Media & Entertainment Storage Solutions

This guide introduces Infortrend Media & Entertainment (M&E) storage solutions featuring comprehensive hardware and software products.

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Summary

Infortrend offers comprehensive storage solutions for today's media and entertainment (M&E) industry that processes 4K and higher-definition multimedia files with industry leading multimedia editing software—DaVinci Resolve, Adobe Premiere Pro, and Apple Final Cut Pro. With its high performance and scalability, Infortrend's shared media storage solution addresses a wide range of media workloads, from video editing to online streaming and archiving. Infortrend's EonStor GS/GSe/CS models are ideal solutions targeting workgroups of all sizes to meet various data storage and file sharing requirements. Infortrend provides a desktop utility for Windows and macOS clients—EonView. EonView can quickly connect their computers to Infortrend GS/GSe/CS storage systems and mount shared folders to the computers as a local disk for easy access.

Audience

This guide is intended for the Infortrend partners, customers, and employees who are interested in building up M&E storage solutions.

Terminology

- **GS**: A shortened name for EonStor GS models.
- **GSe Pro**: A shortened name for EonStor GSe Pro models.
- **CS**: A shortened name for EonStor CS models.
- **EonOne**: The graphical management software for EonStor GS/GSe Pro/CS.
- **EonView**: The client desktop utility that communicates with Infortrend shared storage.

Hardware Products

Small Media Group Solution—GS/GSe[1]

GS/GSe are storage solutions designed for media and entertainment. GSe is a single-controller shared storage solution with high-capacity drives or all-flash configurations, while GS is dual-controller shared storage with a high-availability design and an active-standby configuration. One of GS controllers is responsible for handling all workload while the other stays in a standby condition; if the controller in charge fails, the standby controller immediately takes over the workload to minimize system downtime for mission-critical projects.

The GS/GSe models come in three levels — 2000T, 3000 Gen2, and 4000 Gen2. They all come in multiple form factors, provide flexible host board options, and feature a highly-scalable modular design. GS/GSe 2000T is the most cost-effective solution that supports 13 4K video streams. As the best price/performance resolution, GS/GSe 3000 Gen2 supports 18 4K video streams. GS/GSe 4000 Gen2 is the ultra-high performance solution that supports 26 4K video streams.



GS/GSe 2016T



GS/GSe 3024 Gen2



GS/GSe 4060 Gen2

Large Scale M&E Solution—CS

As your business grows, your current storage capacity and bandwidth might not be able to keep up with the growing requirements. Unlike traditional fixed-capacity solutions, CS allows adding more storage nodes to the cluster to increase both capacity and performance without interrupting system operation. By providing up to 100+ GB/s read/write throughput and 100+ PB capacity, CS can easily handle your massive media

[1] Infortrend GS/GSe can be repurposed into a SAN-NAS integrated storage to store non-multimedia data.

workloads.

Infortrend offers a complete scale-out NAS product line to fulfill any rich media workloads. For mission critical applications, CS 4000 delivers ultra-performance up to 3GB/s throughput per node to meet any post-production workloads. Furthermore, it comes in different form factors with all-flash and all-HDD configurations for flexible cluster deployment. CS 3000 is the best price/performance ratio model for general purposes. CS 2000 is an entry-level scale-out solution for applications that require massive storage capacity, such as data backup and archiving.



CS 2060



CS 3016



CS 4024

Software Products

Management Interface—EonOne

EonOne is the storage management interface for Infortrend EonStor GS, GSe, and CS models. It is a web based management console for doing system monitoring, storage provisioning and file sharing.

