (10GbE x 2) • Front-end (10GbE x 4) + Internal (25GbE x 2) • Front-end (25GbE x 2) + Internal (25GbE x 2) • Front-end (10GbE x 4 + 25GbE x 2) + Internal (25GbE x 2)				
Expansion Enclosures (JBODs)		• 3U 16-bay/4U 24-bay: JB 3016, JB 3060L • 4U 60-bay: JB 3060L			JB 3016, JB 3025B, JB 3060L	
Dimensions (Without Chassis Ears and Protrusions) (W x H x D)		• 3U 16-bay: 449 x 130 x 500 mm • 4U 24-bay: 449 x 174.4 x 500 mm • 4U 60-bay: 447.6 x 176 x 840.9 mm			449 x 88 x 500 mm	
Package Dimensions (W x H x D)		• 3U 16-bay: 780 x 423 x 588 mm • 4U 24-bay: 780 x 465 x 588 mm • 4U 60-bay: 620 x 460 x 1140 mm			780 x 340 x 588 mm	
Power Supply Unit	Power Supplies (Redundant and Hot-swappable)	• 3U 16-bay/4U 24-bay: 530W (80 PLUS Bronze) • 4U 60-bay: 1600W (80 PLUS Platinum)			530W (80 PLUS Bronze)	
	AC Voltage	• 3U 16-bay/4U 24-bay: 100VAC @10A, 240VAC @5A • 4U 60-bay: 100-127VAC @13.8A, 200-240VAC @9.6A			100VAC @10A, 240VAC @5A	
	Frequency	• 3U 16-bay/4U 24-bay: 50-60 Hz • 4U 60-bay: 47-63 Hz			50-60 Hz	
Safety Standards		• Electromagnetic compatibility: CE, BSMI, FCC		• Safety: UL, BSMI, CB		

SOFTWARE SPECIFICATIONS

File System	Infortrend Distributed File System (IDFS)
Max. Disk Pool Size	100 + PB
Supported Protocols	• CIFS/SMB (version 2.0/3.0) • NFS (version 3) • FTP/FXP (vsftp 2.3.4)
Max. File Size	800TB
Max. Number of User Accounts	20000
Max. Number of User Groups	512
Max. Number of Shared Folders	1024 (NFS/CIFS/FTP)
Max. Number of Rsync Jobs	1024
Max. Number of Concurrent Rsync Processes	64
Max. Number of Concurrent Connections	2048 (NFS/CIFS) | 1024 (FTP)
Management	• Web-based EonOne management software • ACL control • User account management • Microsoft Active Directory (AD), Linux LDAP and NIS authentication • Quota management • Storage Resource Management to analyze history records of resource usage
Availability and Reliability	• Self-healing • SMB Multichannel • Backup Service
Efficiency	• Inline compression • Offline deduplication
Data Protection	• Drive protection: RAID 5, RAID 6 • Node protection: Erasure code (2+1 or 4+1 or 4+2 or 8+1 or 8+2) or Replica (x2 or x3) • Cluster protection: Rsync
Notification	• Email • SNMP traps

DATA SERVICES

Data Lock	Optional		Users can specify a pool in the CS cluster as a WORM domain. All data within this domain is secured and won't be tampered or deleted from any accident or unauthorized operation.
Automated Tiering	Optional		Storage tiers per system: 2 (SSD tier and HDD tier)
SSD Cache	CS leverages high speed and low latency of SSDs to deliver faster read performance while accessing vital data under high frequency and demand.		
	Default		1 SAS/SATA SSD per node as cache
	Optional		2, 4, 6, or 8 SAS/SATA SSDs per node as cache
Advanced DNS Load Balancing	The DNS server can use more intelligent policies to automatically balance the traffic between the cluster nodes and the clients.		
	Default		Round Robin
	Optional		Connection number, network throughput, CPU usage

WARRANTY AND SERVICE

Service and Support	Standard Service	3-year limited hardware warranty and 8 x 5 phone, web, and email support (batteries are covered under warranty for 2 years)
	Upgrade or Extension Options	Warranty extension: Can extended standard service up to 5 years The following Service can be upgraded to 5 years • Upgrade: Replacement part dispatch on the next business day • Advanced service: phone, web, and email support + onsite diagnostics on the next business day • Premium service: phone, web, and email support + onsite diagnostics in 4 hours
		Note: Options may vary by region. For more details, please contact our sales representatives.
	Technical Support	Get information on system installation and maintenance, download technical documents and software, or issue a support ticket
	Product Services	Register products, download firmware, apply for licensing services, create product repair tickets, or check product repair status

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