EonOne has the following advantages:

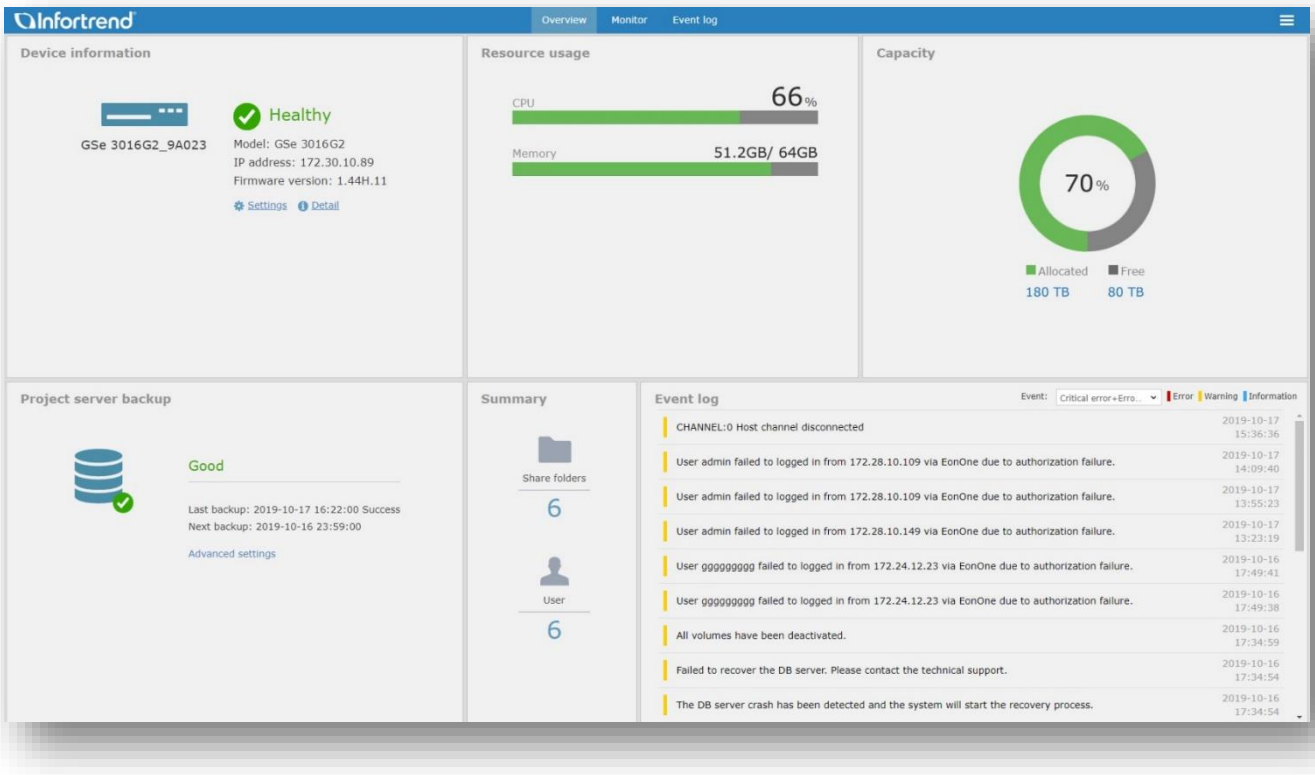
- Easy deployment: With the initialization setup wizard and CS cluster deployment tool, you can easily deploy your media shared storage within 30 minutes.
- Easy management: EonOne is a storage management suite for Infortrend's shared media storage. It provides an intuitive graphic user interface for advanced storage settings and performance monitoring.
- Centralized management: For the scale-out NAS CS product line, EonOne provides centralized cluster management for managing and monitoring all nodes in the cluster, simplifying the management workload and shortening the learning curve.

EonOne comes with two administrative accounts for different management purposes:

- **M&E user administrator**[2]: This administrative account handles local user accounts, users' storage quota, and basic network settings. EonOne provides a smart built-in setup wizard to help this administrator complete basic networking and storage configurations.

[2] For more information, check the **EonOne User Manual for Multimedia Administrator.**

- **System Administrator[3]:** This administrative account manages advanced storage configurations, data services, and hardware/software maintenance.



EonOne management interface

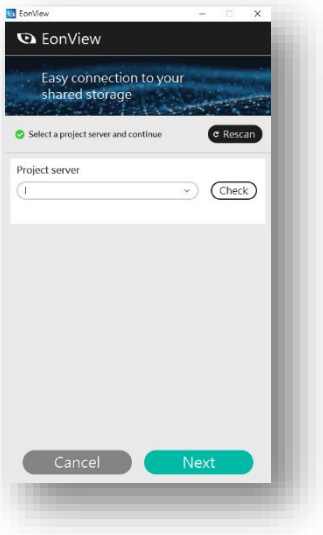
[3] For more information, check the **EonOne User Manual.**

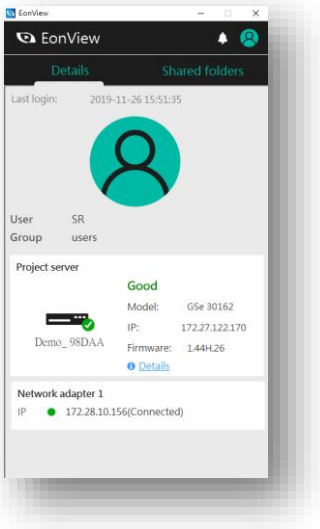
Client Desktop Utility—EonView[4]

EonView is a client utility for Windows and macOS workstations. When installed with EonView, the clients can automatically detect the IP address of a GS/GSe/CS storage, and mount corresponding shared folders for immediate access. EonView simplifies access to your shared storage and facilitates smooth collaboration.

EonView comes with these advantages:

- **Finding shared storage:** EonView locates shared storage over the network.
- **Mounting shared folders**: EonView mounts all accessible shared folders on the client and ensures that all clients use identical mount points for file access.
- **Sending notifications in real time**: EonView informs the client of critical system events in real time.
- **Auto-execution**: EonView automatically launches right after the client is powered on.
- **Flexible credential-based access**: Multimedia technicians can use their own login credentials to freely access files via a different workstation computer, without resetting the environment.





[4] For more information, check **EonView User Manual** and **EonView Application Note**.

Shared Media Storage Solution

Traditional media storage is not keeping pace with exponential growth of multimedia data, especially for HD to 4K and future 8K videos. Infortrend's shared media storage solutions deliver high performance, high scalability, and stability to address a wide range of rich media workloads, from video ingestion to archiving.

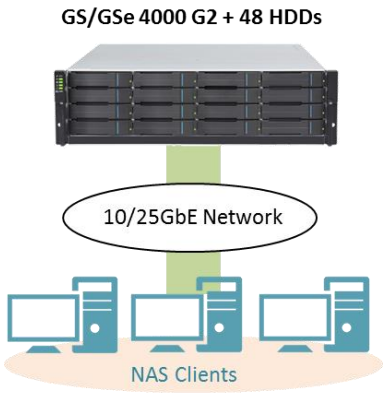
In this section, we demonstrate EonStor GS/GSe and CS storage configurations on the media post-production stage and some network topology useful for video editing, creative finishing (rendering), and content delivery.

Edit / Post-Production

Video editing workloads require high performance for concurrent streams traversing between multiple workstations and shared storage. Furthermore, I/O latency is also critical because poor performance can result in frame drops or application timeouts. EonStor GS/GSe and CS provide a single ultra-performance namespace and data repository with centralized management and immense scalability for post-production studios of any size.

Small Workgroups (Fewer Than 10 Client Workstations)

EonStor GS/GSe 4000 Gen2 is an ideal solution for media collaborations on high-quality videos, allowing easy deployment of multimedia editing applications. Delivering up to 5 GB/s read and 3 GB/s write throughput, GS/GSe 4000 Gen2 with 48 HDDs supports 120 HD playback streams and 26 4K compressed streams.

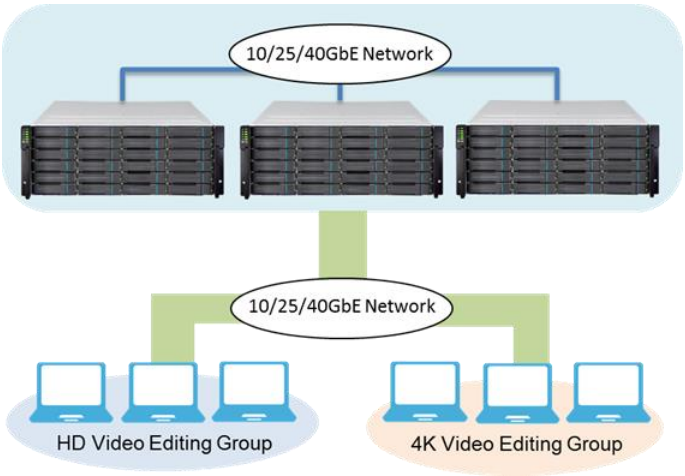


Recommended configurations:

- Model: GS/GSe 4000 Gen2 with 48 HDDs
- Network: 10/25 GbE front-end connections
- Protocol: CIFS
- Data protection: RAID6
- Performance:
  - Maximum number of playback streams:
    - 4K streams: 26
    - HD streams: 120
  - Maximum throughput:
    - Read: 5,000 MB/s
    - Write: 3,000 MB/s

Large-Scale Studios (More Than 10 Client Workstations)

EonStor CS 4000 is a high performance scale-out NAS solution suitable for high-resolution video editing in large post-production environments. With a basic 3-node cluster, CS 4000 with 72 HDDs can deliver up to 33 4K streams and 150 HD playback streams.



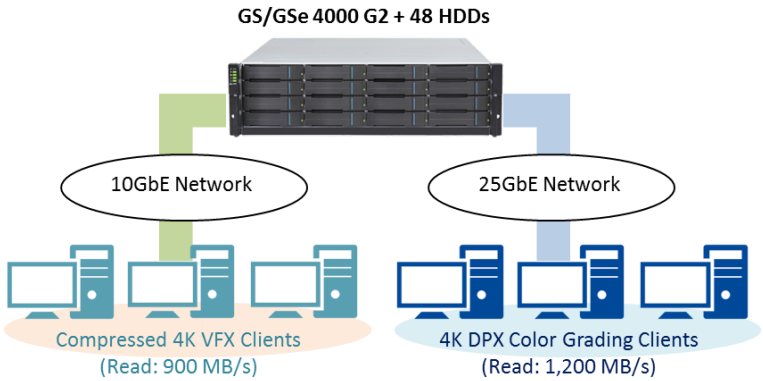
Recommended configurations:

- Model: CS 4024 3-node cluster with 72 HDDs
- Network: 10/25/40GbE internal and front-end connections
- Protocol: CIFS
- Data protection:
  - Node protection: Erasure code (2+1)
  - Drive protection: RAID5 (optimal performance)
- Performance:
  - Maximum number of playback streams:
    - 4K streams: 33
    - HD streams: 150
  - Maximum throughput:
    - Read: 6,800 MB/s
    - Write: 5,600 MB/s

Creative Finishing

After video editing is finished by using nonlinear editing software (e.g. Final Cut Pro, Premiere Pro, and DaVinci Resolve, etc.), the next step of media workflow is to include creative visual effects and rendering. For project conform or visual effects, and rendering creation, those workloads require high throughput for real-time video proofing and playback.

EonStor GS/GSe offers large bandwidth front-end connections such as 10GbE and 25GbE to meet the heavy workloads of 4K resolution video rendering.



Recommended configurations:

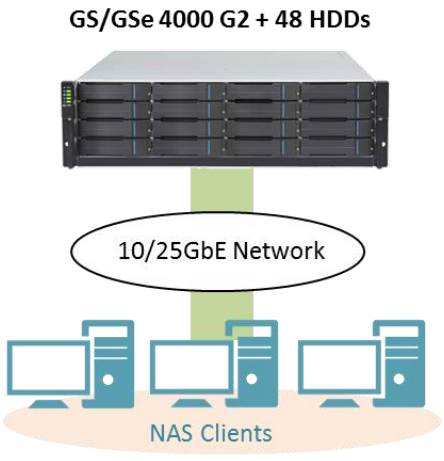
- Model: GS/GSe 4000 Gen2 with 48 HDDs
- Network: 10/25 GbE front-end connections
- Protocol: CIFS
- Data protection: RAID6
- Performance:
  - Maximum number of compressed 4K streams (900MB/s) for visual effects: 5
  - Maximum number of 4K DPX streams (1,200MB/s) for rendering: 4

Content Delivery

Modern multi-platform delivery to terminal devices such as smartphones, tablets, or IPTVs allows convenient access to high resolution media contents anytime and anywhere. Real-time video streaming requires high throughput and responsive performance in the back-end storage architecture. To deliver uninterrupted and high quality contents, EonStor GS/GSe and CS counts on high read performance and capacity for those performance-hungry applications.

Small Workgroups (Fewer Than 10 Client Workstations)

GS/GSe 4000 Gen2 supports up to 26 concurrent 4K video playback steams with 48 units of HDDs, making it suitable for concurrent content delivery workloads.

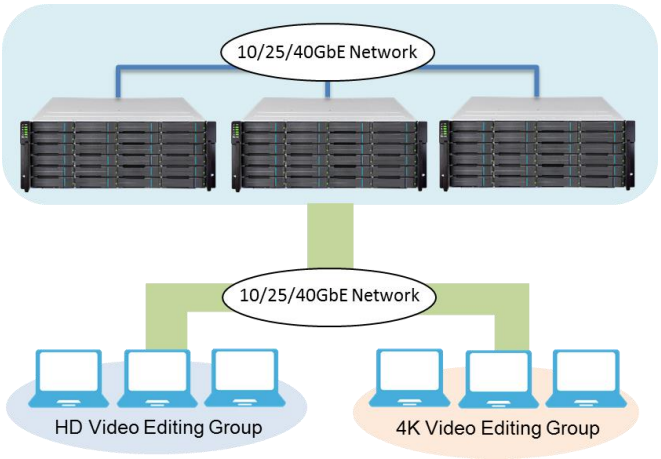


Recommended configurations:

- Model: GS 4000 Gen2 with 48 HDDs
- Network: 10/25GbE front-end connections
- Protocol: CIFS
- Data protection: RAID6
- Performance:
  - Maximum number of playback streams supported:
    - 4K streams: 24
    - HD streams: 120

Large-Scale Studios (More Than 10 Client Workstations)

A 3-node cluster composed of CS 3000 with 72 units of HDDs supports up to 30 concurrent 4K video streams and 140 HD playback streams. You can perform scale-out expansion by adding more nodes to the cluster to linearly improve its overall performance, or expand the storage capacity by cascading JBODs to the existing nodes.



Recommended configurations:

1. Model: CS 3024 3-node cluster with 72 HDDs
2. Network: 10/25/40GbE internal and front-end connections

3. Protocol: CIFS
4. Data protection:
   A. Node protection: Erasure code (2+1)
   B. Drive protection: RAID5 (optimal performance)
5. Maximum number of playback streams supported:
   A. 4K streams (1.2Gb/s): 30
   B. HD streams (100Mb/s): 140

Deploying Shared Storage

Follow the steps to quickly deploy your shared storage and EonView:

1. Log in to the shared storage as **M&E User Administrator**. Then, continue configuring RAID, user credentials, and shared folders with the setup wizard.
2. Install EonView on each client computer.
3. Each client user logs in to EonView. After login, EonView automatically connects to the shared storage and mounts accessible shared folders to the client computer.
4. All the clients can start collaborating on files on the GS/GSe/CS shared storage.

Conclusion

Infortrend offers a comprehensive set of hardware and software products for multimedia storage. GS is high availability storage with dual controllers and active-standby configuration. When a controller fails, the other controller immediately takes over the workload, ensuring minimum system downtime. With the redundant design, GS makes a perfect fit for mission-critical applications. GSe, with a single controller, is designed for budget sensitive or less critical applications. CS targets on large-scale workgroups and post-production studios with more than 10 workstations. In sum, Infortrend GS/GSe/CS M&E storage solutions can achieve collaborative multimedia editing using DaVinci Resolve, Adobe Premiere Pro, and Apple Final Cut Pro.

Legal Information

All Infortrend products, including the product/s that customers have purchased from Infortrend, are subject to the latest Standard Warranty Policy available on the Infortrend website:
https://www.infortrend.com/global/Support/terms-conditions

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